

Financial Flexibility and Future Corporate Performance under Firm-Specific Uncertainty: Evidence from Indian Listed Companies

¹ Rakshith Gowda K M, ² Dr Nischitha H, ³ Dr Venkatesh Babu B R, ⁴ Rajashree B Padeppagol, ⁵ Raksha K B, ⁶ Keshavamurthy M N

¹Assistant Professor, School of Management and Commerce, Sapthagiri NPS University, Bengaluru

²Associate Professor, School of Management and Commerce, Sapthagiri NPS University, Bengaluru

³Professor and Director, School of Management and Commerce, Sapthagiri NPS University, Bengaluru

⁴Assistant Professor, School of Management and Commerce, Sapthagiri NPS University, Bengaluru

⁵Assistant Professor, Field Marshal K M Cariappa College, Madikeri

⁶Student, MBA, School of Management and Commerce, Sapthagiri NPS University, Bengaluru

Abstract

This study examined the relationship between financial flexibility and future corporate performance under firm-specific business uncertainty among Indian listed non-financial companies. A balanced panel of 100 companies covering FY2021 to FY2025 provided 500 firm-year observations. The Financial Flexibility Index was constructed using standardized measures of unused debt capacity, reserves, operating cash flow and interest coverage. Return on Assets was used as the primary performance measure. Return on Equity and Asset Turnover were examined as alternative outcomes. Firm-specific uncertainty was measured using the rolling three-year standard deviation of sales growth. The hypotheses were tested using two-way fixed-effects models with one-year-lagged explanatory variables and standard errors clustered by company. The results showed that financial flexibility was positively associated with future Return on Assets. The coefficient of lagged financial flexibility was 0.0347 and statistically significant at the 1 percent level. This relationship remained significant across several alternative specifications. However, the association with Return on Equity was not significant. The Asset Turnover coefficient was positive but did not meet the 5 percent significance criterion. No inverted U-shaped relationship was identified because the squared financial flexibility term was insignificant. The interaction between financial flexibility and firm-specific uncertainty was positive but remained insignificant at the 5 percent level. The findings indicate that financial flexibility may protect future asset-based profitability. Its benefits for operational efficiency and shareholder returns are less certain. The study contributes by combining a multidimensional flexibility index, forward model timing, nonlinear testing and firm-specific uncertainty within an Indian listed-company setting. The results represent associations and should not be interpreted as causal effects.

Keywords: Financial flexibility, corporate performance, firm-specific uncertainty, Return on Assets, panel data, Indian listed companies

1. Introduction

1.1 Background of the Study

Companies rarely operate under stable financing conditions. Sales may weaken, credit may tighten and useful investment opportunities may arise before outside finance is available on acceptable terms. Financial flexibility gives a firm room to respond to such changes. It reflects the capacity to use internal funds, obtain additional borrowing and meet existing financial commitments without disturbing normal operations. The concept is therefore broader than cash holding or low leverage. Gamba and Triantis (2008) view financial flexibility as an option whose value increases when financing costs and investment opportunities change. Marchica and Mura (2010) also show that spare debt capacity can protect later investment ability and firm value.

The importance of this capacity becomes clearer during a sharp fall in revenue. Evidence from financial crises shows that flexible firms are better placed to preserve investment and performance (Arslan-Ayaydin et al., 2014). Fahlenbrach et al. (2021) reach a similar conclusion during the COVID-19 shock. Firms with stronger cash

positions and lower debt exposure experienced better market outcomes than less flexible firms. These findings indicate that financial flexibility can protect corporate activity when ordinary funding routes become difficult.

Financial flexibility is not valuable at every level in the same way. Resources held as protection may become unproductive when they remain unused for long periods. Very low leverage may also prevent a firm from using debt for sound investment. Recent studies suggest that the benefit of flexibility depends on how resources are allocated and may become nonlinear at higher levels (Hunjra et al., 2024). Wu et al. (2024) also show that investment efficiency can alter the performance effect. The present study therefore examines both the expected benefit and the possibility that excessive flexibility weakens future performance.

1.2 Indian Listed-Company Context

Indian listed companies provide a useful setting because access to finance differs across firms and industries. Business-group links may provide internal support to some firms while independent firms remain more dependent on their own cash flow and borrowing capacity. Khanna and Palepu (2000) show that group affiliation has an important role in the Indian corporate setting. More recent evidence also reports meaningful differences in leverage adjustment across Indian industries (Bhatia & Kumari, 2022). A single cash or debt ratio may therefore give an incomplete picture. A broader measure can better represent the capacity of an Indian firm to respond to changing business conditions.

2. Literature Review and Hypothesis Development

2.1 Statement of the Research Problem

Managers need enough financial room to protect operations and undertake worthwhile investment. At the same time they must avoid keeping excessive funds idle or maintaining an unnecessarily conservative capital structure. The central problem is therefore not whether firms should hold the largest possible reserve. It is whether financial flexibility improves later performance and operating efficiency, whether the benefit declines at high levels and whether the value of flexibility changes when the firm faces unstable sales.

Existing evidence does not fully resolve this problem for Indian listed non-financial companies. Much of the published work uses cash or leverage as an individual proxy. Other studies focus on a common crisis or economy-wide uncertainty. Yet uncertainty can differ greatly among firms operating in the same year. Firm-level risk research supports the need to recognise this variation rather than assume that all companies face an identical shock (Hassan et al., 2019). A forward-looking panel design is needed to examine whether current flexibility is associated with the next period's outcome.

2.2 Research Gap

Four connected gaps guide the study. First, evidence based on a transparent composite measure of financial flexibility remains limited in the Indian setting. Second, operational efficiency is often combined with profitability even though it represents a different outcome. Third, the possibility of an inverted U-shaped relationship has received less attention than the positive linear effect. Fourth, few studies bring a firm-specific rolling measure of business uncertainty into the flexibility and future-performance relationship. These gaps are examined within one panel model rather than through separate and unrelated tests.

2.3 Research Objectives

1. To examine the effect of financial flexibility on the future financial performance of Indian listed non-financial companies.
2. To assess the effect of financial flexibility on future operating efficiency.
3. To determine whether financial flexibility has a nonlinear relationship with future corporate performance.
4. To examine whether firm-specific business uncertainty changes the relationship between financial flexibility and future corporate performance.

2.4 Research Questions

1. How does financial flexibility affect the future financial performance of Indian listed non-financial companies?
2. How does financial flexibility affect future operating efficiency?
3. Does financial flexibility have an inverted U-shaped relationship with future corporate performance?
4. Does firm-specific business uncertainty change the relationship between financial flexibility and future corporate performance?

2.5 Systematic Literature Review Method

The review follows a structured systematic literature review process. Tranfield et al. (2003) recommend clear planning, transparent study selection and evidence synthesis in management research. Snyder (2019) adds that the search logic and quality rules should be visible. The reporting sequence also follows the identification, screening, eligibility and inclusion logic of PRISMA 2020 (Page et al., 2021). A statistical meta-analysis was not suitable because the studies use different measures, outcomes and research designs.

The review covers journal articles published from 1973 to 2025. The search and publication check were updated through July 2026. Search terms combined financial flexibility with debt capacity, cash holdings, financial constraints, firm performance, operating efficiency, uncertainty, nonlinear effects and India. Publisher records, DOI metadata and backward and forward reference checks were used to confirm publication details. The final submission should retain Scopus and Web of Science exports so the identification and screening counts can be reported from evidence rather than estimated.

Table 2.1. Systematic review protocol

Element	Applied rule
Publication type	Published peer-reviewed journal articles only
Inclusion	Direct relevance, clear design and complete publication details
Exclusion	Working papers, preprints, theses, book chapters, editorials, duplicates and retractions
Quality check	Journal standing, transparent method, suitable measurement and cautious interpretation
Evidence base	40 substantive articles and 3 review-method articles
Synthesis	Thematic narrative synthesis supported by structured comparison

Articles were grouped by concept, measurement, performance, efficiency, nonlinear effects, uncertainty and institutional setting. Greater weight was given to studies with clear samples, credible timing and appropriate treatment of firm differences. Conflicting results were retained because they reveal the conditions under which financial flexibility may help or hinder performance.

Each article was read for its research question, sample, measure of flexibility, outcome, method and main limitation. The comparison focused on the direction of the reported relationship and the conditions around it. It did not treat every coefficient as directly comparable. This approach is important because a cash measure, a low-leverage measure and a broad flexibility index do not represent exactly the same capacity. The resulting synthesis is therefore interpretive but traceable to published evidence.

2.6 Concept of Financial Flexibility

Financial flexibility is the capacity to obtain and deploy finance without a costly disruption to normal activity. Gamba and Triantis (2008) treat it as an option that allows a firm to change financing and investment decisions when conditions change. Lins et al. (2010) show that cash and credit lines serve different liquidity needs. Denis and McKeon (2012) further show that firms may raise debt before funds are immediately required in order to preserve future choice. Bonaimé et al. (2014) link this choice with risk management and payout policy. These studies show that flexibility is a financing capacity, not one balance sheet item.

2.7 Measurement of Financial Flexibility

Published studies use cash, leverage, credit access or a combined measure. Opler et al. (1999) and Bates et al. (2009) show that cash holdings reflect growth opportunities, risk and access to capital markets. Cash alone can therefore mix precautionary strength with weak investment demand. Acharya et al. (2007) also explain that cash and debt are not simple substitutes. Their value depends on future cash flow and investment needs.

Debt capacity captures the ability to borrow when internal funds are insufficient. Marchica and Mura (2010) identify flexible firms through persistent spare debt capacity. Rapp et al. (2014) examine how investors value the future financing choices created by flexibility. Faulkender and Wang (2006) show that the value of cash varies with the firm's financial position. Together the evidence supports a composite measure. The present study therefore combines debt capacity, reserves, operating cash flow and interest coverage. The exact construction is explained only in Chapter 3.

A combined index also reduces the risk of classifying a firm as flexible from one favourable number. High cash may coexist with weak cash generation. Low debt may reflect unused borrowing capacity or an inability to obtain credit. Reserves indicate accumulated internal support, while interest coverage shows whether current obligations are manageable. Reading these dimensions together gives a more balanced view of the firm's ability to finance a future response.

2.8 Theoretical Foundations

2.8.1 Financing hierarchy and constraints

Myers (1984) and Myers and Majluf (1984) explain why firms prefer internal finance when outside investors have less information than managers. A firm may reject a useful project if external finance is expensive and internal funds are unavailable. Almeida et al. (2004) show that constrained firms save cash from current cash flow to meet later needs. Financial flexibility can reduce this underinvestment risk by preserving internal funds and borrowing room.

2.8.2 Trade-off and option reasoning

Trade-off theory balances the benefits of debt against distress and agency costs (Kraus & Litzenberger, 1973). Unused debt capacity protects future borrowing but may also sacrifice tax benefits. Real-option reasoning reaches a similar conclusion. Flexibility is valuable when financing costs and investment choices are uncertain, but a reserve that is never used does not create operating returns by itself (Gamba & Triantis, 2008).

2.8.3 Agency and adaptive capacity

Agency theory provides the main caution. Jensen (1986) argues that managers may use excess free cash flow for low-return expansion. Harford (1999) finds that cash-rich firms are more likely to make acquisitions, while Dittmar and Mahrt-Smith (2007) show that governance affects the value of cash. Dynamic capability theory adds a different point. Firms need resources to respond to change, but they also need managerial ability to use them well (Teece et al., 1997). Financial flexibility can therefore support adaptation without guaranteeing a productive response.

The theories are complementary rather than competing explanations. Financing hierarchy and constraint arguments explain why access to funds can protect valuable activity. Trade-off and option reasoning explain why

firms preserve that access before a need appears. Agency theory explains why the same reserve can lose value when managers face weak discipline. Together they predict an average benefit, a possible upper limit and a stronger role for flexibility when the firm faces greater uncertainty.

2.9 Financial Flexibility and Future Financial Performance

The main positive channel is investment protection. Marchica and Mura (2010) report that firms with spare debt capacity have stronger later investment ability. Arslan-Ayaydin et al. (2014) find that flexible East Asian firms maintained investment and performance more effectively during financial crises. Survey evidence from Campello et al. (2010) shows that financing constraints forced firms to cut investment and other important expenditure during crisis conditions. Duchin et al. (2010) similarly link costly external finance with reduced corporate investment.

Evidence from the COVID-19 period strengthens the resilience argument. Ding et al. (2021) connect stronger pre-crisis financial conditions with corporate immunity to the shock. Fahlenbrach et al. (2021) show that firms with more cash and lower debt exposure had better market outcomes when revenue stopped. Chao and Huang (2022) also show that the value of flexibility depends on later investment choices. Recent work finds that flexibility improves accounting and market performance by reducing investment inefficiency (Wu et al., 2024). Li et al. (2025) further connect flexibility with corporate financing efficiency. The evidence is not uniform across every country or period, but it supports a positive average association when current flexibility is related to a later outcome.

H1. Financial flexibility is positively associated with the future financial performance of Indian listed companies.

2.10 Financial Flexibility and Future Operating Efficiency

Operating efficiency concerns the sales generated from the asset base. A financially flexible firm can maintain working capital, preserve supplier relationships and avoid the forced sale of productive assets when cash flow weakens. Baños-Caballero et al. (2014) show that working capital, performance and financing constraints are closely linked. Indian evidence from Altaf and Shah (2018) finds that working capital and profitability have a nonlinear relationship. Wu et al. (2024) also show that investment efficiency shapes the performance benefit of flexibility. Yet direct evidence using Asset Turnover as a separate outcome is limited. This makes operating efficiency a distinct test rather than a mediator of profitability.

The distinction matters because profitability and efficiency can move differently. A firm may protect margins through cost reduction while allowing production capacity to remain underused. It may also improve asset use without an immediate rise in profit because the benefit is absorbed by input costs or financing charges. Testing Asset Turnover separately shows whether prior flexibility supports the productive use of assets, without assuming that it carries the entire effect on ROA.

H2. Financial flexibility is positively associated with the future operating efficiency of Indian listed companies.

2.11 Nonlinear Effect of Financial Flexibility

The benefit of flexibility should be strongest when a firm moves away from a weak funding position. Beyond a suitable level, additional cash and unused debt capacity may produce smaller gains. Jensen (1986) and Harford (1999) identify the risk that abundant internal funds support weak investment. Dittmar and Mahrt-Smith (2007) show that governance determines whether cash is valued well. Martínez-Sola et al. (2013) provide evidence that firm value rises with cash only up to an optimal level. Hunjra et al. (2024) also report nonlinear patterns in the relationship between flexibility and corporate risk-taking. These findings support a balance between precautionary strength and the cost of idle or poorly governed resources.

H3. Financial flexibility has an inverted U-shaped relationship with future corporate performance.**2.12 Moderating Role of Firm-Specific Uncertainty**

Uncertainty delays investment because the value of waiting rises when decisions are difficult to reverse (Bloom, 2009). Policy uncertainty also reduces corporate investment, as shown by Julio and Yook (2012) and Gulen and Ion (2016). Baker et al. (2016) provide a widely used economy-level measure, but a national index does not show whether one firm faces stable sales while another experiences large fluctuations in the same year.

Chortareas and Noikokyris (2021) directly connect firm-specific uncertainty, investment and financial flexibility. Their work supports measuring uncertainty at the company level. When sales growth is volatile, funding needs are harder to predict. A firm with reserves, cash flow and borrowing room can act without an immediate distressed adjustment. Crisis evidence from Fahlenbrach et al. (2021) supports the view that flexibility becomes more valuable when revenue is exposed to a sharp shock. The effect may still depend on whether managers invest or delay. The expected average moderation is positive.

H4. Firm-specific business uncertainty positively moderates the relationship between financial flexibility and future corporate performance.**2.13 Evidence from India and Emerging Markets**

The Indian setting combines market finance, bank borrowing and business-group support. Khanna and Palepu (2000) show that group affiliation has important performance implications in India. Gopalan et al. (2007) find that intragroup support can assist affiliated firms. This support can create flexibility that is not visible from cash alone. Bhaduri (2002) and Chakraborty (2010) show that corporate borrowing and capital structure vary with firm and market conditions. Bhaumik et al. (2012) provide evidence that financing constraints differ across Indian firms. Altaf and Shah (2018) show that even working capital has an optimal rather than unlimited relationship with profitability. The evidence supports a firm-level panel model and also warns against treating all Indian companies as financially similar.

This variation makes India useful for testing the model. Listed companies differ in group membership, credit access, capital intensity and exposure to changing demand. These differences can affect both the amount of flexibility held and the return obtained from it. A panel design that compares a company with itself over time can remove stable firm characteristics from the main estimate. Year effects can then separate common changes in the financial and economic environment.

2.14 Evidence Synthesis and Research Gap**Table 2.2. Evidence synthesis and study response**

Theme	Published evidence	Study response
Measurement	Cash and leverage capture only part of flexibility	Four-component Financial Flexibility Index
Timing	Many models relate current flexibility to current outcomes	Lagged flexibility linked with future outcomes
Outcome and shape	Operating efficiency and nonlinear effects receive less attention	Separate Asset Turnover outcome and FFI squared
Uncertainty and setting	Crisis or national uncertainty can hide firm variation	Rolling firm uncertainty in an Indian listed-company panel

The literature establishes that flexibility can protect investment and performance, especially when external finance is costly. It offers less integrated evidence on future operating efficiency, excessive flexibility and company-level uncertainty in India. The present model addresses these gaps together. It does not claim that the Indian setting

alone is novel. Its contribution lies in the combined measurement, timing, nonlinear test and firm-specific moderation.

The model also improves the sequence of the test. Flexibility is observed before the performance outcome, which is more consistent with the claim that current financial capacity supports later activity. The squared term asks whether the benefit weakens when flexibility becomes unusually high. The interaction asks whether the same capacity matters more when the firm's own sales path is unstable. These questions extend the literature without treating a statistical association as proof of causation.

3. Research Methodology

3.1 Research Approach and Design

The study follows a quantitative and explanatory research design. It evaluates theory-based hypotheses with financial statement data observed across firms and years. A panel design is appropriate because it separates changes within a company from stable differences between companies. Company fixed effects account for time-invariant features such as the business model and long-term risk position. Year effects capture common economic conditions that affect the sample in the same financial year.

The design improves temporal ordering by relating current outcomes to prior-year financial flexibility and controls. It supports evidence of association after observed controls and stable firm characteristics are considered. It does not by itself establish causality. This distinction is retained throughout the analysis.

3.2 Population, Sample and Study Period

The target population consists of Indian listed non-financial companies. Banks, insurers and other financial institutions are excluded because their leverage, reserves and capital requirements are governed by different rules. Purposive sampling is used. A company is retained when consolidated information is continuously available for Sales, Net Profit, Equity Capital, Reserves, Borrowings, Total Assets, Cash Flow from Operations, Interest and Profit Before Tax.

Table 3.1. Sample structure and usable model periods

Item	Coverage	Purpose
Companies	100	Indian listed non-financial companies
Raw period	FY2020-FY2025	Six years used to construct current and prior-year measures
Analysis period	FY2021-FY2025	Five-year balanced panel
Raw observations	600	100 companies observed for six years
Analysis observations	500	100 companies observed for five years
Baseline and nonlinear models	400	FY2022-FY2025 outcomes after a one-year lag
Uncertainty observations	300	FY2023-FY2025 after a rolling three-year calculation
Moderation model	200	FY2024-FY2025 after rolling uncertainty is lagged

Source. Final publication dataset and calculation workbook.

The balanced analytical panel is sufficient for the main fixed-effects models. The moderation sample is smaller because Sales Growth must first be observed for three consecutive years. The resulting uncertainty value is then lagged. The moderation estimate therefore has only two outcome years and is interpreted with greater caution.

3.3 Measurement of Variables

3.3.1 Performance and efficiency outcomes

Average Total Assets equals the mean of current and previous-year Total Assets. Average Equity uses Equity Capital plus Reserves for the current and previous year. ROA is Net Profit divided by Average Total Assets. ROE is Net Profit divided by Average Equity. ROE is treated as missing when Average Equity is zero or negative. Asset Turnover is Sales divided by Average Total Assets. Using average balance sheet values aligns the stock measure in the denominator with the annual flow in the numerator.

$$\text{ROA} = \text{Net Profit}_{it} / \text{Average Total Assets}_{it}$$

$$\text{ROE} = \text{Net Profit}_{it} / \text{Average Equity}_{it}$$

$$\text{Asset Turnover} = \text{Sales}_{it} / \text{Average Total Assets}_{it}$$

3.3.2 Financial Flexibility Index

The Financial Flexibility Index combines four accounting dimensions. Debt Capacity equals one minus Borrowings divided by Total Assets. The Reserves Ratio and CFO Ratio divide their respective values by Total Assets. Interest Coverage equals Profit Before Tax plus Interest, divided by Interest. Coverage is capped between -100 and 100. When Interest is zero, the upper cap of 100 is assigned. This rule limits the influence of unusually small interest values.

Each component is standardised across the 500 analytical observations using its mean and sample standard deviation. The four z-scores receive equal weight. A higher index indicates greater unused financing capacity and internal financial support. Debt Ratio is not entered as a separate control because it is the direct inverse of the Debt Capacity component.

$$\text{FFI} = (Z \text{ Debt Capacity} + Z \text{ Reserves Ratio} + Z \text{ CFO Ratio} + Z \text{ Interest Coverage}) / 4$$

3.3.3 Uncertainty, nonlinear term and controls

Firm-specific uncertainty is the rolling three-year sample standard deviation of Sales Growth within each company. It therefore changes across both firms and years. Sales Growth is the annual change in Sales divided by the absolute value of previous-year Sales. Firm Size is the natural logarithm of Total Assets. The nonlinear term is the square of winsorised lagged FFI. The moderation term is the product of winsorised lagged FFI and winsorised lagged uncertainty.

Table 3.2. Variable definitions and timing

Variable	Role	Measurement	Timing
ROA	Primary outcome	Net Profit / Average Total Assets	t
ROE Clean	Alternative outcome	Net Profit / Average Equity when Average Equity is positive	t
Asset Turnover	Efficiency outcome	Sales / Average Total Assets	t
FFI	Independent variable	Mean of four standardised flexibility components	t-1
FFI squared	Nonlinear term	Square of winsorised lagged FFI	t-1
Uncertainty	Moderator	Rolling three-year SD of firm Sales Growth	t-1
FFI x Uncertainty	Interaction	Winsorised lagged FFI multiplied by winsorised lagged uncertainty	t-1
Firm Size	Control	Natural logarithm of Total Assets	t-1
Sales Growth	Control	(Sales _t - Sales _{t-1}) / absolute Sales _{t-1}	t-1

Source. Variable calculation and formula-index sheets in the final workbook.

3.4 Econometric Models:

All main equations include company effects, represented by μ_i , and financial-year effects, represented by λ_t . The error term is ε_{it} . Standard errors are clustered by company. W1 identifies the 1 percent winsorised form of a variable.

Model 1: Future ROA $ROA_{it} = \alpha + \beta_1 FFI_W1_{i,t-1} + \beta_2 Size_W1_{i,t-1} + \beta_3 Growth_W1_{i,t-1} + \mu_i + \lambda_t + \varepsilon_{it}$

Model 2: Operating efficiency $AssetTurnover_{it} = \alpha + \beta_1 FFI_W1_{i,t-1} + \beta_2 Size_W1_{i,t-1} + \beta_3 Growth_W1_{i,t-1} + \mu_i + \lambda_t + \varepsilon_{it}$

Model 3: Nonlinear effect $ROA_{it} = \alpha + \beta_1 FFI_W1_{i,t-1} + \beta_2 FFI_W1^2_{i,t-1} + \beta_3 Size_W1_{i,t-1} + \beta_4 Growth_W1_{i,t-1} + \mu_i + \lambda_t + \varepsilon_{it}$

Model 4: Moderation $ROA_{it} = \alpha + \beta_1 FFI_W1_{i,t-1} + \beta_2 Uncertainty_W1_{i,t-1} + \beta_3 Interaction_W1_{i,t-1} + \beta_4 Size_W1_{i,t-1} + \beta_5 Growth_W1_{i,t-1} + \mu_i + \lambda_t + \varepsilon_{it}$

H1 and H2 require a positive and statistically significant coefficient on lagged FFI. H3 requires the linear coefficient to be positive and the squared coefficient to be negative. The implied turning point is $-\beta_1$ divided by $2\beta_2$ and must lie inside the observed lagged FFI range. H4 requires a positive interaction coefficient. When the interaction is meaningful, the marginal effect of FFI is calculated at low, average and high uncertainty. Two-tailed tests use a 5 percent significance level and 95 percent confidence intervals. Evidence at 10 percent is described as weak and is not treated as formal hypothesis support.

3.5 Estimator Selection and Panel Diagnostics

The analysis begins with observation counts, mean, median, standard deviation, minimum, quartiles and maximum. Pearson correlation describes linear association and Spearman correlation provides a rank-based check. Variance Inflation Factors are examined before the panel models. A variable is not removed solely because of one high correlation. Its mathematical relationship and theoretical role are also considered.

Pooled OLS, company fixed effects and random effects are estimated before the baseline choice is confirmed. The F-test compares pooled OLS with fixed effects. The Breusch-Pagan LM test examines whether a panel estimator is preferable to pooled OLS (Breusch & Pagan, 1980). The Hausman test examines whether the random effects assumptions are consistent (Hausman, 1978).

Table 3.3. Estimator and diagnostic tests

Procedure	Purpose	Use in the study
F-test for company effects	Pooled OLS versus company fixed effects	Select the panel structure
Breusch-Pagan LM test	Pooled OLS versus random effects	Confirm the presence of panel variation
Hausman test	Fixed effects versus random effects	Assess consistency of random effects
Groupwise Wald test	Heteroskedasticity across companies	Guide robust inference
Wooldridge test	Serial correlation within companies	Guide clustered standard errors
Pesaran CD test	Dependence across companies	Assess common residual movement
VIF and influence checks	Multicollinearity and influential records	Evaluate model stability

The Wooldridge procedure is used for within-company serial correlation (Drukker, 2003). Cross-sectional dependence is assessed with the Pesaran CD test (Pesaran, 2021). Company-clustered standard errors are the main basis for inference because repeated observations for one firm can have correlated residuals. This choice is consistent with finance-panel guidance on clustered inference (Petersen, 2009). Regression tables report coefficients, clustered standard errors, p-values, confidence intervals, within R-squared, observations and number of companies.

3.6 Endogeneity and Robustness Strategy

Reverse causality remains possible because flexible firms may perform better while profitable firms may accumulate reserves and operating cash flow. The primary design reduces this concern through one-year-lagged explanatory variables, company fixed effects and year effects. These choices strengthen temporal ordering and control for stable omitted firm characteristics. They do not remove every source of endogeneity, so the coefficients are interpreted as conditional associations.

The robustness analysis replaces ROA with cleaned ROE, applies 5 percent winsorisation, excludes negative reserve observations, excludes FY2022 outcomes and estimates manufacturing and service subsamples. An HC1 covariance estimate provides an additional standard-error comparison. A PCA-based FFI may be reported only when its loadings, scores and estimation code are retained with the replication material.

System GMM was considered as a supplementary dynamic-panel method following Arellano and Bond (1991) and Blundell and Bond (1998). It is not used to decide the present hypotheses. The five-year analytical panel leaves only three potential outcome periods after the required lags. This is too narrow for a carefully diagnosed dynamic specification. If the period is extended, the instrument matrix should be collapsed, the instrument count should remain below the number of companies and AR and Hansen diagnostics should be reported. These controls are necessary because instrument proliferation can weaken specification tests (Roodman, 2009).

4. Data Analysis:

4.1 Descriptive Statistics

Table 4.1 Descriptive statistics after 1 percent winsorization

Variable	N	Mean	Median	SD	Minimum	Maximum
Financial Flexibility Index	500	0.00	0.03	0.76	-1.77	1.45
Return on Assets	500	9.67%	8.83%	7.15%	-6.78%	30.50%
Return on Equity	491	18.77%	17.91%	12.38%	-9.91%	61.81%
Asset Turnover	500	0.91	0.80	0.50	0.11	2.61
Firm Size	500	10.42	10.22	1.33	8.11	13.54
Sales Growth	500	16.08%	13.18%	21.09%	-28.45%	98.71%
Firm-Specific Uncertainty	300	16.06%	11.61%	13.81%	1.50%	61.51%

Source: Calculated from the final study dataset.

ROA, ROE, Sales Growth and Uncertainty are shown as percentages. Asset Turnover is a ratio. Firm Size is the natural logarithm of total assets.

The descriptive results show clear variation across firms and years. Mean ROA is 9.67 percent and mean cleaned ROE is 18.77 percent. Asset Turnover averages 0.91 times. The Financial Flexibility Index is centred close to zero because its four components are standardized before averaging. Sales Growth averages 16.08 percent. Firm-specific uncertainty averages 16.06 percent for the 300 observations where a rolling three-year measure is available.

4.2 Correlation and Multicollinearity

Table 4.2 Pearson correlation matrix

Variable	ROA	ROE	AT	FFI	Size	Growth	Unc.
ROA	1.000	0.793	0.407	0.734	-0.312	0.028	-0.163
ROE	0.793	1.000	0.363	0.323	-0.110	0.155	0.034
AT	0.407	0.363	1.000	0.281	-0.376	0.177	0.067
FFI	0.734	0.323	0.281	1.000	-0.367	-0.111	-0.230
Size	-0.312	-0.110	-0.376	-0.367	1.000	-0.103	0.041
Growth	0.028	0.155	0.177	-0.111	-0.103	1.000	0.199
Unc.	-0.163	0.034	0.067	-0.230	0.041	0.199	1.000

Source: Calculated from the final study dataset.

AT means Asset Turnover and Unc. means firm-specific uncertainty. Spearman correlations show the same general pattern and do not change the model specification.

The pooled Pearson correlation between FFI and ROA is 0.734. This strong positive association does not control for stable company characteristics. The fixed-effects model is therefore more informative than the pooled correlation. The correlation between ROA and ROE is 0.793. No correlation reaches 0.80. The baseline VIF values range from 1.03 to 1.18. The nonlinear model also has VIF values below 1.20. Multicollinearity is not a material concern in the specified models.

4.3 Estimator Selection and Panel Diagnostics

The F-test rejects pooled OLS in favour of company fixed effects. The Breusch-Pagan LM test also rejects pooled OLS in favour of a panel estimator. The Hausman test is significant at the 1 percent level. This indicates that the random-effects assumptions are not suitable for the baseline model. Two-way fixed effects are therefore used for the main results.

Table 4.3 Estimator-selection and diagnostic tests

Test	Statistic	Probability	Decision
F-test for company effects	$F(99, 294) = 4.573$	$p < 0.001$	Fixed effects preferred to pooled OLS
Breusch-Pagan LM test	Chi-square = 122.863	$p < 0.001$	Panel estimator preferred to pooled OLS
Hausman test	Chi-square(3) = 11.401	$p = 0.010$	Fixed effects preferred to random effects
Groupwise Wald diagnostic	Chi-square(100) = 605.150	$p < 0.001$	Heteroskedasticity is present
Wooldridge serial-correlation test	$F = 37.897$	$p < 0.001$	Serial correlation is present
Pesaran CD test	CD = 1.963	$p = 0.050$	Borderline cross-sectional dependence

Source: Calculated from the final study dataset.

The diagnostics show heteroskedasticity and serial correlation. Cross-sectional dependence is borderline with a p-value close to 0.05. The main models therefore use standard errors clustered by company. Six standardized

residuals exceed an absolute value of three. These observations are not deleted automatically. Their influence is addressed through winsorization and sample-exclusion checks.

4.4 Fixed-Effects Results

4.4.1 Financial flexibility and future performance

Lagged FFI has a positive relationship with future ROA. The coefficient is 0.0347 and is statistically significant ($p = 0.003$). A one-unit increase in lagged FFI is associated with a 3.47 percentage-point increase in ROA. A one standard deviation increase in lagged FFI is associated with an estimated 2.65 percentage-point increase in ROA. H1 is supported for the primary outcome.

The same relationship is not significant when cleaned ROE is used. The ROE coefficient is 0.0094 ($p = 0.726$). The main conclusion should therefore be stated for ROA and not generalized to every profitability measure.

Table 4.4 Two-way fixed-effects results for primary and alternative outcomes

Variable	ROA	Cleaned ROE	Asset Turnover
Lagged FFI	0.0347*** (0.0112)	0.0094 (0.0267)	0.0740* (0.0431)
Lagged Firm Size	-0.0264 (0.0404)	-0.0498 (0.0953)	-0.1902*** (0.0591)
Lagged Sales Growth	0.0298** (0.0145)	0.0430 (0.0313)	0.2587*** (0.0463)
Observations	400	393	400
Companies	100	99	100
Within R-squared	0.092	0.016	0.227

Source: Calculated from the final study dataset.

*Company-clustered standard errors are shown in parentheses. Company and year fixed effects are included. *** $p < 0.01$, ** $p < 0.05$ and * $p < 0.10$.*

4.4.2 Financial flexibility and operational efficiency

The coefficient of lagged FFI in the Asset Turnover model is positive at 0.0740. Its p-value is 0.089. The result is weakly significant at the 10 percent level but not at the required 5 percent level. H2 is therefore not supported. Sales Growth has a clear positive relationship with Asset Turnover. Firm Size has a negative coefficient in this model.

4.4.3 Nonlinear effect

Lagged FFI remains positive in the nonlinear model. The squared term is 0.0006 and is not significant ($p = 0.950$). It is also positive rather than negative. The estimated turning point is -30.35, which lies far outside the observed lagged FFI range of -1.77 to 1.45. The proposed inverted U-shaped relationship is not supported. H3 is not supported.

4.4.4 Moderating role of uncertainty

The interaction between lagged FFI and lagged firm-specific uncertainty is positive at 0.0610. The p-value is 0.070. This indicates a possible strengthening effect at the 10 percent level but it does not meet the 5 percent criterion. The moderation model contains only 200 observations because the rolling uncertainty measure requires three years of Sales Growth before it can be lagged. H4 is therefore not supported.

Table 4.5 Nonlinear and moderation results

Variable	Nonlinear ROA	Moderation ROA
Lagged FFI	0.0346*** (0.0112)	-0.0153 (0.0180)
Lagged FFI squared	0.0006 (0.0090)	Not included
Lagged Uncertainty	Not included	0.1213*** (0.0411)
FFI × Uncertainty	Not included	0.0610* (0.0333)
Lagged Firm Size	-0.0264 (0.0402)	-0.0270 (0.0335)
Lagged Sales Growth	0.0299** (0.0139)	0.0336* (0.0181)
Observations	400	200
Within R-squared	0.092	0.134

Source: Calculated from the final study dataset.

Company-clustered standard errors are shown in parentheses. Company and year fixed effects are included. *** $p < 0.01$, ** $p < 0.05$ and * $p < 0.10$.

4.5 Robustness and Endogeneity Assessment

The positive ROA result remains significant when variables are winsorized at 5 percent, negative-reserve observations are excluded and FY2022 outcomes are removed. It also remains significant when FFI is constructed through PCA and when HC1 standard errors are used. The association is strong among service firms but is not significant among manufacturing firms. The main finding is therefore robust overall but differs across broad sectors.

Table 4.6 Robustness results for the FFI coefficient in the ROA model

Specification	Coefficient	SE	p-value	N	Conclusion
5 percent winsorization	0.0269	0.0100	0.008	400	Positive and significant
Exclude negative reserves	0.0309	0.0108	0.005	394	Positive and significant
Exclude FY2022 outcome	0.0282	0.0108	0.011	300	Positive and significant
Manufacturing firms	0.0177	0.0124	0.161	248	Not significant at 5 percent
Service firms	0.0790	0.0183	<0.001	104	Positive and significant
PCA-based FFI	0.0221	0.0106	0.040	400	Positive and significant
HC1 standard errors	0.0347	0.0097	<0.001	400	Positive and significant

Source: Calculated from the final study dataset.

Lagging the explanatory variables and including company and year fixed effects reduce some endogeneity concerns. They do not eliminate reverse causality. System GMM is not used to decide the hypotheses in this chapter. The five-year panel provides only three GMM-ready outcome periods after the required lags. Reporting a dynamic result without a fully controlled instrument set and valid AR and Hansen diagnostics would create false

precision. A final submission should estimate a collapsed and restricted System GMM model in dedicated panel software after source verification. The instrument count must remain below the number of companies.

6. Discussion and conclusion

6.1 Summary of Major Findings

The study provides one clear result and three qualified results. Lagged Financial Flexibility Index is positively associated with future Return on Assets. The relationship remains significant under several alternative specifications. This supports H1 for the main performance outcome. The corresponding ROE result is not significant. The conclusion therefore applies to future asset-based profitability and should not be extended to every measure of shareholder return.

The Asset Turnover coefficient is positive but does not meet the 5 percent significance requirement. H2 is not supported. The squared FFI term is statistically insignificant and does not indicate an inverted U shape. H3 is also not supported. The interaction between FFI and firm-specific uncertainty is positive but its probability value is 0.070. H4 is not supported at the selected level. The smaller moderation sample makes this result exploratory rather than conclusive.

Table 6.1 Summary of hypothesis decisions

Hypothesis	Relationship	Evidence	Interpretation
H1	FFI and future ROA	0.0347 p = 0.003	Supported for the primary outcome
H2	FFI and Asset Turnover	0.0740 p = 0.089	Not supported at 5 percent
H3	FFI squared and future ROA	0.0006 p = 0.950	No inverted U-shaped evidence
H4	FFI and uncertainty interaction	0.0610 p = 0.070	Positive direction but not supported at 5 percent

Source: Chapter 4 fixed-effects estimates. Decisions use the 5 percent level.

5.3 Discussion of H1: Future Financial Performance

The positive ROA result indicates that firms with stronger financial flexibility in one year tend to record better asset-based profitability in the following year. The coefficient of 0.0347 implies that a one-unit increase in lagged FFI is associated with a 3.47 percentage-point increase in ROA after controlling for firm size, sales growth, company effects and year effects. A one standard deviation increase in FFI corresponds to an estimated 2.65 percentage-point increase in ROA. This is economically meaningful within the sample.

The result is consistent with the view that financial flexibility protects productive activity when internal cash flow is uneven or external finance becomes costly. Marchica and Mura (2010) show that spare debt capacity helps firms preserve investment ability. Arslan-Ayaydin et al. (2014) find that flexible firms maintain investment and performance more effectively during financial crises. The present finding also agrees with Wu et al. (2024), who report a positive relationship between flexibility and accounting performance. It extends this evidence to a recent panel of Indian listed non-financial companies using a composite measure and forward timing.

The result should not be read as proof that increasing cash or reducing debt will automatically raise performance. FFI combines debt capacity, reserves, operating cash flow and interest coverage. A strong value may therefore represent sound financing capacity rather than idle cash. The insignificant ROE result also limits the claim. Flexibility appears more closely related to returns generated from the asset base than to returns measured against equity. Differences in leverage and equity values can make ROE more volatile and may explain why the two outcomes do not produce the same inference.

5.4 Discussion of H2: Operating Efficiency

H2 proposed that flexibility would improve future Asset Turnover by helping firms maintain working capital, suppliers, production and sales activity. The estimated coefficient is positive. However, its probability value of 0.089 is above the required 5 percent level. The evidence is therefore insufficient to conclude that financial flexibility systematically improves the use of assets to generate sales.

This distinction is important because profitability and operating efficiency are not identical. Flexibility can protect margins, reduce financing pressure or prevent costly disruption without producing an immediate rise in sales relative to assets. Chao and Huang (2022) and Wu et al. (2024) identify operating and investment channels through which flexibility may matter. The present result suggests that these channels do not necessarily appear as higher Asset Turnover over a short period. Sales Growth has a stronger direct relationship with Asset Turnover in the model, which indicates that demand expansion may be more important for short-run asset utilisation than financial slack alone.

5.5 Discussion of H3: Nonlinear Effect

The nonlinear model does not support the proposed inverted U-shaped relationship. The squared coefficient is close to zero, positive and statistically insignificant. Its calculated turning point lies far outside the observed FFI range. It would therefore be misleading to claim that performance declines after a particular level of flexibility in this sample.

This finding differs from the level-dependent patterns reported by Hunjra et al. (2024) and Li et al. (2025). The difference may reflect the shorter period, the Indian setting, the composition of the index or limited observations at very high levels of flexibility. It does not invalidate trade-off or agency reasoning. Those arguments state that unused funds and underleveraging can become costly when financial slack is excessive. The current evidence only shows that such a threshold is not visible within the observed range and period. Managers should therefore avoid interpreting the linear result as a recommendation to maximise FFI without considering investment needs and governance quality.

5.6 Discussion of H4: Firm-Specific Uncertainty

The interaction between lagged FFI and firm-specific uncertainty is positive. This direction is consistent with the argument that financing capacity becomes more useful when sales conditions are unstable. Chortareas and Noikokyris (2021) show that the response to firm-specific uncertainty depends on financial constraints and flexibility. Crisis evidence from Campello et al. (2010) and Fahlenbrach et al. (2021) also indicates that access to liquidity and financing capacity can reduce the severity of adjustment during shocks.

The interaction does not meet the 5 percent significance criterion. Only 200 observations are available because the uncertainty measure requires a rolling three-year history and is then lagged. This sharply reduces time variation and statistical power. Uncertainty may also encourage firms to delay investment rather than deploy their reserves, as suggested by Bloom (2009). The positive coefficient is therefore useful as a direction for further testing but not as sufficient evidence for accepting H4.

5.7 Theoretical Contributions

The study contributes to financial flexibility theory in three ways. First, the positive ROA result supports the real-option view of flexibility. Gamba and Triantis (2008) explain that financing capacity has value because it allows firms to respond when opportunities or shocks arise. The result shows that this option value can appear in future accounting performance even outside a single crisis setting.

Second, the findings separate resource availability from resource conversion. Financial flexibility is associated with future ROA but not conclusively with Asset Turnover. This implies that having financial room and using assets more intensively are different capabilities. Dynamic-capability reasoning therefore requires both access to finance and managerial ability to deploy it. Third, the absence of a nonlinear effect places a useful boundary on

the agency and trade-off arguments. Excess flexibility may be costly in theory, but the cost cannot be assumed without evidence that the sample reaches the relevant range.

5.8 Methodological Contributions

The analysis moves beyond a single cash or leverage proxy. The equal-weight FFI combines unused debt capacity, reserves, operating cash flow and interest coverage. A PCA-based alternative produces the same broad ROA conclusion. The use of lagged explanatory variables places flexibility before the performance outcome. Company fixed effects control for stable differences across firms, while year effects absorb shocks shared by all firms.

The study also treats Asset Turnover as a separate outcome instead of forcing it into a mediation model. This produces a clearer distinction between profitability and operational efficiency. Firm-specific uncertainty is measured from rolling sales-growth volatility rather than from a common macroeconomic index. These choices create a transparent model that can be reproduced from published financial statements. They do not remove endogeneity, but they improve the alignment between theory, measurement and timing.

5.9 Managerial, Investor and Policy Implications

5.9.1 Managerial implications

Managers should treat financial flexibility as a coordinated policy rather than a cash target. Adequate operating cash flow, retained reserves, manageable interest obligations and borrowing room can support future profitability. The stronger service-sector result suggests that the value of flexibility may depend on operating structure. Service firms may adjust resources more quickly, while manufacturing firms face larger fixed assets and longer investment cycles. Boards should monitor how flexibility is created and how it is used. High FFI without a clear investment or resilience purpose can still create agency concerns.

5.9.2 Investor implications

Investors can use FFI as a supplementary indicator of resilience and future asset-based profitability. It should not replace analysis of margins, growth, governance and investment quality. The insignificant ROE and Asset Turnover results show why a single favourable coefficient should not be generalised across all outcomes. Investors should examine the components of flexibility and distinguish a deliberately maintained financing reserve from weak borrowing demand or limited investment opportunity.

5.9.3 Policy and lending implications

Lenders and policymakers should recognise that corporate resilience depends on more than current leverage. Cash-flow strength, debt-service ability and accumulated reserves jointly influence a firm's capacity to withstand disruption. Credit assessment and support programmes can therefore consider a broader set of indicators. The findings do not justify uniform incentives for firms to hold more cash. They support conditions that preserve access to finance for otherwise viable firms when temporary uncertainty restricts normal funding.

5.10 Conclusion

The central conclusion is that financial flexibility is positively associated with future ROA among the sampled Indian listed non-financial companies. The result is stable across several alternative specifications and is especially strong among service firms. Financial flexibility therefore appears to provide useful financing capacity that can protect future asset-based profitability.

The remaining findings add necessary caution. The study does not establish a reliable improvement in Asset Turnover or ROE. It does not find an inverted U-shaped relationship within the observed FFI range. The positive uncertainty interaction is suggestive but not significant at 5 percent. Financial flexibility should therefore be understood as an enabling condition rather than a guaranteed source of superior performance. The evidence supports maintaining balanced financing capacity and using it purposefully. Final publication claims should be made only after source verification and stronger endogeneity analysis are completed.

References:

- [1] Arslan-Ayaydin, Ö., Florackis, C., & Ozkan, A. (2014). Financial flexibility, corporate investment and performance: Evidence from financial crises. *Review of Quantitative Finance and Accounting*, 42(2), 211–250. <https://doi.org/10.1007/s11156-012-0340-x>
- [2] Bhatia, A., & Kumari, P. (2022). Deleveraging drive in the Indian corporate sector: Interindustry intervening evidence. *Journal of Asia-Pacific Business*, 23(1), 46–72. <https://doi.org/10.1080/10599231.2022.2025644>
- [3] Fahlenbrach, R., Rageth, K., & Stulz, R. M. (2021). How valuable is financial flexibility when revenue stops? Evidence from the COVID-19 crisis. *The Review of Financial Studies*, 34(11), 5474–5521. <https://doi.org/10.1093/rfs/hhaa134>
- [4] Gamba, A., & Triantis, A. (2008). The value of financial flexibility. *The Journal of Finance*, 63(5), 2263–2296. <https://doi.org/10.1111/j.1540-6261.2008.01397.x>
- [5] Hassan, T. A., Hollander, S., van Lent, L., & Tahoun, A. (2019). Firm-level political risk: Measurement and effects. *The Quarterly Journal of Economics*, 134(4), 2135–2202. <https://doi.org/10.1093/qje/qjz021>
- [6] Hunjra, A. I., Bagh, T., Palma, A., & Goodell, J. W. (2024). Is enterprise risk-taking less sensitive to financial flexibility post COVID-19? Evidence from non-linear patterns. *International Review of Financial Analysis*, 95, 103432. <https://doi.org/10.1016/j.irfa.2024.103432>
- [7] Khanna, T., & Palepu, K. (2000). Is group affiliation profitable in emerging markets? An analysis of diversified Indian business groups. *The Journal of Finance*, 55(2), 867–891. <https://doi.org/10.1111/0022-1082.00229>
- [8] Marchica, M.-T., & Mura, R. (2010). Financial flexibility, investment ability, and firm value: Evidence from firms with spare debt capacity. *Financial Management*, 39(4), 1339–1365. <https://doi.org/10.1111/j.1755-053X.2010.01115.x>
- [9] Wu, W., Le, C., Shi, Y., & Alkaraan, F. (2024). The influence of financial flexibility on firm performance: The moderating effects of investment efficiency and investment scale. *Journal of Applied Accounting Research*, 25(5), 1183–1202. <https://doi.org/10.1108/JAAR-07-2023-0192>
- [10] Acharya, V. V., Almeida, H., & Campello, M. (2007). Is cash negative debt? A hedging perspective on corporate financial policies. *Journal of Financial Intermediation*, 16(4), 515–554. <https://doi.org/10.1016/j.jfi.2007.04.001>
- [11] Almeida, H., Campello, M., & Weisbach, M. S. (2004). The cash flow sensitivity of cash. *The Journal of Finance*, 59(4), 1777–1804. <https://doi.org/10.1111/j.1540-6261.2004.00679.x>
- [12] Altaf, N., & Shah, F. A. (2018). How does working capital management affect the profitability of Indian companies? *Journal of Advances in Management Research*, 15(3), 347–366. <https://doi.org/10.1108/JAMR-06-2017-0076>
- [13] Arslan-Ayaydin, Ö., Florackis, C., & Ozkan, A. (2014). Financial flexibility, corporate investment and performance: Evidence from financial crises. *Review of Quantitative Finance and Accounting*, 42(2), 211–250. <https://doi.org/10.1007/s11156-012-0340-x>
- [14] Baker, S. R., Bloom, N., & Davis, S. J. (2016). Measuring economic policy uncertainty. *The Quarterly Journal of Economics*, 131(4), 1593–1636. <https://doi.org/10.1093/qje/qjw024>
- [15] Baños-Caballero, S., García-Teruel, P. J., & Martínez-Solano, P. (2014). Working capital management, corporate performance, and financial constraints. *Journal of Business Research*, 67(3), 332–338. <https://doi.org/10.1016/j.jbusres.2013.01.016>
- [16] Bates, T. W., Kahle, K. M., & Stulz, R. M. (2009). Why do U.S. firms hold so much more cash than they used to? *The Journal of Finance*, 64(5), 1985–2021. <https://doi.org/10.1111/j.1540-6261.2009.01492.x>
- [17] Bhaduri, S. N. (2002). Determinants of corporate borrowing: Some evidence from the Indian corporate structure. *Journal of Economics and Finance*, 26(2), 200–215. <https://doi.org/10.1007/BF02755986>
- [18] Bhaumik, S. K., Das, P. K., & Kumbhakar, S. C. (2012). A stochastic frontier approach to modelling financial constraints in firms: An application to India. *Journal of Banking & Finance*, 36(5), 1311–1319. <https://doi.org/10.1016/j.jbankfin.2011.11.026>
- [19] Bloom, N. (2009). The impact of uncertainty shocks. *Econometrica*, 77(3), 623–685. <https://doi.org/10.3982/ECTA6248>
- [20] Bonaimé, A. A., Hankins, K. W., & Harford, J. (2014). Financial flexibility, risk management, and payout choice. *The Review of Financial Studies*, 27(4), 1074–1101. <https://doi.org/10.1093/rfs/hht045>

- [21] Campello, M., Graham, J. R., & Harvey, C. R. (2010). The real effects of financial constraints: Evidence from a financial crisis. *Journal of Financial Economics*, 97(3), 470–487. <https://doi.org/10.1016/j.jfineco.2010.02.009>
- [22] Chakraborty, I. (2010). Capital structure in an emerging stock market: The case of India. *Research in International Business and Finance*, 24(3), 295–314. <https://doi.org/10.1016/j.ribaf.2010.02.001>
- [23] Chao, C.-H., & Huang, C.-J. (2022). Firm performance following actual share repurchases: Effects of investment crowding out and financial flexibility. *Pacific-Basin Finance Journal*, 73, 101738. <https://doi.org/10.1016/j.pacfin.2022.101738>
- [24] Chortareas, G., & Noikokyris, E. (2021). Investment, firm-specific uncertainty, and financial flexibility. *Journal of Economic Behavior & Organization*, 192, 25–35. <https://doi.org/10.1016/j.jebo.2021.09.042>
- [25] Denis, D. J., & McKeon, S. B. (2012). Debt financing and financial flexibility: Evidence from proactive leverage increases. *The Review of Financial Studies*, 25(6), 1897–1929. <https://doi.org/10.1093/rfs/hhs005>
- [26] Ding, W., Levine, R., Lin, C., & Xie, W. (2021). Corporate immunity to the COVID-19 pandemic. *Journal of Financial Economics*, 141(2), 802–830. <https://doi.org/10.1016/j.jfineco.2021.03.005>
- [27] Dittmar, A., & Mahrt-Smith, J. (2007). Corporate governance and the value of cash holdings. *Journal of Financial Economics*, 83(3), 599–634. <https://doi.org/10.1016/j.jfineco.2005.12.006>
- [28] Duchin, R., Ozbas, O., & Sensoy, B. A. (2010). Costly external finance, corporate investment, and the subprime mortgage credit crisis. *Journal of Financial Economics*, 97(3), 418–435. <https://doi.org/10.1016/j.jfineco.2009.12.008>
- [29] Fahlenbrach, R., Rageth, K., & Stulz, R. M. (2021). How valuable is financial flexibility when revenue stops? Evidence from the COVID-19 crisis. *The Review of Financial Studies*, 34(11), 5474–5521. <https://doi.org/10.1093/rfs/hhaa134>
- [30] Faulkender, M., & Wang, R. (2006). Corporate financial policy and the value of cash. *The Journal of Finance*, 61(4), 1957–1990. <https://doi.org/10.1111/j.1540-6261.2006.00894.x>
- [31] Gamba, A., & Triantis, A. (2008). The value of financial flexibility. *The Journal of Finance*, 63(5), 2263–2296. <https://doi.org/10.1111/j.1540-6261.2008.01397.x>
- [32] Gopalan, R., Nanda, V., & Seru, A. (2007). Affiliated firms and financial support: Evidence from Indian business groups. *Journal of Financial Economics*, 86(3), 759–795. <https://doi.org/10.1016/j.jfineco.2006.09.008>
- [33] Gulen, H., & Ion, M. (2016). Policy uncertainty and corporate investment. *The Review of Financial Studies*, 29(3), 523–564. <https://doi.org/10.1093/rfs/hhv050>
- [34] Harford, J. (1999). Corporate cash reserves and acquisitions. *The Journal of Finance*, 54(6), 1969–1997. <https://doi.org/10.1111/0022-1082.00179>
- [35] Hunjra, A. I., Bagh, T., Palma, A., & Goodell, J. W. (2024). Is enterprise risk-taking less sensitive to financial flexibility post COVID-19? Evidence from non-linear patterns. *International Review of Financial Analysis*, 95, 103432. <https://doi.org/10.1016/j.irfa.2024.103432>
- [36] Jensen, M. C. (1986). Agency costs of free cash flow, corporate finance, and takeovers. *American Economic Review*, 76(2), 323–329. <https://www.jstor.org/stable/1818789>
- [37] Julio, B., & Yook, Y. (2012). Political uncertainty and corporate investment cycles. *The Journal of Finance*, 67(1), 45–83. <https://doi.org/10.1111/j.1540-6261.2011.01707.x>
- [38] Khanna, T., & Palepu, K. (2000). Is group affiliation profitable in emerging markets? An analysis of diversified Indian business groups. *The Journal of Finance*, 55(2), 867–891. <https://doi.org/10.1111/0022-1082.00229>
- [39] Kraus, A., & Litzenberger, R. H. (1973). A state-preference model of optimal financial leverage. *The Journal of Finance*, 28(4), 911–922. <https://doi.org/10.1111/j.1540-6261.1973.tb01415.x>
- [40] Li, Z., Hyung, D. E., & Lee, D. Y. (2025). Financial flexibility and corporate financing efficiency. *International Review of Financial Analysis*, 98, 103892. <https://doi.org/10.1016/j.irfa.2024.103892>
- [41] Lins, K. V., Servaes, H., & Tufano, P. (2010). What drives corporate liquidity? An international survey of cash holdings and lines of credit. *Journal of Financial Economics*, 98(1), 160–176. <https://doi.org/10.1016/j.jfineco.2010.04.006>
- [42] Marchica, M.-T., & Mura, R. (2010). Financial flexibility, investment ability, and firm value: Evidence from firms with spare debt capacity. *Financial Management*, 39(4), 1339–1365. <https://doi.org/10.1111/j.1755-053X.2010.01115.x>

- [43] Martínez-Sola, C., García-Teruel, P. J., & Martínez-Solano, P. (2013). Corporate cash holding and firm value. *Applied Economics*, 45(2), 161–170. <https://doi.org/10.1080/00036846.2011.595696>
- [44] Myers, S. C. (1984). The capital structure puzzle. *The Journal of Finance*, 39(3), 575–592. <https://doi.org/10.1111/j.1540-6261.1984.tb03646.x>
- [45] Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, 13(2), 187–221. [https://doi.org/10.1016/0304-405X\(84\)90023-0](https://doi.org/10.1016/0304-405X(84)90023-0)
- [46] Opler, T., Pinkowitz, L., Stulz, R., & Williamson, R. (1999). The determinants and implications of corporate cash holdings. *Journal of Financial Economics*, 52(1), 3–46. [https://doi.org/10.1016/S0304-405X\(99\)00003-3](https://doi.org/10.1016/S0304-405X(99)00003-3)
- [47] Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., ... Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ*, 372, n71. <https://doi.org/10.1136/bmj.n71>
- [48] Rapp, M. S., Schmid, T., & Urban, D. (2014). The value of financial flexibility and corporate financial policy. *Journal of Corporate Finance*, 29, 288–302. <https://doi.org/10.1016/j.jcorpfin.2014.08.004>
- [49] Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research*, 104, 333–339. <https://doi.org/10.1016/j.jbusres.2019.07.039>
- [50] Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7), 509–533. [https://doi.org/10.1002/\(SICI\)1097-0266\(199708\)18:7%3C509::AID-SMJ882%3E3.0.CO;2-Z](https://doi.org/10.1002/(SICI)1097-0266(199708)18:7%3C509::AID-SMJ882%3E3.0.CO;2-Z)
- [51] Tranfield, D., Denyer, D., & Smart, P. (2003). Towards a methodology for developing evidence-informed management knowledge by means of systematic review. *British Journal of Management*, 14(3), 207–222. <https://doi.org/10.1111/1467-8551.00375>
- [52] Wu, W., Le, C., Shi, Y., & Alkaraan, F. (2024). The influence of financial flexibility on firm performance: The moderating effects of investment efficiency and investment scale. *Journal of Applied Accounting Research*, 25(5), 1183–1202. <https://doi.org/10.1108/JAAR-07-2023-0192>
- [53] Arellano, M., & Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *The Review of Economic Studies*, 58(2), 277–297. <https://doi.org/10.2307/2297968>
- [54] Blundell, R., & Bond, S. (1998). Initial conditions and moment restrictions in dynamic panel data models. *Journal of Econometrics*, 87(1), 115–143. [https://doi.org/10.1016/S0304-4076\(98\)00009-8](https://doi.org/10.1016/S0304-4076(98)00009-8)
- [55] Breusch, T. S., & Pagan, A. R. (1980). The Lagrange multiplier test and its applications to model specification in econometrics. *The Review of Economic Studies*, 47(1), 239–253. <https://doi.org/10.2307/2297111>
- [56] Drukker, D. M. (2003). Testing for serial correlation in linear panel-data models. *The Stata Journal*, 3(2), 168–177. <https://doi.org/10.1177/1536867X0300300206>
- [57] Hausman, J. A. (1978). Specification tests in econometrics. *Econometrica*, 46(6), 1251–1271. <https://doi.org/10.2307/1913827>
- [58] Pesaran, M. H. (2021). General diagnostic tests for cross-sectional dependence in panels. *Empirical Economics*, 60(1), 13–50. <https://doi.org/10.1007/s00181-020-01875-7>
- [59] Petersen, M. A. (2009). Estimating standard errors in finance panel data sets: Comparing approaches. *The Review of Financial Studies*, 22(1), 435–480. <https://doi.org/10.1093/rfs/hhn053>
- [60] Roodman, D. (2009). A note on the theme of too many instruments. *Oxford Bulletin of Economics and Statistics*, 71(1), 135–158. <https://doi.org/10.1111/j.1468-0084.2008.00542.x>