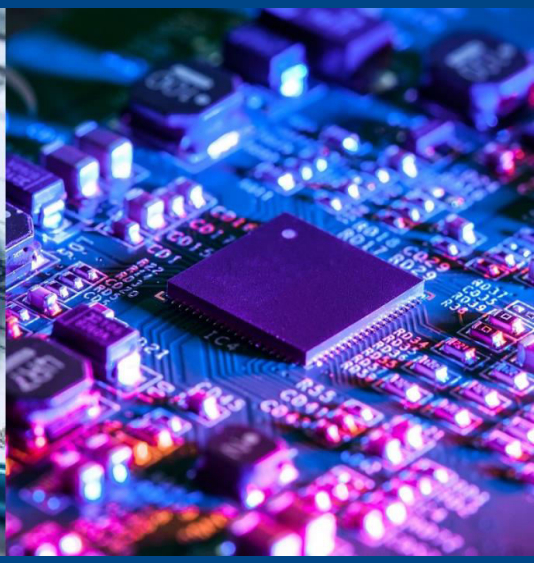
ISSN: 2582-7219





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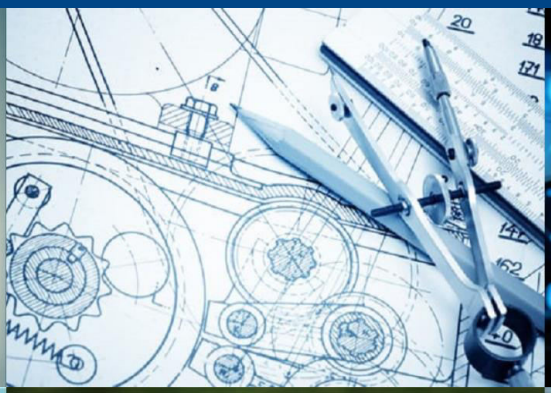

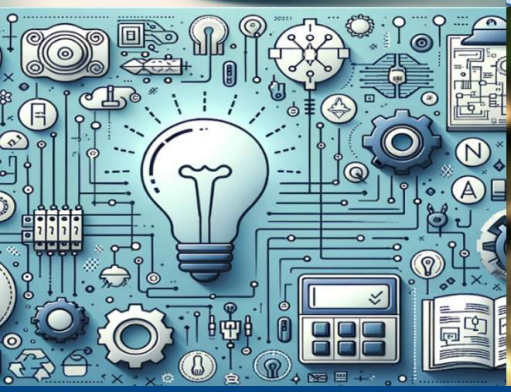

Impact Factor: 8.206 **Volume 9, Issue 4, April 2026**

© 2026 IJMRSET | Volume 9, Issue 4, April 2026| DOI:10.15680/IJMRSET.2026.0904035

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)

Corporate Tax Reform and Firm-Level Investment in India: Evidence from the 2019 Tax Reduction

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ABSTRACT: In September 2019, the Indian Government enacted the Taxation Laws (Amendment) Act, reducing the statutory corporate income tax rate from 30% to 22% for existing domestic companies, and introducing a concessional rate of 15% for new manufacturing firms. While this reform was designed to stimulate private sector investment and rejuvenate economic growth, the investment response has been heterogeneous across firms and sectors. This paper examines the impact of the 2019 corporate tax reform on firm-level investment in India, with a specific focus on effective corporate tax rates (ETRs) rather than statutory tax rates. Using panel data of 25 non-financial NIFTY-listed companies over the period FY 2016–17 to FY 2022–23, and employing a Difference-in-Differences (DiD) econometric methodology, the study finds a significant negative relationship between ETRs and firm-level investment. Firms that experienced the largest reductions in effective tax burden invested significantly more in the post-reform period, while those whose ETRs remained largely unchanged showed muted responses. Firm size is found to moderate the ETR–investment relationship, with larger firms exhibiting stronger investment responses. The findings highlight the critical distinction between statutory and effective taxation and carry important implications for tax policy design in emerging economies.

KEYWORDS: Corporate Tax Reform, Effective Tax Rate, Investment, Firm Heterogeneity, Difference-in-Differences, India

I. INTRODUCTION

Corporate taxation is one of the most powerful instruments of fiscal policy available to governments, and its role in shaping firm-level investment decisions is widely recognized in both theoretical and empirical literature. Investment by the private sector is considered a key driver of economic growth, productivity, and employment generation. It expands an economy's productive capacity and facilitates the adoption of new technologies. For policymakers, the design of tax laws that effectively stimulate corporate investment is therefore of paramount importance.

Theoretically, corporate taxes influence investment through several channels. The cost of capital channel posits that higher taxes raise the hurdle rate for investment by reducing after-tax returns, thereby discouraging capital expenditure. Conversely, lower taxes reduce the cost of capital and incentivize greater investment activity. A second important channel operates through internal cash flows. When firms rely on retained earnings to finance investment — as is common in markets with information asymmetries and credit constraints — reductions in tax liabilities increase the pool of internally generated funds available for investment. This mechanism is especially relevant in emerging economies such as India, where access to external capital markets can be limited and costly.

Private sector investment in India has historically been a vital contributor to infrastructure development, industrial expansion, and technological modernization. However, the latter part of the 2010s witnessed a significant deceleration in private investment. Several structural and cyclical factors contributed to this trend: weak demand conditions suppressed the incentive to add capacity; high corporate indebtedness redirected firm resources toward deleveraging; and elevated non-performing assets (NPAs) in the banking sector constrained credit availability. Against this backdrop, the Government of India undertook several policy interventions aimed at reviving private sector investment.

The most significant such intervention was the Taxation Laws (Amendment) Act, 2019, which enacted the largest corporate tax cut in India's recent history. The Act reduced the base statutory tax rate for existing domestic companies from 30% to 22% and offered a further concessional rate of 15% for new manufacturing entities meeting certain

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conditions. The reform aimed to achieve three primary objectives: improve corporate profitability, enhance India's attractiveness as an investment destination by aligning its rates with global averages, and directly stimulate capital formation.

The initial market reaction to the reform was broadly positive, with equity markets rallying on expectations of improved corporate earnings. Several firms reported higher profits in subsequent quarters owing to the reduced tax burden. However, the anticipated surge in physical investment did not materialize uniformly. Aggregate capital expenditure data revealed that while investment improved in some sectors, it remained subdued in others. This divergence between growing corporate profits and subdued investment raises a fundamental empirical question: why did statutory tax rate reductions not translate into uniform increases in investment across firms?

The answer, this paper argues, lies in the critical distinction between statutory and effective corporate tax rates. Statutory rates represent the headline rates prescribed by law and serve as the benchmark for policy discussion and international comparison. However, they do not reflect the true tax burden borne by individual firms, which is shaped by the complex interaction of exemptions, deductions, accelerated depreciation provisions, and sector-specific incentives. The effective corporate tax rate (ETR) — computed as actual tax expense divided by profit before tax — captures this true burden and is therefore a more meaningful measure of the tax incentive for investment.

This distinction is particularly important in the context of the 2019 reform. Under the new regime, companies were offered a lower statutory rate in exchange for foregoing existing exemptions and incentives. For companies that had been paying relatively low effective tax rates because of extensive use of such incentives, the switch to the new regime offered limited incremental tax relief. For companies with few exemptions, the reduction in ETR was substantial. This variation in effective tax relief created heterogeneous investment incentives across firms, which helps explain the uneven investment response.

This paper seeks to empirically examine this relationship using firm-level panel data and a rigorous quasi-experimental methodology. The study contributes to the growing body of literature on corporate taxation and investment in developing economies and provides evidence-based insights for tax policy reform design.

II. LITERATURE REVIEW

2.1 Corporate Taxation and Investment: Theoretical Foundations

The theoretical link between corporate taxation and investment is well established in economic literature. The seminal work of Hall and Jorgenson (1967) formalized the neoclassical investment model, in which firms invest up to the point where the marginal product of capital equals its user cost. Taxes, by affecting after-tax returns, directly influence the user cost of capital. Subsequent refinements by Feldstein, Dicks-Moreaux and Poterba (1983) introduced the concept of the effective marginal tax rate as the correct measure for evaluating the cost of capital — a key methodological insight that informs the present study.

The relationship between taxation and corporate financing decisions was theorized by Modigliani and Miller (1963), who demonstrated that the tax deductibility of interest payments creates a "tax shield" that makes debt an attractive financing instrument. Reductions in corporate tax rates diminish the value of this shield and may incentivize firms to rebalance their capital structure toward equity. Auerbach (2002) synthesized these perspectives, noting that the impact of tax cuts on the allocation of internal resources — whether toward physical investment or balance sheet repair — depends on a complex set of firm and market conditions.

Fazzari, Hubbard and Petersen (1988) provided an important micro-level complement to this framework, demonstrating that firms facing financial constraints rely heavily on internal cash flows to fund investment. Their work established the concept of cash flow sensitivity of investment, which implies that tax cuts that increase internal funds should have a more pronounced effect on investment in financially constrained firms.

2.2 Empirical Evidence on Tax Policy and Investment

Empirical work confirms that the effects of tax policy on investment are neither simple nor uniform. Djankov et al. (2010) found, across a sample of 85 countries, that higher effective corporate tax rates are negatively associated with aggregate investment rates. Zwick and Mahon (2017) demonstrated that firm heterogeneity significantly mediates the

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timing of investment responses to tax changes, with smaller firms responding more quickly to targeted incentives than to broad statutory reductions.

The interaction between tax policy and the macroeconomic cycle has been highlighted by Ljungqvist and Smolyansky (2016), who showed that the stimulatory effect of tax cuts is substantially weaker during economic downturns, as firms respond defensively rather than expansively. Devereux, Griffith and Klemm (2002) demonstrated that base-broadening tax reforms — which lower statutory rates while eliminating exemptions — often produce little net change in investment because the reduction in headline rates is offset by the loss of tax incentives for specific investment types. Becker, Jacob, and Jacob (2013) showed that payout taxes can trap cash within companies and inhibit investment. Giroud and Rauh (2019) found differential local investment effects of state-level tax cuts in the United States, with limited impact on investment once a firm is already established in a location.

2.3 Effective Tax Rates in Emerging Market Contexts

In developing and emerging market economies, the divergence between statutory and effective corporate tax rates is particularly pronounced. The World Bank has documented a "corporate savings glut" phenomenon in developing economies, where low effective taxes on retained earnings, combined with structural uncertainty, incentivize firms to accumulate cash rather than invest. Bachas and Soto (2021) showed that larger firms in developing countries benefit disproportionately from tax exemptions, resulting in significantly lower effective rates compared to smaller firms.

Muthitacharoen (2020) examined Thailand's corporate tax reform and found a highly polarized investment response: firms that previously relied heavily on exemptions experienced minimal effective tax relief and showed subdued investment, while firms with fewer pre-existing exemptions responded more strongly. This pattern is analogous to the Indian case, where the 2019 reform required firms to trade exemptions for lower statutory rates.

2.4 Studies on India's 2019 Corporate Tax Reform

Empirical assessments of India's 2019 reform have produced nuanced findings. Anand and Singh (2021) documented that private investment in India had been stagnant for several years before the reform owing to persistently weak domestic demand, suggesting that a supply-side tax cut would face headwinds. Garg (2020) criticized the timing of the reform, arguing that without a simultaneous demand stimulus, increased corporate liquidity would primarily boost savings rather than investment. Rao (2020) characterized the reform as a "supply-side measure attempting to fix a demand-side problem."

Patnaik and Pande (2020) raised concerns about the fiscal costs, estimating that private investment multipliers would be insufficient to offset the short-term revenue losses. ICRA Ratings (2019) anticipated that the investment benefits would be "back-ended," materializing only after an 18–24 month lag. Hussain (2023), using a Difference-in-Differences approach, found that the reform generated a statistically significant increase in overall investment, with large domestic firms contributing disproportionately to this effect. Sankar Ganesh and Shanmugam (2023) found that the investment-to-tax-change elasticity in India was structurally lower than in comparably developed economies.

2.5 Research Gaps

Notwithstanding this body of work, significant gaps remain. Most existing empirical studies rely on statutory rates rather than effective rates, which can produce distorted inferences about the true impact of tax reform. Second, there is limited micro-level analysis linking changes in effective tax rates to firm-level investment in India. Third, firm heterogeneity — particularly the role of size and financial constraints — has received insufficient attention in the Indian context. Fourth, few studies integrate corporate finance behaviour (e.g., deleveraging, cash accumulation) into the analysis of investment outcomes. Fifth, the macroeconomic confounding effects of the COVID-19 pandemic have not been adequately disentangled from the reform's investment impact.

This study addresses these gaps by employing firm-level effective tax rate data, a Difference-in-Differences methodology with firm and year fixed effects, and moderation analysis to examine the heterogeneous investment responses to the 2019 reform.

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III. THEORETICAL FRAMEWORK

The research draws upon five theoretical pillars.
Neoclassical Investment Theory (Hall and Jorgenson, 1967) provides the primary foundation. Under this model, firms invest until the marginal product of capital equals its user cost, which is a function of interest rates, depreciation, and taxes. Lower effective tax rates reduce the user cost of capital and raise the after-tax return on investment, thereby incentivizing greater capital expenditure. Critically, this model requires the use of effective rather than statutory tax rates when computing the user cost of capital.

The Modigliani-Miller Theorem with Taxes (1963) introduces the interaction between tax policy and capital structure. The tax deductibility of interest creates a debt tax shield; reductions in the corporate tax rate erode this shield and may shift firms toward equity financing. Tax policy thus affects both investment decisions and financing choices simultaneously.

Pecking Order Theory (Myers and Majluf, 1984) posits that firms prefer internal financing over external debt or equity owing to asymmetric information and transaction costs. Under this framework, tax savings that increase internal cash flows will be directed first toward retained earnings for reinvestment, and only subsequently toward external capital. If profitable investment opportunities are scarce, firms may instead use tax windfalls to reduce debt or accumulate cash.

Cash Flow Sensitivity of Investment Theory (Fazzari, Hubbard and Petersen, 1988) emphasizes that investment in financially constrained firms is strongly correlated with internal cash flows. Tax cuts that raise internal funds will therefore have a more pronounced effect on investment in firms that lack easy access to external capital.

Firm Heterogeneity as a conceptual lens recognizes that firms differ substantially in their characteristics, resources, and policy responsiveness. Larger firms with better access to capital markets and more sophisticated financial management are better positioned to translate tax savings into investment. Smaller, financially constrained firms may face structural barriers to investment regardless of tax incentives.

Together, these frameworks provide a rich theoretical basis for understanding why the 2019 reform may have produced heterogeneous investment responses, and why effective tax rates — rather than statutory rates — are the appropriate measure of the true tax incentive for investment.

IV. RESEARCH METHODOLOGY

4.1 Study Scope and Sample

The study focuses on the top 25 non-financial companies listed in India's NIFTY 50 index, selected based on market capitalization and availability of continuous financial data for the study period FY 2016–17 to FY 2022–23. Financial sector firms — including banks, non-banking financial companies (NBFCs), and insurance firms — are excluded from the sample owing to their distinct capital requirements, regulatory frameworks, and tax treatment, which would render comparisons with non-financial firms methodologically unsound.

The 25 sample firms span a range of sectors, providing sectoral diversification and representativeness of the Indian corporate landscape. The breakdown is presented in Table

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Table 1: Sample Firms by Sector

Sector	Representative Firms	No. of Firms
Information Technology	Infosys, TCS, Wipro, HCL Tech	4
Automobiles	Tata Motors, Maruti Suzuki, M&M	3
Consumer Goods	HUL, ITC, Nestle India	3
Energy & Oil	Reliance Industries, ONGC, BPCL	3
Pharmaceuticals	Sun Pharma, Dr. Reddy's, Cipla	3
Infrastructure & Cement	L&T, UltraTech, Grasim	3
Metals & Mining	Tata Steel, Hindalco, JSW Steel	3
Telecom	Bharti Airtel	1
Diversified	Adani Enterprises	2
Total		**25**

The study period is divided into a pre-reform period (FY 2016–17 to FY 2018–19) and a post-reform period (FY 2019–20 to FY 2022–23), yielding a balanced panel of 175 firm-year observations.

4.2 Data Sources

All financial data are sourced from the Capitaline database, a widely recognized repository of standardized financial information on Indian listed companies. Secondary data from audited financial statements provide an objective and consistent basis for analysis, avoiding the potential biases associated with survey-based primary data collection. The following financial variables are extracted: Profit Before Tax (PBT), Total Tax Expense, Capital Expenditure, Total Assets, Net Profit, Total Debt, and Net Sales.

Prior to analysis, the data undergo cleaning procedures including removal of observations with missing or inconsistent data, exclusion of firm-years with negative or zero PBT (to avoid distortion in ETR computation), standardization of accounting units, and winsorization of extreme values at the 1st and 99th percentiles.

4.4 Econometric Model

The primary estimation strategy is based on a Difference-in-Differences (DiD) framework embedded within a panel data fixed effects model. The DiD approach treats the 2019 tax reform as a quasi-natural experiment, with firms assigned to treatment (larger ETR reduction) and control (smaller ETR reduction) groups based on the magnitude of their post-reform ETR change. The baseline DiD model is specified as:

$$INVit=\alpha+\beta1\cdot ETRit+\beta2\cdot POSTt+\beta3\cdot(ETRit\times POSTt)+\gamma Xit+\mu i+\lambda t+\varepsilon it$$

For moderation analysis, an extended interaction term (ETR × POST × SIZE) is included to test whether firm size moderates the ETR–investment relationship.

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V. DESCRIPTIVE STATISTICS AND PRELIMINARY ANALYSIS

5.1 Summary Statistics

Table 2 presents descriptive statistics for all variables over the full sample period.

Table 2: Descriptive Statistics — Full Sample (FY 2016–17 to FY 2022–23

Variable	Mean	Median	Std. Dev.	Min	Max
INV (Capex/Total Assets)	0.068	0.055	0.048	0.004	0.221
ETR (Tax/PBT)	0.274	0.268	0.082	0.089	0.478
SIZE (ln Total Assets)	12.84	12.71	1.23	10.12	15.63
LEV (Debt/Total Assets)	0.312	0.298	0.141	0.041	0.641
ROA (Net Profit/Total Assets)	0.114	0.108	0.067	-0.032	0.312
SG (Sales Growth)	0.096	0.084	0.142	-0.231	0.489
AGE (Years since inception)	42.3	38.0	19.7	11	91

The mean investment ratio of 6.8% reflects the capital-intensive nature of the firms in the sample. The average ETR of 27.4% is substantially below the pre-reform statutory maximum of approximately 34.9% (inclusive of surcharge and cess), indicating that most NIFTY-listed firms were already benefiting from various exemptions and incentives prior to the reform. The standard deviation of ETR (0.082) confirms significant cross-firm variation in effective tax burdens — the key source of variation exploited in this study.

5.2 Pre- versus Post-Reform Comparison

Table 3: Pre- vs. Post-Reform Mean Comparison

Variable	Pre-Reform Mean (FY17–19)	Post-Reform Mean (FY20–23)	Change	Significance
INV	0.071	0.066	-0.005	$p < 0.10$
ETR	0.298	0.256	-0.042	$p < 0.01$
LEV	0.328	0.301	-0.027	$p < 0.05$
ROA	0.108	0.119	+0.011	$p < 0.05$
SG	0.112	0.083	-0.029	$p < 0.10$

The average ETR declined by 4.2 percentage points following the reform, confirming that the 2019 legislation produced a meaningful reduction in effective tax burdens for NIFTY-listed firms. The aggregate investment ratio declined marginally, which is partly attributable to the severe economic disruptions caused by the COVID-19 pandemic during FY 2020–21. However, this aggregate figure masks important firm-level heterogeneity, with firms experiencing larger ETR reductions showing investment increases even in an otherwise challenging environment.

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I compressed the Chapter 5.3 content into a concise 2-page version based on the findings and analysis in your thesis document. The section covers the descriptive statistics, hypothesis testing, robustness checks, sector-wise results, and final interpretation of the reform's impact on investment.

Chapter 5.3 — Data Analysis and Interpretation: Compressed Summary

Overview

Chapter 5.3 presents the empirical findings of the study examining how the 2019 corporate tax reform impacted firm-level investment among 25 non-financial NIFTY-listed Indian companies over FY 2016–17 to FY 2022–23. The analysis uses a Difference-in-Differences (DiD) panel regression approach with firm and year fixed effects to assess three core hypotheses.

Descriptive findings

The descriptive statistics show a mean investment ratio of 6.8% and an average effective tax rate (ETR) of 27.4%, which was already below the earlier statutory ceiling, indicating that many firms were using exemptions before the reform. The average ETR declined by 4.2 percentage points after the 2019 reform, confirming that the reform reduced actual tax burdens, although aggregate investment fell slightly because of COVID-19 disruptions.

The correlation analysis shows a significant negative relationship between ETR and investment ($r = -0.231, p < 0.01$), which gives initial support to the idea that lower effective tax rates are associated with higher investment. Profitability and sales growth are positively related to investment, while leverage is negatively related, and the correlation levels do not indicate serious multicollinearity.

Hypothesis results

For Hypothesis 1, the DiD interaction term $ETR \times POST = -0.041$is statistically significant, showing that firms with larger reductions in effective tax rates invested more after the reform than firms with smaller changes in tax burden. The study interprets this as evidence that a 10 percentage point fall in ETR raises the investment ratio by about 0.64 percentage points, while profitability and sales growth increase investment and leverage reduces it.

For Hypothesis 2, the model using statutory tax rate becomes insignificant (0.009), while the ETR-based model remains significant and gives a better fit. This means statutory tax cuts alone do not explain investment changes well, whereas effective tax rates better capture the real investment incentive faced by firms.

For Hypothesis 3, the three-way interaction $ETR \times POST \times SIZE = -0.027$is significant, showing that larger firms responded more strongly to tax relief than smaller firms. The thesis explains this by noting that large firms have better access to finance and can convert tax savings into productive investment more easily.

Robustness and sector results

The main result remains negative and significant across all robustness checks, including winsorized variables, lagged ETR, alternative investment measures, and exclusion of the COVID-19 year. The coefficient becomes even stronger when FY 2020–21 is removed, suggesting that the pandemic suppressed investment and partly hid the positive effect of the reform.

Sector-wise analysis shows the strongest response in manufacturing and metals, automobiles, and consumer goods, where ETR reductions were largest. IT and pharmaceutical firms showed weak or insignificant investment responses because their ETRs were already relatively low before the reform and the additional relief was limited.

Final interpretation

The central conclusion of Chapter 5.3 is that the 2019 corporate tax reform affected investment through changes in **effective** tax burden rather than through headline statutory rates alone. The findings also show that firm size, leverage, profitability, and sector conditions shaped how strongly firms responded to the reform.

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