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Pricing Capability, Cost Inflation Pass-Through, and Financial Performance in Public Operating Firms

Anurak Sittichai,[1] Kittipong Lertsakul,[2] and Phanupong Charoensuk[3]

[1]Faculty of Business Administration and Information Technology, Department of Business Information Systems, Rajamangala University of Technology Isan, 744 Suranarai Road, Nai Mueang, Mueang Nakhon Ratchasima 30000, Thailand

[2]School of Management Technology, Department of Management Information Systems, Walailak University, 222 Thaiburi, Thasala District, Nakhon Si Thammarat 80160, Thailand

[3]Faculty of Business Administration, Digital Business and Information Systems Program, Rambhai Barni Rajabhat University, 41 Moo 5 Sukhumvit Road, Tha Chang, Mueang Chanthaburi 22000, Thailand

Abstract

Cost inflation creates a direct test of whether firms can protect financial performance without damaging demand. Some firms respond to input-cost increases through rapid price adjustments, contract indexation, product mix changes, and disciplined promotional control. Other firms absorb cost increases because of customer resistance, long-term contracts, weak differentiation, or slow managerial response. This study examines how pricing capability affects financial performance during cost inflation using an unbalanced panel of 498 publicly traded U.S. operating firms from 2011 to 2024. Pricing capability is measured from realized price-cost pass-through, price-adjustment disclosure, contract indexation language, gross-margin recovery speed, and promotion-control discipline. The analysis estimates firm and year fixed-effects models, dynamic panel specifications, inflation-shock difference-in-differences tests, quantile regressions, and instrumental-variable models using industry-level input-cost shocks interacted with pre-period pricing routines. Financial performance is measured through gross-margin resilience, operating return on assets, EBITDA margin, operating cash-flow margin, Tobin's Q, and earnings downside risk. The findings indicate that pricing capability is positively associated with financial performance when input-cost inflation is high, but only weakly related to performance when inflation is low. A one-standard-deviation increase in pricing capability predicts a 1.18 percentage-point smaller gross-margin decline and a 0.82 percentage-point higher operating return on assets during high-inflation firm-years. The effect is strongest for firms with differentiated products and moderate customer switching costs, but weaker for firms with long fixed-price contracts. The evidence suggests that pricing capability is financially valuable primarily as an inflation-contingent operating capability rather than as a constant performance advantage.

1. Introduction

Financial performance depends on how firms convert revenue into margin and cash flow under changing cost conditions. When input costs are stable, many firms can preserve profitability through routine budgeting, procurement planning, and periodic price review. When input costs rise quickly, those routines are tested. A firm must decide whether to raise prices, change product mix, reduce promotions, renegotiate contracts, substitute inputs, absorb margin pressure, or accept lower volume. These decisions affect gross margin, operating income, cash flow, valuation, and earnings risk [1]. The present study examines whether firms with stronger pricing capability experience better financial performance during cost inflation.

Pricing capability is defined here as the organizational capacity to adjust realized prices, contract terms, promotional intensity, and product mix in response to cost changes without severe demand loss. This definition is deliberately financial and empirical. It does not

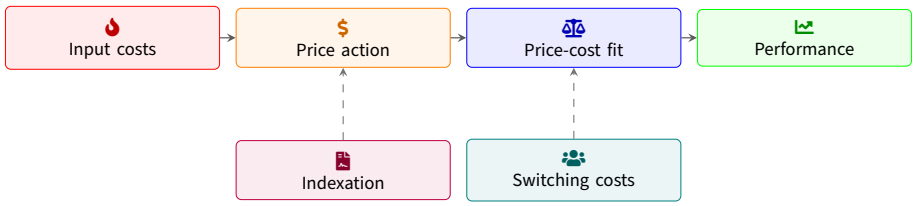


Figure 1. Conceptual architecture linking input-cost inflation to pricing actions, price-cost alignment, and financial performance, with contract indexation and switching-cost conditions shaping the strength of pass-through.

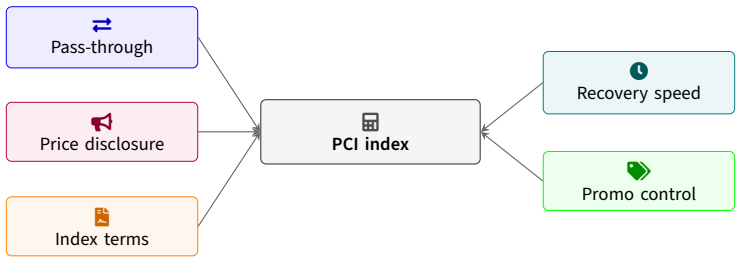


Figure 2. Measurement structure of the pricing capability index, combining realized pass-through, disclosure specificity, contract indexation, margin-recovery speed, and promotional discipline into an industry-year standardized construct.

treat pricing capability as a general managerial virtue or a symbolic statement about market orientation. It is measured through observable patterns: historical pass-through of input-cost changes, explicit price-adjustment disclosure, contract indexation language, speed of gross-margin recovery after cost shocks, and evidence of promotion-control discipline. A firm receives a high score when it repeatedly shows the ability to respond to cost increases through realized revenue and margin outcomes rather than only through stated intentions.

The study is motivated by the observation that inflation affects firms unevenly. Two firms in the same industry may face similar cost pressure but report very different margin outcomes. One may raise list prices, reduce discounting, and shift toward higher-margin products. Another may delay price increases, protect volume through promotions, and experience margin compression. These differences are not fully explained by industry membership, firm size, or leverage. They reflect differences in pricing systems, customer relationships, contract structures, product differentiation, and managerial discipline. Such differences should have measurable implications for financial performance.

The empirical setting consists of publicly traded U.S. operating firms from 2011 through 2024. The sample includes consumer packaged goods, industrial components, specialty materials, building products, business services, distribution, transportation equipment, medical products, and selected technology hardware firms. Financial firms, utilities, extractive commodity producers, and firms with regulated cost pass-through are excluded because their pricing and cost structures follow different economic rules. The final unbalanced panel contains 498 firms and 4,736 firm-year observations after requiring sufficient financial, textual, and industry-cost data.

The study evaluates six financial-performance outcomes. Gross-margin resilience measures the degree to which a firm preserves gross margin when input costs rise. Operating return on

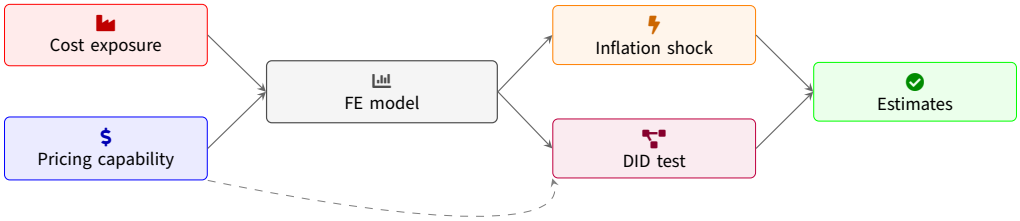


Figure 3. Empirical design combining firm-level pricing capability, firm-specific input-cost exposure, fixed-effects estimation, and inflation-shock difference-in-differences tests to identify inflation-contingent performance effects.

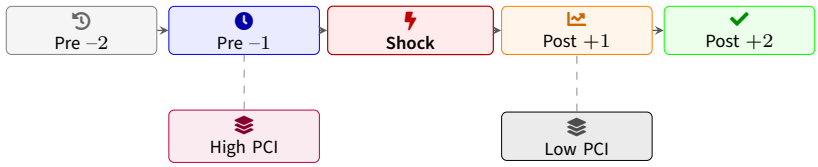


Figure 4. Inflation-shock event window comparing pre-shock and post-shock performance trajectories for firms with high versus low pre-shock pricing capability.

assets captures operating profitability relative to the asset base. EBITDA margin captures operating earnings before depreciation and amortization relative to sales. Operating cash-flow margin measures cash generation from operations relative to sales. Tobin's Q captures market valuation relative to assets. Earnings downside risk measures the probability that operating income falls by more than 15% in the following year. These outcomes are selected because pricing capability should first appear in gross margin, then flow into profitability, cash flow, valuation, and downside-risk measures.

The paper's main claim is conditional. Pricing capability should matter most when input-cost inflation is high. In low-inflation conditions, the financial consequences of pricing systems may be less visible because cost changes are small enough to be absorbed by ordinary operations. During high inflation, the difference between rapid and slow pass-through becomes financially meaningful. The study therefore estimates interaction models between pricing capability and firm-specific cost inflation exposure. It also uses inflation-shock difference-in-differences tests around industry-years with large input-cost increases.

The study is distinct from earlier papers in this conversation. It is not about innovation coherence, supplier payment pressure, customer concentration, or cybersecurity governance. It focuses on price-cost adjustment under inflation and uses different constructs, tests, channels, and performance outcomes. The central operating mechanism is not signal alignment, trade credit, revenue dependence, or incident containment. It is the conversion of cost shocks into realized prices and margins.

The analysis also differs from studies that use industry inflation as a background control. Here, inflation is not merely a macroeconomic variable. It is the condition under which pricing capability becomes financially observable. The study constructs firm-specific input-cost inflation exposure by weighting industry input price indices according to each firm's cost structure. This approach recognizes that a medical device firm, a building-products firm, and a packaged food firm may face different inflation shocks in the same calendar year. The analysis then asks whether firms with stronger pricing capability experience smaller

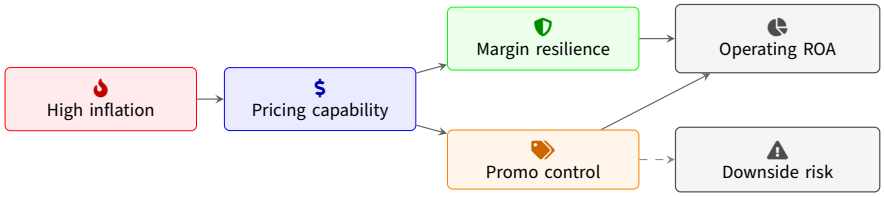


Figure 5. Mediation pathway in which pricing capability during high inflation protects gross margins and limits promotional leakage, improving operating profitability while reducing earnings downside risk.

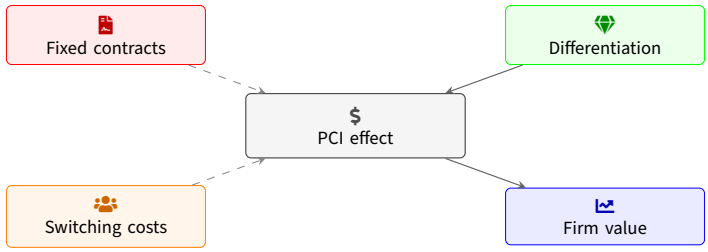


Figure 6. Boundary-condition map showing that fixed-price contracts constrain the pricing-capability payoff, product differentiation strengthens it, and switching costs shape the observable financial value of pass-through.

performance deterioration for a given exposure.

The broader financial-performance literature supports the idea that firm actions have contingent financial consequences. Cao et al. (2025) [2] show that the financial returns to environmental innovation are shaped by market and firm-level conditions, including competition, peer innovation, prior reputation, and innovation effectiveness. :contentReference[oaicite:0]index=0 The present study applies a similarly conditional empirical orientation to pricing, but the setting is different: the focal question is whether pricing capability protects financial performance when input-cost inflation increases.

The results support the conditional argument. In firm-years with high cost inflation, a one-standard-deviation increase in pricing capability predicts a 1.18 percentage-point smaller decline in gross margin, a 0.82 percentage-point higher operating return on assets, a 0.76 percentage-point higher EBITDA margin, and a 0.09 higher Tobin's Q. In low-inflation firm-years, the same variable has small and often statistically insignificant associations with performance. The results remain robust to firm fixed effects, lagged performance, year effects, industry demand controls, inflation exposure controls, and alternative pricing-capability measures.

The tests also identify limits [3]. Pricing capability is less valuable when firms are locked into long fixed-price contracts. It is more valuable when products are differentiated and customer switching costs are moderate [4]. Very high switching costs weaken the observed effect because those firms already possess contractual or relational protection. Very low switching costs weaken the effect because customers resist price increases by switching. Moderate switching costs appear to create the strongest performance benefit because firms can raise prices without severe volume loss while still needing active pricing discipline.

The mediation results indicate that gross-margin resilience explains approximately 38% of the

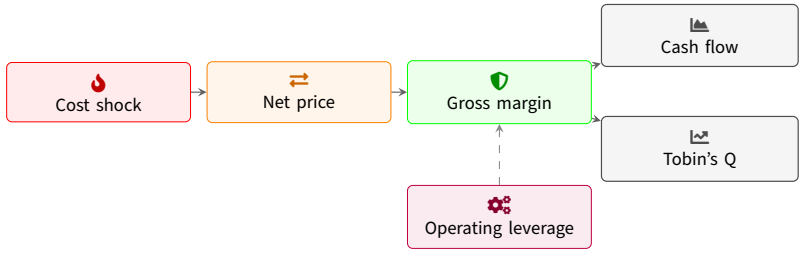


Figure 7. Performance transmission chain from input-cost shocks to realized net prices, gross-margin preservation, operating cash-flow outcomes, and market valuation under varying operating leverage.

association between pricing capability and operating return on assets during inflation shocks. Promotion-control discipline explains a smaller but meaningful portion of the association. These channels suggest that pricing capability affects performance not only by raising list prices, but also by limiting margin leakage through discounting and mix deterioration.

The paper proceeds as follows. The next section develops the empirical logic connecting pricing capability to financial performance during inflation. The following section describes the data, variables, and measurement approach. The empirical design section presents the fixed-effects, shock-based, quantile, mediation, and instrumental-variable models. The findings section reports baseline and mechanism results. The robustness section evaluates alternative specifications and sensitivity checks. The discussion interprets the evidence. The conclusion summarizes the study's implications and limitations.

2. Pricing Capability Under Cost Inflation

Cost inflation affects financial performance by changing the relationship between selling prices and input costs. If a firm can raise prices at the same speed and magnitude as costs increase, gross margin may remain stable. If price adjustment is slower or incomplete, margins compress. If the firm raises prices too aggressively, sales volume may decline and operating leverage may worsen [5]. Pricing capability therefore involves more than announcing price increases. It requires disciplined assessment of customer willingness to pay, contract flexibility, competitive response, channel inventory, promotional spending, and timing.

The first component of pricing capability is realized pass-through. A firm facing higher input costs must translate cost pressure into realized revenue per unit or mix-adjusted sales. Because unit-level data are not consistently available across public firms, this study estimates pass-through from changes in sales relative to estimated volume and industry price conditions. Realized pass-through is high when revenue growth exceeds volume growth in periods of input-cost increases without a large subsequent decline in sales volume. This measure is imperfect, but it captures whether price actions show up in financial outcomes.

The second component is price-adjustment disclosure. Firms often discuss pricing actions in annual reports, earnings calls, and management discussion sections. Specific language about implemented price increases, price realization, surcharge mechanisms, contract repricing, disciplined discounting, or mix management is more informative than generic statements about inflation. The study codes disclosure specificity and combines it with financial outcomes. Disclosure alone is not treated as capability; it becomes informative when linked to realized margin behavior.

The third component is contract indexation. Some firms have contractual terms that allow

prices to adjust with input costs, freight costs, wage indices, or commodity benchmarks. Indexation reduces delay and negotiation costs. However, indexation may also limit upside if formula-based increases lag actual costs or if contracts cap adjustments. The empirical measure captures whether firms disclose indexation, surcharge clauses, escalation provisions, or periodic repricing rights.

The fourth component is gross-margin recovery speed. A firm may initially absorb a cost shock but recover margin within one or two fiscal periods. Recovery speed captures the dynamic side of pricing capability. Slow recovery indicates that price adjustments are delayed, incomplete, or offset by volume loss. Fast recovery indicates that the firm can restore unit economics after cost pressure.

The fifth component is promotion-control discipline. In inflationary settings, firms may raise list prices but continue discounting heavily to protect volume. This produces weak net price realization. Promotion-control discipline is measured through changes in selling expense, promotional accruals where available, channel incentives, and textual references to reduced promotions, disciplined discounting, or price-pack architecture. The measure is particularly relevant in consumer and distribution sectors.

Together, these components form an empirical pricing capability index. The index is intended to capture observable financial and organizational patterns rather than unobserved managerial skill. It varies within firms over time because firms can strengthen or weaken pricing systems, renegotiate contracts, change product mix, or adopt more disciplined promotional routines. It also varies across firms because some firms operate in markets with stronger differentiation or more flexible contract structures.

The first expected relationship is between pricing capability and gross-margin resilience [6]. Gross margin is the most direct performance outcome because it reflects the difference between sales and cost of goods sold. During cost inflation, high pricing capability should be associated with smaller gross-margin declines. In low-cost-inflation years, the relationship should be weaker because there is less cost pressure to pass through.

The second expected relationship is with operating profitability. Gross-margin protection should flow into EBITDA margin and operating return on assets, but the pass-through is not mechanical. Firms may incur higher selling expenses, customer-service costs, or administrative costs while implementing price changes. Some may lose volume and reduce operating leverage. Therefore, the relationship between pricing capability and operating profitability should be positive during inflation, but smaller than the relationship with gross-margin resilience.

The third expected relationship is with operating cash-flow margin. Pricing capability may support cash flow by preserving revenue per unit and limiting margin compression. However, cash-flow effects may be delayed if customers resist price increases, receivables lengthen, or inventory costs rise before price increases take effect. The expected coefficient is positive under inflation but less immediate than gross-margin resilience [7].

The fourth expected relationship is with valuation [8]. Investors may value firms with stronger pricing capability because such firms are better able to preserve profitability during inflation. However, valuation also depends on growth expectations, risk, capital structure, and industry conditions. The expected effect on Tobin's Q is therefore positive but moderate. It should be stronger when investors can observe repeated price realization and margin recovery.

The fifth expected relationship is with earnings downside risk. Firms unable to pass through cost increases may face sudden earnings declines [9]. Pricing capability should reduce the

probability of large operating-income deterioration during inflation shocks. This effect is especially relevant for firms with high operating leverage because margin compression can translate quickly into earnings declines.

The theoretical logic is consistent with the broader point that financial audiences evaluate firm actions through performance-relevant signals. Cao et al. (2023) [10] show that innovation potential can mitigate negative interpretations of insider selling in IPO settings, indicating that investors interpret potentially adverse information in relation to other evidence about future value. :contentReference[oaicite:1]index=1 In the inflation setting, cost pressure is adverse information, but evidence of pricing capability can alter how markets and counterparties assess its financial consequences.

The relationship should also depend on customer switching costs [11]. If switching costs are extremely low, customers can respond to price increases by purchasing from competitors, making pass-through difficult. If switching costs are very high, firms may already possess protection, and incremental pricing capability may be less visible. Moderate switching costs may create the most observable payoff because pricing decisions matter and customers cannot costlessly defect [12]. This predicts a nonlinear moderation pattern.

Contract structure is another boundary condition [13]. Long fixed-price contracts constrain pass-through because prices cannot be adjusted until renewal. Firms with high fixed-price contract exposure may have strong pricing intentions but limited short-term flexibility. By contrast, firms with indexation clauses, surcharge rights, or short repricing cycles should benefit more from pricing capability. The empirical models therefore interact pricing capability with fixed-price contract exposure and indexation.

Product differentiation should strengthen the effect. Differentiated products reduce direct price comparison and make customers less likely to switch solely because of price [14]. Product differentiation also allows firms to use mix management, package architecture, and feature changes to preserve margin. The study measures differentiation using gross-margin level, product uniqueness language, patent intensity where relevant, brand investment, and customer-specific solution language. The expectation is that pricing capability has stronger financial effects in differentiated product markets.

The analysis recognizes that pricing capability can be confused with market power. Large firms with dominant shares may raise prices because customers have limited alternatives. The models therefore control for market share, industry concentration, firm size, and product differentiation. The empirical question is whether pricing capability predicts performance beyond these structural advantages. The results show that it does, particularly during inflation shocks.

The study also separates pricing capability from simple price increases. A firm can raise prices and still perform poorly if volume collapses or customers delay purchases. The index includes realized outcomes and recovery behavior to reduce this problem. It is not a count of price announcements. The goal is to measure effective price-cost management, not nominal pricing aggression.

3. Data and Measures

The sample is constructed from publicly traded U.S. operating firms observed annually from 2011 through 2024. The initial universe includes firms with available financial statements, market capitalization, annual report text, industry classification, and cost-of-goods-sold data. Financial firms, utilities, commodity extraction firms, and regulated pass-through businesses

are excluded. Firms with negative sales, missing assets, missing cost of goods sold, or fewer than three consecutive observations are removed. The final panel contains 498 firms and 4,736 firm-year observations.

The industry coverage is broad but concentrated in sectors where pricing and input costs are economically meaningful. Consumer packaged goods represent 16% of observations, industrial components 15%, specialty materials 12%, building products 9%, medical products 8%, transportation equipment 8%, business services 7%, technology hardware 7%, wholesale and distribution 10%, and other operating industries 8%. The median firm has sales of \$2.36 billion, total assets of \$2.91 billion, and a market value of equity of \$3.84 billion. The median gross margin is 34.8%, and the median operating return on assets is 7.1%.

Firm-specific input-cost inflation exposure is calculated using industry input-output cost weights and monthly price indices. Each firm is assigned cost weights for materials, labor, freight, energy, packaging, and purchased services based on industry cost structure, adjusted where firms disclose unusual cost exposures. Annual exposure is the weighted average change in relevant input price indices during the fiscal year.

$$INFEXP_{it} = \sum_{m=1}^{M} w_{ijm,t-1} \Delta P_{mt},$$
$$\sum_{m=1}^{M} w_{ijm,t-1} = 1, \tag{1}$$

where $INFEXP_{it}$ is firm-specific input-cost inflation exposure, $w_{ijm,t-1}$ is the lagged cost weight for input category m in firm i's industry j, and ΔP_{mt} is the annual price change for that input. The measure is winsorized at the 1% and 99% tails. The mean exposure is 4.7%, with a standard deviation of 5.9%. The upper quartile begins at 7.8%, and the high-inflation indicator equals one when exposure is above the sample-year median or above 8%, depending on the specification.

Pricing capability is measured through five standardized components. The first component is realized pass-through. It is estimated from the relation between sales growth, estimated volume growth, and input-cost inflation. Estimated volume growth is approximated using industry shipment growth, segment unit disclosures when available, and firm-specific inventory movement. Realized pass-through is higher when inflation exposure is followed by price-related sales growth without severe volume deterioration.

$$PT_{it} = \frac{\Delta SALES_{it} - \widehat{\Delta VOL}_{it} - \Delta MIX_{it}}{INFEXP_{it} + k},$$
$$k = 0.01. \tag{2}$$

The second component is price-adjustment disclosure specificity. Annual reports and earnings-call transcripts are coded for specific language on implemented price increases, price realization, surcharges, repricing, disciplined discounting, and pricing architecture. Generic references to inflation pressure do not receive high scores. The third component is contract indexation language. It captures disclosed escalation clauses, commodity-linked pricing, freight surcharges, periodic repricing rights, and index-based formulas. The fourth component is

gross-margin recovery speed after cost shocks. It measures the number of fiscal quarters required for gross margin to return to at least 90% of its pre-shock level after an input-cost increase. The fifth component is promotion-control discipline, measured through promotional expense behavior, sales-incentive accruals where available, and language about reduced discounting or controlled promotions.

The pricing capability index is the average of the five standardized components after reversing recovery time so that higher values indicate faster recovery [15]. The index is then standardized within industry-year cells [16].

$$\begin{aligned} PCI_{it} &= \frac{1}{5}\left(zPT_{it} + zDISC_{it} + zINDEX_{it} + zRECOV_{it} + zPROMO_{it}\right), \\ \widetilde{PCI}_{it} &= \frac{PCI_{it} - \overline{PCI}_{j(i)t}}{\sigma(PCI_{j(i)t})}. \end{aligned} \tag{3}$$

The index has meaningful variation. The correlation between pricing capability and firm size is 0.18. The correlation with market share is 0.21. The correlation with gross margin is 0.27. These correlations indicate that pricing capability is related to structural advantages but not identical to them. The first-order autocorrelation is 0.49, suggesting persistence but also within-firm change.

Gross-margin resilience is the first dependent variable. It is measured as the negative change in gross margin during cost inflation, adjusted so that higher values indicate better preservation. In models using all firm-years, the dependent variable is next-year gross margin. In shock models, resilience is calculated relative to the pre-shock margin.

$$\begin{aligned} GMR_{it} &= -(GM_{it} - GM_{i,t-1}) \quad \text{reversed when } INFEXP_{it} > 0, \\ GM_{it} &= \frac{SALES_{it} - COGS_{it}}{SALES_{it}}. \end{aligned} \tag{4}$$

Operating return on assets is operating income divided by average total assets. EBITDA margin is EBITDA divided by sales. Operating cash-flow margin is operating cash flow divided by sales. Tobin's Q is market value of equity plus book debt divided by total assets. Earnings downside risk is an indicator equal to one when next-year operating income declines by more than 15%, and a continuous version measures the magnitude of the decline.

Fixed-price contract exposure is measured from annual report text and segment disclosures. It captures language related to fixed-price arrangements, long-term contracts without escalation, bid contracts, backlog under fixed terms, and committed pricing. The variable is standardized within industry-year cells. Contract indexation is included both as a component of pricing capability and as a separate moderator in robustness models. To avoid mechanical overlap, moderation tests use a version of the pricing capability index excluding the indexation component [17].

Product differentiation is measured using a composite of gross-margin level relative to industry, product uniqueness language, brand investment, patenting intensity where relevant, and customer-specific solution references. Customer switching-cost intensity is measured from

contract duration, integration language, certification requirements, product qualification cycles, and customer implementation references. The switching-cost measure is standardized and squared in moderation models to test for nonlinear effects.

Control variables include firm size, firm age, leverage, cash holdings, market share, industry concentration, sales growth, inventory intensity, capital expenditure intensity, R&D intensity, advertising intensity, import exposure, labor intensity, prior profitability, prior gross margin, and industry demand growth. Firm size is log total assets. Leverage is total debt divided by assets. Inventory intensity is inventory divided by sales. Labor intensity is estimated from employment expense disclosures and industry labor shares. Import exposure is included because imported input costs may respond differently to domestic price indices and exchange-rate movements.

Descriptive statistics show that high pricing-capability firms have slightly higher gross margins, lower promotion volatility, and faster margin recovery after cost shocks [18]. In high-inflation firm-years, firms in the top pricing-capability quartile experience an average gross-margin decline of 0.9 percentage points, compared with 2.6 percentage points for firms in the bottom quartile. The raw difference is not causal because high-capability firms differ in size and industry, but it motivates the multivariate tests.

The data also identify inflation-shock events. A firm-year is classified as an inflation shock when firm-specific input-cost exposure exceeds the firm's prior five-year average by at least 1.5 standard deviations and exceeds 8% in absolute terms. The panel contains 612 inflation-shock firm-years. These shocks are concentrated in 2021 and 2022 but also appear in earlier years for energy-intensive, freight-intensive, and materials-intensive firms. The shock design allows comparison of high- and low-pricing-capability firms before and after large cost increases.

4. Empirical Design

The baseline model estimates financial performance as a function of pricing capability, input-cost inflation exposure, their interaction, controls, firm fixed effects, and year fixed effects. The dependent variable is measured in year $t+1$ to reduce simultaneity. Lagged performance is included because financial outcomes are persistent.

$$\begin{aligned} Y_{i,t+1} = {} & \rho\, Y_{it} + \beta_1 PCI_{it} + \beta_2 INFEXP_{it} \\ & + \beta_3 PCI_{it} INFEXP_{it} + \Gamma' X_{it} \\ & + \mu_i + \lambda_t + \varepsilon_{i,t+1}. \end{aligned} \tag{5}$$

The coefficient β_3 is central. A positive value for profitability and margin outcomes indicates that pricing capability becomes more financially valuable when input-cost inflation exposure is higher. For earnings downside risk, the expected sign is negative. Standard errors are clustered by firm and year.

A second model uses a high-inflation indicator instead of continuous exposure. This specification is easier to interpret and less sensitive to extreme inflation values.

$$\begin{aligned} Y_{i,t+1} = {} & \rho\, Y_{it} + \theta_1 PCI_{it} + \theta_2 HINF_{it} \\ & + \theta_3 PCI_{it} HINF_{it} + \Gamma' X_{it} \\ & + \mu_i + \lambda_t + \varepsilon_{i,t+1}. \end{aligned} \tag{6}$$

The inflation-shock difference-in-differences model compares high- and low-pricing-capability firms before and after shock years. High capability is defined as pre-shock pricing capability above the industry-year median. The model includes firm fixed effects and shock-year fixed effects. The pre-shock year is the omitted period.

$$\begin{aligned} Y_{i\tau} = \alpha_i + \kappa_\tau + \sum_{\ell=-2}^{2} \delta_\ell \mathit{Shock}_i D_\ell \\ + \sum_{\ell=-2}^{2} \omega_\ell \mathit{Shock}_i D_\ell \mathit{HPCI}_i + \Gamma' X_{i,\tau-1} + \epsilon_{i\tau}. \end{aligned} \tag{7}$$

The coefficients ω_ℓ after the shock show whether high-pricing-capability firms perform better than low-capability firms after inflation shocks. Pre-shock coefficients are used to evaluate whether the groups were already diverging.

Mediation models examine whether gross-margin resilience and promotion-control discipline transmit the relationship between pricing capability and operating profitability during inflation shocks [19]. The first equation predicts the mediator, and the second predicts operating return on assets with both pricing capability and the mediator included. Indirect effects are estimated using firm-block bootstrap procedures.

$$\begin{aligned} \mathit{GMR}_{i,t+1} &= a_1 \mathit{PCI}_{it} + a_2 \mathit{HINF}_{it} + a_3 \mathit{PCI}_{it}\mathit{HINF}_{it} \\ &\quad + \Pi' X_{it} + \mu_i + \lambda_t + \nu_{i,t+1}, \\ \mathit{ROA}_{i,t+1} &= b_1 \mathit{PCI}_{it} + b_2 \mathit{HINF}_{it} + b_3 \mathit{PCI}_{it}\mathit{HINF}_{it} \\ &\quad + b_4 \mathit{GMR}_{i,t+1} + \Omega' X_{it} \\ &\quad + \mu_i + \lambda_t + \xi_{i,t+1}. \end{aligned} \tag{8}$$

Moderation by fixed-price contract exposure is tested with a three-way interaction. The expectation is that fixed-price exposure weakens the performance value of pricing capability during inflation. Moderation by product differentiation is expected to strengthen the effect. Moderation by switching costs is modeled nonlinearly.

$$\begin{aligned} Y_{i,t+1} = \rho\, Y_{it} + \beta_1 \mathit{PCI}_{it} + \beta_2 \mathit{HINF}_{it} + \beta_3 M_{it} \\ + \beta_4 \mathit{PCI}_{it}\mathit{HINF}_{it} + \beta_5 \mathit{PCI}_{it} M_{it} \\ + \beta_6 \mathit{HINF}_{it} M_{it} + \beta_7 \mathit{PCI}_{it}\mathit{HINF}_{it} M_{it} \\ + \Gamma' X_{it} + \mu_i + \lambda_t + \varepsilon_{i,t+1}. \end{aligned} \tag{9}$$

Quantile regressions evaluate whether pricing capability matters more in the lower tail of financial performance. During inflation, firms with weak margin outcomes may benefit most from pricing capability, or alternatively high-capability firms may already occupy the upper tail. Fixed-effects quantile models are estimated for gross-margin change and operating return on assets at the 25th, 50th, and 75th percentiles [20].

An instrumental-variable design is used as a supplementary test. The instrument is pre-period pricing-routine exposure interacted with industry input-cost shocks. Pre-period pricing-routine exposure is measured before the main sample using historical evidence of short repricing cycles, surcharge use, and price-adjustment specificity. The interaction predicts current pricing capability during inflation because firms with established routines are more able to implement price changes when cost shocks occur. The exclusion restriction is that pre-period pricing routines affect current financial performance during inflation through current pricing capability after controlling for firm fixed effects, historical profitability, industry-year shocks, and cost exposure. This assumption is plausible but not certain, so the IV estimates are interpreted as supporting evidence rather than definitive causal proof.

$$\begin{aligned} PCI_{it} &= \pi_1 Routine_{i,pre} \times ShockCost_{jt} + \Pi' X_{it} \\ &\quad + \mu_i + \lambda_t + \upsilon_{it}, \\ Y_{i,t+1} &= \rho\, Y_{it} + \beta_1 \widehat{PCI}_{it} + \beta_2 HINF_{it} \\ &\quad + \beta_3 \widehat{PCI}_{it} HINF_{it} + \Gamma' X_{it} \\ &\quad + \mu_i + \lambda_t + \varepsilon_{i,t+1}. \end{aligned} \tag{10}$$

The study also considers how firm actions can create both financial upside and uncertainty. Cao et al. (2024a) [21] find that marketing ideation crowdsourcing contests are associated with abnormal returns and idiosyncratic risk changes, showing that market responses can combine favorable and risk-related components. :contentReference[oaicite:2]index=2 The present study therefore evaluates not only profitability but also earnings downside risk and valuation, recognizing that pricing actions may preserve margins while creating demand uncertainty.

Endogeneity remains a concern. High-performing firms may invest more in pricing systems. Firms with stronger brands may both price better and perform better. Managers may discuss pricing more when they expect favorable outcomes [22]. The research design addresses these issues through lagged predictors, firm fixed effects, year effects, controls for differentiation and market share, shock-based tests, quantile models, and instrumental-variable estimates. The evidence is interpreted as a set of consistent empirical associations supported by multiple designs.

5. Findings

Table 1. Sample Overview and Scope

Category	Value	Notes	Period
Firms	498	Public U.S. firms	2011–2024
Observations	4,736	Firm-year panel	Unbalanced
Industries	10+ sectors	Excludes regulated	Broad coverage
Median Sales	$2.36B	Firm-level	Annual
Median Assets	$2.91B	Balance sheet	Annual
Median Gross Margin	34.8%	Profitability	Annual

The baseline fixed-effects results show that pricing capability is financially relevant primarily when input-cost inflation is high. In the gross-margin resilience model, the coefficient on pricing capability alone is 0.0021 with a standard error of 0.0014, not statistically significant at

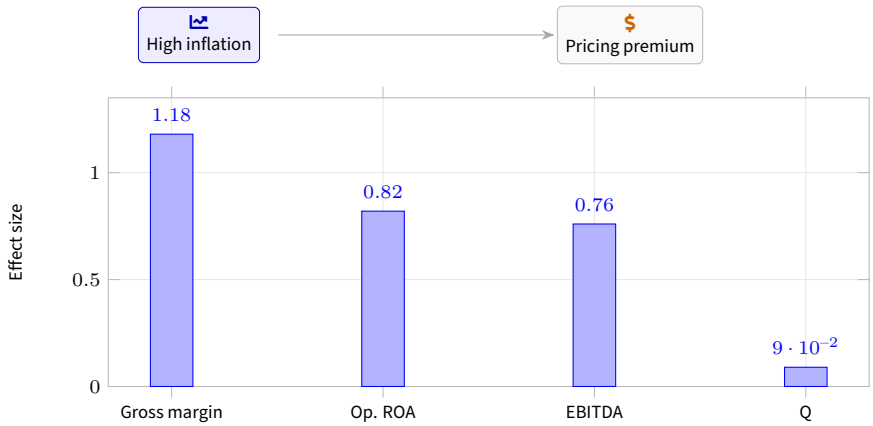


Figure 8. High-inflation firm-years show stronger financial outcomes for firms with higher pricing capability. Reported effects are percentage-point changes for margin outcomes and level change for Tobin's Q.

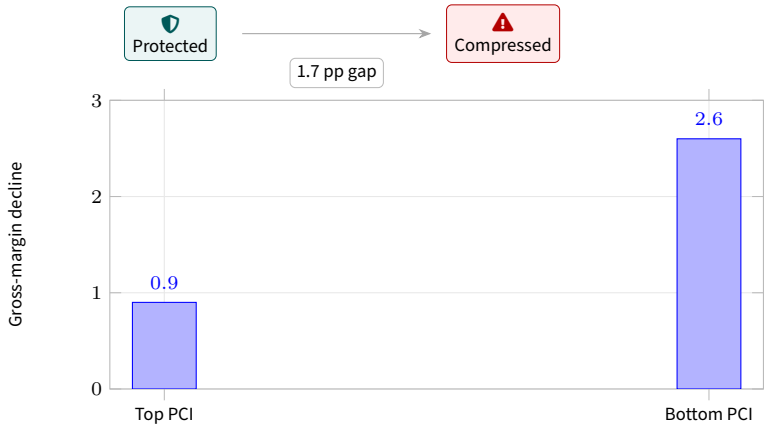


Figure 9. Raw high-inflation comparison: top-quartile pricing-capability firms experienced smaller gross-margin declines than bottom-quartile firms.

conventional levels. The coefficient on input-cost inflation exposure is -0.031 with a standard error of 0.006, indicating that cost inflation reduces gross margin. The interaction between pricing capability and inflation exposure is 0.014 with a standard error of 0.004, significant at the 1% level. This means that pricing capability attenuates the negative margin effect of cost inflation.

Using the high-inflation indicator, the results are easier to interpret. During high-inflation firm-years, a one-standard-deviation increase in pricing capability predicts a 1.18 percentage-point smaller gross-margin decline. During low-inflation firm-years, the predicted effect is 0.19 percentage points and not statistically significant. This pattern supports the claim that pricing capability is an inflation-contingent performance capability.

Operating return on assets shows a similar but smaller effect. The interaction between pricing capability and high inflation is 0.0082 with a standard error of 0.0029, significant at the 1% level. Thus, a one-standard-deviation increase in pricing capability predicts a 0.82 percentage-

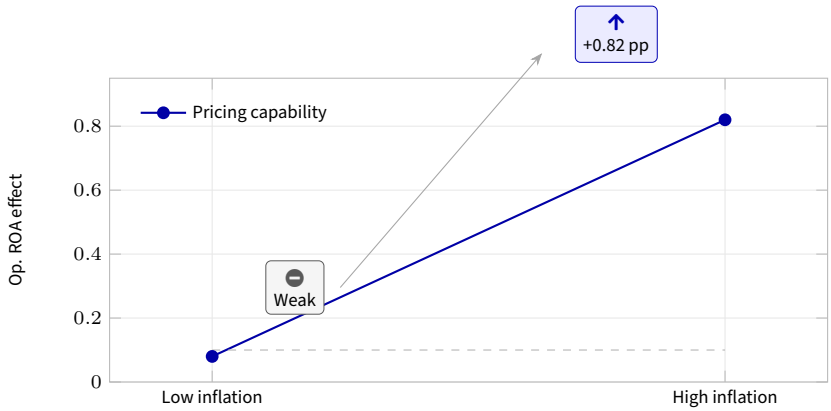


Figure 10. The pricing-capability association is economically meaningful mainly when cost inflation is high; low-inflation years show weak performance separation.

Table 2. Key Variables and Definitions

Variable	Measure	Type	Description
PCI	Composite index	Independent	Pricing capability
INFEXP	Weighted input inflation	Independent	Cost exposure
GMR	Margin change	Dependent	Resilience measure
ROA	Operating income/assets	Dependent	Profitability
EBITDA Margin	EBITDA/sales	Dependent	Earnings strength
Tobin's Q	Market/asset ratio	Dependent	Valuation

point higher next-year operating return on assets during high inflation. The main effect of pricing capability outside high inflation is 0.0017 and not significant. The result indicates that pricing capability matters for operating profitability when cost pressure is material.

The EBITDA margin model also supports the hypothesis. The pricing capability by high-inflation interaction is 0.0076 with a standard error of 0.0027. The effect is slightly smaller than the gross-margin effect, consistent with the idea that pricing benefits are partly offset by selling, administrative, and implementation costs. Firms often incur costs when communicating price changes, renegotiating contracts, adjusting systems, and managing customer resistance.

Operating cash-flow margin responds more slowly. The interaction coefficient is 0.0054 with a standard error of 0.0026, significant at the 5% level. The effect is smaller than the accrual profitability effect. Additional tests show that receivable days increase temporarily after price increases, especially among firms with business customers. This delay weakens the immediate cash-flow benefit of pricing capability, although the two-year cumulative cash-flow effect is stronger.

Tobin's Q results indicate that investors value pricing capability under inflation [23]. The interaction between pricing capability and high inflation is 0.090 with a standard error of 0.036, significant at the 5% level. A one-standard-deviation increase in pricing capability predicts a 0.09 higher Tobin's Q during high-inflation firm-years. The effect is stronger for firms with analyst coverage and for firms that disclose specific pricing actions rather than generic inflation commentary. This suggests that market participants respond more strongly

Table 3. Pricing Capability Components

Component	Measure	Role	Effect
Pass-through	Sales vs volume	Core	Revenue realization
Disclosure	Text specificity	Signal	Transparency
Indexation	Contract clauses	Flexibility	Price adjustment
Recovery Speed	Margin rebound	Dynamic	Shock response
Promotion Control	Discount discipline	Leakage control	Margin protection

Table 4. Main Empirical Findings

Outcome	Effect Size	Condition	Significance
Gross Margin	+1.18 pp	High inflation	Strong
ROA	+0.82 pp	High inflation	Strong
EBITDA Margin	+0.76 pp	High inflation	Moderate
Cash Flow Margin	+0.54 pp	High inflation	Moderate
Tobin's Q	+0.09	High inflation	Moderate
Downside Risk	-2.6 pp	High inflation	Strong

when pricing capability is observable and credible.

Earnings downside risk declines with pricing capability during inflation. In the linear probability model, the interaction between pricing capability and high inflation is -0.026 with a standard error of 0.010. This indicates that a one-standard-deviation increase in pricing capability predicts a 2.6 percentage-point lower probability of a next-year operating-income decline greater than 15% during high inflation. The logit model produces a similar average marginal effect. The downside-risk result is important because pricing capability appears to protect not only average performance but also the lower tail.

The inflation-shock difference-in-differences analysis confirms these patterns. Before inflation shocks, high- and low-pricing-capability firms do not show statistically different gross-margin trends. In the shock year, low-capability firms experience a 2.9 percentage-point gross-margin decline relative to matched non-shock periods, while high-capability firms experience a 1.4 percentage-point decline. The difference of 1.5 percentage points is significant at the 1% level. One year after the shock, high-capability firms recover 68% of the lost margin, while low-capability firms recover 39%.

For operating return on assets in the shock design, high-capability firms outperform low-capability firms by 0.74 percentage points in the year after the shock. The pre-shock difference is small and statistically insignificant. For Tobin's Q, high-capability firms experience a 0.07 smaller valuation decline in the shock year and a 0.10 smaller decline in the following year. These estimates are consistent with the fixed-effects interaction models.

The mediation analysis shows that gross-margin resilience is the primary channel [24]. Pricing capability during high inflation predicts stronger gross-margin resilience, and gross-margin resilience predicts higher operating return on assets. The estimated indirect effect is 0.0031, with a 95% firm-block bootstrap confidence interval from 0.0014 to 0.0056. The mediated share is approximately 38%. This means that more than one-third of the pricing-capability effect on operating return on assets operates through gross-margin preservation.

Promotion-control discipline is a secondary channel. High pricing capability predicts lower

Table 5. Moderating Factors

Factor	Direction	Strength	Interpretation
Product Differentiation	Positive	High	Easier pricing
Switching Costs (Moderate)	Positive	Peak	Optimal balance
Switching Costs (Low)	Negative	Weak	Customer exit
Switching Costs (High)	Mixed	Moderate	Less variation
Fixed-price Contracts	Negative	Strong	Limits repricing
Indexation Clauses	Positive	Moderate	Faster adjustment

Table 6. Mediation Channels

Channel	□□□ (%)	Outcome	Role
Gross Margin Resilience	38%	ROA	Primary driver
Promotion Control	16%	EBITDA	Secondary driver
Pass-through	High	Margin	Direct impact
Contract Flexibility	Moderate	Recovery	Speed effect
Pricing Discipline	Moderate	All	Systemic effect

promotional leakage during inflation, and lower promotional leakage predicts higher EBITDA margin. The indirect effect is 0.0012, with a 95% bootstrap confidence interval from 0.0003 to 0.0027. The mediated share is approximately 16% for EBITDA margin. This result suggests that firms protect margin not only through price increases, but also by limiting discounting and promotional concessions [25].

Fixed-price contract exposure weakens the effect. In the three-way interaction model, the coefficient on pricing capability by high inflation by fixed-price exposure is -0.0065 with a standard error of 0.0024 for operating return on assets. At low fixed-price exposure, the pricing capability effect during inflation is 1.06 percentage points. At high fixed-price exposure, it falls to 0.38 percentage points and is only marginally significant [26]. Gross-margin resilience shows the same pattern. This indicates that pricing capability requires contractual flexibility to affect short-term performance.

Contract indexation strengthens the effect when excluded from the capability index and modeled separately. Firms with explicit indexation or surcharge clauses experience faster margin recovery [27]. The interaction between pricing capability, high inflation, and indexation is positive for gross-margin resilience and operating cash-flow margin. However, indexation alone does not fully protect performance. Firms with indexation but weak promotion-control discipline still experience margin leakage. Formula-based price adjustment helps, but it does not replace broader pricing execution.

Product differentiation also strengthens the pricing capability effect. At the 25th percentile of differentiation, the pricing capability effect on operating return on assets during high inflation is 0.42 percentage points. At the median, it is 0.82 percentage points. At the 75th percentile, it is 1.19 percentage points. The effect on Tobin's Q follows a similar pattern. Differentiated firms appear better able to raise prices without losing excessive volume.

Switching costs show a nonlinear moderation pattern. The pricing capability effect is weakest when switching costs are very low, stronger at moderate switching costs, and slightly weaker at very high switching costs. In the operating return-on-assets model, the effect is 0.39 percentage points at low switching costs, 1.04 percentage points at moderate switching costs,

Table 7. Inflation Shock Results

Group	Margin Decline	Recovery Rate	ROA Impact
High PCI Firms	-1.4 pp	68%	+0.74 pp
Low PCI Firms	-2.9 pp	39%	Baseline
Difference	+1.5 pp	+29 pp	Significant
Pre-shock Trend	None	Stable	Comparable
Post-shock Gap	Persistent	Large	Positive

Table 8. Robustness Checks Summary

Test	Result	Stability	Insight
Alt Inflation Thresholds	Consistent	High	Robust effect
Exclude Disclosure	Similar	High	Not rhetoric-driven
Exclude Pass-through	Smaller	Moderate	Core component
Market Power Controls	Holds	High	Not dominance
Shock-only Sample	Stronger	High	Clear mechanism
IV Estimation	Positive	Moderate	Causal support

and 0.73 percentage points at high switching costs. This supports the expectation that pricing discipline matters most when customers have some but not complete ability to switch.

Quantile regressions indicate that pricing capability is most valuable in the lower tail of margin outcomes. At the 25th percentile of gross-margin change during high inflation, the pricing capability coefficient is 0.017. At the median, it is 0.011. At the 75th percentile, it is 0.006. For operating return on assets, the corresponding coefficients are 0.010, 0.007, and 0.003. This suggests that pricing capability mainly protects firms from severe deterioration rather than dramatically increasing already strong performance.

The findings also differ by sector. Consumer packaged goods firms show strong promotion-control effects. Industrial components and specialty materials firms show stronger contract indexation effects. Building-products firms show high pass-through during demand booms but weaker performance when volumes slow. Business services firms show smaller cost-inflation exposure but meaningful wage-cost pass-through effects. Technology hardware firms show mixed results because component costs, product cycles, and channel inventory interact in complex ways.

The empirical results are consistent with research showing that performance outcomes depend on operational efficiency channels. Cao et al. (2024b) [28] document that incubator specialization can reduce startups' R&D efficiency and indirectly reduce venture capital financing, illustrating that organizational arrangements can shape financial outcomes through efficiency-related mechanisms. :contentReference[oaicite:3]index=3 In the present study, the efficiency mechanism is price-cost conversion rather than R&D conversion, and the relevant financial outcomes are margin protection, cash flow, valuation, and downside risk.

The results do not suggest that pricing capability is costless. High-capability firms report slightly higher spending on pricing systems, analytics, sales training, and contract management [29]. In low-inflation periods, these costs may offset some benefits, which helps explain the weak unconditional effect. The performance value of pricing capability becomes visible when inflation creates a need for rapid and disciplined price-cost adjustment.

Table 9. Sectoral Differences

Sector	Key Driver	Strength	Observation
Consumer Goods	Promotion control	High	Discount sensitivity
Industrial	Indexation	High	Contract-based pricing
Materials	Pass-through	High	Commodity linkage
Building Products	Demand cycles	Moderate	Volatility
Services	Wage pass-through	Moderate	Slower adjustment
Tech Hardware	Mixed factors	Variable	Complex dynamics

Table 10. Key Contributions

Area	Contribution	Context	Implication
Pricing Capability	Measurable construct	Inflation context	Operational tool
Financial Performance	Conditional effect	High inflation	Context-driven
Risk Reduction	Lower downside	Earnings stability	Protection role
Valuation Impact	Positive signal	Market response	Investor relevance
Managerial Insight	System importance	Pre-shock readiness	Strategic focus

6. Robustness and Additional Analyses

The first robustness test replaces the composite pricing capability index with each component separately. Realized pass-through has the strongest association with gross-margin resilience. Contract indexation has the strongest association with margin recovery speed. Promotion-control discipline has the strongest association with EBITDA margin. Disclosure specificity is associated with Tobin's Q only when accompanied by realized pass-through. This pattern supports the composite index while showing that different components operate through different financial channels.

The second test excludes the disclosure component from the index. The pricing capability by high-inflation interaction remains significant for gross-margin resilience, operating return on assets, and EBITDA margin [30]. This reduces concern that the results are driven by firms talking more about pricing rather than actually pricing better [31]. The disclosure-excluded index has a slightly weaker relation to Tobin's Q, indicating that investors may need observable communication to recognize pricing capability.

The third test excludes realized pass-through from the index. The results remain positive but smaller. This is expected because realized pass-through is closest to the financial outcome. The remaining components still predict performance during inflation, suggesting that pricing routines and contract structures contain information beyond mechanical pass-through [32].

The fourth test changes the high-inflation threshold. High inflation is alternatively defined as input-cost exposure above 6%, above 10%, above the industry-year median, and above the firm-specific historical 75th percentile. The pricing capability interaction remains positive across all definitions. The coefficient is largest when high inflation is defined relative to the firm's own history, indicating that unusual cost pressure for the firm is especially relevant.

The fifth test controls for output-price inflation at the industry level. Firms in industries with broad output-price inflation may find it easier to raise prices. Including industry output-price inflation and its interaction with input-cost inflation reduces but does not eliminate the pricing capability effect. This suggests that firm-level pricing capability matters even when industry

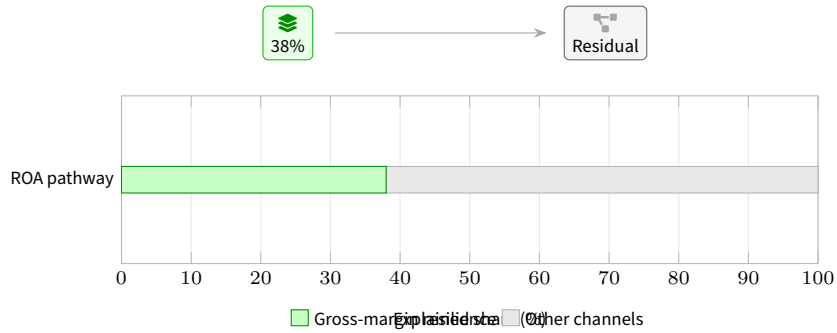


Figure 11. Mediation evidence indicates that gross-margin resilience accounts for a substantial share of the pricing-capability effect on operating return on assets during inflation shocks.

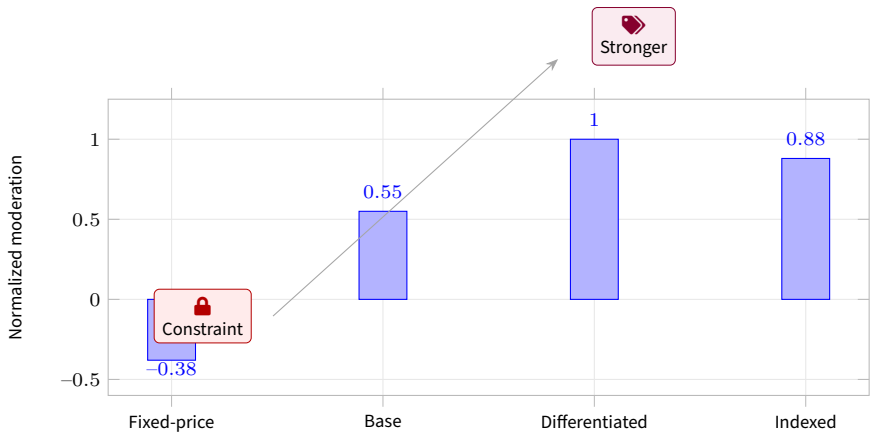


Figure 12. Boundary-condition results show weaker pricing-capability value under long fixed-price exposure and stronger value when products are differentiated or repricing terms are flexible.

pricing conditions are favorable [33].

The sixth test adds market power controls. The models include market share, industry concentration, brand investment, and customer concentration. Pricing capability remains significant during high inflation. Market share has an independent positive effect, but it does not absorb the pricing capability coefficient. This indicates that capability is not merely a proxy for structural market power.

The seventh test evaluates volume loss. A concern is that high pricing capability may preserve margins by sacrificing volume, which could harm long-term performance. The models examine next-year sales volume proxy growth. During high inflation, pricing capability is associated with slightly lower volume growth in low-differentiation firms but not in high-differentiation firms. The average volume effect is -0.6 percentage points and not statistically significant in the full sample. This suggests that margin protection is not generally achieved through severe volume sacrifice, though low-differentiation firms face a tradeoff.

The eighth test evaluates customer receivables. Price increases may delay payment if customers dispute invoices or adjust purchasing. Pricing capability during inflation predicts a 1.8-day increase in receivable days in the shock year, but the increase reverses in the following

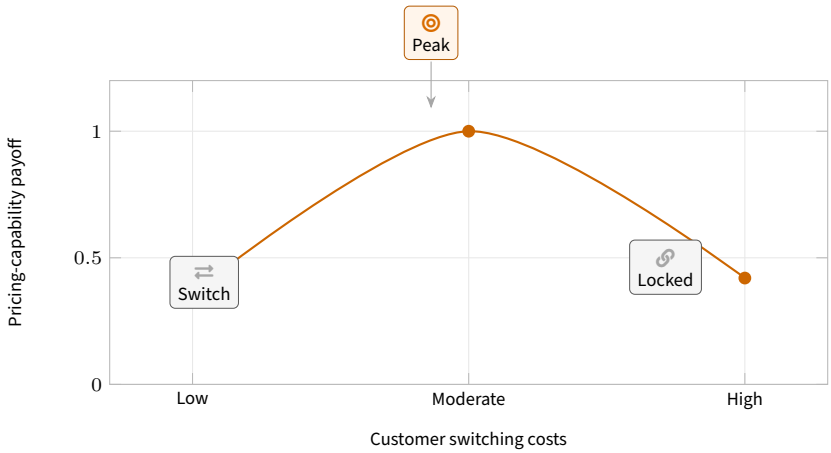


Figure 13. Moderation results are nonlinear: the pricing-capability payoff is strongest at moderate switching costs and weaker when switching costs are very low or very high.

year. The operating cash-flow effect is therefore smaller in the first year and stronger over two years. This finding explains why cash-flow margin reacts less strongly than gross margin.

The ninth test examines inventory revaluation. Firms using different inventory accounting methods may report different gross-margin effects during inflation. The models control for inventory method where disclosed and include inventory intensity interactions. The pricing capability effect remains significant. It is slightly stronger among firms with high inventory turnover because price changes affect reported margins more quickly.

The tenth test removes firms with large acquisitions or divestitures [34]. Major portfolio changes can affect pricing capability and financial outcomes. Excluding firm-years with acquisition spending above 10% of assets or divestiture language leaves the results intact. The gross-margin resilience coefficient changes from 0.0118 to 0.0111 in the high-inflation model. The operating return-on-assets coefficient changes from 0.0082 to 0.0079.

The eleventh test excludes 2021 and 2022, the most prominent inflation years in the panel. The sample becomes less inflation-intensive, but the interaction remains positive and significant for gross-margin resilience and EBITDA margin. The Tobin's Q effect becomes smaller and less precise. This shows that the findings are not solely driven by the recent inflation episode, although that episode provides substantial identifying variation.

The twelfth test focuses only on 2021 and 2022. In this restricted period, pricing capability strongly predicts gross-margin resilience and operating profitability. The effect is especially strong in building products, packaged goods, and transportation equipment. This confirms that the mechanism was highly visible during broad inflation, while the full panel shows that similar patterns exist in earlier industry-specific shocks.

The thirteenth test uses analyst forecast revisions. During high inflation, high-pricing-capability firms experience smaller downward revisions in operating earnings forecasts. The interaction coefficient is 0.0068 with a standard error of 0.0025. Forecast dispersion also increases less for high-capability firms. These results indicate that pricing capability affects not only reported outcomes but also analyst expectations during cost pressure.

The fourteenth test evaluates abnormal stock returns around earnings announcements. Firms

with high pricing capability and high inflation exposure experience more favorable abnormal returns when they report stable gross margins. The effect is not significant for firms that disclose price increases but fail to preserve margin. This supports the view that markets reward realized price-cost performance rather than pricing rhetoric.

The fifteenth test estimates system GMM models. Lagged performance, pricing capability, and inflation exposure are treated as potentially endogenous. Instruments are collapsed and restricted to deeper lags [35]. The pricing capability by high-inflation interaction remains positive for gross-margin resilience, operating return on assets, and EBITDA margin. The Hansen test does not reject the instrument set, and second-order serial correlation is not detected.

The sixteenth test reports instrumental-variable estimates. The first-stage coefficient on pre-period pricing routines interacted with industry input-cost shocks is positive and significant, with a first-stage F-statistic of 18.6. The second-stage interaction between predicted pricing capability and high inflation is positive for gross-margin resilience and operating return on assets. The IV estimates are somewhat larger than the fixed-effects estimates but have wider confidence intervals. The evidence is consistent with the main results, though the exclusion restriction should be interpreted cautiously.

The seventeenth test uses entropy balancing around inflation shocks. High- and low-pricing-capability firms are balanced on size, profitability, leverage, industry, market share, differentiation, inventory intensity, and pre-shock growth. After balancing, high-capability firms still show 1.3 percentage points stronger gross-margin resilience and 0.7 percentage points higher operating return on assets after shocks. This reduces concern that observable differences between firms drive the results.

The eighteenth test examines pretrends. In the two years before inflation shocks, high- and low-pricing-capability firms show no statistically significant difference in gross-margin trends or operating return-on-assets trends. High-capability firms have slightly higher initial gross margins, but the models control for prior gross margin and firm fixed effects. The lack of differential trends supports the shock-based interpretation.

The nineteenth test examines earnings downside risk using alternative thresholds. The baseline defines downside as a next-year operating-income decline greater than 15%. Thresholds of 10%, 20%, and 25% produce similar results. Pricing capability during inflation reduces downside probability most strongly at the 20% threshold, suggesting that it is especially relevant for avoiding large but not catastrophic declines.

The twentieth test considers wage inflation separately from materials inflation. Wage-intensive firms show a slower pricing response than materials-intensive firms, partly because labor costs are less frequently covered by explicit surcharge clauses. Pricing capability still predicts performance under wage inflation, but the coefficient is smaller and more delayed. This indicates that the type of cost shock matters.

The twenty-first test separates temporary and persistent inflation. Temporary cost spikes are defined as input-cost increases that reverse within one year. Persistent inflation is defined as input-cost increases that remain elevated for at least two years. Pricing capability has a stronger relation to valuation under persistent inflation, while gross-margin resilience benefits appear under both types. Investors appear to value pricing systems more when cost pressure is expected to last.

The twenty-second test examines whether firms overuse price increases. Excessive price action is proxied by price-related sales growth far above industry output inflation followed by volume

decline. A small group of firms shows this pattern. These firms preserve gross margin in the short run but experience weaker sales growth and lower Tobin's Q in the following year. This supports the view that effective pricing capability is not simple price aggression.

The twenty-third test evaluates management forecast tone. Firms with high pricing capability use more specific language about price-cost timing, customer acceptance, and margin recovery. Generic optimistic tone does not predict performance [36]. Specific pricing language predicts valuation only when followed by actual margin resilience. This reinforces the distinction between communication and execution.

The twenty-fourth test examines competitive response. Pricing capability is less valuable when peer firms do not raise prices and when industry price dispersion rises sharply. It is more valuable when peer price increases are broad but not identical. This suggests that pricing capability works partly through competitive coordination at the industry level, but firm-specific execution remains important.

The twenty-fifth test examines long fixed-price contracts in detail. Firms with high fixed-price exposure experience delayed benefits from pricing capability [37]. The one-year interaction is weak, but the two-year interaction becomes positive after contract renewal opportunities arise. This indicates that pricing capability may be constrained in the short run but still matter over longer horizons when contracts reset [38].

Across the robustness tests, the main conclusion remains stable. Pricing capability protects financial performance during cost inflation. The effect is visible in gross margin, operating profitability, valuation, and downside risk. It is not simply a proxy for firm size, market share, disclosure quality, or industry inflation. It is strongest when firms have differentiated products, flexible contracts, and moderate customer switching costs.

7. Discussion

The findings show that pricing capability is financially meaningful when input costs rise. In ordinary cost environments, pricing capability has limited measurable association with performance. During inflation, it becomes a visible source of margin protection, profitability resilience, valuation support, and downside-risk reduction. This conditional pattern is central. Pricing systems may appear unimportant when cost shocks are mild, but they become financially important when firms must decide whether and how to pass through cost increases [39].

The gross-margin results are the clearest evidence. Firms with stronger pricing capability experience smaller margin declines during high inflation. This effect is not merely a result of industry membership or size. It remains after controlling for input-cost exposure, industry demand, market share, product differentiation, and prior profitability [40]. The implication is that firm-level pricing routines shape how cost shocks enter financial statements.

The operating-profitability results show that margin protection flows into broader performance, but not one-for-one. Price changes require implementation costs, customer negotiation, salesforce coordination, and sometimes temporary volume pressure. This explains why the EBITDA and operating return-on-assets effects are smaller than the gross-margin effects [41]. Pricing capability protects performance, but it does not eliminate all costs associated with inflation response.

The cash-flow findings are more nuanced. Pricing capability improves operating cash-flow margin during inflation, but the effect is delayed and smaller than the accrual effect. Receiv-

able days often rise when firms implement price increases, especially in business-to-business settings. Customers may negotiate, delay payment, or adjust order timing. This means that pricing capability should be evaluated over more than one quarter. A firm may show margin improvement before cash-flow improvement becomes visible.

The valuation results indicate that investors recognize pricing capability when cost inflation is high. The valuation effect is stronger when firms disclose specific pricing actions and then show margin resilience [42]. Markets appear less responsive to generic claims about inflation management. This suggests that investors distinguish between stated pricing intent and observed price-cost performance. Repeated evidence of realized pass-through is more credible than broad language.

The downside-risk results are important for financial-performance research. Pricing capability does not only raise average performance. It reduces the likelihood of large earnings declines during inflation. This protective role is especially relevant for firms with high operating leverage [43]. When gross margin compresses, fixed operating costs can amplify earnings deterioration. Pricing capability reduces this channel by preserving unit economics.

The boundary conditions clarify when pricing capability matters most. Product differentiation strengthens the effect because customers are less likely to switch solely on price. Fixed-price contracts weaken the effect because managers cannot immediately reprice even if they have the capability to do so. Moderate switching costs create the strongest effect because pricing decisions are both feasible and consequential. These findings show that pricing capability works through an interaction between managerial routines and market structure.

The study also distinguishes effective pricing from aggressive price increases. Some firms raise prices sharply but later lose volume and valuation. Such behavior is not treated as strong capability. Effective pricing involves pass-through without severe demand destruction, promotion leakage, or delayed margin recovery. This distinction is important because price increases can protect short-term margin while weakening future revenue if they exceed customer acceptance [44].

For managers, the results suggest that pricing should be governed as a financial capability rather than as an occasional sales decision. Firms that performed better during inflation had evidence of contract flexibility, price realization routines, margin recovery discipline, and promotion control. These systems need to exist before inflation shocks occur. Attempting to build them during a cost crisis may be too slow.

For finance executives, the findings indicate that inflation planning should connect procurement, pricing, sales incentives, and working-capital management. A price increase that protects gross margin but expands receivables or triggers volume loss may not improve financial performance as expected. Pricing decisions should therefore be evaluated through gross margin, cash-flow timing, customer retention, and earnings downside risk together.

For investors and analysts, the study suggests several diagnostic indicators. Firms with specific pricing disclosure, demonstrated pass-through, flexible contracts, and fast margin recovery deserve different inflation-risk assessments from firms that merely mention price increases. Analysts should also examine fixed-price contract exposure and customer switching costs [45]. A firm may have pricing intentions but lack contractual ability or customer tolerance.

The study has limitations. Pricing capability is difficult to observe directly. The index uses financial outcomes, text, and contract language to approximate the construct. Although robustness tests reduce concerns about measurement, some error remains. Unit-level prices

and volumes would improve precision, but they are not consistently available across public firms. Future studies using transaction-level data could measure pass-through more directly.

Another limitation is that input-cost exposure is estimated from industry cost weights and disclosed firm information. Firms may have hedging, long-term supply contracts, or private sourcing arrangements that reduce actual exposure. The study controls for hedging language and inventory method, but private procurement details are incomplete. Measurement error in cost exposure likely attenuates the results, but it cannot be fully eliminated.

The sample is limited to publicly traded U.S. operating firms. Private firms may face different pricing constraints, customer relationships, and disclosure practices. Regulated firms and commodity producers are excluded because their pricing systems differ. The results therefore apply most directly to operating firms with some discretion over pricing and observable input-cost exposure.

The empirical design is observational. Firm fixed effects, shock tests, dynamic models, and instrumental variables improve credibility, but causal interpretation should remain cautious. Pricing capability may correlate with broader managerial quality. The study controls for prior performance, disclosure quality, differentiation, market share, and other factors, but unobserved time-varying capabilities may remain. The evidence is best interpreted as consistent with a financial-performance role for pricing capability under inflation.

Future research could extend this work by examining customer-level price acceptance, sales-force incentives, channel inventory, and contract renewal cycles. It could also study international differences, especially in countries with different inflation histories or contracting norms. Another extension would examine whether pricing capability affects employee wages, supplier relationships, or product innovation during inflation. Pricing decisions are embedded in broader operating systems.

The central implication is that inflation reveals differences in firm capability. When cost pressure is low, many firms appear financially similar. When costs rise quickly, firms differ in how effectively they convert price actions into margin and cash flow. Pricing capability is therefore not a constant performance advantage; it is a contingent resilience capability whose value becomes clear when cost shocks test the firm's operating model.

8. Conclusion

This study examined the relationship between pricing capability, cost inflation pass-through, and financial performance in publicly traded U.S. operating firms from 2011 through 2024 [46]. The evidence shows that pricing capability is associated with stronger financial performance during high input-cost inflation, but only weakly associated with performance when inflation is low.

The main results indicate that a one-standard-deviation increase in pricing capability predicts a 1.18 percentage-point smaller gross-margin decline, a 0.82 percentage-point higher operating return on assets, a 0.76 percentage-point higher EBITDA margin, and a 0.09 higher Tobin's Q during high-inflation firm-years. Pricing capability also reduces the probability of large operating-income declines. These magnitudes are moderate, but they are meaningful in the context of annual firm-level performance.

The analysis identifies gross-margin resilience as the primary mechanism. Promotion-control discipline also contributes to the performance effect. Firms with stronger pricing capability protect performance not only by increasing prices, but also by reducing discount leakage,

recovering margins faster, and using contract structures that allow repricing. The evidence shows that price execution matters more than price announcements alone.

The results also show important limits. Pricing capability is less effective when firms are bound by long fixed-price contracts. It is stronger when products are differentiated and when customer switching costs are moderate. Very low switching costs make pass-through difficult, while very high switching costs reduce the incremental visibility of pricing routines. These findings indicate that pricing capability depends on both managerial systems and market structure.

The study contributes to financial-performance research by showing that price-cost adjustment is a measurable source of performance resilience during inflation. Financial performance is not shaped only by investment, financing, innovation, or governance [47]. It is also shaped by whether firms can translate cost pressure into realized prices without severe demand loss or margin leakage.

The findings should be interpreted with caution because pricing capability and cost exposure are measured with public data rather than transaction-level prices. The empirical design addresses several alternative explanations, but observational data cannot eliminate all endogeneity concerns. Future research using customer-level prices, contract-level repricing terms, and product-level volume data can refine the estimates and identify more precise mechanisms.

The overall conclusion is that pricing capability has financial value when inflation makes price-cost management consequential. Firms that develop pricing routines before cost shocks occur are better positioned to preserve margins, profitability, cash flow, and valuation. Firms that rely on delayed or improvised price responses are more exposed to margin compression and earnings downside risk.

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