



Drivers of Debt-Financing and Related Sustainability Costs: A Pre-and Post GST Perspective of Indian Consumer Goods SMES

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Abstract

This study investigates how the sustainability costs, i.e. tax compliance, logistics, and digitisation costs, moderate with key determinants of debt financing, viz., profitability, liquidity, growth, business risk, and cash flow, to shape the debt financing of Indian consumer goods SMEs across pre- and post-GST periods. Data have been analysed using a short panel of 65 BSE-listed SMEs (selected under revised MSMED Act, 2025 thresholds) during 2014–2024. Arellano–Bond, 1991 dynamic estimation is applied to address issues like endogeneity and firm heterogeneity. Finally, study results exhibit a marked shift in the post-GST period. Profitability derogates long-term debt, while business risk becomes restrictive. However, sustainability factors moderate these effects differently, reflecting a lower compliance costs, improved logistics, and evolving digitisation, indicating that GST reforms and sustainable cost management are reshaping SMEs' debt financing strategies towards a sustainable future.

Keywords: GST implementation, Debt financing, Sustainability Cost, Moderation effect, Consumer Goods SME

1. Introduction

In the earlier tax regime, small-scale manufacturing firms used to pay multiple indirect taxes such as Excise, VAT, and Service Tax, amounting to nearly 25%. Post-GST implementation in July 2017, the indirect tax rate reduced to around 18% (Costea, [2021](#)) creating a unified "One Nation One Tax" structure. This reform eliminated tax disparities and cascading effects, difficulty and disparities owing to local VAT and state-specific tax laws while operating across regions, and digital compliance enhanced transparency, enabling manufacturing SMEs in the consumer goods sector to achieve stability and competitiveness. Furthermore, business development now depends significantly on sustainable debt policies and several financial planning costs (e.g. tax compliance, logistics and digitisation costs). These factors play a moderating role in shaping the interrelationship between debt policy determinants and capital structure strategies (Chen and Pohlschmidt 2025, 10). Furthermore, in alignment with the global shift towards sustainable business practices, the study highlights three sustainability dimensions that have significantly influenced SMEs across both periods. Firstly, *Tax Compliance Costs* have reduced under a unified GST framework, encouraging streamlined and sustainable practices (Vishnuhadevi and Bindu 2022, 10). Second, *Logistics costs* reduced in post-GST, due to the elimination of multiple inter-state checkpoints and regional levies, simplifying distribution networks (Clear tax 2025). Lastly, *Digitisation Costs* increased owing to the full-scale digitalization of tax compliance through the GSTIN portal. Enhanced transparency, better utilization of input tax credits, and the adoption of ERP systems by SMEs not only aided regulatory compliance but also promoted sustainable governance (PIB, Govt. of India 2025).

This study seeks to explore how select determinants of debt capital financing affect SMEs' debt procurement policies, specifically focusing on listed consumer goods manufacturers on the BSE (Rahman Asma, Rina Abdul and Noor et al. 2021, 70). This study collectively underscore how GST has revamped the structure decisions while aligning SMEs with sustainable growth pathways. Hence, the causal effects of debt policy determinants and capital structure planning, alongside the moderating impact of sustainable operating costs on the changing relationship between the pre- and post-GST regimes (Becker, Annette, Serena Fatica, and Michela Rancan 2025, 110) sets the main central theme of the study.

2. Review of Literature and Study variables

Firstly, this study examines firm-level determinants of debt policy in Consumer goods SMEs, focusing on profitability, liquidity, growth, business risk, and cash flow. (Eldomiaty, Tarek I. 2008, 30; Degryse, Hans, Peter De Goeij, and Peter Kappert 2012, 440; Hsiao, J., C. Hsu, and K. Hsu 2009, 250). Profitability, Liquidity, Business risk and strong cash flows reduce reliance on debt as because all of these determinants empowers firms with more internal funds (López-Gracia, José, and Francisco Sogorb-Mira 2008, 120; Mateev, Miroslav, Panikkos Poutziouris, and Konstantin Ivanov 2013, 30; Mitra, Sayak 2022; Mitra, Sayak, and Pradip Kumar Samanta. 2022, 40) while Sales growth rate shapes preferences of Long-term (for fund expansion) and Short-term borrowing (for working capital needs) (Almendros, Jose A. Clemente, and Francisco Sogorb Mira 2018, 170; Rao, Purnima, Satish Kumar, and Vinodh Madhavan 2019, 40; Mitra, Sayak, Rupa Mondal, and Saurav Mukherjee 2023, 30)

Tax compliance and digitization costs primarily encourage long-term debt usage due to their strategic, ongoing nature and potential for creating sustainable competitive advantages. However, it may increase short-term borrowing needs during peak compliance periods owing to working capital requirements and seasonal payment cycles (Bruce-Twum, Ernest and Danie Schutte 2021, 10). Furthermore, Logistics costs may discourage long-term debt due to their operational volatility and impact on predictable cash flows; Costea, [2021](#)). Nevertheless, Digitization costs generally favour long-term financing structures but may require short-term bridge financing during implementation phases (Kusumawardhani, Fieryanti Kamaril, Dwi Ratmono, et al. 2024,1111-1116).

Secondly, this paper captures the moderation effects of several Sustainability costs (Chen and Pohlschmidt 2025, 10) which are associated with the above select determinants of debt policy of SMEs. The increase in tax compliance costs amplify profitability, sales growth, and reduces business risk which in turn positive impact on debt, while deepening liquidity's negative has an effect. Cash flow shows a mixed influence, reducing debt need when strong but increasing reliance on debt when weak. Higher logistics costs weaken the profitability, liquidity that discourages debt, (Pohit Sanjib, Devendra B. Gupta, and Devender Pratap et al. 2019, 260) however, it strengthen the impact of sales growth and business risk on debt usage. Cash flow effects remain mixed due to seasonal cost surges and volatility in operational cycles. Digitization costs enhance the positive impact of profitability, liquidity, sales growth, and business risk on debt, as firms leverage financing to fund digital transformation. Cash flow effects are mixed, with initial debt-funded investments offset by long-term efficiency gains.

Table:1 Description of Variables

<i>Variable Type</i>	<i>Name of Variable</i>	<i>Description</i>	<i>Hypnotised effect</i>
Dependent Variables	Long Term Debt Ratio (LTDR)	Long-term borrowings excluding current options/ Total Assets	
	Short Term Debt Ratio (STDR)	Short-term borrowings excluding current options/ Total Assets	
Independent Variables	Profitability (PROF)	Earnings before Depreciation, Interest & Tax/ Total Assets	Negative
	Liquidity (LIQ)	Current Asset/ Current Liabilities excluding provisions	Negative
	Growth Rate (GROW)	$[\text{Total Sales}_t - \text{Total Sales}_{t-1}] / \text{Total Sales}_{t-1}$	Negative /Positive
	Business Risk (BR)	σ Earnings before Interest & Tax/ Total Assets	Negative
	Cash Flow (CF)	Profit after Tax + Depreciation & Amortisation/ Total Assets	Negative /Positive
Moderating Variables	Tax Compliance Cost (TCC)	Total payment of indirect tax (<i>incl. penalties, fines etc.</i>)/ Total Sales	Positive
	Logistics Cost (LC)	(Total distribution expenses + travelling expenses)/ Total Sales	Negative
	Digitisation Cost (DC)	(Depreciation on Software + software & other IT and digital connectivity charges)/ Total Sales	Negative
Control Variables	Size of Firm (SIZE)	Log of the Total Assets of firm	

3. Methodology

3.1 Data source and Sample

For the study, data has been extracted from the authorised database of PROWESS-CMIE, a sample of consumer goods manufacturing companies listed on the Bombay Stock Exchange (BSE). The study's sample selection involved several steps. Companies without complete data or those reporting negative reserves and surpluses (i.e., negative sales profitability) during the study period were excluded from the analysis. The selection further fathoms the revised thresholds under the Micro, Small, and Medium Enterprises Development (MSMED) Act, 2006, effective from April 1, 2025. According to the revised MSMED Act, eligible Small and Medium Enterprises must have an investment in plant and machinery of Rs. 2.5 crore to Rs.

125 crore, and turnover between Rs. 10 crore and Rs. 500 crore. Only firms consistently meeting these criteria from 2014 to 2024 were considered. After extensive screening, including data completeness and outlier removal, a final sample of 65 companies that fulfilled the SME criteria was selected.

3.2 Empirical Framework

Study's empirical framework is based on panel data methodology, specifically a short panel with greater number of cross-sectional units (65 companies) than time periods (11 years). The firm-level determinants of debt financing regressed as independent variables, while, "Tax Compliance Cost," "Logistics Cost," and "Digitisation Cost", are included in the model as moderating variables.). This analysis includes a comparative element based on GST implementation, represented by a dummy variable coded "0" before (April 2014 - March 2018) and "1" after implementation (April 2019 - March 2024) (Banerjee, Arindam, and Anupam De 2015, 180) Then these variables and the GST dummy are interacted by multiplying the raw variables with the dummy to create before-and-after transformed variables. Subsequently, moderation effects combined with the GST dummy are tested simultaneously in the regression model. Finally, multiple regression uses these moderated and GST-transformed variables, regressed against the dependent variables (i.e., long-term or short-term debt) in respective models, to capture the differential impact of GST implementation alongside moderating cost factors. This approach allows examination of the moderating effects of specific sustainable costs and the differential impact of GST implementation on debt financing decisions in SMEs through robust panel data analysis.

Initially,

Model framework-

$$Y_{it} = \alpha + \beta_1 * RV_{it} + \varepsilon_{it} \dots \dots (1)$$

Where, Y= dependent variable; RV= Regressor Variable; ε_{it} = Error term

Actual model with variables,

$$DR_{it} = \alpha + \beta_1 * PROF_{it} + \beta_2 * LIQ + \beta_3 * GROW_{it} + \beta_4 BR_{it} + \beta_5 * CF_{it} + \varepsilon_{it} \dots (1.1)$$

(Where, DR= Long Term Debt Ratio (LTDR)/ Short Term Debt Ratio; ε_{it} = error terms; α = intercept; β_i = Regressor co – efficient, $i = 1, 2, \dots, 5$)

Now, incorporating the moderating variables in the above (1) the revised model

Model framework-

$$Y_{it} = \alpha + \beta_1 * RV_{it} + \gamma * M_{it} + \varepsilon_{it} \dots \dots (2)$$

Where, Y= dependent variable; RV= Regressor Variable; M_{it} = Moderating variable; ε_{it} = Error term.

Actual model with variables,

$$DR_{it} = \alpha + \beta_1 * PROF_{it} + \beta_2 * LIQ + \beta_3 * GROW_{it} + \beta_4 * BR_{it} + \beta_5 * CF_{it} + \gamma * M_{it} + \varepsilon_{it} \dots (2.1)$$

(Where, Moderating variables (M_{it}) = “TCC”, “LC” and “DC”, use separately with each regressor in the model;

Now, introducing pre and post GST dummy (i.e. “0” and “1”) in the above (2) model we get,

$$Y_{it} = \alpha + \beta_i * D_RV_{it} + \gamma * M_{it} + \varepsilon_{it} \dots (3)$$

Actual model with variables,

Before implementation dummy [D = 1, otherwise, 0 (*where, “1” will be assigned for the year 2014 to 2018, beyond that is “0”*)] in the above (3) model

$$DR_{it} = \alpha + \beta_1 * D_{1,0} * PROF_{it} + \beta_2 * D_{1,0} * LIQ + \beta_3 * D_{1,0} * GROW_{it} + \beta_4 * D_{1,0} * BR_{it} + \beta_5 * D_{1,0} * CF_{it} + D_{1,0} * \gamma * M_{it} + \varepsilon_{it} \dots (3.1)$$

After implementation dummy [D = 1, otherwise, 0 (*where, “1” will be assigned for the year 2019 to 2024, previously that is “0”*)] in the above (3) model

$$DR_{it} = \alpha + \beta_1 * D_{0,1} * PROF_{it} + \beta_2 * D_{0,1} * LIQ + \beta_3 * D_{0,1} * GROW_{it} + \beta_4 * D_{0,1} * BR_{it} + \beta_5 * D_{0,1} * CF_{it} + D_{0,1} * \gamma * M_{it} + \varepsilon_{it} \dots (3.2)$$

The Dynamic panel regression is used here to apprehend the “change in impact” of regime switch in indirect tax regulation in the analysis. To be more specific, to investigate the effects in the model, Two-step Arellano-Bond dynamic panel-data estimation model has been employed. The Arellano–Bond, 1991 (Arellano, Manuel, and Stephen Bond 1991, 280) model corrects endogeneity by differencing regressors and eliminates omitted-variable bias through removing individual fixed effects. It instruments lagged dependent variables with past values. Moreover, the model robustness is assessed using Sargan and Hansen tests for instrument validity, autoregression diagnostics, and overall model fit, consistent with (Roodman, David 2009, 140); Baltagi, Badi Hani 2008)

4. Results and Discussion

The analysis highlights significant changes in determinants of firms' debt structures between pre- and post-GST periods in the Indian SME consumer goods sector, reflecting broad shifts in financial dynamics and moderation effects of certain sustainability costs.

From analysis it is evident that all components of descriptive statistics are under tolerable limit. So, data can be further analysed. Furthermore, all variables are found unlikely to have unit roots as specified under “Augmented dickey fuller test (fisher type) by (Mushtaq, Rizwan. 2021).

Table: 2 Correlation Matrix of all Study Variables

	LTDR	STDR	PROF	LIQ	GROW	BR	CF	TCC	LC	DC	SIZE	VIF
LTDR	1.000	-0.120	0.114	-0.115	0.039	-0.017	0.070	0.141	0.097	-0.027	-0.169	-
STDR	-0.120	1.000	-0.372	-0.449	0.020	0.035	-0.514	-0.057	-0.066	0.039	-0.176	-
PROF	-0.114	-0.372	1.000	0.226	0.009	0.144	0.929	0.079	0.062	-0.049	-0.086	8.18
LIQ	-0.115	-0.449	0.226	1.000	0.008	-0.015	0.276	0.002	0.054	0.006	0.096	1.12
GROW	0.039	0.020	0.009	0.008	1.000	-0.025	0.031	0.016	-0.056	-0.083	0.054	1.10
BR	-0.017	0.035	0.144	-0.015	-0.025	1.000	0.156	0.069	-0.024	-0.009	-0.299	1.26
CF	0.070	-0.514	0.929	0.276	0.031	0.156	1.000	0.057	0.022	-0.067	0.025	8.28
IDTL	0.141	-0.057	0.079	0.002	0.016	0.069	0.057	1.000	0.382	0.327	-0.066	1.23
LC	0.097	-0.066	0.062	0.054	-0.056	-0.024	0.022	0.382	1.000	0.578	0.027	4.03
DC	-0.027	0.039	-0.049	0.006	-0.083	-0.009	-0.067	0.327	0.578	1.000	-0.015	3.78
SIZE	-0.169	-0.176	-0.086	0.096	0.054	-0.299	0.025	-0.066	0.027	-0.015	1.000	1.42

Source(s): Authors Own Compilation.

From, Table-2, the nature of relationship between the dependent and independent variables are obtained. Furthermore, the correlation matrix shows no severe multicollinearity except between independent variables. Most other variables exhibit acceptable VIFs (<10 but >1), suggesting the regression model is generally stable.

Table:3.1 Two-Step Arellano-Bond Dynamic Panel-data Estimation

<i>Sustainability Cost Dimension:1 Tax Compliance Cost</i>				
<i>Variable</i>	Model-1		Model-2	
	(Dependent Variable-LTDR)		(Dependent Variable-STDR)	
	<i>Before GST</i>	<i>After GST</i>	<i>Before GST</i>	<i>After GST</i>
L1.LTDR	0.616***(0.000)	0.627***(0.000)	0.757***(0.000)	0.721***(0.000)

Table:3.1 Two-Step Arellano-Bond Dynamic Panel-data Estimation**Sustainability Cost Dimension:1 Tax Compliance Cost**

Variable	Model-1		Model-2	
	(Dependent Variable-LTDR)		(Dependent Variable-STDR)	
	Before GST	After GST	Before GST	After GST
D_PROF	0.020(0.712)	-0.296*** (0.000)	-0.080(0.535)	-0.240** (0.024)
D_LIQ	-0.043(0.581)	-0.016*** (0.000)	-0.044(0.227)	-0.007** (0.016)
D_GROW	0.018** (0.029)	0.050(0.177)	-0.005(0.248)	0.047(0.109)
D_BR	0.030(0.677)	-1.692*** (0.000)	0.888** (0.000)	-0.237(0.602)
D_CF	0.045(0.588)	0.257(0.001)	-0.476** (0.017)	-0.148(0.180)
D_PROF X TCC	-7.182*** (0.000)	-5.688(0.344)	-2.740(0.142)	-25.649*** (0.000)
D_LIQ X TCC	0.059*** (0.007)	-0.140** (0.011)	-0.054*** (0.000)	-0.457*** (0.000)
D_GROW X TCC	-0.727*** (0.006)	-0.302** (0.042)	1.380*** (0.000)	2.194*** (0.000)
D_BR X TCC	7.063*** (0.003)	11.580(0.103)	4.233*** (0.000)	37.938*** (0.000)
D_CF X TCC	7.653** (0.016)	5.705** (0.043)	0.605(0.827)	26.845*** (0.000)
D_SIZE	-0.014*** (0.000)	0.023*** (0.000)	0.017*** (0.006)	-0.006(0.240)
Wald (joint) test	166.522*** [0.000]	187.720*** [0.000]	242.448*** [0.000]	309.713*** [0.000]
AR(1) z	-3.763*** [0.000]	-3.903*** [0.000]	-4.184*** [0.000]	-4.482*** [0.000]
AR(2) z	-1.553 [0.120]	-1.821 [0.069]	-0.332 [0.740]	-1.469 [0.142]
Sargan test	84.972 [0.492]	47.687 [0.325]	50.0685 [0.245]	47.687 [0.325]
Hansen Test	43.673 [0.486]	48.442 [0.298]	49.1893 [0.522]	51.901 [0.193]
Instruments	55	56	55	56
Observations	715	715	715	715

Note(s): ***, ** and * denote statistical significance at 1%, 5% and 10% levels, respectively.

Source(s): Authors Own Compilation.

Table: 3.2 Two-Step Arellano-Bond Dynamic Panel-Data Estimation**Sustainability Cost Dimension:2 Logistics Cost**

Variable	Model-1		Model-2	
	(Dependent Variable-LTDR)		(Dependent Variable-STDR)	
	Before GST	After GST	Before GST	After GST
L1.LTDR	0.660*** (0.000)	0.730*** (0.000)	0.745*** (0.000)	0.712*** (0.000)
D_PROF	0.302*** (0.000)	-0.190* (0.061)	-0.256** (0.018)	-0.565*** (0.000)
D_LIQ	-0.019*** (0.000)	-0.004*** (0.001)	-0.086(0.196)	-0.010** (0.017)
D_GROW	0.019** (0.018)	0.017(0.686)	-0.015* (0.086)	0.007** (0.043)

Table: 3.2 Two-Step Arellano-Bond Dynamic Panel-Data Estimation**Sustainability Cost Dimension:2 Logistics Cost**

Variable	Model-1		Model-2	
	(Dependent Variable-LTDR)		(Dependent Variable-STDR)	
	Before GST	After GST	Before GST	After GST
D_BR	1.213*** (0.000)	-1.746*** (0.000)	0.586 (0.264)	0.182 (0.631)
D_CF	0.693*** (0.000)	0.372*** (0.001)	-1.106*** (0.000)	-0.234** (0.045)
D_PROF X LC	6.837*** (0.000)	-30.045*** (0.000)	-7.656*** (0.000)	7.740*** (0.000)
D_LIQ X LC	0.052*** (0.000)	0.082** (0.022)	-0.030** (0.037)	0.058 (0.229)
D_GROW X LC	0.439*** (0.000)	-0.175*** (0.000)	-0.102 (0.252)	0.005 (0.867)
D_BR X LC	-3.423 (0.422)	10.639*** (0.001)	8.351*** (0.000)	-7.387*** (0.004)
D_CF X LC	-23.600*** (0.000)	41.083*** (0.000)	15.806*** (0.000)	-9.359*** (0.000)
D_SIZE	0.038*** (0.000)	0.023*** (0.000)	0.0145** (0.015)	0.052 (0.247)
Wald (Joint) Test	242.448*** [0.000]	199.399*** [0.000]	298.595** [0.000]	268.053*** [0.000]
AR(1) z	-3.804*** [0.000]	-3.884*** [0.000]	-4.135*** [0.000]	-4.412*** [0.000]
AR(2) z	-1.868 [0.162]	-1.608 [0.108]	-0.303 [0.762]	-1.195 [0.232]
Sargan Test	46.337 [0.376]	46.419 [0.373]	47.517 [0.331]	52.467 [0.179]
Hansen Test	50.069 [0.245]	48.286 [0.309]	47.867 [0.319]	52.266 [0.184]
Instruments	55	56	55	56
Observations	715	715	715	715

Note(s): ***, ** and * denote statistical significance at 1%, 5% and 10% levels, respectively.

Source(s): Authors Own Compilation.

Table: 3.3 Two-Step Arellano-Bond Dynamic Panel-Data Estimation**Sustainability Cost Dimension:3 Digitisation Cost**

Variable	Model-1		Model-2	
	(Dependent Variable-LTDR)		(Dependent Variable-STDR)	
	Before GST	After GST	Before GST	After GST
L1.LTDR	0.645*** (0.000)	0.638*** (0.000)	0.745*** (0.000)	0.713*** (0.000)
D_PROF	0.030 (0.679)	-0.356*** (0.000)	-0.013 (0.927)	-0.341*** (0.002)
D_LIQ	-0.001*** (0.000)	-0.002*** (0.003)	-0.046 (0.160)	-0.007** (0.021)
D_GROW	0.03 (0.624)	0.027 (0.435)	-0.011 (0.180)	0.047 (0.203)
D_BR	1.319*** (0.000)	-1.713*** (0.000)	0.656 (0.286)	-0.102 (0.813)
D_CF	0.018 (0.834)	0.332*** (0.000)	-0.748*** (0.000)	-0.030 (0.786)
D_PROF X DC	-82.829** (0.019)	-8.110*** (0.256)	-80.539** (0.012)	2.638 (0.774)
D_LIQ X DC	0.726** (0.012)	48.859** (0.026)	-0.444 (0.544)	-85.471*** (0.000)

Table: 3.3 Two-Step Arellano-Bond Dynamic Panel-Data Estimation

<i>Sustainability Cost Dimension:3 Digitisation Cost</i>				
<i>Variable</i>	Model-1		Model-2	
	(Dependent Variable-LTDR)		(Dependent Variable-STDR)	
	Before GST	After GST	Before GST	After GST
D_GROW X DC	7.706*** (0.008)	151.746** (0.041)	2.777** (0.016)	-181.353 (0.226)
D_BR X DC	72.591** (0.031)	4370.540 (0.115)	165.164*** (0.001)	12186.570*** (0.004)
D_CF X DC	44.010 (0.524)	-25353.110*** (0.000)	163.177* (0.070)	-5445.307 (0.229)
D_SIZE	-0.015*** (0.000)	0.0240*** (0.000)	0.017*** (0.000)	0.024*** (0.000)
Wald (joint) test	108.666*** [0.000]	203.536*** [0.000]	253.913*** [0.000]	277.411*** [0.000]
AR(1) z	-3.815*** [0.000]	-4.956*** [0.000]	-4.068*** [0.000]	-4.800*** [0.000]
AR(2) z	-1.643 [0.100]	-1.822** [0.068]	-0.177 [0.8596]	-1.315 [0.188]
Sargan test	48.950 [0.281]	49.023 [0.279]	49.252 [0.271]	51.988 [0.191]
Hansen Test	49.345 [0.268]	45.829 [0.251]	49.779 [0.254]	51.917 [0.210]
Instruments	55	56	55	56
Observations	715	715	715	715
<i>Note(s): ***, ** and * denote statistical significance at 1%, 5% and 10% levels, respectively.</i>				
<i>Source(s): Authors Own Compilation.</i>				

From table, 3.1, 3.2 and 3.3 it is observed that,

Before GST, firms' profitability generally encouraged long-term borrowing, but after GST it started discouraging it. Liquidity always reduced long-term debt, showing that firms prefer using internal funds when they have enough liquid assets. Growing firms continued to rely more on long-term debt in both periods, while business risk switched from boosting long-term borrowing before GST to reducing it after GST. Cash flow consistently supported higher long-term debt in both periods.

For short-term debt, profitability and liquidity reduced borrowing throughout. Growth, which previously reduced short-term debt, started increasing it after GST, indicating firms became more willing to use short-term funds to capture new opportunities. Business risk also turned from positive to negative after GST, meaning firms became more cautious about taking short-term debt. Cash flow consistently lowered short-term debt, as stronger cash flows reduced the need for short-term borrowing.

Furthermore, the moderation effects of sustainability cost dimensions of TCC, LC, and DC also shifted considerably:

- Tax Compliance Costs gradually reduced in post-GST, indicating that GST tax reforms helped to minimize the compliance cost burden on firms' capital structure decisions.
- In post-GST, Logistics Costs undergoes an orientation change, however the significance level of debt determinants remained same. GST enhanced logistics efficiency and cost management which significantly influences firms' reduced dependence on external financing.
- Conversely, Digitisation Costs depicts mixed effects before and after GST, implying that digital investments continue to impact capital structure, but, still remains largely unaffected by the implementation of GST however in a subjective manner.

The introduction of GST has reasonably reshaped the pattern of sustainability-related costs (viz. tax compliance, logistics, and digital transformation) that affect the linkage between key determinants of debt (like profitability, liquidity, growth, risk, and cash flow) and firms' capital structure choices. In India's consumer goods SME industry, these reforms have redefined financial strategies, as new cost structures manipulate how companies manage debt and financing decisions notably. Hence, businesses have restructure their leverage policies that well aligns with evolving regulatory and operational conditions, reflecting a more strategic and adaptive approach to financial managers in the post-GST period.

5. Concluding Remarks

During pre-GST reform, Small and medium-sized firms in India struggled with high compliance and logistics costs that often made it difficult to manage debt in a sustainable way. Many had to choose between meeting tax obligations and maintaining a stable capital structure. However, the implementation of GST has simplified and reduced compliance costs significantly, that helps these firms to strengthen their long-term financial health, even though some short-term financing issues still persisted. GST also brought major betterment in logistics efficiency, declining environmental and transportation costs. This not only encouraged greener logistics practices but also enhanced liquidity and enabled firms to handle more long-term debt responsibly. Improved logistics further created social benefits by generating employment opportunities and supporting community development. Moreover, digital investments continued to play a key role in promoting sustainable financing both before and after GST. GST itself did not change this relationship radically, however, it facilitated greater digitization,

allowing firms to cut costs, boost transparency, and better manage sustainability-related factors and associated financial risks. In due course, these improvements plausibly enabled firms to redirect savings toward productive, sustainable investments by strengthening both environmental and social dimensions of their operations.

Consequent to above findings, the study suggests that Indian consumer goods SMEs should focus on building sustainable capital structures supported by strategic cost management. By emphasizing digital transformation, optimizing logistics networks, and aligning decisions with ESG principles, these firms can achieve scalable and resilient growth. In the future, policy efforts should prioritize the regulatory simplification, furthermore, enhancing governance standards, and promoting green investments to foster sustainable development among SMEs.

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