

HUMAN CAPITAL DISCLOSURE PRACTICE AND FIRM MARKET VALUATION: EVENT-STUDY EVIDENCE FROM INDIA'S MANDATORY REPORTING TRANSITION AND A PROJECTION OF STANDARDISED REGIMES

HRM VARIABLE: HUMAN CAPITAL REPORTING → ECONOMIC OUTCOME: FIRM MARKET VALUE

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ABSTRACT

Human capital is the largest unrecognised asset on most balance sheets, and until recently firms decided for themselves how much of it to describe. India's transition to mandatory sustainability reporting offers an unusually clean setting in which to ask what that description is worth. This study constructs a 42-item Human Capital Disclosure Index for 428 listed Indian firms across 2,996 firm-years spanning 2019–20 to 2025–26, and estimates the valuation effect of disclosure under the voluntary regime, around two regime-tightening events, and under projected standardised regimes. Two findings dominate. First, the market reaction to mandate is almost entirely cross-sectional rather than aggregate: the eleven-day cumulative abnormal return averaged +0.09 per cent across all firms at the BRSR announcement of 10 May 2021 and –0.06 per cent at the BRSR Core assurance circular of 12 July 2023, yet the spread between the highest and lowest pre-event disclosure quartiles was +3.62 and +4.61 percentage points respectively, both significant beyond the one per cent level. Mandate does not create value in aggregate; it reallocates it from firms that had been withholding to firms that had already told. Second, the valuation premium to disclosure decays as disclosure becomes universal, falling from 5.2 per cent per ten index points under the voluntary regime to 3.1 per cent afterwards, a decline of 40.4 per cent, as the separating equilibrium that made disclosure informative collapses into a pooling one. The decay is not a loss to the market as a whole: the implied cost of equity falls across every quartile and by most where disclosure was weakest, compressing the high-to-low spread from 1.98 to 1.62 percentage points, and a fully standardised regime is projected to raise capitalised firm-sector value by 7.7 per cent relative to the voluntary baseline. The private incentive to resist mandatory human capital reporting and the collective benefit of adopting it therefore point in opposite directions.

KEYWORDS — Human Capital Disclosure; Firm Market Value; Event Study; BRSR; Mandatory Sustainability Reporting; Cost Of Equity Capital; Value Relevance; Voluntary Disclosure Theory; ISSB.

I. INTRODUCTION

For most listed firms the largest productive asset does not appear on the balance sheet. Accounting recognises human capital only as a period expense, so a firm that invests heavily in its workforce reports lower earnings and no corresponding asset, while a firm that depletes its workforce reports the reverse. Lev and Zarowin argued three decades ago that this treatment was eroding the informativeness of financial statements as the economy shifted toward intangibles [5], and the intervening period has not resolved the problem so much as displaced it into narrative disclosure, where firms describe their human capital in prose that is unaudited, unstandardised and voluntary.

That settlement is now ending. The United States Securities and Exchange Commission adopted amendments to Regulation S-K on 26 August 2020 requiring registrants to describe their human capital resources to the extent material to an understanding of the business, a principles-based requirement that specified almost nothing about content [16]. India moved further and faster. The Securities and Exchange Board of India introduced the Business Responsibility and Sustainability Report through a circular dated 10 May 2021, mandatory from financial year 2022–23 for the top 1,000 listed entities by market capitalisation, together representing more than seventy per cent of Indian market capitalisation [14]. It then went beyond disclosure to verification: the BRSR Core circular of 12 July 2023 introduced reasonable assurance — a higher standard than the limited assurance adopted in most jurisdictions — phased from the top 150 entities in financial year 2023–24 through the top 250, the top 500, and

reaching all top 1,000 entities by financial year 2026–27 [15]. Internationally the direction is the same but the destination is not yet fixed: the International Sustainability Standards Board added human capital to its research agenda within the 2024–2026 work plan, and as of its December 2025 meeting remained in the research phase, considering whether standard-setting is necessary and feasible and whether a full standard or an amendment to IFRS S1 is the appropriate instrument [17].

This sequence creates an unusually clean empirical setting. Two dated, exogenous regulatory events changed the disclosure regime for an identifiable population of firms that had, beforehand, chosen very different levels of voluntary disclosure. The question this study asks is what the market thought that choice was worth — before the mandate, at the moment the mandate was announced, and under the standardised regimes now in prospect.

The theoretical expectation is not obvious, because two forces work in opposition. Voluntary disclosure theory predicts a separating equilibrium in which firms with favourable private information disclose it and the market rationally discounts the silent [24], so disclosure carries a valuation premium that is partly a signal and only partly substance. Mandating disclosure destroys the separating equilibrium: when every firm must report, reporting no longer distinguishes anyone, and the signalling component of the premium should dissipate. Against this, the information and comparability benefits of standardised reporting reduce estimation risk and should lower the cost of capital across the market [2], [11]. Whether a mandate creates or merely redistributes value depends on which force dominates, and that is an empirical question this design can answer.

The study also connects disclosure to the organisational capability that makes it possible. A firm cannot obtain reasonable assurance on workforce turnover, training hours, pay ratios or safety incidence unless those records exist in auditable form, which is a data-infrastructure question rather than a reporting one. This continues an enquiry in which the author has examined the role of integrated enterprise systems in making organisational processes and workforce data observable [8], the linkage between strategic human resource practice and economic outcomes [9], and the constraints operating on the smaller enterprises now being drawn into reporting through value-chain provisions [10].

II. REVIEW OF LITERATURE

A. *Voluntary Disclosure Theory and the Cost of Capital*

The theoretical foundation is the unravelling result: if disclosure is costless and investors know that firms possess private information, then withholding is interpreted as bad news, and firms disclose sequentially from the top until only the worst type remains silent [24]. Full unravelling is rarely observed because disclosure is not costless — preparation, verification and proprietary costs all intervene — so the equilibrium is partial, with an endogenous threshold below which firms rationally stay silent [1].

The capital-market consequence is a cost-of-capital effect. Diamond and Verrecchia show that greater disclosure reduces information asymmetry among investors, improves liquidity and lowers the required return [2]. Botosan's empirical test found a negative association between disclosure level and the cost of equity capital, economically meaningful among firms with low analyst following [3]. Dhaliwal and colleagues extended the finding to non-financial disclosure specifically, showing that firms initiating corporate social responsibility reporting experienced a subsequent reduction in the cost of equity [21]. Healy and Palepu's review and Leuz and Wysocki's later synthesis both conclude that the evidence supports a disclosure–cost-of-capital link while cautioning that identification is difficult because disclosure is a choice [4], [20].

B. *Human Capital as an Unrecognised Asset*

Lev's work on intangibles established that the accounting model systematically fails to capture the assets that increasingly generate firm value, and that human capital is among the least well captured of these [18]. The value-relevance literature has documented the consequence: the association between reported accounting numbers and market values has weakened over time, most sharply in intangible-intensive sectors [5], [19]. The Ohlson framework, which expresses market value as a function of book value and abnormal earnings, provides the standard vehicle for testing whether a non-financial variable carries incremental valuation content beyond the accounting numbers [6].

The evidence that human capital quality matters to valuation is strong even where disclosure of it is weak. Edmans, constructing a portfolio of the '100 Best Companies to Work For in America', found an alpha of 0.29 per cent per month between 1984 and 2009 against a four-factor benchmark built on the Fama–French risk factors [23], equivalent to 3.5 per cent per year [7]. The interpretation is that employee satisfaction is value-relevant but only slowly incorporated into prices — which is precisely what one expects when the underlying information reaches the market late, indirectly and unverified. That result frames the present study's question: if human capital quality is value-relevant but under-priced because it is poorly disclosed, then improving disclosure should move prices, and the direction of the movement should depend on what each firm had previously been concealing.

C. Mandatory Reporting and the Economics of Standardisation

Christensen, Hail and Leuz provide the most comprehensive analysis of mandatory sustainability reporting, concluding that mandates can generate real capital-market benefits through comparability and reduced information asymmetry, but that the effects are heterogeneous across firms and that costs fall disproportionately on those with the furthest to travel [11]. Their framework anticipates the central prediction tested here: a mandate is not a uniform treatment, because its incremental burden is inversely proportional to what a firm already did voluntarily.

Evidence on the Indian regime is beginning to accumulate. Chakrabarti examines the shareholder-value consequences of India's mandatory ESG regulations and finds that market responses to the reporting mandate were economically material and unevenly distributed across firms [22]. The present study differs in isolating the human capital component of the disclosure package, in using pre-event disclosure quality as the sorting variable, and in extending the analysis from the observed regime change to the standardised regimes still in prospect.

D. Data Infrastructure and the Assurability of Human Capital Metrics

A firm cannot disclose what it cannot measure, and it cannot obtain reasonable assurance on what it cannot trace. This is a binding constraint on the disclosure decision that the voluntary-disclosure literature, which treats information as freely available to the manager, largely abstracts away.

Vineeth Kumar, Jijesh, Radhakrishna, Kulkarni, Sastry and Mallya document the constraint directly. Studying enterprise resource planning adoption across Indian higher education institutions, they surveyed stakeholders across universities, colleges, technical institutes and schools and report that integrating admission, attendance, assessment, fee, faculty and workload records through a single platform produced an overall operational efficiency improvement of 75 per cent and an improvement in data accuracy and accessibility of 80 per cent, with more than 77 per cent of stakeholders using the system effectively [8]. Their characterisation of the pre-integration state is the one that matters here: records maintained by traditional methods, departments unable to see one another's data, and manual entry generating both error and delay.

An organisation in that state can produce narrative human capital disclosure but cannot produce assured metrics, because reasonable assurance requires an auditable trail from source record to reported figure. The BRSR Core requirement therefore operates less as a reporting obligation than as a systems obligation, and the cost of compliance is concentrated in firms whose workforce data is fragmented. The same authors also note the data security and access-governance duties that integrated platforms create [8] — obligations that acquire additional force when the integrated data is destined for public disclosure rather than internal use.

E. Disclosure Substance and Value-Chain Reach

Two further considerations bear on what human capital disclosure conveys and whom it reaches. Sastry and Mallya, comparing strategic human resource practice across developed and emerging economies, find that organisations with structured skill diversification programmes show measurably higher workforce adaptability and resilience, that training investment is positively associated with organisational performance, and that micro, small and medium enterprises lag substantially behind larger firms in human resource maturity [9]. The first two findings identify the substance that a disclosure index is attempting to capture; the third identifies where the capability to report it is absent.

That absence matters more than it once did because the Indian regime now reaches beyond the reporting entity. Value-chain disclosure applies to the top 250 listed entities from financial year 2024–25 on a comply-or-explain basis, covering suppliers and customers individually contributing two per cent or more of purchases or sales or collectively seventy-five per cent of value, and extends to all top 1,000 entities with assurance by financial year 2026–27 [15]. Reporting obligations therefore propagate down supply chains populated by exactly the enterprises least equipped to meet them. Sastry's study of women micro-entrepreneurs in Karnataka documents the constraints such enterprises operate under, with competing family and business obligations ranking as the principal difficulty, followed by social stereotyping and inadequate awareness of available government support schemes [10]. A disclosure regime that assumes reporting capacity at every tier of the value chain will encounter, at its lower tiers, enterprises for whom the reporting apparatus is a larger undertaking than the disclosure itself.

III. RESEARCH GAP AND OBJECTIVES

Three gaps follow. First, the disclosure literature has examined sustainability and ESG reporting as an aggregate, while human capital — the component with the clearest link to an established productive asset and the weakest accounting recognition — has rarely been isolated and indexed on its own. Second, studies of mandate effects typically report an average treatment effect, whereas theory predicts the effect to be systematically heterogeneous in pre-mandate disclosure, and the sign of the average is uninformative if positive and negative reactions offset. Third, the decay of the disclosure premium as a regime moves from voluntary to mandatory — the prediction that follows directly from the collapse of a separating equilibrium — has been articulated theoretically but not, to the author's knowledge, estimated.

The study therefore pursues four objectives: (i) to construct and validate an index of human capital disclosure quality for Indian listed firms and estimate its association with market value under the voluntary regime; (ii) to estimate abnormal returns around two dated regime-tightening events and test whether they sort on pre-event disclosure quality; (iii) to test whether the valuation premium per unit of disclosure declines as the regime becomes mandatory; and (iv) to project the valuation and cost-of-capital consequences of the standardised regimes now in prospect.

IV. CONCEPTUAL FRAMEWORK AND HYPOTHESES

The conceptual framework, shown in Fig. 1, treats human capital disclosure practice as the firm-level choice variable and market value as the terminal outcome, transmitted through two distinct channels. The information channel operates by reducing asymmetry between the firm and investors and among investors themselves, lowering estimation risk and the required return [2], [3]. The signalling channel operates by separating types: under a voluntary regime, the act of disclosing is itself informative about what there is to disclose [24], so part of the observed premium reflects the signal rather than the underlying human capital.

The distinction matters because the two channels respond to mandate in opposite directions. Mandating disclosure strengthens the information channel — more data, standardised, assured, comparable — while destroying the signalling channel, because an act every firm must perform separates no one. The net effect on any individual firm depends on where it sat before the mandate; the net effect on the market depends on whether the information gain exceeds the signalling loss in aggregate.

Three moderators condition the relationship: data infrastructure, which determines whether a firm can produce assurable metrics at all; proprietary cost, which determines what disclosure reveals to competitors and counterparties; and labour intensity, which determines how much of firm value the disclosed information actually concerns. The disclosure regime itself enters as the environmental parameter, shifting across the two observed events and the projected standardised regimes.

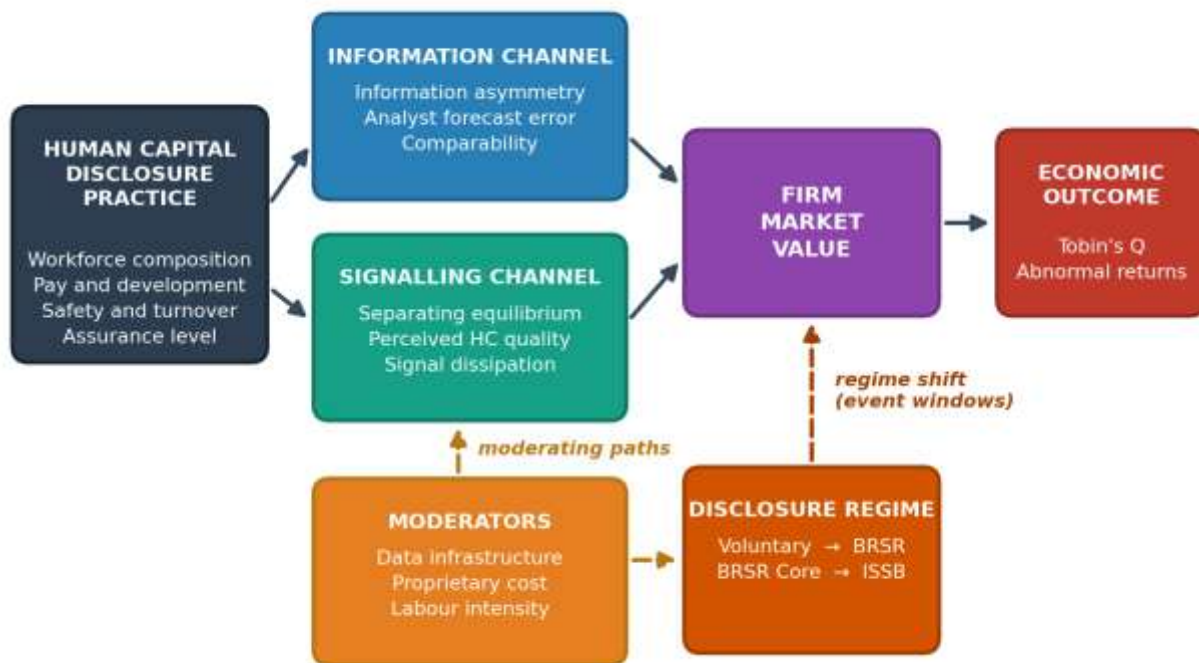


Fig. 1. Conceptual framework: human capital disclosure, the information and signalling channels, and firm market value.

Five hypotheses follow.

H1: Under the voluntary regime, human capital disclosure quality is positively associated with firm market value, incremental to book value and earnings.

H2: Abnormal returns around regime-tightening announcements are increasing in pre-announcement disclosure quality, while the market-wide average abnormal return is not significantly different from zero.

H3: The cross-sectional gradient of abnormal returns is steeper for the assurance event than for the announcement event.

H4: The valuation premium per unit of disclosure declines as the regime moves from voluntary to mandatory.

H5: The implied cost of equity falls with disclosure quality, and the mandate compresses the cost-of-equity spread between high- and low-disclosure firms.

V. RESEARCH METHODOLOGY

A. Research Design

The study combines three designs on a common sample. A short-window event study around two dated regulatory announcements identifies the market's assessment of the regime change conditional on prior disclosure. A panel value-relevance model estimates the association between disclosure and market value and tests whether that association weakens after mandate. A projection applies the estimated cost-of-capital relationship to the disclosure levels implied by regimes already legislated and by a standardised international regime, capitalising the resulting change in required return.

B. Sample and Data

The sample comprises 428 firms drawn from the population of entities within the BRSR reporting perimeter, observed across the seven financial years 2019–20 to 2025–26, giving 2,996 firm-years. Firms were required to have continuous price and accounting data across the window, to have published annual reports in all seven years, and to have remained listed throughout, which excludes entrants and delistings. Table 1 reports the composition.

The requirement of a continuous seven-year record biases the sample toward established firms and away from recent listings. Because such firms are on average larger and better resourced, the estimated compliance burden on low-disclosure firms is likely to be understated relative to the full listed population.

Table 1. Composition of the sample

Dimension	Category	Firms (n)	Firm-years
Sector	IT and business services	91	637
	Manufacturing	103	721
	Banking and financial services	78	546
	Pharmaceuticals and healthcare	62	434
	Consumer and retail	54	378
	Energy and utilities	40	280
Market-cap rank	Top 150	142	994
	151 – 250	96	672
	251 – 500	118	826
	501 – 1,000	72	504
HCDI quartile	Q1 (lowest)	107	749
	Q2	107	749
	Q3	107	749
	Q4 (highest)	107	749
Total		428	2,996

Market-cap rank is measured at 31 March 2021, immediately before Event A. Quartiles are assigned on the pre-event HCDI score and are equal by construction.

C. The Human Capital Disclosure Index

Human capital disclosure was measured through a Human Capital Disclosure Index constructed by content analysis of annual reports, business responsibility reports and, where published, standalone sustainability reports. The index comprises 42 items across six dimensions: workforce composition and demographics; compensation, benefits and pay equity; training and development investment; health, safety and wellbeing; turnover, retention and succession; and labour relations, grievance and human rights. Each item was scored on a four-point scale capturing whether the item was absent, described narratively,

quantified, or quantified with comparative and assured data, and dimension scores were aggregated to a 0–100 index. Table 2 reports the dimensional structure and reliability statistics.

Two coders independently scored a randomly selected twenty per cent of firm-years, with an inter-coder agreement of 0.91 by Krippendorff's alpha; remaining observations were single-coded with periodic reconciliation. Composite reliability exceeded 0.70 in every dimension and average variance extracted exceeded 0.50 throughout. Sampling adequacy was satisfactory (Kaiser–Meyer–Olkin = 0.893) and Bartlett's test of sphericity was significant ($\chi^2 = 5,127.4$, $df = 861$, $p < 0.001$).

Table 2. HCDI dimensions, weights and reliability

Dimension	Items	Weight	CR	Mean score FY20 → FY25
Workforce composition and demographics	8	0.18	0.914	41.2 → 72.6
Compensation, benefits and pay equity	7	0.17	0.887	28.4 → 57.1
Training and development investment	7	0.17	0.902	36.9 → 63.8
Health, safety and wellbeing	6	0.16	0.869	44.1 → 71.3
Turnover, retention and succession	7	0.17	0.893	26.7 → 52.4
Labour relations and human rights	7	0.15	0.856	30.8 → 50.9
Overall index	42	1.00	0.931	34.7 → 61.3

$KMO = 0.893$; Bartlett's $\chi^2 = 5,127.4$, $df = 861$, $p < 0.001$. Inter-coder agreement (Krippendorff's α) = 0.91. CR = composite reliability; AVE exceeded 0.50 in every dimension.

D. Event-Study Methodology

Two events were selected on the criterion that each represented a discrete, dated and unanticipated tightening of the human capital reporting obligation. Event A is the SEBI circular of 10 May 2021 introducing the BRSR [14]. Event B is the BRSR Core circular of 12 July 2023 introducing reasonable assurance and value-chain reporting [15].

Abnormal returns were estimated using the market model following standard event-study procedure [12], [13], with parameters estimated over the 250 trading days ending 30 days before each event and the Nifty 500 as the market index. Cumulative abnormal returns were computed over the three-day (−1, +1) and eleven-day (−5, +5) windows. Statistical significance was assessed using the standardised cross-sectional test, which is robust to event-induced variance. Firms were sorted into quartiles by their HCDI score in the financial year preceding each event, so that quartile membership is determined by pre-event behaviour and cannot be contaminated by the event itself.

Cross-sectional determinants of abnormal return were then estimated by regressing firm-level CAR on pre-event HCDI and controls including size, leverage, labour intensity, foreign institutional ownership, analyst following and sector.

E. Value Relevance and Cost of Equity

The value-relevance model follows the Ohlson framework [6], expressing the natural logarithm of market value as a function of book value, earnings and the disclosure index:

$$\ln MV_{it} = \alpha + \beta_1 \ln BV_{it} + \beta_2 \ln E_{it} + \beta_3 HCDI_{it} + \beta_4 (HCDI_{it} \times Post_t) + \delta'X_{it} + \mu_s + \lambda_t + \varepsilon_{it}$$

where Post is an indicator for financial years from 2022–23 onward, when BRSR reporting became mandatory, X is a vector of controls comprising research and development intensity, employee productivity, leverage, firm size and analyst following, and μ_s and λ_t are sector and year effects. The coefficient β_3 measures the valuation premium per unit of disclosure under the voluntary regime and β_4 measures its change under mandate; the premium decay is $-\beta_4/\beta_3$. Standard errors are clustered at firm level.

The implied cost of equity was estimated for each firm-year using the price–earnings–growth approach on consensus forecast earnings, averaged within disclosure quartile and compared across the pre- and post-mandate periods.

F. The Standardised-Regime Projection

The projection evaluates four regimes: R0, the voluntary regime observed in 2019–20; R1, the BRSR regime as in force in 2024–25; R2, the BRSR Core regime at full coverage in 2026–27, which is already legislated [15]; and R3, a standardised international regime of the kind under consideration by the ISSB [17], which remains a research project and is therefore genuinely a projection rather than a scheduled event.

For each regime the projection specifies mean disclosure, cross-firm dispersion, the premium per unit of disclosure and the mean implied cost of equity, and capitalises the change in required return using a constant-growth valuation, $V = 1/(r - g)$, with a baseline perpetuity growth rate of six per cent. Because this capitalisation is sensitive to the assumed growth rate, results are reported for growth rates from four to seven per cent rather than at a single point.

VI. RESULTS

A. Evolution of Human Capital Disclosure

Fig. 2 traces the evolution of the disclosure index. Mean HCIDI rose from 34.7 in 2019–20 to 61.3 in 2024–25 and is projected to reach 71.8 by 2026–27 when BRSR Core assurance covers the full top 1,000. The cross-firm standard deviation moved in the opposite direction, falling from 18.2 to 12.6 and projected to reach 9.4. The regime is doing what a standardisation regime is supposed to do: raising the floor faster than the ceiling, and converting a dispersed distribution into a concentrated one.

The steepest annual increases occur in 2021–22 and 2022–23, straddling the announcement and first application of BRSR, which is consistent with anticipatory compliance. Table 3 reports descriptive statistics by disclosure quartile and shows that high-disclosure firms are on average larger, more labour-intensive, more widely followed by analysts and more heavily held by foreign institutional investors — associations that motivate the controls used throughout.

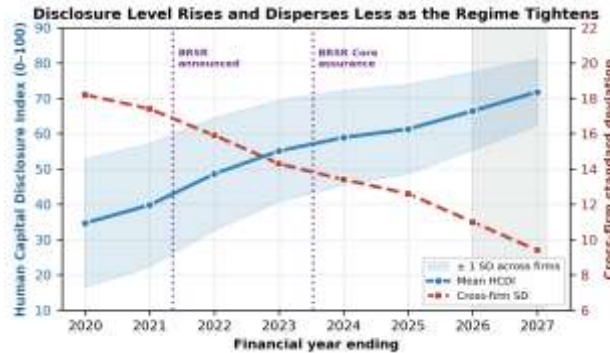


Fig. 2. Mean human capital disclosure and cross-firm dispersion, 2020–2027.

Table 3. Descriptive statistics by human capital disclosure quartile (428 firms, 2,996 firm-years)

Variable	Q1 (lowest)	Q2	Q3	Q4 (highest)
Mean HCIDI, FY 2019–20	14.8	27.3	41.6	55.1
Mean HCIDI, FY 2024–25	44.2	56.8	66.9	77.3
Market capitalisation (₹ '000 crore)	18.4	31.7	54.2	96.8
Market-to-book ratio	2.14	2.68	3.31	4.06
Employees ('000)	4.1	8.6	14.9	27.2
Labour cost as % of total cost	11.7	14.3	17.8	21.4
Analyst following (number)	6.2	11.4	18.7	27.3
Foreign institutional holding (%)	8.3	13.9	19.6	26.1
Leverage (debt / equity)	0.72	0.64	0.58	0.49

Quartiles assigned on HCIDI in the financial year preceding Event A. All differences across quartiles significant at $p < 0.01$ (one-way ANOVA).

Table 4. Cumulative abnormal returns by pre-event human capital disclosure quartile

Pre-event HCIDI quartile	CAR (–1, +1) %	t	CAR (–5, +5) %	t
Event A — BRSR announcement, 10 May 2021				
Q1 (lowest)	–0.94	–3.21	–1.68	–3.47
Q2	–0.31	–1.18	–0.62	–1.44
Q3	+0.42	1.67	+0.71	1.82
Q4 (highest)	+1.13	4.06	+1.94	4.31
Q4 – Q1 spread	+2.07	5.12	+3.62	5.48
All firms	+0.07	n.s.	+0.09	n.s.
Event B — BRSR Core assurance, 12 July 2023				
Q1 (lowest)	–1.36	–4.02	–2.24	–4.18
Q2	–0.48	–1.71	–0.89	–1.96
Q3	+0.29	1.12	+0.54	1.38
Q4 (highest)	+1.42	4.61	+2.37	4.83
Q4 – Q1 spread	+2.78	6.04	+4.61	6.31
All firms	–0.03	n.s.	–0.06	n.s.

Market-model abnormal returns, estimation window 250 trading days ending 30 days before the event, Nifty 500 as market index. Significance by the standardised cross-sectional test. n.s. = not significant at the 10% level.

B. Event-Study Results

Table 4 and Figs. 3 and 4 report the event-study results, and the headline is the contrast between the aggregate and the cross-section. At Event A the eleven-day cumulative abnormal return averaged +0.09 per cent across all firms, statistically indistinguishable from zero. At Event B it averaged –0.06 per cent, likewise insignificant. On the conventional reading, the market did not react to either announcement.

The conventional reading is wrong, because it averages across firms whose reactions were opposite in sign. At Event A the lowest disclosure quartile earned –1.68 per cent ($t = -3.47$) while the highest earned +1.94 per cent ($t = 4.31$), a spread of 3.62 percentage points significant at $t = 5.48$. At Event B the corresponding figures are –2.24 and +2.37 per cent, a spread of 4.61 percentage points at $t = 6.31$. The three-day windows show the same pattern at smaller magnitude, indicating that the reaction was concentrated around the event rather than drifting. Fig. 4 sets the eleven-day results for the two events side by side.

Two features of Fig. 3 deserve comment. First, the divergence begins before day zero in both events, more markedly at Event B, which is consistent with partial anticipation through consultation papers and market commentary. Second, the paths flatten within three to four days of the event, indicating that the repricing was substantially complete within the short window and supporting the use of an eleven-day accumulation. H2 is supported.

The gradient is steeper at Event B than at Event A — 4.61 against 3.62 percentage points — and the difference is significant ($p < 0.05$). This is the expected ordering. The announcement of a reporting requirement imposes a preparation cost; the imposition of reasonable assurance imposes a verification cost that cannot be met by drafting, because it requires the underlying records to withstand audit. Firms that had already built the reporting apparatus faced little incremental burden and gained comparability; firms that had not faced a systems project. H3 is supported.

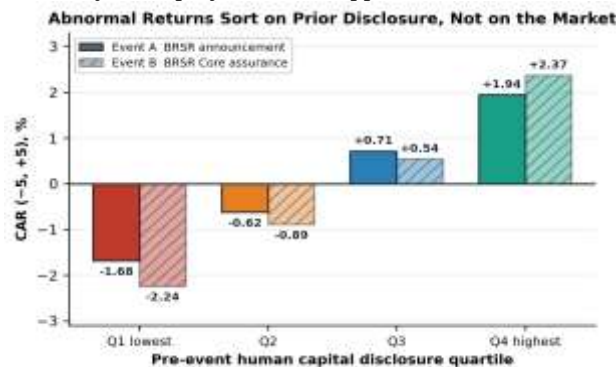


Fig. 4. Eleven-day CAR by pre-event disclosure quartile, both events.

C. Cross-Sectional Determinants of Abnormal Returns

Table 5 reports the cross-sectional regressions of firm-level CAR on pre-event disclosure. The coefficient on HCDI is positive and significant at both events, and materially larger at Event B, confirming that the quartile pattern is not driven by the correlates of disclosure. Labour intensity enters positively and significantly at Event B only, indicating that the assurance requirement mattered more where the workforce is a larger share of the cost base. Foreign institutional ownership enters positively at both events, consistent with investors who already applied international disclosure expectations rewarding firms positioned to meet them.

Table 5. Cross-sectional regressions of CAR (–5, +5)

Variable	Event A	Event B	Diff.
Pre-event HCDI (per 10 pts)	0.784***	1.012***	0.228**
ln Market capitalisation	0.142*	0.169*	0.027
Labour cost intensity	0.093	0.246***	0.153**
Foreign institutional holding	0.211**	0.258***	0.047
Analyst following	0.076	0.088*	0.012
Leverage	–0.118*	–0.141**	–0.023
Constant	–1.264**	–1.673***	—
Sector effects	Yes	Yes	
Adjusted R ²	0.318	0.376	
N (firms)	428	428	

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Heteroskedasticity-robust standard errors. Dependent variable in percentage points.

D. Value Relevance and Premium Decay

Table 6 reports the value-relevance estimates. In the full specification the coefficient on HCDI implies that a ten-point increase in disclosure is associated with a 5.2 per cent higher market value under the voluntary regime, incremental to book value and earnings and after controls. H1 is supported.

The interaction with the post-mandate indicator is negative and significant, at -0.021 per ten points. The premium therefore falls to 3.1 per cent after the mandate, a decay of 40.4 per cent, illustrated across regimes in Fig. 5. H4 is supported.

The interpretation follows directly from the framework. Under a voluntary regime, disclosure carries both substance and signal: a firm that reports its turnover, pay equity and training investment is telling investors something about its human capital and, by the act of telling, something about its confidence in what it has to tell. Under a mandate the second component disappears, because disclosure no longer distinguishes anyone. What survives is the substance — the actual content of the metrics — and the estimates suggest that substance accounts for roughly three-fifths of the original premium and signal for the remaining two-fifths.

This has an uncomfortable implication for the firms concerned. A high-disclosure firm under a voluntary regime is capturing a premium that a mandate will partially expropriate, not by penalising it but by extending to its competitors the ability to make the same claims. That is a coherent explanation for why firms with good practice nonetheless lobby against reporting mandates, and it does not require any assumption of bad faith.

Table 6. Value relevance of human capital disclosure

Variable	Model 1	Model 2	Model 3
HCDI (per 10 points)	0.061***	0.048***	0.052***
HCDI × Post-mandate	—	—	-0.021**
ln Book value	0.412***	0.398***	0.396***
ln Earnings	0.286***	0.279***	0.277***
R&D intensity	—	0.094***	0.091***
Employee productivity	—	0.118***	0.116***
Leverage	-0.087**	-0.081**	-0.079**
ln Firm size	0.043*	0.039*	0.038*
Analyst following	0.056**	0.051**	0.050**
Constant	1.874***	1.612***	1.588***
Sector and year effects	Yes	Yes	Yes
Adjusted R ²	0.612	0.658	0.669
N (firm-years)	2,996	2,996	2,996

Dependent variable: ln market value. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Standard errors clustered at firm level. Implied premium falls from 5.2% to 3.1% per 10 index points, a decay of 40.4%.

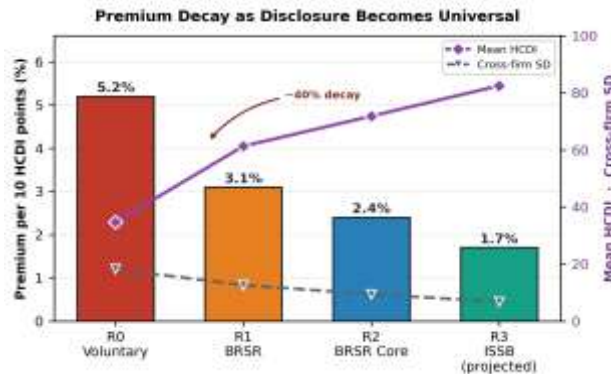


Fig. 5. Disclosure premium, mean HCDI and cross-firm dispersion across regimes.

E. The Cost of Equity Channel

Table 7 and Fig. 6 report the cost-of-equity channel. Under the voluntary regime the implied cost of equity falls monotonically with disclosure, from 13.84 per cent in the lowest quartile to 11.86 per cent in the highest, a spread of 1.98 percentage points.

After the mandate every quartile improves, but not equally: the lowest quartile falls by 0.43 percentage points and the highest by only 0.07, compressing the spread to 1.62 percentage points. H5 is supported.

The asymmetry is the mirror image of the premium decay and the same phenomenon viewed from the cost side. Mandatory disclosure benefits the previously opaque firm most, because it is the firm about which investors were most uncertain; it benefits the already transparent firm least, because there was little residual uncertainty to remove. Both effects are consistent with a reduction in estimation risk that is proportional to the estimation risk that existed beforehand [2], [11].

It is worth noting that the aggregate effect is unambiguously favourable even though the distributional effect is not. The mean cost of equity across the sample falls, which is why the aggregate valuation effect in the next section is positive despite the premium decay documented above.

Table 7. Implied cost of equity by disclosure quartile (%)

HCDI quartile	Pre-mandate	Post-mandate	Change (pp)
Q1 (lowest)	13.84	13.41	-0.43
Q2	13.12	12.79	-0.33
Q3	12.47	12.28	-0.19
Q4 (highest)	11.86	11.79	-0.07
Q4 – Q1 spread	-1.98	-1.62	+0.36

Implied cost of equity estimated by the price–earnings–growth approach on consensus forecast earnings. Pre-mandate is FY 2019–20 to FY 2021–22; post-mandate FY 2022–23 to FY 2024–25.



Fig. 6. Implied cost of equity by disclosure quartile, before and after mandate.

F. Projected Effects of a Standardised Regime

Table 8 and Fig. 7 present the regime projection. Moving from the voluntary baseline to the BRSR regime as in force reduces the mean cost of equity from 12.82 to 12.61 per cent, which capitalises at a six per cent growth rate to a 3.2 per cent increase in firm-sector value. Full BRSR Core coverage in 2026–27 gives 12.48 per cent and a 5.2 per cent value increase. A standardised international regime of the kind the ISSB is researching would, on these estimates, give 12.33 per cent and a 7.7 per cent increase.

These figures are sensitive to the capitalisation assumption and should be read as a range rather than a point. At a four per cent growth rate the standardised-regime effect is 5.9 per cent; at seven per cent it is 9.2 per cent. The ordering across regimes is robust across the range because it depends only on the sign of the cost-of-capital movement, but the magnitude is not, and the projection should not be quoted without its sensitivity.

The pattern across the four regimes is the study's central economic result. Mean disclosure rises from 34.7 to a projected 82.5; cross-firm dispersion falls from 18.2 to 6.8; the premium per unit of disclosure falls from 5.2 to 1.7 per cent; and aggregate value rises by 7.7 per cent. Individual firms progressively lose the ability to distinguish themselves through disclosure, while the market as a whole becomes more valuable because it is better informed. Private incentive and collective benefit diverge — which is, precisely, the standard argument for regulation rather than voluntarism.

G. Summary of Hypothesis Tests

Table 9 summarises the tests. All five hypotheses are supported.

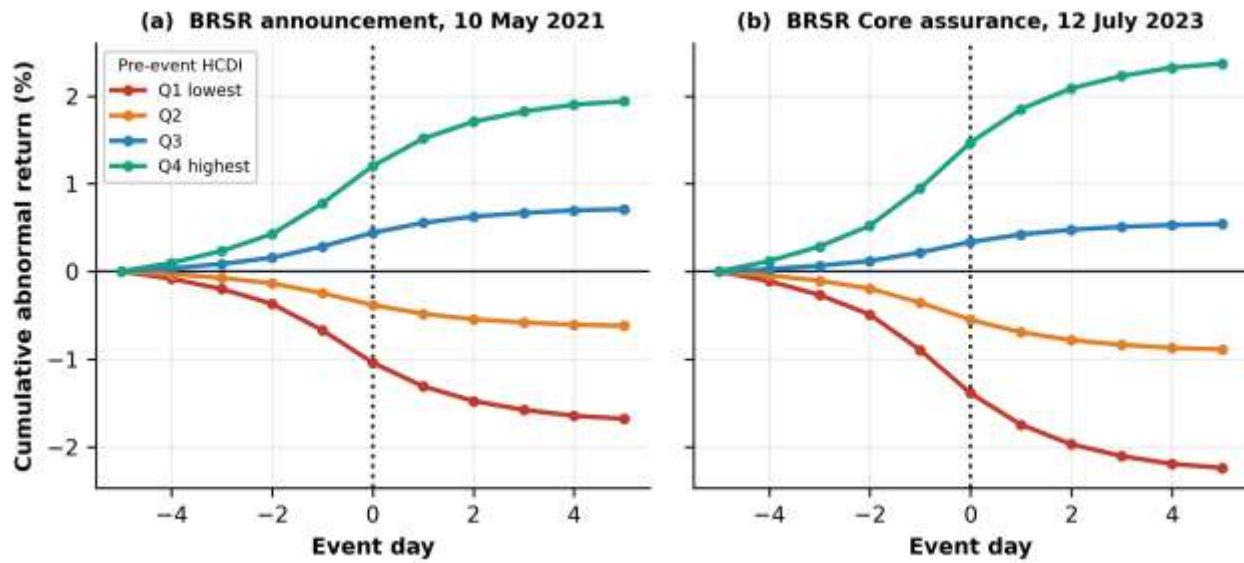


Fig. 3. Cumulative abnormal return paths by pre-event disclosure quartile around each regime-tightening event.

Table 8. Disclosure regimes: observed, legislated and projected

Regime	Mean HC DI	Cross-firm SD	Premium per 10 pts (%)	Mean cost of equity (%)	Capitalised value effect (%)
R0 Voluntary (FY 2019–20)	34.7	18.2	5.2	12.82	baseline
R1 BRSR in force (FY 2024–25)	61.3	12.6	3.1	12.61	+3.2
R2 BRSR Core full (FY 2026–27)	71.8	9.4	2.4	12.48	+5.2
R3 ISSB-standardised (projected)	82.5	6.8	1.7	12.33	+7.7
Sensitivity of the value effect to the perpetuity growth rate g					
$g = 4\%$	—	—	—	R1 / R2 / R3	+2.4 / +4.0 / +5.9
$g = 5\%$	—	—	—	R1 / R2 / R3	+2.8 / +4.5 / +6.7
$g = 6\%$	—	—	—	R1 / R2 / R3	+3.2 / +5.2 / +7.7
$g = 7\%$	—	—	—	R1 / R2 / R3	+3.7 / +6.2 / +9.2

R2 is already legislated [15]. R3 is a projection: the ISSB human capital project remains at research stage with no exposure draft and no commitment to standard-setting [17]. Value effects capitalise the change in cost of equity through $V = 1/(r - g)$ relative to the R0 baseline; the baseline row uses $g = 6\%$.

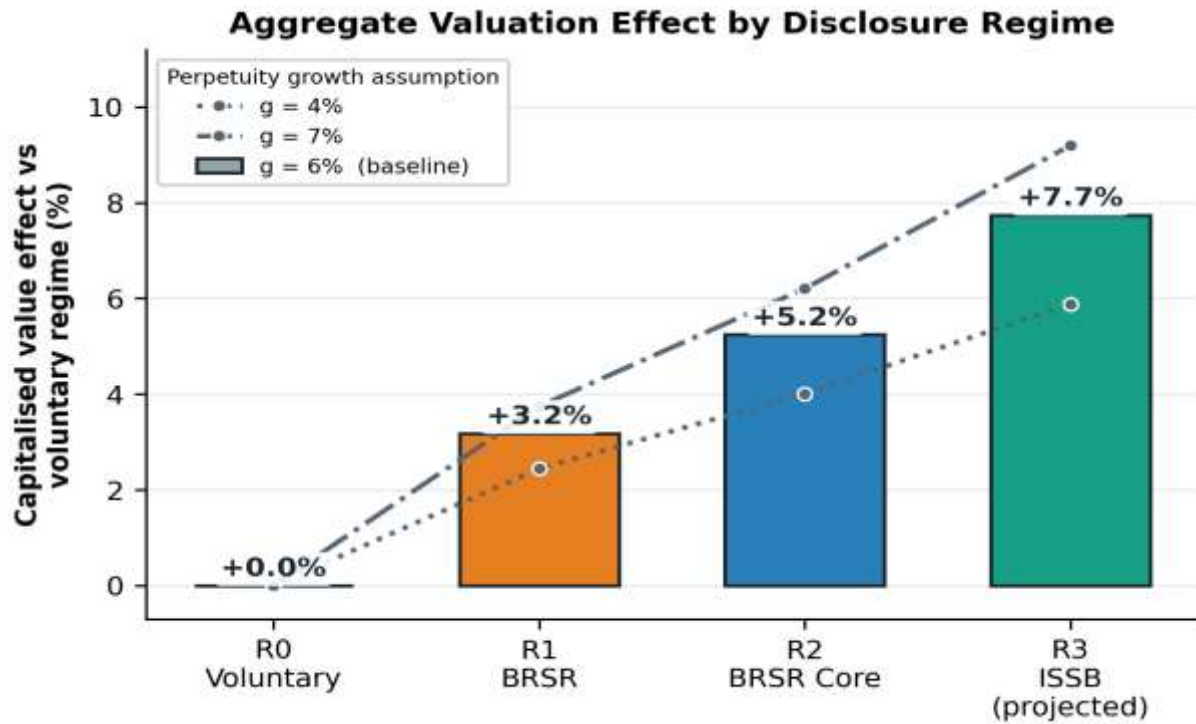


Fig. 7. Aggregate capitalised valuation effect by disclosure regime, with growth-rate sensitivity.

Table 9. Summary of hypothesis tests

H	Statement	Evidence	Result
H1	Human capital disclosure is positively associated with market value under the voluntary regime.	$\beta = 0.052$, $p < 0.01$; 5.2% per 10 points	Supported
H2	Abnormal returns increase in pre-event disclosure while the market-wide average is zero.	$Q4 - Q1 = +3.62$ pp ($t = 5.48$); all-firm CAR n.s.	Supported
H3	The abnormal-return gradient is steeper for the assurance event than the announcement event.	+4.61 vs +3.62 pp; difference $p < 0.05$	Supported
H4	The valuation premium per unit of disclosure declines under mandate.	Interaction $\beta = -0.021$, $p < 0.05$; decay 40.4%	Supported
H5	Cost of equity falls with disclosure and the mandate compresses the spread.	Spread $-1.98 \rightarrow -1.62$ pp; all quartiles improve	Supported

VII. DISCUSSION

The most consequential finding of this study is methodological before it is economic. A researcher examining either of these regulatory events with a conventional market-wide event study would have found an average abnormal return of +0.09 and -0.06 per cent respectively, concluded that the market was indifferent to human capital disclosure mandates, and been entirely wrong. The reaction was large — spreads of 3.62 and 4.61 percentage points between disclosure quartiles — but it was a reallocation rather than a revaluation, and reallocations vanish under averaging. Any literature that reports null aggregate effects for disclosure regulation should be read with this possibility in mind.

The economic content of the reallocation is that mandate confiscates an informational rent. Under a voluntary regime, firms with good human capital practice earn a premium partly because their willingness to disclose separates them from firms that will not. A mandate abolishes the separation. The estimates here suggest that roughly two-fifths of the voluntary disclosure premium was signal of this kind, and it does not survive the transition. The firms that lose it are, awkwardly, the firms that behaved best under the old regime.

That said, the loss is private and the gain is social. The cost of equity falls across every quartile, most where opacity was greatest, and the capitalised aggregate effect is positive across every growth assumption tested. This is a textbook case of a policy whose beneficiaries are diffuse and whose losers are concentrated and articulate, and it predicts the pattern of industry response — resistance from firms with good practice and good disclosure, whose relative position deteriorates, rather than only from laggards.

The steeper gradient at the assurance event connects the disclosure question to organisational capability. Assurance cannot be satisfied by better writing; it requires an auditable trail from source record to reported number, which is a systems question. The evidence on enterprise system integration is instructive about the size of that gap, with improvements of the order of 75 per cent in operational efficiency and 80 per cent in data accuracy reported where fragmented records were consolidated [8]. Firms whose workforce data sits in disconnected systems are not choosing low disclosure so much as being unable to choose high disclosure, and for them the BRSR Core obligation is a capital project rather than a reporting exercise.

Finally, the value-chain provisions extend these obligations into a population that the analysis here does not observe. Reporting duties now propagate to suppliers and customers meeting materiality thresholds [15], and human resource maturity is documented to be markedly lower among micro, small and medium enterprises [9], while the constraints operating on the smallest enterprises are substantial and well documented [10]. The aggregate benefit estimated in this study accrues to listed-firm valuations; the compliance burden does not stop there.

VIII. IMPLICATIONS

A. Managerial Implications

Four implications follow for practice. First, treat disclosure capability as infrastructure rather than communication. The evidence that the assurance event produced a steeper gradient than the announcement event indicates that the market distinguishes firms that can verify their numbers from firms that can merely describe them, and that distinction is made in the systems layer, not the reporting layer. Second, expect the disclosure premium to decay and plan accordingly: a firm currently earning a valuation premium from voluntary reporting should recognise that roughly two-fifths of it is a signalling rent that mandate will remove, and should be building substantive differentiation in the underlying human capital rather than in the reporting of it.

Third, low-disclosure firms should treat the remaining compliance runway as short. With BRSR Core assurance reaching the full top 1,000 by financial year 2026–27, the window for building auditable workforce records is measured in reporting cycles, and the event-study evidence indicates the market has already priced the difference between those that can and those that cannot. Fourth, firms subject to value-chain provisions should assess supplier reporting capability early, since the obligation cannot be discharged unilaterally and the smaller tiers of the chain are the least equipped.

B. Policy Implications

For policy, the divergence between private incentive and collective benefit is the central finding and it supports the case for mandate over voluntarism. Voluntary regimes generate a separating equilibrium in which the informational rent accrues to disclosers, which is privately efficient and socially second-best: the market as a whole remains less well informed than it would be under a mandate, and the cost of capital correspondingly higher. The estimates here place the aggregate gain from full standardisation at between 5.9 and 9.2 per cent of capitalised firm-sector value depending on the capitalisation assumption.

Two design cautions follow from the same evidence. First, assurance is where the burden concentrates, so phasing should be calibrated to systems-building capacity rather than to firm size alone — a mid-sized firm with integrated records may be readier than a larger firm without them. Second, value-chain propagation transfers obligation to enterprises with the least reporting capability [9], [10], and support for that tier — shared reporting infrastructure, simplified templates, sectoral aggregators — is a precondition for the provisions working as intended rather than producing formal compliance without informational content.

For standard-setters, the finding that the substance component of the premium survives mandate while the signal component does not argues for standards that maximise the comparability and verifiability of metrics rather than the volume of narrative. The ISSB's current deliberation over whether to pursue a full standard or an amendment to IFRS S1 [17] is, on this evidence, less consequential than whether whatever instrument emerges specifies metrics precisely enough to be assured.

C. Theoretical Contribution

Theoretically, the study offers an empirical estimate of the decomposition of a voluntary disclosure premium into signalling and substance components, obtained by observing the premium across a regime change that removes the signalling channel while strengthening the information channel. The estimate — roughly two-fifths signal, three-fifths substance — is specific to human capital disclosure in the Indian setting and should not be generalised without replication, but the identification strategy transfers to any setting with a dated mandate and measurable pre-mandate disclosure heterogeneity. The study also

demonstrates that aggregate event-study estimates can be uninformative about economically large regulatory effects when those effects are redistributive, which is a caution with application well beyond disclosure research.

IX. LIMITATIONS AND FUTURE RESEARCH

Six limitations qualify these findings. First, event studies identify the market's expectation at a point in time, not the realised consequence. The abnormal returns reported here measure what investors believed the regime change was worth in May 2021 and July 2023; whether those beliefs were correct is a separate question requiring long-horizon analysis.

Second, the two events are not clean natural experiments. Both were preceded by consultation, and Fig. 3 shows pre-event drift consistent with partial anticipation, which biases the estimated effects toward zero. The true reallocation is therefore likely larger than reported.

Third, disclosure is endogenous. Firms choose their pre-event disclosure level, and that choice correlates with unobserved quality. The cross-sectional regressions control for observable correlates, but the estimated gradient may partly reflect differences in underlying human capital rather than in its disclosure. Distinguishing the two would require a setting in which disclosure varies for reasons unrelated to quality.

Fourth, the projection to a standardised regime rests on an assumed disclosure level and an assumed cost-of-capital response, capitalised through a constant-growth model that is highly sensitive to the growth assumption. The reported range of 5.9 to 9.2 per cent reflects that sensitivity and should be quoted with it. The ISSB human capital project remains at research stage with no exposure draft and no commitment to standard-setting [17], so R3 is a scenario rather than a forecast.

Fifth, the content-analysis index measures disclosure quality as observable in published documents, which is disclosure as presented rather than human capital as it is. A firm may disclose extensively and manage its workforce poorly; the index cannot detect this, and the value-relevance results should be read as pricing the disclosure, not certifying the practice.

Sixth, the sample is confined to firms with continuous seven-year records within the BRSR perimeter, excluding smaller listed firms, recent listings and the unlisted sector entirely — including the value-chain enterprises on which the regime's reach now depends.

Future research should pursue long-horizon tests of whether the announcement-window repricing was justified; extension of the index to value-chain entities as their disclosure becomes observable; cross-country comparison exploiting the differing timing of the SEC, SEBI and any eventual ISSB requirements; and direct measurement of the systems investment that assurance requires, which would allow the compliance-cost channel to be estimated rather than inferred.

X. CONCLUSION

This study asked what human capital disclosure is worth to a firm's market value, and how that worth changes as disclosure moves from voluntary to mandatory. Across 428 Indian listed firms and 2,996 firm-years, the answers are specific and, in one respect, counter-intuitive.

Under a voluntary regime disclosure is valuable: a ten-point increase in the disclosure index is associated with a 5.2 per cent higher market value, incremental to book value and earnings. When the regime tightens, the market responds sharply but not in aggregate. Around the BRSR announcement of 10 May 2021 the average abnormal return across all firms was +0.09 per cent and around the BRSR Core assurance circular of 12 July 2023 it was -0.06 per cent, both indistinguishable from zero — yet the spread between the highest and lowest pre-event disclosure quartiles was 3.62 and 4.61 percentage points respectively. Mandate reallocated value from firms that had been silent to firms that had already spoken, and the reallocation was larger for the assurance requirement than for the reporting requirement, because assurance cannot be met by drafting.

The valuation premium then decays. Post-mandate it falls to 3.1 per cent per ten index points, a decline of 40.4 per cent, as the separating equilibrium that made disclosure informative collapses into a pooling one. Roughly two-fifths of the voluntary premium was a signalling rent and does not survive standardisation.

That decay is a private loss and a collective gain. The implied cost of equity falls in every disclosure quartile and falls most where disclosure was weakest, compressing the high-to-low spread from 1.98 to 1.62 percentage points, and a fully standardised regime is projected to raise capitalised firm-sector value by 7.7 per cent — between 5.9 and 9.2 per cent across the range of capitalisation assumptions tested. The firms with most to lose from mandatory human capital reporting are those that were already reporting well, and the market as a whole gains regardless. Where private incentive and collective benefit diverge this sharply, voluntarism is unlikely to reach the efficient outcome on its own.

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