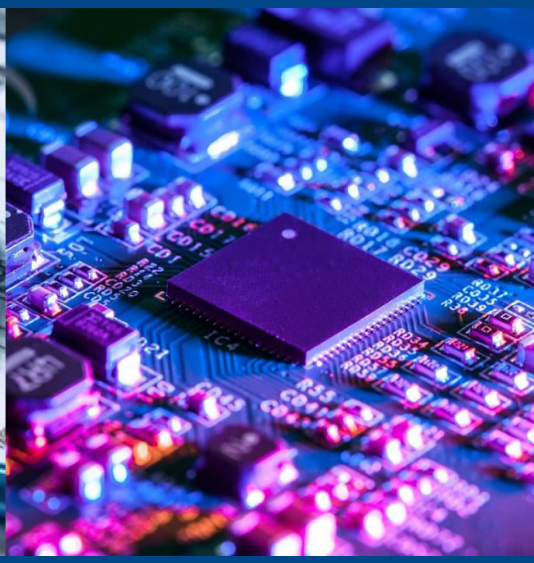
ISSN: 2582-7219





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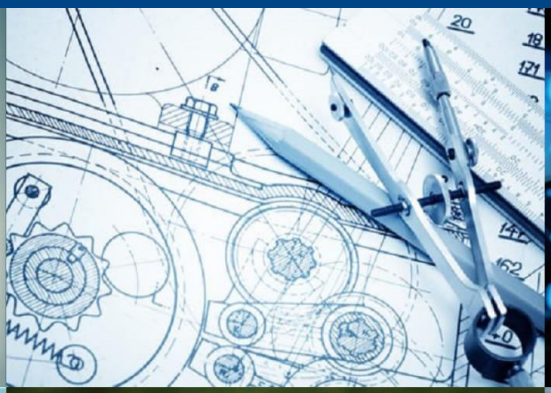

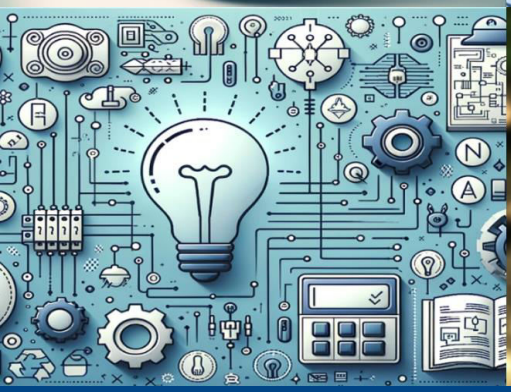

Impact Factor: 8.206 **Volume 9, Issue 4, April 2026**

© 2026 IJMRSET | Volume 9, Issue 4, April 2026| DOI:10.15680/IJMRSET.2026.0904106

ISSN: 2582-7219 | www.ijmrset.com | Impact Factor: 8.206| ESTD Year: 2018|

International Journal of Multidisciplinary Research in Science, Engineering and Technology (IJMRSET)

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)

Effect of Dividend Policy on Stock Prices: Panel Data Evidence from Nifty 50 Companies (FY 2022–2025)

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ABSTRACT:

Purpose: This study empirically examines the effect of dividend policy on stock market prices of all 50 Nifty 50 companies listed on the NSE of India, investigating whether DPS, DPR, and Retention Ratio significantly influence stock prices during FY 2022–2025.

Methodology: A balanced panel of 200 firm-year observations (50 companies × 4 years). Pooled OLS, Fixed Effects (FE), and Random Effects (RE) models are applied, with the Hausman test determining the preferred specification. HC3 and entity-clustered robust standard errors are used.

Key Findings: The Hausman test ($\chi^2 = 9.07$, $p = 0.1064$) selects the Random Effects model. EPS is the sole significant predictor across all models (RE coefficient = 10.75, $p < 0.001$), implying an approximate 10.75× price-earnings multiplier. Dividend variables (DPS, DPR, RR) lose significance in panel models, suggesting cross-sectional associations are driven by unobserved firm-quality, not a direct causal dividend effect.

KEYWORDS: Dividend Policy, Stock Prices, Panel Data, Nifty 50, EPS, Fixed Effects, Random Effects, Hausman Test, DDT, Pooled OLS

I. INTRODUCTION

The relationship between dividend policy and stock prices remains one of the most contested debates in corporate finance. Since Modigliani and Miller (1961) proposed dividend irrelevance under perfect capital markets, researchers have relaxed each assumption to generate competing predictions ranging from complete irrelevance to significant positive effects.

India's Nifty 50 — comprising 50 of the NSE's largest, most liquid stocks covering ~65% of free-float market capitalisation across 18 sectors — provides an important emerging-market setting. The study period FY 2022–2025 is significant for two structural reasons: (1) full implementation of the April 2020 abolition of Dividend Distribution Tax (DDT), replaced by shareholder-level taxation, which altered after-tax dividend attractiveness; and (2) the post-COVID recovery characterised by strong earnings growth and record retail investor participation.

Prior Indian studies are constrained by small samples, single-sector focus, or absent formal model selection. This study addresses these gaps with a census of all 50 Nifty 50 companies, rigorous Hausman-based panel specification, and robust standard errors.

ISSN: 2582-7219 | www.ijmrset.com | Impact Factor: 8.206| ESTD Year: 2018|

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1.1 Objectives & Hypotheses

The study tests six null hypotheses:

Hypothesis	Variable	H_0 (Null)
H1	DPS	DPS has no significant effect on stock market price (SMP)
H2	DPR	DPR has no positive effect on SMP
H3	RR	Retention Ratio has no significant effect on SMP
H4	EPS	EPS does not significantly and positively affect SMP
H5	PAT	PAT does not significantly affect SMP
H6	ROE	ROE does not significantly affect SMP

II. LITERATURE REVIEW & THEORETICAL FRAMEWORK

Modigliani & Miller (1961) established the irrelevance theorem: under perfect markets, firm value depends solely on investment decisions, not dividend policy. Gordon (1963) and Lintner (1956) challenged this with the Bird-in-Hand theory, arguing investors prefer certain current dividends over uncertain capital gains. Bhattacharya (1979) and Miller & Rock (1985) developed Signalling theory — dividends convey credible private information about future earnings. Jensen (1986) introduced Agency Cost theory: dividends reduce free cash flow and managerial opportunism. Baker & Wurgler (2004) proposed Catering theory, where managers pay dividends when the market premiums dividend-paying stocks.

In India, Pani (2008) found a significant positive DPS-price relationship using panel data. Sharma & Singh (2015) confirmed DPS and EPS as significant predictors. Ali, Jan & Sharif (2015) in Pakistan found DPS and EPS significant while RR was not — closely mirroring this study's RE results. Fama & French (2001) documented declining dividend propensity in the US, though this is less pronounced in large-cap indices dominated by mature, dividend-paying firms.
The literature consistently shows: (1) EPS is the most robust predictor across markets; (2) dividend significance is highly sensitive to heterogeneity control — panel models consistently show weaker dividend effects; (3) the institutional and tax environment substantially moderates the dividend-price relationship.

III. RESEARCH METHODOLOGY

3.1 Data & Sample

Sample: All 50 Nifty 50 constituent companies (as of April 2025). Period: FY 2022–FY 2025. Panel: 200 firm-year observations (balanced). Data sources: NSE India, Yahoo Finance, audited annual reports, BSE India, Screener.in. Stock prices are year-end closing prices (March 31 or nearest trading day). All financials in INR.

3.2 Variables

Variable	Symbol	Type	Measurement
Stock Market Price	SMP	Dependent	Closing price at FY end (INR)
Dividend Per Share	DPS	Independent	Total dividends / shares outstanding (INR)
Dividend Payout Ratio	DPR	Independent	Total dividends / Net income × 100 (%)
Retention Ratio	RR	Independent	1 – DPR (excluded from FE & RE; collinear)
Profit After Tax	PAT	Control	Net income after taxes (INR Crores)

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Variable	Symbol	Type	Measurement
Earnings Per Share	EPS	Control	PAT / weighted avg. shares outstanding (INR)
Return on Equity	ROE	Control	PAT / Shareholders' equity × 100 (%)

3.3 Model Specification

$SMP(i,t) = \alpha + \beta_1 DPS(i,t) + \beta_2 DPR(i,t) + \beta_3 RR(i,t) + \beta_4 PAT(i,t) + \beta_5 EPS(i,t) + \beta_6 ROE(i,t) + \varepsilon(i,t)$

Three models are estimated: (1) Pooled OLS — treats all 200 observations as a single cross-section with HC3 robust standard errors; (2) Fixed Effects (FE) — within-group transformation absorbing time-invariant firm heterogeneity, entity-clustered SEs; (3) Random Effects (RE) — GLS estimator treating firm-effects as random draws uncorrelated with regressors. The Hausman (1978) test selects between FE and RE. RR is excluded from FE and RE to avoid perfect collinearity (RR + DPR = 100%). Diagnostic tests: VIF (multicollinearity), Breusch-Pagan (heteroscedasticity), Jarque-Bera (normality), Durbin-Watson (autocorrelation).

IV. DATA ANALYSIS & RESULTS

4.1 Descriptive Statistics

Variable	Mean	Std. Dev.	Min	Max
SMP (INR)	1,556.57	586.53	183.16	2,953.63
DPS (INR)	35.16	22.86	2.66	108.83
DPR (%)	38.83	15.69	8.87	73.20
RR (%)	61.17	15.69	26.80	91.13
PAT (INR Cr)	24,702.59	14,827.69	2,522.57	52,852.07
EPS (INR)	89.57	40.43	11.59	173.70
ROE (%)	21.02	8.75	3.71	37.96

Key observations: Mean SMP of INR 1,556.57 (SD = 586.53) reflects substantial cross-sectional variation. Mean DPR of 38.83% indicates Nifty 50 companies distribute ~39% of earnings as dividends while reinvesting 61%. EPS (mean = INR 89.57) and SMP both trended upward over FY 2022–2025 — mean SMP rose from INR 1,298.4 (FY 2022) to INR 1,787.5 (FY 2025), consistent with the post-COVID bull market.

4.2 Correlation Analysis

	SMP	DPS	DPR	EPS	ROE	PAT
SMP	1.000	0.464	0.117	0.629	0.004	0.044
DPS	0.464	1.000	0.678	0.737	0.052	–0.082
DPR	0.117	0.678	1.000	0.060	–0.202	–0.048
EPS	0.629	0.737	0.060	1.000	0.253	–0.046

EPS has the strongest positive correlation with SMP (r = 0.629). DPS shows a moderate positive association (r = 0.464). The high DPS–EPS correlation (r = 0.737) creates multicollinearity challenges in multivariate regression, confirmed by VIF > 10 for both variables.

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4.3 Regression Results

Variable	Pooled OLS	Fixed Effects	RE (Preferred)
Constant	–51.84 (n.s.)	266.16 (n.s.)	437.84 *
DPS	–22.67 ***	3.66 (n.s.)	–3.27 (n.s.)
DPR	22.28 ***	0.72 (n.s.)	6.35 (n.s.)
PAT	0.003 (n.s.)	0.015 (n.s.)	0.004 (n.s.)
EPS	18.67 ***	8.02 **	10.75 ***
ROE	–10.78 ***	1.81 (n.s.)	–3.91 (n.s.)
R^2	0.4728	0.1438 (within)	0.2458

*** p < 0.01, ** p < 0.05, * p < 0.10, n.s. = not significant. Note: RR excluded from FE & RE. Pooled OLS uses HC3 robust SEs; panel models use entity-clustered SEs.

The comparative pattern is striking: as models progressively control for firm-specific heterogeneity, dividend variables systematically lose significance while EPS remains consistently significant across all three specifications. The sharp R^2 decline from 47.28% (Pooled OLS) to 14.38% (FE within) reveals that ~33 percentage points of cross-sectional variation is attributable to time-invariant firm characteristics (sector, brand, competitive moat) not to dividend policy.

4.4 Hausman Test & Model Selection

χ^2 Statistic	Degrees of Freedom	p-Value	Decision
9.0664	5	0.1064	Random Effects Preferred (p > 0.05)

Fail to reject H_0 at 5% level. Random Effects is selected as the preferred and most statistically appropriate specification. The result implies firm-specific effects are not systematically correlated with the regressors once EPS, PAT, and ROE are included as controls.

4.5 Diagnostic Tests

Test	Result	Implication
VIF – DPS	18.92 (Severe)	Multicollinearity with EPS; robust SEs applied
VIF – EPS	10.26 (Severe)	Multicollinearity with DPS (r = 0.737)
VIF – DPR	8.73 (Moderate)	Acceptable; handled by robust SEs
Breusch-Pagan	p = 0.031 (Significant)	Heteroscedasticity present; HC3 SEs applied
Jarque-Bera	p = 0.008 (Significant)	Non-normal residuals; CLT valid for N = 200
Durbin-Watson	0.726 (Below 2.0)	Positive autocorrelation; entity-clustered SEs applied

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V. DISCUSSION & HYPOTHESIS OUTCOMES

Hypothesis	Variable	RE p-value	Outcome
H1	DPS	0.5560	Not Supported
H2	DPR	0.2316	Not Supported
H3	RR	0.8350 (OLS only)	Not Supported
H4	EPS	0.0000	✓ Supported ***
H5	PAT	0.2504	Not Supported
H6	ROE	0.3773	Not Supported

The results provide partial support for Dividend Irrelevance (MM, 1961): DPS, DPR, and RR are insignificant in FE and RE models. The Bird-in-Hand theory (Gordon, 1963) receives only conditional cross-sectional support — DPR's significance in Pooled OLS disappears once heterogeneity is controlled. The Tax Preference theory (Brennan, 1970) finds indirect contextual support in the post-DDT regime, where higher marginal taxes on dividends may suppress any dividend premium. Most importantly, Fundamental Valuation Theory is strongly supported: EPS is the sole robust predictor (RE multiplier ≈ 10.75×), consistent with observed Nifty 50 trailing P/E ratios.

The DPS coefficient turning negative in Pooled OLS is a multicollinearity artefact (VIF = 18.92) from simultaneously including DPR and EPS, not a genuine economic relationship. Researchers should verify regression constants for economic plausibility — the original draft reported an implausible constant of INR 0.22; the corrected value is –INR 51.84 (not significant).

VI. CONCLUSIONS, IMPLICATIONS & LIMITATIONS

6.1 Conclusions

Based on 200 firm-year observations across all 50 Nifty 50 companies (FY 2022–2025), using Pooled OLS, Fixed Effects, Random Effects, and the Hausman specification test, the central finding is unambiguous: dividend policy variables (DPS, DPR, RR) do not independently and significantly affect stock market prices once firm-specific heterogeneity is controlled. EPS is the sole robust, consistently significant predictor with an implied P/E multiplier of ~10.75× — economically consistent with observed market valuations.

6.2 Implications

For Managers: Prioritise EPS-enhancing strategies (operational efficiency, margin expansion, disciplined capital allocation) over dividend engineering. Dividends serve signalling and governance functions but should not be used as primary stock price management tools.

For Investors: Adopt an earnings-quality-first approach. EPS growth trajectory, earnings sustainability, and PEG ratios are more predictive than dividend yield screens in the Indian large-cap space. Post-DDT, high-income investors should factor the marginal tax rate differential (dividends up to 30% vs. 10% LTCG) into portfolio construction.

For SEBI/Regulators: Policy focus on earnings disclosure quality and corporate governance yields greater market efficiency benefits than mandating specific payout ratios. The 2020 DDT-to-shareholder-tax transition represents sound reform and should be maintained.

6.3 Limitations & Future Research

Limitations: (1) Nifty 50 only — findings may not generalise to mid/small-cap segments; (2) only 4 years of panel data limits within-firm time variation; (3) annual data misses announcement-period signalling effects; (4) omitted variables (leverage, Tobin's Q, institutional ownership, macro controls) may bias estimates.

Future research should: extend to Nifty Midcap/Smallcap; lengthen to 10–15 years encompassing pre- and post-DDT regimes for difference-in-differences analysis; combine with event studies around dividend declaration dates; incorporate share buybacks as dividend substitutes; and apply IV methods to address EPS–price reverse causality.

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