Assessing Dividend Policy through Lintner's Lens: A Study on Earnings and Past Dividend Influence

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***Abstract*—Dividend policy remains a cornerstone of corporate financial strategy, often reflecting management's outlook and shareholder expectations. This study examines the validity of Lintner's (1956) dividend adjustment model using firm-level data spanning 2000–2024. The primary objective is to evaluate how current earnings per share (EPS) and past dividend levels influence dividends per share (DPS), with an emphasis on estimating the target pay-out ratio and adjustment speed. Employing a quantitative design, the study utilizes Ordinary Least Squares (OLS) regression and diagnostic tests including Shapiro–Wilk, Breusch–Pagan, and Durbin–Watson to assess model assumptions and robustness. The findings reveal a significant influence of both EPS ($\beta = 0.0346$, $p < 0.05$) and lagged DPS ($\beta = 0.8474$, $p < 0.001$) on current dividends, supporting the partial adjustment hypothesis. The model explains 94% of the variation in DPS ($R^2 = 0.94$), with an estimated target pay-out ratio of 15.26% and an adjustment speed of 22.68%. Despite mild heteroscedasticity and autocorrelation, the model remains statistically valid and reliable. The results underscore the relevance of earnings stability and historical dividend behaviour in shaping pay-out decisions, thereby affirming Lintner's theory in a contemporary context.**

***Index Terms*—Dividend Policy, Lintner Model, Target Pay-out Ratio, Adjustment Speed, Earnings per Share, Dividend Smoothing**

I. INTRODUCTION

Dividend policy continues to be one of the most debated areas in corporate finance, holding substantial implications for investment valuation and shareholder satisfaction. Among the foundational theories in this domain, Lintner's (1956) dividend adjustment model stands out for its emphasis on dividend smoothing—where firms prefer gradual adjustments to dividends rather than abrupt changes, often influenced by both current earnings and prior dividend levels.

Despite the proliferation of modern dividend theories, empirical validation of Lintner's model in the contemporary context remains limited, particularly in emerging market economies where firm behavior may diverge from textbook predictions. This creates a research gap in understanding the dynamic interplay between earnings, historical dividend trends, and pay-out decisions over extended periods.

The present study aims to evaluate the validity of Lintner's model by investigating the determinants of dividend payments using data from 2000 to 2024. Specifically, it explores whether earnings per share (EPS) and lagged dividends per share (DPS) significantly influence current dividend decisions. The objectives of the study are to assess the impact of EPS and lagged DPS on current dividend pay-outs and estimate the target pay-out ratio and the speed of adjustment as proposed in Lintner's model. Hypotheses were set to test that EPS has no significant effect on DPS and Lagged DPS has no significant effect on DPS.

This study contributes to the dividend literature by providing empirical insights into the persistence and relevance of classical dividend behavior theories in modern financial settings.

II. LITERATURE REVIEW

The foundation for understanding dividend behavior was laid by Lintner (1956), who proposed the partial adjustment model, suggesting that firms' smooth dividends over time, influenced by a target pay-out ratio and past dividends. His findings-initiated

decades of research into corporate dividend decisions.

Fama and Babiak (1968) empirically validated Lintner's model using U.S. industrial firms and found strong support for dividend smoothing behavior. Similarly, Brealey, Myers, and Allen (2011) emphasized that dividend stability is often more important to managers than immediate earnings fluctuations.

On the other hand, Bhattacharya (1979) and Miller and Rock (1985) offered alternative views, proposing that dividends signal firm quality or resolve information asymmetries, challenging the purely behavioral explanation of Lintner.

In emerging markets, Aivazian, Booth, and Cleary (2003) showed that firm-specific factors, such as profitability and leverage, significantly influence pay-out policies. Meanwhile, Denis and Osobov (2008) questioned the universality of dividend smoothing, noting that it is less common outside the U.S.

Kumar (2006), in the Indian context, identified EPS, cash flow, and lagged dividends as strong predictors of dividend pay-outs, aligning with Lintner's theory but highlighting contextual variations. Similarly, Pandey (2001) emphasized that firms in developing countries exhibit more irregular pay-out patterns due to liquidity constraints.

Glen et al. (1995) compared corporate pay-out behaviors across emerging markets and found evidence of lower and more volatile dividend payments, supporting the need for further local-level testing of classical models.

Finally, DeAngelo, DeAngelo, and Stulz (2006) stressed the importance of retained earnings in dividend decisions, underscoring that sustainable earnings capacity, rather than one-time profits, drives long-term policy.

Research Gap and Contribution

While many studies confirm the relevance of Lintner's framework, few have rigorously applied it to long-term datasets in the Indian context using quantitative diagnostics and model testing. This study bridges that gap by empirically validating Lintner's model from 2000 to 2024, using regression diagnostics, target pay out and adjustment ratios, and robustness tests, thereby offering updated evidence of dividend-smoothing behaviour in an evolving economic environment.

III. METHODOLOGY

Research Design

This study adopts a quantitative research design, relying on numerical data and statistical modeling to investigate the determinants of dividend policy. Specifically, it empirically tests Lintner's model using time-series regression to analyze the relationship between dividends per share (DPS), earnings per share (EPS), and lagged dividends. Aims of study are to assess the impact of EPS and lagged DPS on current dividend pay-outs and estimate the target pay-out ratio and the speed of adjustment as proposed in Lintner's model.

Data Collection

- Sources: Secondary data were collected from audited annual reports of the selected firm spanning 2000 to 2024.
- Variables Included: Dividends per share (DPS), earnings per share (EPS), lagged DPS (DPS_{t-1}).
- Tools: Microsoft Excel was used for initial data organization, while R programming language was used for regression analysis and diagnostics.
- Sampling Method: A purposive sampling approach was employed, focusing on a single firm with consistent dividend history to enable time-series analysis and avoid sectoral heterogeneity.

Data Analysis

- Modeling Technique: Ordinary Least Squares (OLS) regression was applied to test Lintner's model, estimating the target pay-out ratio and adjustment speed.
- Diagnostics Performed:
  - Normality: Shapiro-Wilk test
  - Heteroscedasticity: Breusch–Pagan test
  - Autocorrelation: Durbin–Watson test
  - Multicollinearity: Variance Inflation Factor (VIF)
  - Residual Analysis: Residuals vs. fitted, Q-Q plot, scale-location, and Cook's distance

Justification of Methods

Lintner's model is fundamentally quantitative, rooted in behavioral finance and econometrics. Regression analysis is ideal for this purpose, allowing estimation of key parameters such as:

- Target pay-out ratio (r): Reflects long-term dividend intention.
- Adjustment ratio (λ): Measures speed of adjustment towards target.

Time-series regression was selected to reflect the temporal dependence of dividend decisions, while diagnostic tests ensured robustness and model validity. The use of secondary data enabled efficient, cost-effective insights into long-term pay-out patterns.

Hypotheses:

- H_{01}: EPS has no significant effect on DPS.
- H_{02}: Lagged DPS has no significant effect on DPS.

IV. RESULTS AND DISCUSSION

Table No.1: Descriptive Statistics

Descriptive Statistics	DPR	EPS	DPS
Mean	26.63450593	56.6007513	16.345613
Standard Error	2.977584881	12.2234219	2.1858156
Median	25.59909091	27.4516667	15.113636
Standard Deviation	14.27999544	58.621472	10.482803
Sample Variance	203.9182697	3436.47698	109.88917
Kurtosis	11.88729207	-0.326301	-1.331134
Skewness	2.776449106	1.11770188	0.2216961
Range	77.81818182	179.288333	33.640909
Minimum	5.436363636	4.53	0.0909091
Maximum	83.25454545	183.818333	33.731818
Sum	612.5936364	1301.81728	375.94909
Count	23	23	23

The dividend pay-out ratio (DPR) exhibits high skewness (2.77) and kurtosis (11.88), indicating a sharply peaked distribution with extreme values (e.g., 83.25). Earnings per share (EPS) is positively skewed (1.12) and spans a wide range (4.53–183.82), suggesting substantial variability in earnings. The distribution of dividends per share (DPS) is approximately normal (skewness ≈ 0.22), although some dispersion remains.

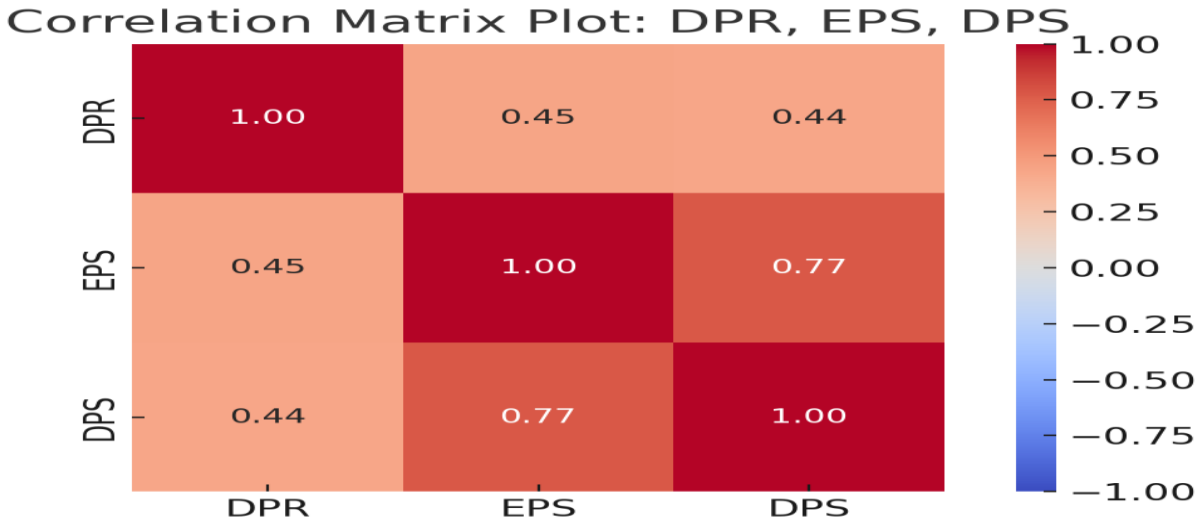
Outlier control is necessary for EPS. Given its relative stability, DPS is a suitable candidate as a dependent variable in dividend modeling.

Table No.2: Correlation Matrix

	DPR	EPS	DPS
DPR	1		
EPS	0.44527	1	
DPS	0.436433	0.773947	1

The correlation between EPS and DPS is strong (r = 0.77), indicating that higher earnings are associated with higher dividends per share. The relationships between DPR and EPS (r = 0.45), and DPR and DPS (r = 0.44), are moderately positive. These results suggest that while EPS is a key driver of dividend payments, dividend policy—as measured by DPR—is only moderately influenced by both earnings and actual dividend distributions. This implies some degree of firm-specific discretion in pay-out decisions.

Chart No.1: Heat Map



Higher earnings are associated with increased dividends per share, thereby validating the relevance of dividend policy in reflecting firm performance.DPR relates moderately with both EPS and DPS, showing alignment in pay-out behavior but with room for firm-specific policy discretion.

Table No.3: Model Coefficients (Linter Model)

Variable	Coefficient	Std. Error	t-value	p-value	95% CI (Lower)	95% CI (Upper)
Intercept	1.6961	0.962	1.764	0.092	-0.303	3.696
EPS	0.0346	0.014	2.449	0.023	0.005	0.064
DPS_LAG	0.8474	0.078	10.818	0	0.684	1.01

The coefficient for EPS in the regression model is positive and statistically significant (0.0346, $p = 0.023$), confirming that EPS contributes positively to dividend payments. The coefficient for lagged DPS (DPS_LAG = 0.8474, $p < 0.001$) is highly significant, indicating that firms adjust their dividend levels slowly and rely heavily on past dividend values. The intercept is not statistically significant ($p = 0.092$), suggesting the absence of a fixed baseline pay-out independent of earnings or past dividends.

These findings are consistent with Lintner's (1956) partial adjustment hypothesis, where firms exhibit dividend smoothing behavior. That is, while earnings influence dividend decisions, firms prioritize stability in payouts, reflecting a conservative approach to dividend policy. The high reliance on past dividends also implies dividend signaling behavior and a commitment to consistent shareholder returns.

Table No.4: Model Fit and Diagnostics (Linter Model)

Metric	Value
R-squared	0.94
Adjusted R-squared	0.935
F-statistic	165.4
Prob (F-statistic)	1.40E-13
Log-Likelihood	-56.787
AIC	119.6
BIC	123.1

The regression model demonstrates strong explanatory power, with an R^2 of 0.94 and an adjusted R^2 of 0.935. This indicates that 94% of the variation in DPS is explained by current EPS and

lagged DPS. The F-statistic (165.4, $p < 0.001$) confirms the overall significance of the model. Furthermore, low values of the Akaike Information Criterion (AIC = 119.6) and the Bayesian Information Criterion (BIC = 123.1) suggest a well-fitting model with minimal information loss. The model is statistically robust and suitable for forecasting DPS. It provides empirical support for Lintner's theory, demonstrating that both current earnings and historical dividend levels are significant predictors of dividend policy.

Table No.5: Adjustment and Target Pay-out Ratios – Lintner Model Estimates	
Adjustment Ratio (λ)	22.68%
Target Pay-out Ratio (r)	0.1526

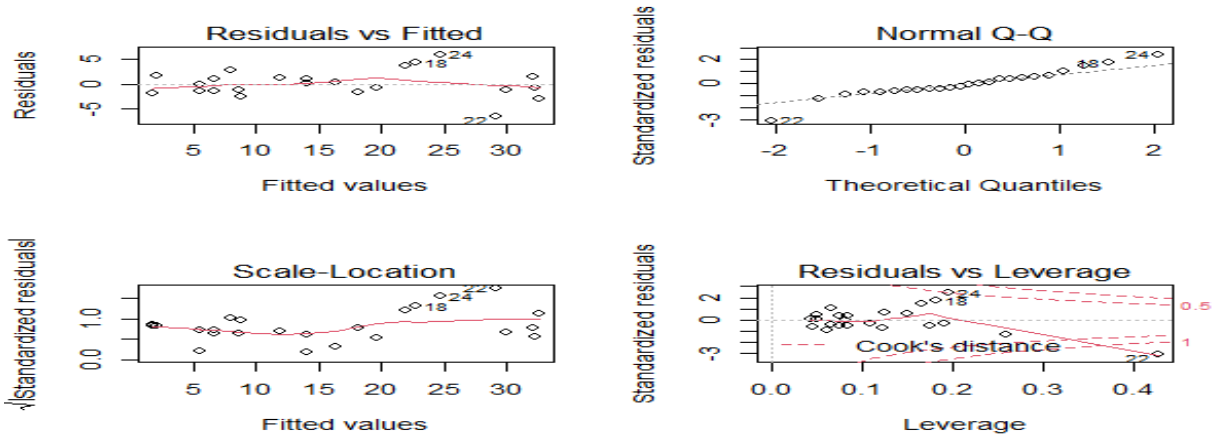
The adjustment ratio (λ) is estimated at 22.68%, indicating that firms adjust approximately 22.68% of the gap between target and actual dividends each year. The target payout ratio (r) is 15.26%, implying that firms aim to distribute roughly 15.26% of their earnings as dividends. This moderate target suggests a preference for retaining earnings to support reinvestment or maintain financial flexibility.

Firms do not instantly adjust dividends to match target levels, reflecting a cautious and gradual dividend policy. A moderate target pay-out suggests a preference for reinvestment or financial flexibility over aggressive distribution.

Table No.6: Diagnostic Tests		
Test	P-value	Ideal Result
Shapiro-Wilk	0.5991	$p > 0.05$ (normal residuals)
Breusch-Pagan (bptest)	0.003165	$p > 0.05$ (no heteroscedasticity)
Durbin-Watson (dwtest)	0.2585	DW ≈ 2, $p > 0.05$ (no autocorrelation)
VIF	Multicollinearity check EPS DPS_lag 2.055165 2.055165	VIF < 5 (preferably < 2.5)

Diagnostic tests reveal that the model satisfies key assumptions of normality and multicollinearity. The Shapiro–Wilk test ($p = 0.5991$) confirms that residuals are normally distributed. Variance inflation factor (VIF) values are acceptable (VIF = 2.06), indicating no serious multicollinearity. However, the Breusch–Pagan test ($p = 0.0032$) reveals heteroscedasticity, and the Durbin–Watson statistic (0.2585) suggests strong positive autocorrelation in the residuals. These violations of ordinary least squares (OLS) assumptions may compromise the validity of standard error estimates and inference.

Chart No.2: Residual Plots



Residual diagnostics support these findings: the residuals-versus-fitted plot indicates mild non-linearity and variance spread, consistent with heteroscedasticity. The normal Q–Q plot is largely

linear, indicating approximate normality of residuals. The scale–location plot shows a slight upward trend, also pointing to mild heteroscedasticity. The residuals-versus-leverage plot reveals no high-leverage points, with Cook's distance values all below 1, suggesting no observations exert undue influence.

In summary, while the model is broadly valid and statistically reliable, minor heteroscedasticity and autocorrelation may affect the precision of coefficient estimates. To address these issues, the use of robust standard errors or time-series adjustments is recommended. Nevertheless, the model provides strong support for dividend smoothing practices and demonstrates the predictive value of both EPS and past DPS in explaining dividend policy behavior.

IV. CONCLUSION AND RECOMMENDATIONS

This study tested the validity of Lintner's dividend model using longitudinal data on Dividend Per Share (DPS), Earnings Per Share (EPS), and lagged DPS. The empirical findings confirm the relevance of Lintner's partial adjustment hypothesis, indicating that firms adjust dividends gradually toward a target payout ratio. The regression model explained 94% of the variation in DPS, with both EPS and lagged DPS emerging as statistically significant predictors. The adjustment ratio was estimated at 22.68%, and the target payout ratio at 15.26%, suggesting a conservative dividend policy and a strong preference for dividend stability.

The research successfully addressed the objective of assessing the determinants of dividend policy and evaluating the applicability of Lintner's model within the Indian corporate context. The findings reinforce the notion that firms favor gradual dividend adjustments and value consistency in shareholder payouts.

Recommendations

- Firms should clearly define and communicate their dividend policies to enhance investor confidence and reduce uncertainty.
- Regulators should consider promoting standardized disclosures of payout targets and dividend adjustment practices.
- Investors can incorporate lagged dividends and earnings trends into dividend forecasting models to improve prediction accuracy.

V. LIMITATIONS

While the findings are robust and insightful, this study has several limitations:

1. Single-company focus: The analysis is based on data from a single firm, which limits the generalizability of results across different industries or sectors.
2. Time-series constraints: Although the dataset spans multiple years, it does not capture structural changes in the regulatory or macroeconomic environment that may influence dividend policy.
3. Model specification: The Lintner model primarily accounts for earnings and past dividends, excluding other potential determinants such as cash flow, investment opportunities, tax policy, and ownership structure.
4. Heteroscedasticity and autocorrelation: Diagnostic tests revealed minor violations of ordinary least squares (OLS) assumptions, suggesting possible inefficiencies in standard error estimation and statistical inference.
5. Static analysis: The model does not account for dynamic interactions or non-linear relationships, which may be better, captured through panel data or advanced time-series econometric techniques.

These limitations highlight areas for further research and offer opportunities for refining models of dividend behavior.

VI. FUTURE RESEARCH DIRECTIONS

- Extend the analysis using panel data across multiple industries to improve the generalizability of results.
- Incorporate additional explanatory variables such as free cash flow, ownership structure, and market volatility to enhance model robustness.
- Employ dynamic panel or advanced time-series models to address autocorrelation and heteroscedasticity detected in the residuals.

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