

The effect of mandatory CSR on firm's risk: Evidence from India and 2% rule.

Abstract

Section 135 of the Indian Company Act 2013 requires all the firms meeting specific size or profit-based threshold to spend at least 2% of net profit on Corporate Social Responsibility (CSR). These regulatory requirements might constraint the manger discretion and the limit their capacity to engage the CSR activity strategical. This may increase the firm risk, as investors and customers may not view CSR as a value-adding activity. In this paper, we examine the impact of mandatory CSR legislation on the firm's risk. Firm risk is, in general, the combination of systematic and unsystematic risk. We have also used a difference-in-difference (DID) regression to examine the effect of mandatory CSR legislation on the association between CSR and firm risk. Findings of this paper suggest that the firm risk has significantly increased for the companies that were affected by the legislation, but the risk has reduced for the companies that were not subjected to the legislation.

Introduction

In 2013, India implemented the mandatory CSR regulation depending on the firm's profitability and size under its new Companies Act 2013 (CA2013). It required that companies whose net worth exceeds INR 5 billion, or whose annual turnover exceeds INR 10 billion, or whose profit exceeds INR 50 million in any financial year, has to spend two percent of their past three years average profits on CSR. The introduction of this new legislation has prompted many studies to examine the impact of the legislation on stock returns (Bhattacharyya & Rahman, 2020; Bird, Duppati, & Mukherjee, 2016; Dahiya & Singh, 2020; Manchiraju & Rajgopal, 2017). All the previous study has provided evidence that forcing a firm to spend on CSR is likely to be sub-optimal for the firm with a consequent negative impact on shareholder value. This forced CSR spending has been perceived negatively by investors. This has resulted in a negative relationship between CSR and stock return (Manchiraju & Rajgopal, 2017).

In this paper, we examine the impact of mandatory CSR legislation on the firm's risk. Firm's risk is defined as a risk inherent in a firm's operations as a result of external or internal factors that can affect a firm's profitability (Jo & Na, 2012). Factors such as a change in regulatory risk can cause the firm's stock price to fluctuate that can increase the firm's risk. Firm risk is, in general, the combination of systematic and unsystematic risk. Because systematic risks influence a large number of assets, they are often called market risks. On the other hand, as

unsystematic risks affect at most a small number of assets, they are sometimes called firm-specific unique risks (Ross, Ross, Westerfield, & Jordan, 2015)

The impact of CSR engagement in firm risk is examined by many studies (Godfrey, Merrill, & Hansen, 2009; Jo & Na, 2012; McGuire, Sundgren, & Schneeweis, 1988; Orlitzky & Benjamin, 2001; Salama, Anderson, & Toms, 2011), but all these studies are focused on strategic CSR approach. Moral manager utilises CSR as a means to improve information transparency, strategies, philanthropy, and to eventually reduce firm risk (Jensen & Meckling, 1976). In a voluntary regime, the manager can choose CSR activities strategically to optimise stakeholder engagement and mitigate the firm's perceived risk (Wood, 1991). However, in India, the mandatory CSR regulation requires firms to spend a portion of their profit in CSR and directs firms to channel their CSR funds towards a set of specified activities (Mukherjee, Bird, & Duppati, 2018). This forced CSR spending will reduce the manager's discretion which may lead to increased fixed cost and accentuate the variability of residual cash flow in the face of fluctuating demand (Salama et al., 2011).

Our examination of CSR and Firm's risk differs from prior research in several ways. First, although the mandatory CSR disclosure regime exists in several countries, it is only limited to firms that incurred CSR expenditure. The mandate in India applies to CSR expenditure and CSR disclosure. Therefore, the Indian context provides us with a setting where responsible firms do not bias the association between CSR expenditure on the firm's risk. Second, we have extended our study to examine the effect of the mandatory regime on the association between CSR and firm's risk. Using a difference-in-difference (DiD) research design, we compare the change in the firm's risk among mandatory CSR expenditure firms (treatment firms) with change among the non-mandatory CSR firms (control firms).

We empirically find that firm risk is significantly and positively related to CSR engagement for firms impacted by the mandatory CSR legislation. The difference in difference analysis suggests that the introduction of mandatory legislation is responsible for increased firm risk.

The remainder of the paper is organised as follows. Section 2 discusses the institutional background. Section 3 presents the literature review and develops the hypothesis. Section 4 sets out the study's methodology. Sections 5 presents the results. Section 6 summarises the major theme covered.

Background

The Indian Government was dissatisfied with the extent of CSR expenditure undertaken by corporates. Thus, the Government took steps to make CSR spending mandatory through changes in the draft of the Companies Bill 2008. One year later, the Indian Government relented under pressure from business and issued voluntary guidelines proposing that companies should allocate 2% of their net profits to CSR expenditures. However, the Indian Government found the response to these voluntary guidelines unsatisfactory. In 2013 the Government made it mandatory for large companies to spend 2% of their net profits on CSR activities. In February 2014, the Government also mandated the exact areas to which the CSR expenditure must be directed (Bird et al., 2016).

There have been numerous criticisms of the practice of employing a mandatory mechanism to enforce CSR practises (Goncalves, Weffort, Peleias, & Goncalves, 2007; Waagstein, 2011). One of the significant issues related to the CSR mandate lies in its weak enforcement because of the “comply or explain” framework. The framework provides an easy escape to the companies and has rendered itself to more of a disclosure mandate rather than spending (Dahiya & Singh, 2020). Manchiraju and Rajgopal (2017), has suggested that the mandatory CSR rule imposes high net costs on firms that are required to comply with this regulation, leading to declines in shareholder value. Bhattacharyya and Rahman (2020) argue that the mandated 2 per cent CSR expenditure is an additional tax imposed on firms, and as a result, the regulation is destroying shareholders’ value.

Despite the perceived need by the Indian Government to mandate CSR expenditure, there were a significant number of companies, both large and small, already undertaking CSR expenditures before the legislation being introduced. After the legislation became effective, the firms neatly fall into four categories:

1. Category A: Companies that were spending funds on CSR activities prior to the passing of the Act, and for whom the Act made CSR compulsory (henceforth A companies)
2. Category B: Companies that were not spending funds on CSR activities prior to the passing of the Act, and for whom the Act made CSR compulsory (B Companies)
3. Category C: Companies that were spending funds on CSR activities prior to the passing of the Act, but were not required to spend on CSR under the new Act (C companies)

4. Category D: Companies that were not spending funds on CSR activities prior to the passing of the Act and were not required to spend on CSR under the new Act. (D companies).

Mukherjee and Bird (2016) surveyed 223 Indian companies drawn from each of the four categories (i.e. A, B, C and D companies) to investigate their attitudes to mandatory CSR expenditure. Their results suggest that the large well-established companies that voluntarily spent on CSR (i.e. A companies) has already been undertaking significant spending on CSR. The managers of these companies were driven to make this expenditure because they were concerned for the community, and their desire to have a good public image and good relations with both the community and Government. In contrast, the younger and smaller companies that voluntarily spent on CSR activities (i.e., C companies) were driven by internal reasons mostly revolving around improving employee conditions and productivity. Large companies did not spend on CSR until required to do so under the 2013 legislation (i.e., B companies) were not undertaking such expenditure due to constrained for cash and/or not having access to adequate support to execute CSR spending. The smaller companies that do not spend on CSR activities (i.e., D companies), primarily because they do not think that it is in the strategic interest of the companies to do so. These findings imply that the attitude towards CSR changes with the availability of resources. Clarkson, Li, Richardson, and Vasvari (2011) results have supported that only firms with sufficient financial resources and management capabilities can generate strategic benefit from proactive CSR engagement.

In the remainder of the paper, we will seek to throw more light on the impact of making CSR expenditure mandatory on firm risk. Our findings will provide further justification to the observed negative relationship between CSR and stock return in the Indian mandatory CSR legislation context.

Literature review and hypothesis

The resource-based theory of the firm proposes that valuable, costly to copy firm resources and capabilities provide the critical sources of a sustainable competitive advantage (Barney & Arikan, 2001). A firm engaging in CSR activities can generate a competitive advantage in the form of enhanced reputation; these strategies require substantial investment and longterm commitment (Clarkson et al., 2011). Firm risk can be reduced by generating moral capital or good-will, which can provide insurance-like protection to preserve financial performance (Godfrey et al., 2009). Benefits of CSR engagement could come from various sources

including shareholder wealth increases through insurance-like protection, improved risk management, market appeal to customers by strategic approach, improved transparency, and easier access to financial market (Jo & Na, 2012).

CSR may be viewed as a way in which firms accumulate social (or moral) capital over time (Aoki, 2011; Godfrey, 2005). It works because, by participating in CSR related activities, firms strengthen and/or maintain a good relationship between (external and internal) stakeholders in the form of credibility among customers and investors, trust among employees and suppliers, and a strong social image among communities and regulators (Cheung, 2016). Luo and Bhattacharya (2009) argue further that CSR lowers idiosyncratic risk because firms with a higher level of social capital are expected to have a more remarkable ability to absorb (external and internal) shocks. In particular, a good relationship with stakeholders provides these firms with insurance-like protection that stabilises the demand and supply in times of crisis and increases resilience against shocks, contributing to accelerating their recovery and sustainable growth. Inelastic demand due to either consumers' loyalty to CSR firms or investors' preference for CSR firms leads to lower systematic risk, which in turn makes CSR firms less sensitive to aggregate shocks (Cheung, 2016).

While the discussion so far focuses on how voluntary CSR can be beneficial, we also have to consider the implications of mandatory CSR in India, as imposed by the Companies Act. There are several reasons why mandatory CSR activities and their disclosure may not benefit, and might even harm, shareholders (Manchiraju & Rajgopal, 2017). Under the compulsory CSR regime, the Government has prescribed how the CSR money should be spent, thereby limiting a firm's flexibility in coming up with its CSR policies. This will affect the manager ability to generate competitive advantage through CSR engagement. Mandatory CSR also comes with compliance obligations such as administrative costs associated with reporting information and the need for the board to monitor the firm's CSR activities.

In summary, there are several ways in which CSR can either have a positive or negative impact on firm risk. Based on this discussion, our hypothesis is:

H1: The mandatory CSR rule affects firm risk.

Sample, Variables and Methodology

Sample

In this study, we have collected data from the Centre for Monitoring Indian Economy Pvt Ltd (CMIE) Prowess database for firms listed on the Bombay Stock Exchange (BSE) from 2009 to

2019. The database is built from Annual Reports, quarterly financial statements, Stock Exchange feeds and other reliable sources. The database is normalised to enable inter-company and inter-temporal comparisons.

Variables

Following extant accounting and finance literature, we measure firm risk by the total risk. In financial theory, the total risk is composed of the firm-specific unique (idiosyncratic) risk and the systematic risk. The total risk of an investment is typically measured by the variance or, more commonly, the standard deviation of its return (Ross et al., 2015). In this study, systematic risk is measured using the Beta. The value for Beta has been procured from CMIE Prowess, which calculates Beta by regressing the weekly returns of security over weekly returns of the CMIE Overall Share Price Index. For this computation, weekly returns for the past five years are taken into account. The idiosyncratic risk is the residual variance of the market model using daily stock returns of the previous twelve months. See Table 1 for detailed variable definition.

Table 1
Definition of variables used in the study

<i>Dependent Variable</i>	
Systematic Risk (Beta)	The beta coefficient of the market model using weekly stock returns of the previous five years.
Idiosyncratic Risk (Idio)	Residual variance of the market model using daily stock returns of the previous twelve months.
<i>Independent Variables</i>	
CSR (Category A)	The dollar value of CSR spending for A companies
CSR (Category B)	The dollar value of CSR spending for B companies
CSR (Category C)	The dollar value of CSR spending for C companies
CSR (Category D)	The dollar value of CSR spending for D companies
<i>Control Variables</i>	
Book to Market Ratio	Book value of common equity divided by market value of equity
Operating Cash Flow	Net cash flows from operations divided by total assets
Leverage	Total liabilities divided by total assets
Size	Natural logarithm of the book value of the total asset
Sales Growth	$(Sales_{i,t} - Sales_{i,t-1})/Sales_{i,t}$
Cash holding	Cash and Cash Equivalents / Book Assets
R&D to Sales (rnds)	R&D Expense / Sales
Capital Expenditure to Assets (capxa)	Capital Expenditures / Book Assets

Methodology

Panel Regression

We use panel regressions to test the impact of CSR expenditure on firm risk at the firm level. First, we conduct the tests, with and without yearly fixed effects, over the pre-legislation period (i.e. 2009–2012). Then we repeat the same analysis over the post-legislation period (2014–2019). We use the following regression model for our study:

$$\begin{aligned} \text{Beta}_{i,t} = & \alpha + \beta_1 \text{CSR}_{A,t} + \beta_2 \text{CSR}_{B,t} + \beta_3 \text{CSR}_{C,t} + \beta_4 \text{CSR}_{D,t} + \beta_6 \text{Contro Variables} \\ & + e_{it} \quad (1) \end{aligned}$$

$$\begin{aligned} \text{Idio}_{i,t} = & \alpha + \beta_1 \text{CSR}_{A,t} + \beta_2 \text{CSR}_{B,t} + \beta_3 \text{CSR}_{C,t} + \beta_4 \text{CSR}_{D,t} + \beta_6 \text{Contro Variables} \\ & + e_{it} \quad (2) \end{aligned}$$

Where all variables are as defined in Table 1.

After conducting the panel regression analysis over the pre-and post-legislation period, we tested for whether there had been changes in the regression coefficients of the CSR variables across the two periods. This analysis allows us to comment on the impact of the mandatory legislation on the relationship between CSR expenditure and firm risk for A and C companies. We also conducted a Chow test to identify if there was a structural break from the pre- to the post- legislation period (Chow, 1960). This testing procedure splits the sample into two sub-periods, estimates the parameters for each sub-period, and then tests the equality of the two sets of parameters using a standard F statistic (Hansen, 2001).

Difference-in-difference

The Indian compulsory CSR legislation provides us with a natural setting to apply the DiD regression to test the impact of mandated CSR on firm risk. DiD is a tool to estimate pre-and post-treatment differences for a treatment and a control group. For example, both A and C companies were voluntarily spending on CSR before the introduction of the Act (the Treatment), but after the legislation, A companies are required to do so (the treatment group), and C companies are not required to do so (the control group). Similarly, with B and D companies, B companies are the treatment group and D companies are the control group.

The equation that is used is as follows:

$$Beta_{i,t} = \alpha + \beta_1 D_{Post} + \beta_2 D_{Treatment\ Group} + \beta_3 D_{Post} * D_{Treatment\ Group} + Control\ Variable + \varepsilon \quad (3)$$

$$Idio_{i,t} = \alpha + \beta_1 D_{Post} + \beta_2 D_{Treatment\ Group} + \beta_3 D_{Post} * D_{Treatment\ Group} + Control\ Variable + \varepsilon \quad (4)$$

Where:

D_{Post} = Time Dummy = 1 if the year observation is after 2013, 0 otherwise.

$D_{Treatment\ Group}$ = Treatment group dummy = 1 if A or B companies, otherwise 0.

$D_{Post} * D_{Treatment\ Group}$ = Interaction variable = Time dummy * Treatment group dummy.

The coefficients of each of the individual variables are calculated, as shown in Table 2 below:

The important coefficient is β_3 which measure the differential effect of the Treatment (i.e. mandatory CSR) on both the treatment group (i.e. those impacted by the legislation) and the control group (i.e. those not impacted).

Table 2

Description of difference in difference regression coefficient calculation

	Post-Treatment	Pre-Treatment	Difference
Treatment	$\beta_0 + \beta_1 + \beta_2 + \beta_3$	$\beta_0 + \beta_2$	$\beta_1 + \beta_3$
Control	$\beta_0 + \beta_1$	β_0	β_1
	$\beta_2 + \beta_3$	β_2	β_3

Results

Descriptive statistics

We have reported summary statistics in Table 3 for the variables used in this study, as outlined in Table 1. The first observation we make is that the A and B category companies (effected by the legislation) are much larger in terms of profit, size and sales growth. Category A and C companies that were spending on CSR post legislation has increased spending as a percentage of profit. The CSR to profit has increased significantly for category C companies. On the other hand, categories B and D are spending less than 2 % of the profit on CSR. The smaller contribution of these companies has diluted the average CSR spend across the whole sample.

The total Beta and Idiosyncratic risk have increased for the whole sample. But, the most significant increase in systematic risk and firm-specific unique (idiosyncratic) risk has been experienced by Category A and Category B companies. These are the companies that were impacted by mandatory legislation. A possible reason for this is of Government lacked commitment. The Government that introduced the Act are not in power any more, and the

current Government does not consider the legislation necessary, but they are not making any amendments. This undefined government policy is creating uncertainty and increasing risk.

Table 3
Summary Statistics

Item	Sample	Legislation		
		Pre	Post	Diff.
Average CSR spending per firm in (\$ U.S. M.)	Total	0.25	0.59	0.34***
	Cat A	0.66	1.28	0.62***
	Cat B	0	0.379	
	Cat C	0.083	0.034	-0.052
	Cat D	0	0.0025	
Profit (\$ U.S. M.)	Total	55.02	42.61	-12.41**
	Cat A	86.69	74.04	-12.65
	Cat B	69.03	49.02	-20.01
	Cat C	0.284	1.37	1.08**
	Cat D	-1.05	-1.47	0.417
CSR Spend/Profit (%)	Total	0.70%	1.03%	0.64%
	Cat A	1.76%	2.16%	0.85
	Cat B	0	0.70%	
	Cat C	1.05%	3.28%	2.23%*
	Cat D	0	0.38%	
Beta	Total	0.88	1.02	0.14***
	Cat A	0.93	1.13	0.21***
	Cat B	0.91	1.14	0.23***
	Cat C	0.81	0.83	0.022
	Cat D	0.77	0.72	-0.050
Idio	Total	0.33	0.35	0.02**
	Cat A	0.34	0.36	0.02**
	Cat B	0.29	0.35	0.06**
	Cat C	0.26	0.28	0.02
	Cat D	0.23	0.68	0.45
Cash Holding	Total	0.064	0.8	0.015***
	Cat A	0.061	0.083	0.022***
	Cat B	0.062	0.078	0.016***
	Cat C	0.075	0.088	0.013
	Cat D	0.07	0.074	0.004
Book To Market	Total	5.0838	5.0833	-0.0005
	Cat A	5.06	5.057	-0.003
	Cat B	4.08	4.078	-0.007
	Cat C	4.098	4.126	0.27
	Cat D	4.13	4.116	0.014
Operating Cash Flow	Total	0.088	0.078	0.015***
	Cat A	0.12	0.098	-0.022***
	Cat B	0.1	0.087	0.013
	Cat C	0.041	0.43	0.001

Leverage	Cat D	0.037	0.023	-0.014**
	Total	0.174	0.214	0.04
	Cat A	0.056	0.086	0.03
	Cat B	0.047	0.062	0.015
	Cat C	0.039	0.129	0.09
Size	Cat D	0.032	0.035	0.003
	Total	10.83	10.7	-0.13
	Cat A	12.01	12.07	0.06
	Cat B	11.33	11.42	0.09
	Cat C	2.01	1.89	-0.117
Sales Growth	Cat D	1.69	1.08	-0.6
	Total	18.78%	15.77%	-3.01%***
	Cat A	22%	15.97%	-6.03***
	Cat B	20.72%	13.47%	-7.25***
	Cat C	17.93%	9.84%	-8.09%
Research & Development	Cat D	11.74%	7.32%	-4.40%
	Total	0.002	0.002	0
	Cat A	0.0029	0.0028	0.0001
	Cat B	0.0017	0.002	0.0007
	Cat C	0.0009	0.001	0.0001
ROA	Cat D	0.0014	0.0011	-0.0004
	Total	3.35	1.07	-2.27***
	Cat A	5.91	3.46	-2.44***
	Cat B	4.49	2.52	-1.96***
	Cat C	1.83	1.55	0.28
Cat D	0.85	0.77	-0.08	

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Panel Regression

We have conducted the regression analyses over both the six-year pre-legislation period from 2009 to 2013 and the five years post-legislation period of 2014 and 2019. Our findings based on Eq. (1) and Eq. (2) are reported in the first (pre-) and second (post-) columns of Table 4 and 5. The final column provides information on a test of the significance of any changes in the impact of each of the variables between the pre-and post-mandatory CSR periods.

In table 4, we have reported the association between Beta and CSR. We observe that for category A companies the all sample Beta has a positive relation with CSR. This implies that systematic risk is increasing for these companies. In the pre-legislation period, the relationship was negative but not significant. In the post legislation period, the relation has turned significantly positive. Pre and post-change are significant and positive.

For category B companies, we observe a significantly positive relation between Beta and CSR in the post legislation period, which implies that the systematic risk for these companies is also increasing.

An important finding of our study is that the relationship between Beta and CSR is negative for category C and D companies. For both these categories, we observe that during the post legislation period, the relation is significantly negative.

Overall our findings support that the systematic risk is increasing for the firms that are affected by the mandatory legislation. But the companies that are spending on CSR voluntarily, especially in the post legislation period has experienced a decrease in systematic risk.

Table 4: Panel Regression table (Dependent Variable Beta) – In this table, we provide the results of regression Eq. (1)

	All beta	Pre Legislation	Post Legislation	Diff Pre - Post
CSR (Category A)	0.00517*	-0.000554	0.00620*	0.006754*
CSR (Category B)	0.00787		0.00976*	
CSR (Category C)	-0.022	0.00315	-0.337**	-0.340**
CSR (Category D)	-1.360**		-0.988*	
Cash Holding	0.265***	0.112*	0.213**	
Book to Market Ratio	-0.0487*	-0.141***	-0.0144	
Size	0.0455***	0.0319***	0.0458***	
Leverage	-0.159***	-0.136	-0.0559	
Research and Dev	-0.387	-1.95	-0.609	
ROA	-0.00146***	-0.00215***	-0.000995***	
Capital Exp	0.137	0.594	-0.0314	
Sales Growth	0.00679	0.00935*	0.00599	
Constant	0.854***	0.816***	0.869***	
Time Effect (Chi2)	14.12	4.63	8.4	
Industry Effect (Chi2)	57.52	30.49	25.85	
N	10392	3161	7231	
Adjusted R – sq	13.83%			
CHOW TEST (F)	40.6***			

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

In table 5, we have reported the relationship between Idiosyncratic risk and CSR. In this case, we observe that the risk increase for category A companies in the post legislation period. On the contrary, we the risk reduces for the category D companies that spend in CSR activities. These findings allow us to support that the companies that are subjected to the mandatory CSR legislation are experiencing increased risk.

Table 5: Panel Regression table (Dependent Variable Idio) – In this table, we provide the results of regression Eq. (2)

	All Period	Pre Legislation	Post Legislation	Diff Pre - Post
CSR (Category A)	-0.0862	-0.0433	0.115*	0.1583*
CSR (Category B)	-0.0432	0	0.122	
CSR (Category C)	-0.214	-0.194	0.422	0.616
CSR (Category D)	-5.631	0	-8.015*	
Cash Holding	4.398***	3.022*	2.446*	-0.576*
Book to Market Ratio	-1.124*	-1.537	-0.777	
Size	0.708***	0.685***	0.452***	
Leverage	-3.616***	-0.76	-3.464***	
Research and Dev	10.91	-16.91	14.15	
ROA	-0.0172**	-0.0379*	-0.0119*	
Capital Exp	-8.954	6.201	-9.507	
Sales Growth	-0.0856	0.00375	-0.156	
Constant	24.67***	24.60***	23.07***	
Time Effect (Chi2)	32.67	31.67	46.45	
Industry Effect (Chi2)	63.16	25.1	25.19	
N	10392	3161	7231	
Adjusted R – sq	36.89%	12.22%	42.28%	
CHOW TEST (F)	65.38***			

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

The difference in Difference regression

In the panel regression analysis, we conducted a Chow test for all the models to see if there is any evidence of a structural break in our data (Cantrell, Burrows, & Vuong, 1991) from the pre-(2009 F.Y. to 2013 F.Y.) to post- (2014 F.Y. and 2019 F.Y.) period. The F value for our Chow test is significant for all regression models, which suggests that there has been a significant structural break at the time of introducing mandatory CSR legislation. Difference in difference (DiD) analysis provides the means to estimate the impact of certain policy interventions and policy changes, such as the legislation of the Indian Government to make CSR expenditures compulsory. We applied Eq. (3) and (4) to separately compare A with C companies and B with D companies, both with and without control variables. The DiD analysis allows us to compare the impact on the firm risk of the mandatory CSR regulation on the treatment companies that were affected by the legislation (i.e. A and B) as compared to the unaffected control companies (i.e. C and D). The coefficient of interest is that of the interaction variable $D_{Post} * D_{Treatment\ Group}$ that captures the difference between the treatment and control companies and so the variation in Beta and Idio attributable to the introduction of mandated CSR expenditure.

From table 6 panel A, we observe that the coefficient for the interaction term $D_{Post} * D_{Treatment\ Group}$ is 0.159 and significant. This suggests that the introduction of the legislation has significantly increased the firm's systematic risk. From panel B, we observe that the interaction term for Idiosyncratic risk is 1.305 and significant. Therefore we can conclude the legislation increased the firm's total risk.

Table 6: Difference in Differences (A and C companies) - In this table, we provide the pre-and post-legislation coefficients of Difference in Difference (DiD) regression analysis as set out in Eq. (3) and (4) and Table 2. Panel A report the results with dependent variable Beta and Panel B report results with dependent variable Idio. The treatment group in this equation is the A companies, and the control group is the C companies. The difference column in the table below provides the coefficient that measures the variability caused due to the introduction of new legislation. The third row of the same column provides the coefficient of the variable representing the product of the time dummy and treatment group dummy. This coefficient will allow us to measure the impact of the legislation on the profitability of the treatment group (i.e. A companies)

Panel A			
Dependent variable: Beta	Post-Legislation	Pre-Legislation	Difference
Treatment Group (Category A)	0.5962***	0.4023	0.1939***
Control Group (Category C)	0.4139**	0.379*	0.0349
Difference	0.1823***	0.0233	0.159***
Panel B			
Dependent variable: Idio	Post-Treatment	Pre-Treatment	Difference
Treatment Group (Category A)	25.397***	16.987***	8.41***
Control Group (Category C)	23.715***	16.61***	7.105***
Difference	1.682	0.377	1.305*

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

In Table 7, we report the impact of legislation on category B companies. We observe a similar result as category A companies. The systematic risk and the firm's specific risk has increased to the introduction of the mandatory legislation.

Table 7: Difference in Differences (B and D companies) - In this table, we provide the pre-and post-legislation coefficients of Difference in Difference (DiD) regression analysis as set out in Eq. (3) and (4) and Table 2. Panel A report the results with dependent variable Beta and Panel B report results with dependent variable Idio. The treatment group in this equation is the B companies, and the control group is the D companies. The difference column in the table below provides the coefficient that measures the variability caused due to the introduction of new legislation. The third row of the same column provides the coefficient of the variable representing the product of the time dummy and treatment group dummy. This coefficient will allow us to measure the impact of the legislation on the profitability of the treatment group (i.e. B companies)

Panel A			
Dependent variable : Beta	Post-Legislation	Pre-Legislation	Difference
Treatment Group (Category B)	1.2887***	1.076***	0.2127***
Control Group (Category D)	0.9577***	0.974***	-0.0163
	0.331***	0.102**	0.229***
Panel b			
Dependent variable : Idio	Post-Legislation	Pre-Legislation	Difference

Treatment Group (Category B)	36.228***	30.141***	6.087***
Control Group (Category D)	34.694***	29.84***	4.854***
	1.534**	0.301	1.233***

p < 0.1, **p < 0.05, *p < 0.01.*

Conclusion

The present study explores the association between firm risk and CSR expenditure during the mandatory regime. It also examines whether there exists any difference during mandatory disclosure regimes concerning the change in firm risk.

The findings of our study suggest that the total risk has significantly increased for the companies that were impacted by the mandatory CSR legislation (i.e. category A and B companies). The threat has increased considerably during the post legislation period for these companies. On the contrary, the risk of category C and D companies has reduced during the post legislation period. These findings emphasise that managers' discretion in formulating is utmost essential to get the strategic competitive benefits for engaging in CSR activity.

We also found that there is a structural break in the relationships between Beta – CSR and Idio – CSR during the pre and post legislation period. Our DiD regression findings point out that risk A and B companies have increased during the introduction of mandatory legislation.

REFERENCES

- Aoki, M. (2011). Linking economic and social-exchange games: From the community norm to CSR. In *Social capital, corporate social responsibility, economic behaviour and performance* (pp. 129-148): Springer.
- Barney, J. B., & Arikan, A. M. (2001). *The resource-based view: Origins and implications*: The Blackwell handbook of strategic management.
- Bhattacharyya, A., & Rahman, M. L. (2020). Mandatory CSR expenditure and stock return. *Meditari Accountancy Research*. doi:<https://doi.org/10.1108/MEDAR-10-2019-0591>
- Bird, R., Duppati, G., & Mukherjee, A. (2016). Corporate social responsibility and firm market performance: a study of Indian listed companies. *Int. J. Business Governance and Ethics*, 11(1), 68-88. doi:10.1504/ijbge.2016.076351
- Cantrell, R. S., Burrows, P. M., & Vuong, Q. H. (1991). Interpretation and Use of Generalized Chow Tests. *International Economic Review*, 32(3), 725-741. doi:10.2307/2527116
- Cheung, A. (2016). Corporate social responsibility and corporate cash holdings. *Journal of Corporate Finance*, 37, 412-430. doi:<https://doi.org/10.1016/j.jcorpfin.2016.01.008>
- Chow, G. C. (1960). Tests of Equality Between Sets of Coefficients in Two Linear Regressions. *Econometrica*, 28(3), 591-605. doi:10.2307/1910133
- Clarkson, P. M., Li, Y., Richardson, G. D., & Vasvari, F. P. (2011). Does it really pay to be green? Determinants and consequences of proactive environmental strategies. *Journal of Accounting and Public Policy*, 30(2), 122-144. doi:<https://doi.org/10.1016/j.jaccpubpol.2010.09.013>
- Dahiya, M., & Singh, S. (2020). The linkage between CSR and cost of equity: an Indian perspective. *Sustainability Accounting, Management Policy Journal*. doi:<https://doi.org/10.1108/SAMPJ-10-2019-0379>
- Godfrey, P. C. (2005). The Relationship Between Corporate Philanthropy And Shareholder Wealth: A Risk Management Perspective. 30(4), 777-798. doi:10.5465/amr.2005.18378878
- Godfrey, P. C., Merrill, C. B., & Hansen, J. M. (2009). The relationship between corporate social responsibility and shareholder value: an empirical test of the risk management hypothesis. 30(4), 425-445. doi:<https://doi.org/10.1002/smj.750>
- Goncalves, R. D. S., Weffort, E. F. J., Peleias, I. R., & Goncalves, A. D. O. (2007). Social disclosure: up to where should the regulation go? , 1(1-2), 18-28. doi:10.1504/ijlse.2007.014578
- Hansen, B. E. (2001). The New Econometrics of Structural Change: Dating Breaks in U.S. Labour Productivity *Journal of Economic Perspectives*, 15(4), 117-128. doi:10.1257/jep.15.4.117
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305-360. doi:[https://doi.org/10.1016/0304-405X\(76\)90026-X](https://doi.org/10.1016/0304-405X(76)90026-X)
- Jo, H., & Na, H. (2012). Does CSR Reduce Firm Risk? Evidence from Controversial Industry Sectors. *Journal of Business Ethics*, 110(4), 441-456. doi:10.1007/s10551-012-1492-2
- Luo, X., & Bhattacharya, C. B. (2009). The Debate over Doing Good: Corporate Social Performance, Strategic Marketing Levers, and Firm-Idiosyncratic Risk. 73(6), 198-213. doi:10.1509/jmkg.73.6.198
- Manchiraju, H., & Rajgopal, S. (2017). Does Corporate Social Responsibility (CSR) Create Shareholder Value? Evidence from the Indian Companies Act 2013. *Journal of Accounting Research*, 55(5), 1257-1300. doi:<https://doi.org/10.1111/1475-679X.12174>
- McGuire, J. B., Sundgren, A., & Schneeweis, T. (1988). Corporate social responsibility and firm financial performance. *Academy of management Journal*, 31(4), 854-872.
- Mukherjee, A., & Bird, R. (2016). Analysis of mandatory CSR expenditure in India: a survey. *International Journal of Corporate Governance*, 7, 32-59.

- Mukherjee, A., Bird, R., & Duppati, G. (2018). Mandatory Corporate Social Responsibility: The Indian experience. *Journal of Contemporary Accounting & Economics*, 14(3), 254-265.
doi:<https://doi.org/10.1016/j.jcae.2018.06.002>
- Orlitzky, M., & Benjamin, J. D. (2001). Corporate Social Performance and Firm Risk: A Meta-Analytic Review. 40(4), 369-396. doi:10.1177/000765030104000402
- Ross, S. A., Ross, S., Westerfield, R., & Jordan, B. (2015). *Corporate finance*. New York: New York: McGraw-Hill Education.
- Salama, A., Anderson, K., & Toms, J. S. (2011). Does community and environmental responsibility affect firm risk? Evidence from U.K. panel data 1994–2006. *Business Ethics: A European Review*, 20(2), 192-204. doi:<https://doi.org/10.1111/j.1467-8608.2011.01617.x>
- Waagstein, P. R. (2011). The Mandatory Corporate Social Responsibility in Indonesia: Problems and Implications. *Journal of Business Ethics*, 98(3), 455-466. doi:10.1007/s10551-010-0587-x
- Wood, D. J. (1991). Corporate Social Performance Revisited. 16(4), 691-718.
doi:10.5465/amr.1991.4279616