Socioeconomic Welfare and Taxation Policy

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Abstract

Governments strive to maximize citizens' socioeconomic welfare. Free-market systems dominated by corporations may not share the same objective. Governments may intervene, channeling corporate behavior to reduce private welfare and maximize universal socioeconomic welfare. We examine whether government intervention improves socioeconomic welfare using a recently passed taxation reform. We build the government's rationale for taxation reform and the postulated claims in the post-taxation period. Results show that the government's rationale was flawed and did not achieve the intended socioeconomic welfare goals. We exhort policymakers to conduct sufficient research before enacting major taxation reforms.

I.   Introduction

The government's objective is to maximize universal socioeconomic welfare. Governments can expect free-market systems to maximize socioeconomic welfare for all participants. However, a free-market system may only maximize socioeconomic outcomes for some. The cornerstone of modern financial theory is rational agents who seek to maximize private welfare. In a bid to maximize private welfare, agents may act irrationally. In addition to irrational agents, free markets are plagued by information asymmetry. Wealthy and powerful agents exploit such information asymmetries to maximize private welfare, thereby making other less-informed agents worse off. In an efficient market, gains by some agents are offset by losses to other agents (Stiglitz (2009)). Efficient markets where some agents exert their power and wealth to impoverish other agents systematically are socially inefficient. Hence, governments intervene by introducing and imposing regulations to level the playing field and maximize socioeconomic welfare for all agents. In this paper, we examine a recent government regulation that introduced new taxes on one mode of corporate payouts and eliminated taxes on another mode of corporate payouts. The perceived unfair private welfare conferred on a group of powerful, wealthy, and informed agents prompted the change in taxation policy. We construct the government's rationale for taxation policy change and the postulated outcomes of the taxation policy change.

Public interest or socioeconomic welfare may be safeguarded only by government regulations. An OECD (2000) report on government regulation finds that since the 1970s, government regulation has produced impressive gains in socioeconomic welfare. However, in most cases, the performance of government regulation has been dismal. Government regulations fail due to multiple reasons, such as lack of awareness among the target group, unwillingness or

inability to comply with regulations by target groups, lack of sufficient research on costs and benefits of regulations, lack of engagement and feedback from the target group, and many other reasons. Laws and regulations demand adequate time to examine the impact of proposed regulations. However, governments mandate regulations under pressure without sufficient research. Hasty and insufficient research will result in poorly designed and imposed regulations, which may not achieve their objective and do more harm than good. Ineffective regulation may stifle innovation and cause erosion in government trust (Beales et al., 2017). The intended target group in many economic regulations are corporations, which usually pass the cost of regulations onto consumers in the form of higher prices for goods and services, to employees in the form of reduced wages and benefits, and investors in the form of lower return on investment (Beales et al., 2017).

Governments must carefully balance between supporting and regulating corporations because governments generate revenue from multiple sources, including business taxes from corporations. In addition to taxes, governments expect corporations to reinvest earnings, to increase wages and benefits of the workforce, and to contribute to society by spending on socioeconomic goals. Companies with adequate cash flows easily meet higher reinvestment, leading to higher wages and higher socioeconomic spending. Companies with constrained cash flows reduce investments or payouts to support higher investments. Payout reduction is an ominous sign, and market reactions are negative. Hence, corporations strive to maintain a consistent level of payouts and not risk any loss in market value that is associated with a reduction in payouts. Higher payouts are a positive sign; markets greet higher payouts by sending the share prices higher. However, higher payouts may result in lower reinvestment and lower socioeconomic spending. Governments may mandate regulations on payouts to force corporations to achieve

socioeconomic welfare goals. Regulations are often passed without sufficient research and discussion or corporate feedback. For instance, the Biden administration has imposed a 1% tax as a surcharge tax on share buybacks (Francis and Trentmann, 2021)). A long list of politicians that include Senators Bernie Sanders and Chuck Schumer[1], and Elizabeth Warren have criticized share buybacks. In addition to the 1% surcharge on buybacks, many proposals to tax buybacks are still in the formative stage and may never become law. Other than wishful thinking, there is no satisfactory research to support the case for socioeconomic welfare that results from new taxes. This paper attempts to provide rigorous academic research to empirically test whether such taxes will help governments achieve their socioeconomic welfare goals. This research is important because tax policy changes have major implications. Significant social and economic capital is needed to rectify the outcomes of an ill-conceived tax policy change based on insufficient research.

We use a recently enacted share buyback tax reform in India as a natural experiment to examine the welfare outcomes of tax on buybacks. The government claimed that the new tax would help eliminate the disparity between taxes on dividends and share buybacks by inducing corporations to reduce buybacks. Corporations could increase spending on capital assets, employee wages, and corporate social responsibility (CSR) from the savings accrued from reduced payouts. Higher spending by corporations will increase socioeconomic welfare. We test these claims by the government in a difference-in-difference (D-in-D) framework during the pre-and post-tax change period. Our results show that the government acted haphazardly without sufficient research to support such a significant change in the tax code. Our analysis also indicates that the government did not achieve additional corporate socioeconomic welfare spending. The rationale for taxation policy change was flawed, and the shift did not accomplish any of the claimed socioeconomic

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[1] https://www.nytimes.com/2019/02/03/opinion/chuck-schumer-bernie-sanders.html

welfare outcomes. Overall, our message is that regulations backed by political jingoism and insufficient research are likely to fail and that governments should conceive tax regulation based on reputed and dependable research.

The remainder of the paper is organized as follows. Section II discusses the role of government, and section III provides a brief history of taxation on dividends and share buybacks in India. Section IV constructs the government rationale for higher taxes on share buybacks. In this section, we also develop a theoretical model for the tax policy-induced optimal plowback ratio for corporations. In Section V, with multivariate regressions, we detail the corporate responses to the tax changes . Section VI presents our conclusions.

II.   Role of Government

The role of government in a country's progress is paramount. Governments exert a lot of influence on the economy - directly and indirectly. Governments can create and regulate financial institutions. Through these institutions, governments may control and direct the flow of funds to different sections of the economy. Governments create policies that address taxation, banking, information disclosure, and many more (Stiglitz (1994)). Governments facilitate the progress and the smooth functioning of the economy by maintaining law and order, protecting national borders, and providing and maintaining healthcare systems, communication networks, and transportation infrastructure. With various levels of support, governments also handle crises like the recent Covid-19 pandemic, economic recession, financial market failures, and other natural calamities. Thus, governments exist to maximize socioeconomic welfare, which may conflict with the corporate shareholder wealth maximization motive. Governments worldwide are becoming more amenable to social issues and have enacted many laws and regulations to strengthen environmental

protection. Governments worldwide are becoming more amenable to social issues and have enacted many laws and regulations to strengthen environmental protection[2], workforce protection and improvement[3], improve diversity-equity-inclusivity[4], and encourage corporate social responsibility (CSR)[5]. For instance, governments and financial markets are more prone to holding corporations accountable for damages inflicted on the environment and society. According to Violation Tracker[6], various U.S government agencies, based on over 9000 cases, have collected $583 billion in fines (environmental violation fees amount to $38 billion) and settlements from the top 100 parent companies. Such violations, subsequent inquiries, and fines lead to declining shareholder wealth (Karpoff, Lott, and Wehrly, 2005). Corporate trustworthiness reduces due to environmental violation-related complaints, litigation, and penalties. Other reasons have also contributed to the decline in corporate trustworthiness. For example, the reduction in competition through mergers and acquisitions and consequent consolidation of corporate power over consumer choice has kept alive the long-standing debate that anti-competitive mergers and acquisitions induce monopolies, higher prices, and lower consumer choice (Hackbarth and Taub, 2020). Corporate fraud and top management misconduct have also contributed to the erosion of corporate trustworthiness (Khanna, Kim, and Lu (2015), Yu (2013)). Farber (2005) finds that analyst following and institutional investor holdings do not increase in fraudulent companies, suggesting that lost credibility is difficult to rectify. Arnow-Richman, Hicks, and Solomon (2022), using S&P

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[2] Please visit https://climate-laws.org/. Research according to the Grantham Institute finds that there are more than 2000 climate laws and policies, and more than 1000 litigations across the world

[3] https://www.oecd-ilibrary.org//sites/1686c758-en/1/3/3/index.html?itemId=/content/publication/1686c758-en&_csp_=fc80786ea6a3a7b4628d3f05b1e2e5d7&itemIGO=oecd&itemContentType=book#section-d1e23823. Organization for Economic Cooperation and Development documents that during the post financial crisis period, several member countries have enacted stricter worker protection laws.

[4] https://www.mckinsey.com/featured-insights/diversity-and-inclusion/diversity-wins-how-inclusion-matters and visit the World Economic Forum initiatives on diversity, equity and inclusion https://www.weforum.org/agenda/2022/03/diversity-inclusion-equity-business/

[5] See Lin (2020) for a summary of mandatory regulations across the world

[6] https://violationtracker.goodjobsfirst.org/parent-totals

1500 companies' data from 2015 – 2020 find that harassment and company policy violations as a reason for CEO departure have considerably increased in the wake of #MeToo movement. In addition to corporate harassment and misconduct scandals, ever-increasing executive compensation and stagnating median employee compensation have added to the decline in corporate trustworthiness. Economic Policy Institute (EPI) research finds that CEO compensation has skyrocketed 1322.2% from 1978 to 2020. Whereas, real median employee wages have been stagnant over the last 40 years. Thus, governments worldwide feel the pressure to reign in corporate largesse and misbehavior and to channel corporate behavior and expenditures toward populist social priorities. Corporate misconduct, government inaction, or inadequate actions has also led to a decline in public trust in governments and institutions. According to the 2022 annual global surveys by public relations firm Edelman[7], public trust towards governments has fallen considerably. Despite allegations of misconduct and excessive CEO compensation, Edelman surveys find that public trust in companies has increased. Lack of trust and populist sentiments may compel governments to enact laws or regulations. These laws and regulations may include sanctions or punitive actions such as fees or levies for non-compliance, withdrawal of licenses, taxation policies designed to encourage or discourage specific corporate behavior, and subsidies or grants for investing in government-strategized areas.

Left with no choice, corporations comply with government policies and regulations, fearing government sanctions and adverse reactions from the media and consumers. Within the boundaries set by government policies, corporations operate in a manner that maximizes shareholder wealth. However, the demands on corporations to comply with ever-increasing, complex national and global regulations and socioeconomic expectations are challenging.

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[7] These surveys may be accessed from https://www.edelman.com/trust/2022-trust-barometer

Corporations and many politicians may oppose excessive government regulation. In some cases, government intervention via regulations is the only hope for a large population of consumers and investors to achieve universal socioeconomic welfare. We explore a recent intervention by the Indian government in corporate payouts. The Indian government changed the tax structure by introducing higher taxes on share buybacks, and by eliminating the tax at source on dividend payouts. The Indian government claimed that wealthy shareholders were exploiting a loophole in the taxation system to enrich themselves at the expense of the minority shareholders. We examine whether the change in taxation policy increases socioeconomic welfare. Before we proceed any further with the analysis, understanding the taxation policy on share buybacks and dividends in the India is essential.

III.   Share buybacks in India

Share buybacks were illegal in India until 1999. The Ministry of Corporate Affairs (MCA) added sections 77A, 77AA, and 77B and amended the Indian Companies Act, which allowed companies to buy back shares. Companies also had to comply with the Securities and Exchange Board of India (SEBI) 1999 regulations on share buybacks. Further, the Indian Finance Act 1999 – Section 46 (A) mandated that the share buybacks be taxed as capital gains at the hands of the shareholders. The government also amended the Indian Income Tax Act – section 2(22) to state that share buybacks and dividends be taxed differently.

Consequently, long-term capital gains taxes of 10% applied to investors' gains from share buybacks if investors owned the shares for more than one year, and a short-term capital gains tax rate of 15% applied if investors held the shares for less than one year. In this context, it is also necessary to discuss dividend taxes to fully relate to the recent tax changes by the Indian

government. Multiple taxation systems exist for taxing corporate income (Alzahrani and Lasfer (2012)). India followed a *classical* taxation system for taxing dividends that treated corporate income differently from personal income. Under this system, the corporation distributing dividends did not pay taxes on dividends, but the investors paid taxes on dividend income received based on their marginal income tax rates. In the *partial* and *full imputation* system, investors received partial or full credit equivalent of the total amount of paid corporate taxes against personal income taxes on distributed earnings. In 1997, India introduced Dividend Distribution Tax (DDT), which made dividends taxable at the source.

For a brief period between 2002 and 2003, India shifted to the *classical* system of taxing dividends at the hands of the shareholders. Post 2003, DDT was re-instated, and dividends became taxable at the corporate level. Most recently, in 2019, the DDT was 20.56%. In other words, a company that distributed dividends remitted the taxes directly to the government. For example, in 2019, if a company distributed 100 Rupees as dividends, it remitted 20.56 Rupees to the government owing to DDT at 20.56%, and it distributed the remaining 79.44 Rupees to the shareholders who did not pay any further taxes on the dividends received. In July 2019, India introduced a 23.3% tax at source on share buybacks. For example, if a company spends 100 Rupees on share buybacks, then the company remits 23.3 Rupees to the government and the remaining 76.7 Rupees is paid to the shareholders. In 2020, the government abolished DDT, and dividends became taxable at the hands of the investor.

[Insert Table 1 here]

IV. Government Rationale for Higher Taxes on Share buybacks

The Indian Finance Minister, Ms. Nirmala Seetharaman, in her budget speech in 2019[8], announced the new taxation scheme on buybacks. In this section, we reconstruct the government's proposition for the new scheme.

A. Arresting the Popularity of Share Buybacks

Over the last two decades, share buybacks became popular around the world as the preferred mode of payout to shareholders (Manconi, Peyer, and Vermaelen (2019), Bonaime, Hankins and Jordan (2016), Farre-Mensa, Michaely, and Schmalz (2014), Jagannathan, Stephens, and Weisbach (2000)). Companies buyback shares for various reasons[9] that include undervaluation (Brav, Graham, Harvey, and Michaely (2005), Jagannathan & Stephens (2003), Ikenberry, Lakonishok and Vermaelen (2000), Chan, Ikenberry and Lee (2004)), capital structure adjustments, distributing excess cash to shareholders, deterring take-over attempts (Billet and Xue (2007), Bagwell (1991)), and offsetting the dilutive effects of stock options (Bens, Nagar, Skinner, and Wong (2003), Fenn and Liang (2001), and Cuny, Martin and Puthenpurackal (2009)). Share buybacks are also popular due to their flexibility over dividends (Bonaime, Hankins, and Jordan (2016), Grullon and Michaely (2002)), which may be entrenched. Once a company initiates a dividend, investors expect the company to continue or increase dividends. Whereas share buyback announcements are not firm commitments. Based on country-specific regulations, companies may make an offer to buybacks shares without any time-bound obligation. Hence, managers can time the market for buying back shares (Ben-Raphael, Oded and Wohl (2014), Edith & Hamon (2007)). Share buybacks are also popular due the preferential tax treatment they provide over dividend

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[8] The full text of the budget speech can be found in this link - https://www.indiabudget.gov.in/budget2019-20/doc/Budget_Speech.pdf

[9] See (Dittmar (2000) and Voss (2012)

payments (Jacob and Jacob (2013)). Dividend tax penalties induce companies to distribute cash through share buybacks (Moser 2007)).

Graham (2013) findings suggest that government changes to the taxation policy affect a multitude of corporate decisions. By modifying the tax code with higher taxes on share buybacks, the government hoped to reduce the popularity of share buybacks. By taxing share buybacks at a higher rate, the government anticipated a change in corporate behavior towards share buybacks. The government hoped that the popularity of share buybacks would wane by introducing higher taxes. Before we present the impact of higher taxes on share buybacks, we examine whether corporate dividend and share buyback patterns in India confirm to global practices. We hope to find that share buybacks are more popular in India than dividends.

[Insert Table 2 here]

In Table 2 – Panel A, we show dividends payments and the amount spent on share buybacks by Indian companies. From a modest 1% share of the total payouts, share buybacks have grown in popularity to approximately 22% in 2018 and dropped to 18% in 2021. We now turn our attention to Table 2 – Panel B. From a sample of 5000 companies in the Bombay Stock Exchange (BSE), the number of companies buying back shares has been consistent at 2%, and the number of companies paying dividends has hovered around 30%. The payout patterns in India show that the amount spent on share buybacks has increased over the last two decades, confirming the global share buyback trends. Share buybacks have not replaced dividends as the preferred mode of payouts. Data does not support the Indian government's belief that share buybacks have replaced dividends as the most popular mode of payouts.

B.   Eliminate Tax Loopholes

The tax advantage enjoyed by share buybacks over dividends should accrue to most taxpayers, who may also be shareholders in Indian companies. By eliminating DDT, the government shifted the burden of paying taxes on dividends from companies to shareholders. If shareholders pay taxes at 20%, then such a change should not affect dividend tax remittances. If most shareholders are above (below) the 20% personal income tax bracket, then government revenue should increase (decrease) due to higher (lower) taxes on dividends.

[Insert Table 3 here]

Table 3 provides the distribution of the number of taxpayers, the income levels, and the tax brackets in India. Table 3 – Panel A shows that the tax code in 2019 followed an easy-to-understand gradient of 5%, 20%, and 30% for income levels of 250,000 – 500,000 Rupees, 500,000 – 10,000,000 Rupees, and above 10,000,000 Rupees. Table 3 – Panel B shows the distribution of taxpayers according to various brackets. The total number of taxpayers has slightly increased since the 2017 – 2018 tax year and dropped somewhat in 2020 – 2021. Interestingly, Panel B also shows that approximately 90% of the population of taxpayers paid taxes of 20% or below. Wealthy taxpayers, who constituted only 10% of the tax-paying population, paid taxes at 30%. Based on this distribution, the government made the correct judgment that the majority of the shareholders (also taxpayers) may lobby the companies to reduce the instances of share buybacks and the amount spent on share buybacks that are now taxed at 23.3%. These shareholders could, in turn, lobby the companies to increase dividend payouts.

Family or promoters, who pay taxes at the highest income tax rates and own the majority of shares, influence all aspects of corporate decision-making in India (Jindal and Seth(2019), (Khanna and Palepu (2000 and 2005), Chakrabarti, Megginson, and Yadav (2008). Promoters are

less likely to support a shift to more dividend payments because dividends are taxed at the investors' respective income tax rates. Promoters are expected to support share buybacks taxed at 23.3% versus 30% taxes on dividends. Table 2 – Panel B also confirmed that the number of companies buying back shares did not reduce as the government expected.

C.   Recover Lost Tax Revenue through Higher Corporate Remittances

Being fully aware of the distribution of the data on Indian taxpayers and their respective tax brackets, the government eliminated DDT making dividends a taxable liability at the individual taxpayer level. Approximately 65% of taxpayers pay taxes at a 20% tax rate. These numbers indicate that the government's tax revenue from dividends will not equal 20.56% of distributed dividends. Earlier, the government efficiently collected from the companies the 20.56% taxes on distributed dividends from the companies at source. The government may have hoped to recover some of this lost revenue by introducing higher taxes on share buybacks. Higher taxes on share buybacks should induce companies to reduce share buybacks and increase reinvestments. These reinvestments could, in turn, lead to higher corporate income. Ceteris paribus, tax revenue from corporate tax remittances should increase to compensate for the lost revenue in DDT.

[Insert Table 4 here]

Corporate tax collections in the tax year 2016 are 4227.7 billion Rupees. We witness an increasing trend in corporate tax collections till 2019. Corporate tax collections achieve a maximum of 5800.45 billion Rupees during this period. Further, corporate tax collections show a declining trend. Data collected from the Indian Ministry of Finance shows that tax collections for the years post-tax code change are lower than those in years before the change in tax code, which

is against what the government could have hoped. The government's expectation that higher corporate tax revenue to stem losses from DDT did not materialize.

D.   Increase Corporate Plowback

Statements by senior ranking government officials indicated that the government wanted companies to reinvest more of their earnings than distribute earnings via buybacks. These stated reasons underscore an assumption by the government that companies were not reinvesting enough of their earnings. By developing a theoretical model for the government's objective revenue function and the shareholders' objective function for wealth, we hope to calculate an optimal plowback ratio. We then hope to validate the government's claims of under-investment by comparing the theoretical optimum plowback ratio to the actual plowback ratio.

1.   Government's Optimal Plowback Ratio

Governments generate revenue from multiple sources. Primary revenue sources are taxes on corporate income, personal income, and gross sales. The proposed tax changes aim at corporate share buybacks and the resultant investment behavior. Here we model the government's marginal tax revenue function from corporations. Ceteris paribus, we provide only the changes in corporate behavior due to the new taxation scheme on share buyback. Let us assume a one-period model where a corporation distributes all its earnings entirely through share buybacks, which implies the following –

$$Earnings\ (E) = \ Share\ Buybacks\ (SR); Dividends = 0 \tag{1}$$

Let us assume that the amount spent by corporations on share buybacks in the previous year (SR_{t-1}) will equal the amount spent on corporations in the current year (SR_t), consequently we

drop the time subscripts. The tax on share buybacks may induce corporations to start plowing back earnings at a plowback rate of q. Corporations may buy back shares at the rate of $1-q$, which is the new payout ratio. The incremental income before-tax is a function of the additional investment through plowback of earnings. This incremental income is subject to corporate tax rate. Let us assume that income before-tax (*IBT*) is a Cobb-Douglas type function of plowback ratio, which results in the following equation –

$$Incremental\ IBT\ =\ (q \times SR)^{\alpha} \tag{2}$$

where α is the sensitivity of *IBT* to reinvested income. The government collects taxes at corporate tax rate (T_C) from incremental *IBT* as follows

$$Corporate\ taxes\ from\ Incremental\ IBT\ =\ (q \times SR)^{\alpha} \times T_C \tag{3}$$

Post corporate tax payments the remainder of the income will accrue to shareholders, which will increase shareholder's equity. Let shareholders sell their shares after the increase, thus incurring a capital gain tax on the incremental income post corporate taxes. Shareholder's capital gain tax liability based on capital gain tax rate of T_{CG} is calculated as follows –

$$Shareholder's\ Capital\ Gain\ Tax\ liability\ =\ (q \times SR)^{\alpha} \times (1 - T_C)\ \times T_{CG} \tag{4}$$

After plowback, corporations distributed earnings as share buybacks, which will be taxed at government's new share buyback tax rate (T_{SR}) as follows –

$$Share\ buyback\ taxes = (1 - q) \times SR \times T_{SR} \tag{5}$$

Overall, the government's incremental tax revenue is given by the following objective function $Government\ Incremental\ Revenue = G$

$$G = Corp\ taxes\ from\ incremental\ IBT + Shareholders'\ cap\ gain\ taxes +$$
$$Share\ buyback\ taxes \tag{6}$$

$$G = (q \times SR)^\alpha \times T_C + (q \times SR)^\alpha \times (1 - T_C) \times T_{CG} + (1 - q) \times SR \times T_{SR} \tag{7}$$

The tax rates T_C, T_{CG}, and T_{SR} are pre-determined. Differentiating this function w.r.t q, we get the following

$$\frac{dG}{dq} = q^{\alpha-1} \times \alpha \times SR^\alpha \times (T_C + (1 - T_C)T_{CG}) - SR \times T_{SR} \tag{8}$$

Optimizing this function by setting the first order condition to zero, and by assuming that $SR=1$ Rupee, we get the following optimal solution for q

$$q^*_{Government} = \left[\frac{(T_{SR})}{\alpha \times (T_C + (1-T_C)) \times T_{CG}} \right]^{\frac{1}{\alpha-1}} \tag{9}$$

We performed year-wise univariate regressions between income before tax and reinvested earnings (with income before tax as the dependent variable and reinvested earnings as independent variable) to empirically determine α. We found that the average α is 50%. Other pre-determined inputs are $T_C = 25\%$ $T_{CG} = 10\%$, and $T_{SR} = 23.3\%$. The optimal q to maximize government incremental tax revenue is approximately 48.2%.

2.   Shareholders' Optimal Plowback Ratio

Now we turn our attention to calculate the optimal q that will maximize shareholder's incremental wealth. Shareholders' incremental wealth (W) post tax payments can be derived from the government's incremental tax revenue function –

$$W = (q \times SR)^\alpha \times (1 - T_C) \times (1 - T_{CG}) + (1 - q) \times SR \times (1 - T_{SR}) \qquad (10)$$

Differentiating the shareholders' wealth function w.r.t. to q we obtain the following first order condition

$$\frac{dW}{dq} = q^{\alpha-1} \times \alpha \times SR^\alpha \times (1 - T_C)(1 - T_{CG}) - SR \times (1 - T_{SR}) \qquad (11)$$

Optimizing this function by setting the first order condition to zero, and by assuming that *SR=1 Rupee,* we get the following optimal solution for q

$$q^*_{Shareholder} = \left[\frac{(1 - T_{SR})}{\alpha \times (1 - T_C) \times (1 - T_{CG})} \right]^{\frac{1}{\alpha-1}} \qquad (12)$$

The optimal q to maximize shareholders' incremental wealth is approximately 19.4%. Government expects that corporations will plowback the optimal amounts and reinvest to increase capital expenditures, research & development expenditures, employee compensation, and corporate social responsibility expenditures.

We calculated the plowback ratio for all firm-year observations during our sample period. Table 5 shows that the average plowback ratio exceeds 90%. The 25th percentile of the plowback ratio is 100%, meaning less than 25% of the company's payout excess cash as dividends and share buybacks. We also calculated the year-wise plowback ratio for the sample period, and our results are no different. Industry-wise calculation of the plowback ratio yielded similar results except for a few industries, such as Mining and Utilities, where the plowback ratio was below 90% but was at or above 80%. Data do not justify the government's rationale for increasing the reinvestment. A plowback ratio of 90% or above implies that the return on invested capital should be greater than

the cost of capital, in which case tweaking the tax code to increase reinvestment is not likely to produce any change in corporate investment and payout behavior.

[Insert Table 5 here]

The following section details the corporate response government's propositions on reduction in share buyback activity, higher capital expenditures and research & development, employee compensation, and corporate social responsibility-related expenditures.

V. Corporate Response to Changes in Tax Code

A. Data

We use the Prowess Database provided by the Center for Monitoring the Indian Economy to collect data for 2014 to 2021 for companies listed on the Bombay Stock Exchange (BSE) and National Stock Exchange (NSE). The full sample of firm-year observations is 36,230, with 5,745 unique companies. We note that 476 unique companies bought back shares for 735 firm-year observations. Our firm-year observations fluctuate based on the data availability of independent and control variables. All financial variables are winsorized at 1% and 99% to limit the influence of outliers in our sample. We discuss the variable definitions in Appendix 1.

B. Summary Statistics

Table 6 presents the summary statistics. Panel A provides the summary statistics for the entire sample. Panel B and panel C split the sample into buyback companies and non-buyback companies. On average, companies spend approximately 2.49 million Rupees on share buybacks and pay an average of 145.65 million Rupees in dividends. Total assets is 21468.89 million Rupees, and profit before interest, tax, and depreciation is 2298.04 million Rupees. Companies in

our sample spent 319.27 million Rupees on capital expenditure and 17.4 million Rupees on research and development expenses. On average, companies in our sample paid 677.63 million Rupees as employee compensation and employed 1721.13 people. Compensation to total assets was 6.8%, compensation increased by 7.8% yearly, and hiring inched up 0.9% yearly.

[Insert Table 6 here]

Panel B and C of Table 6 show summary statistics for companies that bought back shares and those that did not. Buyback companies spent 122.74 million Rupees on share buybacks, which amounts to approximately 2% of their total assets. Buyback companies paid 1.3% (670.2 million Rupees) of their total assets as dividends, whereas non-repurchasing companies paid an amount of 0.4% (134.78 million Rupees) of their payouts as dividends. The average total assets of buyback companies were 69400.7 million Rupees, whereas non-buyback companies' total assets were 20476.36 million Rupees, respectively. Share buyback companies are significantly larger than non-buyback companies. In untabulated results, we also observe that share buyback companies are considerably more profitable than non-buyback companies. Share buyback companies (non-buyback companies) PBDITA of 8585 million Rupees (PBDITA of 2167 million Rupees), and PAT of 2478 million Rupees (PAT of 422 million). Cash holdings of share buyback companies are significantly higher than that of non-buyback companies, with 2173 million Rupees and 536 million Rupees, respectively. Buyback companies spent 1152 million Rupees on capital expenditure, whereas non-buyback companies spent 302 million Rupees on capital expenditure. We also observe that buyback companies spent significantly higher on research and development than non-buyback companies (74 million and 16 million Rupees, respectively).

Buyback companies compensated their employees better than non-buyback companies, as evidenced by the 2542 million Rupees versus 639 million Rupees. Compensation to total assets of

buyback companies is 9.1%, whereas for non-buyback companies is 6.8%. Yearly compensation changes and hiring change for buyback companies are 9% and 6%, whereas, for non-buyback companies, it is 7.8% and 0.7%, respectively. On average, buyback companies spent higher amounts on CSR activities than non-buyback companies (45.7 million Rupees and 10 million Rupees, respectively). Buyback companies spent an average of 0.1% of their total assets for CSR, whereas non-buyback companies spent 0.03% of their total assets for CSR. The mandatory CSR spending ratio for buyback companies (1.024 times) was higher than for non-buyback companies (0.917). T-tests indicate that all the variables described above differ (between buyback and non-buyback companies) at the 1% significance level.

C.   Testing Government Propositions

1. Reduction in Share buybacks

The government introduced the new taxation scheme on share buyback and eliminated DDT to dissuade companies from share buybacks. Thus, we formally state the government's proposition as follows –

GP1: Share buyback taxes will dissuade companies from share buybacks.

Our methodology incorporates appropriate regression models, which help us extract efficient results for the government proposition mentioned in the study. We use panel logit regressions and an OLS regression to test *GP1*.

$$SHARE\ BUYBACK_{i,t} = \beta 1 POSTDUMMY + \beta 2 CONTROLS_{i,t} + \epsilon_{i,t} \tag{13}$$

SHARE BUYBACK in equation (13) is measured using two proxies – SRDUMMY takes value 1 for the year a company brought back shares. SRAMTTA is the amount spent on share buybacks scaled by total assets. We employ logit regressions when dependent variable is SRDUMMY, and we use panel regressions with fixed effects when SRAMTTA is the dependent variable. POSTDUMMY takes value 1 for years 2020 and 2021. Based on extant literature, we employ various control variables like CASHFLOW, CASH, MKBK, SIZE, LEVERAGE, RETURN, and DIVIDENDS.

Table 7 presents the results of regression estimates for government proposition *GP1*. We observe that the coefficient of POSTDUMMY is positive and significant in both models. The POSTDUMMY coefficients show that the government's changes to the tax policy failed to curtail share buybacks. CASHFLOW is positively and significantly associated with share buybacks in model 1. Large companies are positively and significantly associated with share buybacks. LEVERAGE is negative and significant, which implies that higher leverage reduces the probability of share buybacks. We also see that share buybacks are positively and significantly associated with higher dividend payouts in model 1. Our results don't support *GP1*, and we can claim that the government intervention by introducing share buyback tax has failed to reduce share buybacks.

[Insert Table 7 here]

2. Higher Corporate investments

By introducing taxes on share buybacks, the government expected to dissuade companies from share buybacks and use the surplus cash to reinvest. Thus, we formally state the government's proposition:

GP2: Share buyback taxes induce companies to increase their investments.

We employ Difference-in-Difference (D-in-D) regressions to test *GP2* and use the following equation.

$$INVESTMENTS_{i,t} = \beta 0 + \beta 1\ SHARE\ BUYBACK + \beta 2\ SHARE\ BUYBACK \times POSTDUMMY + \beta 3\ POSTDUMMY \\ + \beta 4\ CONTROLS + \delta_i + \gamma_i + \epsilon_{i,t}$$

(14)

We measure INVESTMENTS$_{i,t}$ using three proxies – CAPEX defined as the annual capital expenditures scaled by total assets for company i in the year t, RND is the research and development expenses scaled by total assets for company i in year t and, a combined measure (CAPEX+RND) which is the sum of capital expenditure and research and development expenses scaled by total assets for company i in year t. SHARE BUYBACK variable is measured using two proxies – SRDUMMY and SRAMTTA. We include POSTDUMMY, which takes value 1 for financial years 2019-20 and 2020-21. We also include the interaction of SHARE BUYBACK variables with POSTDUMMY in different models to test *GP2*. δi is firm-fixed effects and γt is year-fixed effects. We also include the same control variables as in equation 13 – CASHFLOW, CASH, MKBK, SIZE, and LEVERAGE. Additional controls used specifically for equation 14 are ROA, which is defined as the profit before interest and taxes divided by total assets. TANGIBILITY is a measure of borrowing capacity motivated by Almeida and Campello (2007). We discuss the variable definition in Appendix 1. We also include one more control variable named K.Z. Index (Kaplan-Zingales Index), which measures financial constraints.

Our variables of interest are POSTDUMMY and interactions of SRDUMMY and SRAMTTA with the POSTDUMMY. *GP2* predicts that in the post-taxation period, ceteris paribus,

corporate investments should increase, and share buybacks should decrease. However, POSTDUMMY is negative in all models, which shows that corporate investment declined in the post-period. *GP2* also predicts that the interaction variables will be negative. Lower share buybacks should increase corporate investments. From Table 8 model 1, where CAPEX is the dependent variable, we see that the SRDUMMY X POSTDUMMY coefficient is positive (0.0073) and significant at the 5% level, which means that share repurchasing companies are investing more in capital expenditure post-government intervention. In model 3, we see that the combined investment variable positively relates to share buybacks in the post-period. We also observe from models 4 and 6 that SRAMTTA X POSTDUMMY is positive and significant (with coefficients 0.4567 and 0.4395) at the 10% leve3 and the 5% level. An increase in the share buyback amount during the post-period is positively associated with corporate investments.

Other observations from table 8 are as follows. CASHFLOW is positive and significantly associated with corporate investment. We also observe that companies with higher market to book (MKBK) ratio, SIZE and return on assets (ROA) invest more. LEVERAGE is positive and significantly associated with corporate investment. It is also evident that companies facing financial constraints invest less. TANGIBILITY is negatively associated with capital expenditure but positively associated with investing in R&D. Overall, based on the empirical results, we claim that *GP2* is not supported.

[Insert Table 8 here]

3. Increase in Employee compensation and hiring

By introducing taxes on share buybacks, the government hoped that companies would invest the excess cash in improving employee-related investments. Thus, we formally state the government's proposition as

GP3: Share buyback taxes induce companies to increase their employee compensation and hiring.

We employ D-in-D regressions to test *GP3* and use the following equation.

$EMPLOYEE\_INVESTMENTS_{i,t} = \beta0 + \beta1\ SHARE\ BUYBACK + \beta2\ SHARE\ BUYBACK \times POSTDUMMY +$
$\beta3\ POSTDUMMY + \beta4\ CONTROLS + \delta_i + \gamma_i + \epsilon_{i,t}$ (15)

EMPLOYEE_INVESTMENTS$_{i,t}$ is measured using three proxies – COMPENSATION which is total employee compensation scaled by total assets, ΔCOMPENSATION is defined as the annual change in total employee compensation and ΔHIRING is defined as the yearly change in the number of employees. Control variables used in equation (15) are SIZE, LEVERAGE, ROA, δi is firm fixed effects and γ$_t$ is year fixed effects. We present the results in Table 9. Our variables of interest are the POSTDUMMY and the interactions of SRDUMMY and SRAMTTA with the POSTDUMMY. For *GP3* to be valid, share buybacks taxes should induce a reduction in buybacks. A lower incidence and magnitude of share buybacks should be associated with higher employee compensation and hiring. Hence, we expect a negative sign for the interactions. Models 2 and 5 show that share repurchasing companies reduced compensation and hiring during the post-period. POSTDUMMY coefficients are -0.2608 and -0.2606 when ΔCOMPENSATION is the dependent variable. SRDUMMY X POSTDUMMY coefficients are positive in models 1,3,4 and 6, suggesting that share buybacks are associated with higher compensation and recruitment during the post-period. Standard controls used in all the models. Large companies are associated with

lower compensation but raise compensation and recruit more employees. High profitability results in higher compensation and higher recruitment. Thus, the results do not support *GP3*.

[Insert Table 9 here]

4. Higher CSR spending

By increasing taxes, the government hoped companies would divert cash savings to CSR-related investments. Thus, we formally state the government's proposition as

GP4: Share buyback taxes induce companies to increase their CSR spending.

We use the following regression equation to test *GP4*.

$$CSR_{i,t} = \beta 0 + \beta 1\ SHARE\ BUYBACK\ + \beta 2\ SHARE\ BUYBACK \times POSTDUMMY + \beta 3\ POSTDUMMY + \beta 4\ CONTROLS + \delta_i + \gamma_i + \epsilon_{i,t} \tag{16}$$

The dependent variable $CSR_{i,t}$ is measured using proxies - CSR expenses to total assets (CSRTA). Control variables are SIZE, LEVERAGE, and ROA. δi is firm fixed effects and γ_t is year fixed effects. All variables are measured annually and the results are presented in table 10. Our variables of interest are POSTDUMMY and the interactions of SRDUMMY and SRAMTTA with the POSTDUMMY. As in *GP3*, we expect a negative sign for the interactions. From table 10, models 1 and 3, we see that the coefficient of our variable of interest, SRDUMMY X POSTDUMMY is positive and significant (0.0172 and 1.0017) at the 1% level. From table 10, we also observe that overall CSR levels have increased in the post-period. Large firms invest more in CSR and LEVERAGE is negatively associated with CSR levels, which means that higher leverage leads to lower CSR. The government hoped that a decrease in share buybacks would increase CSR. Thus, we see that *GP4* is not supported.

[Insert Table 10 here]

D. Robustness Checks

We asserted that promoters are likely to be taxed at the highest income tax rates (30%). Thus, despite the newly imposed taxes, promoters will likely favor share buybacks (taxed at 23.3%) over dividend payouts. We tested this assertion and present the results in table 11. PROMOPERC is the percentage ownership of the promoters. PROMOPERC X POSTDUMMY is the interaction variable intended to capture the behavior of promoters during the post-period. Results for the POSTDUMMY variable are consistent with our expectations. During the post-period, share buybacks are higher, and dividends are lower. For the entire sample period, promoters like share buybacks to dividends. Although firms with high promoter ownership pay dividends, the amount is not statistically significant. The interaction results need careful explanation. Models 1, and 3 suggest that firms with high promoter ownership reduced the number of incidences of share buybacks and dividends. The interaction is insignificant regarding the share buyback or dividend amounts. These results suggest that firms with higher promoter ownership could have behaved cautiously during the post-period because this period also overlapped with the COVID-19 crisis period.

[Insert table 11 here]

One of the drawbacks of our testing is that share buybacks are fundamentally different from non-buyback firms. To alleviate such criticisms, we perform a PSM matching, re-run all the tests and present the results in table 12. The interaction variables are insignificant in most models except the hiring regression, where the interaction is positive and not negative. The PSM sample regressions bolster our earlier results and conclusively show that we cannot support any government propositions regarding share buybacks.

[Insert table 12 here]

VI.   Conclusions

We provide rigorous academic research to empirically test whether changes in taxation policies helps governments achieve their socioeconomic welfare goals. We use a recent share buybacks tax reform in India as a natural experiment to examine the welfare outcomes of tax on buybacks. The government introduced a new taxation scheme on share buybacks, assuming that share buybacks were popular in India and that share buybacks were responsible for the declining corporate reinvestments. Both assumptions were unfounded. Further, the government hoped that by plugging the tax loophole, higher taxes would induce companies to reduce buybacks, Promoters, more powerful than the minority shareholders and taxed at the maximum income tax level of 30%, still found that the new share buyback taxes were lower, and did not lobby the companies to reduce buybacks. The government hoped to recoup lost DDT revenue via higher corporate tax remittances, which did not materialize. Persuading companies to increase the corporate reinvestment rates, which were currently at 90%, cannot dramatically increase corporate revenues enough to recover the loss in DDT revenue. The government claimed that the new tax policy would help plug the disparity between dividend and share buyback taxes by inducing corporations to improve socioeconomic welfare via higher corporate spending on capital expenditures, recruitment, employee wages, and CSR. We test these claims by the government in a difference-in-difference framework during the pre-and post-2019 period. The empirical results do not show any evidence to support the government's claims. The results imply that the government acted haphazardly without sufficient research to support such a significant change in the tax code. Our analysis also shows that the government did not achieve any socioeconomic welfare spending by corporations. The study findings provide valuable insights to policymakers in

formulating new policies. Our study exhorts policymakers to conduct sufficient research and invite

feedback from various stakeholders before enacting major taxation overhaul.

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Table 1: Taxation Before and after Government Policy Changes*

This table indicates the changes in taxation of dividend payment and share buyback in India.

	Pre-2019 Tax Liability		Post-2019 Tax Liability	
	Company	Investor	Company	Investor
Share buyback	No tax liability	Capital gain tax	Tax at 23.3%	No tax liability
Dividends	DDT at 20.56%	No tax liability	No tax liability	Personal income tax rates

Table 2: Payout patterns

This table provides the payout patterns in India. Panel A shows the spending on share buybacks and the amount of dividends distributed by Indian companies over a period of 22 years. Panel B shows the percentage of companies that engaged in share buybacks and dividend payments as a percentage of the approximately 5000 actively traded BSE companies.

Panel A: Payouts in Rupees (in millions)				Panel B: Number of Companies distributing Payouts				
Year	Share Buyback	Dividends	Share Buybacks to Total Payout	Year	Share Buyback	Dividends	% Share Buybacks	% Dividends
1999	723.00	110,012.00	1%	1999	14	1,418	0.28%	28.36%
2000	4,149.00	138,002.70	3%	2000	15	1,277	0.30%	25.54%
2001	17,044.20	128,460.10	12%	2001	21	1,203	0.42%	24.06%
2002	3,150.00	204,461.00	2%	2002	23	1,151	0.46%	23.02%
2003	2,683.20	243,555.20	1%	2003	21	1,112	0.42%	22.24%
2004	9,501.80	285,130.80	3%	2004	17	1,265	0.34%	25.30%
2005	37,215.60	364,061.50	9%	2005	81	1,405	1.62%	28.10%
2006	24,064.40	454,092.80	5%	2006	146	1,524	2.92%	30.48%
2007	39,391.00	605,073.60	6%	2007	151	1,640	3.02%	32.80%
2008	73,304.50	528,491.80	12%	2008	166	1,634	3.32%	32.68%
2009	37,107.70	651,715.50	5%	2009	189	1,675	3.78%	33.50%
2010	46,804.10	711,623.10	6%	2010	178	1,592	3.56%	31.84%
2011	65,240.70	924,689.90	7%	2011	150	1,671	3.00%	33.42%
2012	139,179.90	1,066,902.00	12%	2012	140	1,687	2.80%	33.74%
2013	57,348.10	1,164,793.00	5%	2013	113	1,587	2.26%	31.74%
2014	70,270.40	1,524,821.00	4%	2014	116	1,556	2.32%	31.12%
2015	51,490.20	1,646,024.00	3%	2015	92	1,526	1.84%	30.52%
2016	117,632.20	1,777,769.00	6%	2016	75	1,513	1.50%	30.26%
2017	366,621.40	1,774,976.00	17%	2017	104	1,302	2.08%	26.04%
2018	577,932.10	1,993,369.00	22%	2018	119	1,462	2.38%	29.24%
2019	480,572.60	2,057,212.00	19%	2019	120	1,471	2.40%	29.42%
2020	324,948.80	2,367,647.00	12%	2020	114	1,468	2.28%	29.36%
2021	442,850.70	2,019,801.00	18%	2021	111	1,022	2.22%	20.44%

Table 3: Tax Rates and Income levels

Panel A presents tax rates per income levels. Panel B provides the distribution of frequency and percentage of tax payers from 2017 through 2021

Panel A: Tax Rates in 2019	
Income (in Rupees)	Tax rate
0 – 250,000	Nil
250,000 – 500,000	5%
500,000 – 1000,000	20%
>1000,000	30%

Panel B Distribution of Taxpayers

		Number of Taxpayers			
Income Levels (in Rupees)	Tax rate	2020-21	2019-20	2018-19	2017-18
0 –250,000	0%	10013000	10052290	9919406	7690297
250,000 – 500,000	5%	28272000	28176260	27803793	25445864
500,000 – 1,000,000	20%	15314000	15261440	15059696	11876287
>1,000,000	30%	5890000	6010010	5930563	4855932
Total		58900000	59500000	58713458	49868380
		Percentage of Taxpayers			
Income Levels (in Rupees)	Tax rate	2020-21	2019-20	2018-19	2017-18
0 –250,000	0%	17%	16.89%	16.89%	15.42%
250,000 – 500,000	5%	48%	47.36%	47.36%	51.03%
500,000 – 1,000,000	20%	26%	25.65%	25.65%	23.82%
>1,000,000	30%	10%	10.10%	10.10%	9.74%

Table 4 – The tax revenue collections by the government of India

This table presents tax revenue (in Rupees) collected by Government of India under various categories. It also presents various sub-components of corporate tax collections.

Tax Revenue	Actuals	Actuals	Actuals	Actuals	Actuals	Revised estimates	Budget estimates
	2015-2016	**2016-2017**	**2017-2018**	**2018-2019**	**2019-2020**	**2020-2021**	**2021-2022**
Corporation tax	453228.33	484923.86	571201.87	663571.62	556875.55	446000	547000
Taxes on Income	287637.12	364604.38	430772.03	473002.86	492653.71	459000	561000
Wealth tax	1079.26	185.14	63.43	40.86	19.81		
Customs	210338	225370.34	129029.92	117812.85	109282.54	112000	136000
Union Excise Duties	288072.89	382094.41	259431.28	231981.9	240614.52	361000	335000
Service tax	211414.25	254498.74	81228.07	6903.62	6029.11	1400	1000
GST			442561.43	581559.3	598748.9	515100	630000
Taxes of Union Territories	3878.26	4145.53	4720.68	5592.42	5835.19	5779.83	7059.27
Gross Tax Revenue	**1455648.11**	**1715822.4**	**1919008.71**	**2080465.43**	**2010059.33**	**1900279.83**	**2217059.27**
Corporate Tax							
Collections	422770.27	404746.05	486113.18	580045.1	462842.68	385961.53	473365.39
Surcharge	17754.06	20109.75	21439.48	58004.54	19054.14	42884.62	52596.15
Education /Health & Education cess	12704	13998.55	16305.02	25521.98	20888	17153.85	21038.46
Penalties		199.98	1526.86		139.17		
Interest recoveries		2281.51	3209.3		1955.43		
Tax on distributed profits of domestic companies		41417.86	41180.67		50399.38		
Tax on distributed income to Unit Holders		1993	879.45		1201.71		
Miscellaneous Receipts		177.16	547.91		395.04		
Total Corporate Tax	**453228.33**	**484923.86**	**571201.87**	**663571.62**	**556875.55**	**446000**	**547000**
Dividend distribution tax payable	39202.27	41443.08	40369.2	45947.99			
Tax on buyback of shares				1015.23			
				46963.22			

Source: Receipt Budget document, Budget division, Ministry of Finance, Government of India

Table 5 – Plowback Ratio

This table presents descriptive statistics of plowback ratio of Indian companies for the period 2015 to 2021

			Plowback Ratio			
Year	Mean	Median	p25	p75	Std. Dev	N
2015	90.39%	100.00%	86.02%	100.00%	17.86%	3590
2016	89.42%	100.00%	86.01%	100.00%	19.73%	3582
2017	93.08%	100.00%	94.52%	100.00%	15.25%	3662
2018	91.76%	100.00%	89.30%	100.00%	15.95%	3638
2019	91.25%	100.00%	89.22%	100.00%	16.86%	3516
2020	88.99%	100.00%	84.62%	100.00%	19.76%	3081
2021	94.32%	100.00%	97.82%	100.00%	14.07%	3148
Total	91.32%	100.00%	89.87%	100.00%	17.26%	24217

Table 6: Descriptive Statistics

This table presents summary statistics of the main variables. Panel A provides the summary statistics for all firm-years and Panel B (Panel C) replicates the same data for buyback companies (non-buyback companies).

Panel A: Descriptive statistics for all firm-year observations

	Mean	Median	p25	p75	SD	N
Test Variables						
SR AMOUNT (INR millions)	2.087	0	0.000	0	17.355	36975
DIVIDENDS (INR millions)	145.017	0	0.000	.7	714.195	36975
CAPEX (INR millions)	315.606	2.8	0.000	69.3	1224.348	36975
RND (INR millions)	16.507	0	0.000	0	88.406	36975
COMPENSATION (INR millions)	656.661	25.5	1.900	241.6	2334.323	36975
Δ COMPENSATION (%)	5.0	5.7	-6.8	18.2	42.2	34003
Δ HIRING (%)	0.4	0	-8.2	8.9	35.6	19115
CSR (INR millions)	9.958	0	0.000	.9	40.713	36975
Control variables						
TA (INR millions)	21041.834	691.8	144.400	4571.6	96767.385	36975
CASH (INR millions)	569.502	6.7	0.700	55.9	3170.09	36975
RETURN (%)	24.4	0	-30.8	48.1	94.8	25488
LEVERAGE (%)	67.6	48.9	21.1	73.6	107	36975
ROA (%)	7.5	6.7	1.1	12.9	11.5	36975
CASHFLOW (%)	2.2	1.7	-1.7	8.9	14.6	36975
MKBK	2.129	.834	0.273	2.155	4.734	32906
TANGIBILITY	.318	.359	0.149	.48	.191	33303
KZ	2.029	1.631	0.643	2.54	2.756	26867
PROMOTER (%)	50.88	55.04	37.84	69.03	21.48	30052

Panel B: Descriptive statistics for firm-year observations of share buyback companies

	Mean	Median	p25	p75	SD	N
Test Variables						
SR AMOUNT (INR millions)	102.609	160.1	25.000	160.1	67.089	752
DIVIDENDS (INR millions)	**657.963**	**4.5**	0.000	302.85	1529.544	752
CAPEX (INR millions)	**1139.496**	**149.85**	8.700	681.35	2461.57	752
RND (INR millions)	**71.824**	**0**	0.000	11.45	187.085	752
COMPENSATION (INR millions)	**2457.348**	**500.2**	67.800	2229.6	4656.579	752
Δ COMPENSATION (%)	7.7	7.7	-1.9	15.7	31.7	732
Δ HIRING (%)	**5.8**	**0.4**	-6.1	10.9	34.1	528
CSR (INR millions)	**40.747**	**4**	0.000	36.55	80.73	752
Control variables						
TA (INR millions)	**67830.283**	**9183.45**	1799.700	37860.55	166535.9	752
CASH (INR millions)	**1627.179**	**94.25**	16.150	590.35	5148.93	752
RETURN (%)	**37.6**	**9.5**	-27	64.6	108.2	593
LEVERAGE (%)	**44.8**	**40**	21.7	61.3	33.6	752
ROA (%)	13.6	12.6	6.5	18.5	11.2	752
CASHFLOW (%)	**6.9**	7	1.3	12.9	13	752
MKBK	2.662	**1.503**	0.724	3.434	3.73	681
TANGIBILITY	.28	**.289**	0.136	.435	.173	731
KZ	**1.131**	1.247	0.313	2.048	1.689	619
PROMOTER (%)	57.2	60.77	47.1	72.05	18.11	637

Numbers in bold denote T-test and Median test difference between share buyback companies and non-buyback companies at 1% level of significance.

Panel C: Descriptive statistics for all firm-year observations of non-share buyback companies

	Mean	Median	p25	p75	SD	N
Test variables						
DIVIDENDS (INR millions)	134.368	0	0.000	.3	683.069	36223
CAPEX (INR millions)	298.502	2.5	0.000	63.2	1179.04	36223
RND (INR millions)	15.359	0	0.000	0	84.779	36223
COMPENSATION (INR millions)	619.278	24.1	1.900	225.9	2245.864	36223
Δ COMPENSATION (%)	4.9	5.7	-6.9	18.3	42.4	33271
Δ HIRING (%)	0.3	0	-8.3	8.9	35.6	18587
CSR (INR millions)	9.319	0	0.000	.7	39.201	36223
Control variables						
TA (INR millions)	20070.492	663.2	140.700	4223.8	94535.27	36223
CASH (INR millions)	547.544	6.4	0.700	52.2	3112.03	36223
RETURN (%)	24.1	0	-30.9	47.8	94.4	24895
LEVERAGE (%)	68.1	49.1	21	73.9	107.9	36223
ROA (%)	7.3	6.6	1	12.8	11.5	36223
CASHFLOW (%)	2.1	1.6	-1.8	8.8	14.6	36223
MKBK	2.118	.821	0.266	2.132	4.753	32225
TANGIBILITY	.319	.361	0.150	.481	.191	32572
KZ	2.05	1.64	0.652	2.551	2.772	26248
PROMOTER (%)	50.74	54.95	37.6	68.93	21.53	29415

Table 7: Share buyback and Government intervention

This table presents the results of logistic regression (Model 1) and OLS regression (Model 2) for all the firms with share buyback dummy and share buyback amount as dependent variables and post dummy as independent variable along with various Standard control variables included are, CASHFLOW; operating cashflow scaled to TA, CASH; cash and bank scaled to TA, MKBK is market to book ratio, SIZE is natural log of TA, LEVERAGE is TA minus Book Value of equity to TA, RETURN is the value weighted, market adjusted stock return for the previous year. DIVIDENDS is the total dividends paid scaled by total assets. All continuous variables are winsorized at the 1% level. ***, **, and * indicate statistical significance at the 1%, 5% and 10% level respectively. CASHFLOW, CASH, DIVIDENDS are scaled by total assets.

VARIABLES	(1) SRDUMMY	(2) SRAMOUNT
POSTDUMMY	0.3769**	0.0002***
	(2.2035)	(2.9758)
CASHFLOW	1.4243***	0.0001
	(2.6014)	(0.6778)
CASH	0.7265	-0.0001
	(1.1100)	(-0.1378)
MKBK	-0.0600***	-0.0000
	(-2.6434)	(-0.3526)
SIZE	0.4024***	0.0001*
	(13.6048)	(1.7777)
LEVERAGE	-1.6634***	-0.0001*
	(-5.7556)	(-1.8178)
RETURN	0.1973***	0.0000
	(2.9665)	(1.0643)
DIVIDENDS	8.2489***	-0.0023
	(2.7440)	(-0.3304)
Constant	-5.7860***	-0.0005
	(-8.0056)	(-1.0979)
Observations	23,833	24,022
R-squared		0.3063

Table 8: Corporate Investments

This table presents results of D-in-D regression for corporate investments. Dependent variables are CAPEX, RND and CAPEX+RND, all scaled by Total Assets respectively. Main independent variables are SRDUMMY which takes value 1 for the firm year in which a company repurchased shares, SRAMOUNT is Share buyback amount scaled by Total Assets, and POSTDUMMY which takes value 1 for the financial years 2019-20 and 2020-2021 respectively. Standard control variables include, CASHFLOW is operating cashflow scaled to Total Assets, CASH is cash and bank scaled to Total Assets, MKBK is market to book ratio, SIZE is natural log of Total Assets, LEVERAGE is Total Assets minus Book Value of equity to Total Assets, ROA is Profit before Interest, Tax, Depreciation and Amortization (PBITDA) scaled to total assets, TANGIBILITY is a measure of borrowing capacity, KZ is Kaplan-Zingales Index score. All regressions are firm-year-industry fixed effects models. Standard errors are clustered at firm-level. Robust t-statistics in parentheses. ***, ** and * denotes significance at 1%, 5% and 10% respectively.

VARIABLES	(1) CAPEX	(2) RND	(3) CAPEX+RND	(4) CAPEX	(5) RND	(6) CAPEX+RND
SRDUMMY	-0.0013	-0.0096	-0.0012			
	(-0.6897)	(-0.9157)	(-0.6511)			
SRDUMMY X POSTDUMMY	0.0073**	-0.0015	0.0069**			
	(2.2754)	(-0.0833)	(2.0778)			
SRAMOUNT				-0.0986	-0.8498	-0.0986
				(-1.1561)	(-1.4538)	(-1.1281)
SRAMOUNT X POSTDUMMY				0.4567***	0.2890	0.4395**
				(2.6483)	(0.3412)	(2.4922)
POSTDUMMY	-0.0141***	-0.0078*	-0.0143***	-0.0141***	-0.0079*	-0.0143***
	(-15.4090)	(-1.6750)	(-15.3641)	(-15.4458)	(-1.6899)	(-15.4067)
CASHFLOW	0.0235***	0.0102	0.0239***	0.0235***	0.0104	0.0239***
	(8.0012)	(1.3802)	(7.9883)	(8.0078)	(1.4036)	(7.9950)
CASH	-0.0103*	-0.0317	-0.0099*	-0.0102*	-0.0320	-0.0099*
	(-1.9135)	(-1.3031)	(-1.8266)	(-1.9072)	(-1.3147)	(-1.8207)
MKBK	0.0008***	0.0020	0.0008***	0.0008***	0.0020	0.0008***
	(4.1365)	(1.5204)	(4.1889)	(4.1328)	(1.5064)	(4.1853)
SIZE	0.0047***	-0.0076	0.0045***	0.0047***	-0.0077	0.0045***
	(4.7842)	(-1.4699)	(4.5151)	(4.7864)	(-1.4752)	(4.5167)
LEVERAGE	0.0056***	0.0029	0.0055***	0.0056***	0.0028	0.0055***
	(4.0801)	(0.2851)	(4.0031)	(4.0775)	(0.2761)	(4.0008)
ROA	0.0122***	-0.0063	0.0123***	0.0122***	-0.0057	0.0123***
	(2.6977)	(-0.3011)	(2.6649)	(2.6990)	(-0.2731)	(2.6668)
TANGIBILITY	-0.0104**	0.0850***	-0.0095*	-0.0104**	0.0849***	-0.0096*
	(-2.0171)	(5.1525)	(-1.8183)	(-2.0246)	(5.1522)	(-1.8258)

KZ	-0.0017***	-0.0048	-0.0017***	-0.0017***	-0.0048	-0.0017***
	(-3.5257)	(-1.5016)	(-3.5052)	(-3.5233)	(-1.4871)	(-3.5028)
Constant	-0.0050	0.1570***	-0.0023	-0.0050	0.1573***	-0.0023
	(-0.6793)	(3.9352)	(-0.3050)	(-0.6798)	(3.9402)	(-0.3048)
Observations	24,573	24,573	24,573	24,573	24,573	24,573
R-squared	0.0294	0.0044	0.0296	0.0295	0.0045	0.0297

Table 9: Employee Investments

This table presents results of D-in-D regression for Employee Investments which measured using Compensation and hiring levels. Dependent variables are Compensation to Total assets, Compensation change (Δ Compensation) from previous year and Hiring change (Δ Hiring) which is the change in number of employees from the previous year. Main independent variables are SRDUMMY which takes value 1 for the firm year in which a company repurchased shares, SRAMOUNT which is Share buyback amount scaled by Total Assets, and POSTDUMMY which takes value 1 for the financial years 2019-20 and 2020-2021. Standard controls are SIZE is the natural log of Total Assets, LEVERAGE is Total Assets minus Book Value of Equity scaled by Total Assets and ROA is Profit before Interest, Tax, Depreciation and Amortization (PBITDA) scaled to total assets. All regressions are firm-year-industry fixed effects models. Standard errors are clustered at firm-level. Robust t-statistics in parentheses. ***, ** and * denotes significance at 1%, 5% and 10% respectively.

VARIABLES	(1) Compensation	(2) Δ Compensation	(3) Δ Hiring	(4) Compensation	(5) Δ Compensation	(6) Δ Hiring
SRDUMMY	-0.0008	0.0105	-0.0037			
	(-0.5409)	(0.6430)	(-0.1900)			
SRDUMMY X POSTDUMMY	0.0062**	0.0328	0.1042***			
	(2.3574)	(1.2302)	(2.9406)			
SRAMOUNT				-0.0174	0.1970	-1.0067
				(-0.2164)	(0.2417)	(-1.1094)
SRAMOUNT X POSTDUMMY				0.2050*	1.3389	5.0690***
				(1.6512)	(1.0845)	(3.0739)
POSTDUMMY	-0.0002	-0.2608***	-0.0128	-0.0002	-0.2606***	-0.0116
	(-0.2304)	(-27.6174)	(-0.9265)	(-0.1738)	(-27.6224)	(-0.8470)
SIZE	-0.0177***	0.0599***	0.0447***	-0.0177***	0.0600***	0.0447***
	(-10.9400)	(6.3100)	(3.7336)	(-10.9290)	(6.3171)	(3.7371)
LEVERAGE	0.0096***	-0.0065	0.0137	0.0096***	-0.0065	0.0136
	(5.4927)	(-0.7229)	(0.9268)	(5.4907)	(-0.7266)	(0.9207)
ROA	0.0066	0.3035***	0.3051***	0.0065	0.3037***	0.3062***
	(0.9205)	(7.4888)	(6.3019)	(0.9195)	(7.4924)	(6.3242)
Constant	0.1768***	-0.3062***	-0.4320***	0.1767***	-0.3066***	-0.4325***
	(16.0890)	(-4.6364)	(-4.5956)	(16.0754)	(-4.6411)	(-4.6010)
Observations	36,975	34,003	19,115	36,975	34,003	19,115
R-squared	0.0720	0.0468	0.0189	0.0720	0.0468	0.0187

Table 10: CSR Investments

This table presents results of D-in-D regression for CSR Investments. Dependent variables are CSRTA which is CSR amount spent scaled by Total Assets. Test variables are SRDUMMY which takes value 1 for the firm year in which a company repurchased shares, SRAMOUNT is Share buyback amount scaled by Total Assets, POSTDUMMY which takes value 1 for the Financial years 2019-20 and 2020-2021. Standard controls are, SIZE is the natural log of total assets, LEVERAGE is Total Assets minus Book Value of Equity scaled by Total Assets, and ROA is Profit before Interest, Tax, Depreciation and Amortization (PBITDA) scaled to Total Assets. All regressions are firm-year-industry fixed effects models. Standard errors are clustered at firm-level. Robust t-statistics in parentheses. ***, ** and * denotes significance at 1%, 5% and 10% respectively.

VARIABLES	(1) CSRTA	(2) CSRTA
SRDUMMY	-0.0010	
	(-0.3347)	
SRDUMMY X POSTDUMMY	0.0172***	
	(2.7633)	
SRAMOUNT		-0.0004
		(-0.2648)
SRAMOUNT X POSTDUMMY		1.0017***
		(2.9662)
POSTDUMMY	0.0276***	0.0276***
	(24.2078)	(24.2240)
SIZE	0.0043***	0.0043***
	(5.5167)	(5.5467)
LEVERAGE	-0.0048***	-0.0048***
	(-7.4029)	(-7.4020)
ROA	0.0058*	0.0057
	(1.6667)	(1.6388)
Constant	-0.0071	-0.0072
	(-1.3055)	(-1.3283)
Observations	36,975	36,975
R-squared	0.0523	0.0527

Table 11: Promoter ownership, Share buyback and Government intervention

This table presents results of logistic regression (Model 1 and 3) and OLS regression (Model 2 and4) for all the firms with share buyback dummy (SRDUMMY), dividend dummy (DIVDUM), share buyback amount (SRAMOUNT) and dividend paid amount (DIVIDENDS) as dependent variables. Test variables are POSTDUMMY which takes the value 1 for financial years 2019-20 and 2020-21, promoter ownership percentage (PROMOPERC) and promoter ownership percentage interaction with post dummy. Standard control variables included are, CASHFLOW is operating cashflow scaled to Total Assets, CASH is cash and bank scaled to Total Assets, MKBK is market to book ratio, SIZE is natural log of Total Assets, LEVERAGE is Total Assets minus Book Value of equity to Total Assets, RETURN is the stock return for the previous year. DIVIDENDS is the amount of total dividends paid scaled by total assets. All control variables are lagged. Models 1 and 3 are year-industry fixed effects models and Models 2 and 4 are firm-year-industry fixed effects models. Standard errors are clustered at firm-level. Robust t-statistics in parentheses. ***, ** and * indicate statistical significance at the 1%, 5% and 10% level respectively.

VARIABLES	(1) SRDUMMY	(2) SRAMOUNT	(3) DIVDUM	(4) DIVIDENDS
POSTDUMMY	0.8483***	0.0003***	-0.6525***	-0.0019***
	(2.6247)	(2.5953)	(-5.5682)	(-4.8436)
PROMOPERC	1.1400***	0.0008*	1.9043***	0.0019
	(2.9689)	(1.7593)	(9.5881)	(1.2170)
PROMOPERC X POSTDUMMY	-0.8518*	-0.0001	-0.6182***	-0.0005
	(-1.7618)	(-0.5348)	(-3.2683)	(-0.6935)
CASHFLOW	1.4242***	0.0001	2.4429***	0.0017***
	(2.5884)	(0.7223)	(11.1524)	(3.3732)
CASH	0.6609	-0.0001	1.7100***	0.0029
	(1.0132)	(-0.2359)	(4.4145)	(1.4296)
MKBK	-0.0617***	-0.0000	0.0438***	0.0001***
	(-2.6384)	(-0.4572)	(6.1531)	(4.0596)
SIZE	0.4015***	0.0001*	0.6450***	-0.0009***
	(13.2998)	(1.7196)	(31.4711)	(-2.9097)
LEVERAGE	-1.7424***	-0.0001*	-2.3608***	-0.0003**
	(-5.9491)	(-1.7532)	(-17.1555)	(-2.5531)
RETURN	0.1786***	0.0000	0.2134***	0.0006***
	(2.5798)	(0.9350)	(9.4222)	(6.2066)
DIVIDENDS	7.7880***	-0.0026		
	(2.5815)	(-0.3745)		
Constant	-6.3340***	-0.0009*	-5.5745***	0.0114***
	(-7.9187)	(-1.7728)	(-6.1789)	(4.7348)
Observations	23,507	23,694	23,675	23,694
R-squared		0.3071		0.7548

Table 12: Propensity Score Matched Regressions

This table presents results of propensity score matched regression for the firms matched with share buyback firms. Test variables are SRDUMMY which takes the value 1 for the firm-years with a share repurchase, POSTDUMMY which takes the value 1 for financial years 2019-20 and 2020-21, and an interaction between SRDUMMY and POSTDUMMY. Standard control variables included are, CASHFLOW is operating cashflow scaled to Total Assets, CASH is cash and bank scaled to Total Assets, MKBK is market to book ratio, SIZE is natural log of Total Assets, LEVERAGE is Total Assets minus Book Value of equity to Total Assets, ROA is Profit before Interest, Tax, Depreciation and Amortization (PBITDA) scaled to total assets, TANGIBILITY is a measure of borrowing capacity, KZ is Kaplan-Zingales Score. Standard errors are clustered at firm-level. Robust t-statistics in parentheses. ***, ** and * indicate statistical significance at the 1%, 5% and 10% level respectively.

VARIABLES	(1) CAPEX	(2) RND	(3) CAPEX + RND	(4) COMPENSATION	(5) Δ COMPENSATION	(6) Δ HIRING	(7) CSRTA
SRDUMMY	0.0027	-0.0002	0.0032	0.0115	0.0021	-0.0323	0.0094
	(1.0662)	(-0.0044)	(1.2001)	(1.5514)	(0.1131)	(-1.2507)	(1.5051)
POSTDUMMY	-0.0037	0.0322	-0.0033	-0.0013	-0.1359***	-0.0060	0.0191**
	(-1.4320)	(0.5823)	(-1.1999)	(-0.1776)	(-6.0581)	(-0.1565)	(2.5203)
SRDUMMY X POSTDUMMY	0.0050	-0.0022	0.0044	0.0052	0.0417	0.0915*	0.0110
	(1.2078)	(-0.0312)	(1.0131)	(0.4602)	(1.2701)	(1.8144)	(0.9750)
SIZE	0.0009	0.0506***	0.0015**	-0.0022	0.0002	-0.0026	0.0106***
	(1.4365)	(4.4456)	(2.3038)	(-1.1285)	(0.0557)	(-0.5463)	(7.4007)
LEVERAGE	-0.0119**	-0.1648	-0.0144***	-0.0051	-0.0633	0.0172	-0.0387***
	(-2.2714)	(-1.5750)	(-2.6512)	(-0.6553)	(-1.4983)	(0.5915)	(-3.1295)
ROA	0.0529***	0.1326	0.0540***	0.3625***	0.3710***	0.3413***	0.4547***
	(3.7565)	(0.8391)	(3.8510)	(6.8859)	(4.3348)	(2.8477)	(11.6506)
CASHFLOW	0.0394***	-0.0764	0.0382***				
	(3.7585)	(-0.5823)	(3.5407)				
CASH	-0.0115	-0.2924	-0.0157				

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	(-0.8093)	(-1.2571)	(-1.0494)				
MKBK	0.0001	0.0314***	0.0004				
	(0.2083)	(4.1589)	(1.0159)				
TANGIBILITY	0.0559***	0.6363***	0.0647***				
	(8.9824)	(5.3469)	(9.6639)				
KZ	0.0030***	-0.0291	0.0026**				
	(2.7043)	(-1.4237)	(2.3996)				
Constant	-0.0040	-0.3840***	-0.0088	0.0525***	0.0806*	0.0280	-0.0562***
	(-0.7086)	(-3.8158)	(-1.4588)	(2.9046)	(1.9083)	(0.5320)	(-4.9501)
Observations	1,234	1,234	1,234	1,488	1,464	1,056	1,488
R-squared	0.1415	0.1017	0.1577	0.1392	0.0624	0.0168	0.3264

Appendix 1: Variable Definitions

Variable	Description
SR_DUMMY	A dummy variable which takes value 1 for the firm-year with a share buyback.
SRAMTTA	Share buyback amount scaled by total assets
POST_DUMMY	A dummy which takes value 1 for the years 2019 and 2020 (post tax changes)
CASHFLOW	Operating cashflow
DIVIDENDS	Total Dividends Paid
CASH	Cash and equivalents
ROA	Profit before interest depreciation, and amortization scaled by Total Assets
MKBK	Market to Book ratio (Market capitalization/Book value of equity)
SIZE	Natural log of total assets
LEVERAGE	Total assets minus Book Value of equity scaled by TA
RETURN	Value weighted, market adjusted stock return for the previous year.
TANGIBILITY	A measure of borrowing capacity*
KZ	Kaplan-Zingales Index of financial constraint
CSR	CSR expenditures
CSRSR	CSR Spending ratio; CSR scaled by mandated CSR as per law
CAPEX	Capital expenditures scaled by total assets
RND	Research and development expenses scaled by total assets
CAPEX+RND	Capital expenditures plus research and development expenses
Compensation	Total employee compensation expenses scaled by total assets
Δ Compensation	Yearly change in employee compensation expenses
Δ Hiring	Yearly change in number of employees

$$*\text{TANGIBILITY} = \frac{0.715*RECEIVABLES+0.547*INVENTORY+0.535*PPE}{TA-CASH}$$