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Multiple Debt Finances and GRI Sustainability: Firm Level Evidence from the Diplomatic Developing Ties

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Abstract: Sustainability performance has become critical to every industry. The study examines the effect of Multiple debt finances on financial performance and GRI sustainability economic performance, measured through GRI 201-1, economic performance approach, for period from 2007-2020. The study applied mixed panel regression models to analyse the sample of 253 non-financial firms from diplomatic developing ties, namely Pakistan and India. The empirical findings shows that short-run debts have significant positive, but long-term and total debts have significant negative performance effects. However, firm size and asset tangibility have performance effects for non-financial firms of Pakistan and India. The study applied trade off theory for supporting the implication of GRI sustainability economic performance.

Keywords: Debt financing, India, Pakistan, Panel regression, Sustainability.

Introduction

The concept of Sustainability has become a phenomenon and gained importance in both financial and the economic literature. The sustainability efforts have become an integral part of every industry. Hoffman (2018) reported that above 90percent of companies' CEOs considered sustainability, critical to the success of their companies. Sustainability as meeting present needs without compromising ability of future generations to meet their needs. Sarvajayakesavalu (2015) highlighted that developing economies need to design adequate frameworks and evaluation mechanisms and ensure its legal implementation, for achieving Sustainability Development Goals.

The United Nations Development Programme (UNDP), defined Sustainability Goal 12.6 as to "encourage companies, especially transnational and large companies, to focus on adoption of sustainable practices and integration of quality sustainability disclosure into their reporting period", by 2030 (UNDP, 2015). In regard to UN SDG, the significant contribution towards sustainability can be played by corporate sector (UNDP, 2018). Corporate sustainability is considered as company's financial performance which remains durable over periods. Global Reporting Initiative (GRI) Sustainability reporting

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standards are the internationally recognized standards, used for quality reporting, performance measurement and promotion of better decision making (UNDP, 2020). There is still a need to explore GRI from different contextual perspectives, specifically among emerging economies (Orazalin & Mahmood, 2019).

According to Parsons (2018), there must be consistency between the firm financing decisions and its sustainable development strategy. Debt financing considers generation of funds as loans, from commercial banks that confers firms with financial obligations consisted of transactional costs, interest rates, bankruptcy costs. Companies consider multiple debt types for lowering their bankruptcy risk. An extended number of existing studies proved mixed and contrasting results with multi-debt structure and performance effects, such as Nazir, Azam, and Khalid (2021); Margaritis and Psillaki (2010); Ebaid (2009). From the Literature, debt structure decisions are still identified as debatable and among the most considerable financing decisions, encountered by corporate sector (Orji, EO, & Agubata, 2021). Considering the author's knowledge, the area is not explored from GRI sustainability perspective.

The Diplomat Magazine on March 18, 2022, documented India-Pakistan relations as Diplomatic in regard to various perspectives: cricket, trading, nuclear and military relations, corporate financial legacy etc. According to Shahzad, Ali, Ahmad, and Ali (2015), Pakistan and India are the considerable developing ties where large number of companies consider bank credits as a major source of financing. Allen, Chakrabarti, De, and Qian (2012) documented that Indian companies consider bank borrowings to leverage 18.2 percent of their entire financing needs. Although they are emerging markets, (Jadiyappa, Hickman, Jyothi, Vunyale, & Sireesha, 2020) documented that about 78 percent of Indian firms reported debt finance element on balance sheet with diversified debt financing sources. The purpose of the study is to analyse the impact of multiple debt finances on the financial performance and GRI sustainability economic performance of non-financial firms in diplomatic developing ties i-e Pakistan and India. In the light of above-mentioned gaps, the main question to be answered is: does the multiple debt finances affect the short-term performance and GRI sustainability economic performance of non-financial firms in diplomatic developing ties?

The study contributes by examining the effect of Multiple debt finances i-e combination of short-term debt, total debt ratio and long-term debt on GRI corporate sustainability of non-financial manufacturing firms in diplomatic developing ties i-e Pakistan and India. Sustainability performance is measured through GRI 201-1, economic performance approach. Trade-off theory is applied to study the debt structure-performance relationship. The study applied mixed panel regression models for estimation of the proposed models.

Literature Review

Theoretical Logic

Modigliani and Miller in 1958, proposed the irrelevance capital structure theorem, which formed the basic principle, argued that company value would not be affected by any form of finances either equity, debt or hybrid in perfect capital market conditions. [L. Zhang and Yu \(2016\)](#) documented about non-existence of perfect capital markets because of existing market distortions: inflation, transaction cost and taxation cost and coinsurance effect. The alternative capital structure theories have been proposed for imperfect market conditions, specifically trade-off theory has relevancy for the study ([Jensen & Meckling, 2019](#)). According to trade-off theory, the firm's choice of finances should consider the balance between costs and benefits, and optimal financing structure will consider the trade-off between the effects of personal income, corporate taxes, agency costs, transaction cost and bankruptcy costs etc. [Myers \(1984\)](#) stated that company will consider trading off the tax shield aid of debts finances with the cost of debt and financial distress for creating an optimal financing structure with increased firm value. [Zhao et al. \(2022\)](#) proved that trade-off is applicable to support diverse leverage levels for sustainability perspective. According to [K. Q. Zhang and Chen \(2017\)](#), trade-off theory theoretically supports the capital structure sustainability performance relationship. The current study applied trade-off theory for determining the diverse debt finances relationship with sustainability performance.

Empirical Review

A large number of the evidenced studies have studied the debt-financing-financial performance relationship and proved mixed results including: positive, negative and insignificant relationship. A trickle of studies has determined the effect of financing structure on firm performance, specifically focusing on sustainability perspective. Considering [Orazalin and Mahmood \(2019\)](#), academicians were extensively focused towards an attempt to determine the influential effects of sustainability performance. The existing studies on corporate sustainability performance are principally conducted on developed economies such as USA, Canada and Europe ([De Beelde & Tuybens, 2015](#)). According to [Kuzey and Uyar \(2017\)](#), the area of sustainability performance effects still remained unexplored in context of emerging economies. A very few of empirical studies on corporate sustainability performance focused on GRI Sustainability Standards. The studies conducted were mostly descriptive in nature ([Laskar, Chakraborty, & Maji, 2017](#)) focus on quality of sustainability disclosures ([Yang, Orzes, Jia, & Chen, 2021](#)). The implication of GRI sustainability as a performance metric is lagging behind among emerging countries. Lopez et al. in 2016, highlighted that measurement discrepancies and diverseness of sustainability performance metrics, un-explained measurement methodologies have created confusions for GRI assessment accuracy.

Multiple Debt Finances and Firm Performance

According to [Jadiyappa et al. \(2020\)](#), the use of diversified debt finances may influence the firm value. They investigated the causality of debt diversification on the firm value, by considering 3061 non-financial companies listed on Indian National Security market over a period from 2001-2016. They applied panel regression and proved significant negative effect of diversified debt finances on firm value. [Pandey and Sahu \(2019\)](#) empirically investigated the influence of debt types on the performance of listed production companies in Indian security market over the period ranging between 2009 and 2016. The study applied mixed panel regression statistics and proved significant negative debt finance-performance relationship, measured by return on equity. Singh and Bagga in 2019, examined the capital structure-profitability relationship for Nifty companies listed on National Security exchange of India, data collected from 50 firms for the period from 2008 to 2017 and analysed through mixed panel regression models. The results proved significant negative relation of total debt finances with asset returns ([Tripathy & Shaik, 2020](#)). They empirically scrutinized the impact of financial leverage on corporate performance of 56 food processing organizations listed on Bombay Security market for period from 2000-2018 and proved significant positive financial leverage-corporate performance relationship through panel regression models. [Chadha and Sharma \(2015\)](#) proved insignificant impact of debt structure on organization financial performance, if measured by parameters of asset returns, but shows significant negative influence for return on equity. Chandra and Udhayakumar in 2018, also proved the insignificant leverage effects on performance of listed production and wholesale traders on Bombay security market for the period from 2012-2017.

The study conducted to analyse the impact of debt level on the performance of listed companies of Pakistan Stock Exchange for five years 2013-2017, by [Nazir et al. \(2021\)](#). The study adopted mixed panel regression models and proved the significant negative effects of both short and long-term debts on the performance of sugar, cement and automobile sectors, with agency problems as the reason for decreasing performance. [Aziz and Abbas \(2019\)](#) studied the relation of debt finances and profitability of listed non-finance companies of Pakistan security market and confirmed significant negative debt structure-profitability link. [Kanwal, Shahzad, ur Rehman, and Zakaria \(2017\)](#) determined the association between financing decisions and financial performance of non-financial companies listed on KSE (Karachi Stock Exchange) for 1999-2015. The study considered sector-wise comparison and proved negative debt finances- performance link with a variation in the magnitude of the effect across industries. [Rashid, Bilal, et al. \(2020\)](#) examined the performance effects of non-financial firms listed on Pakistan security market from the perspective of capital structure. Three debt structure metrics are analysed from 2010-2017 and proved positive long-term debt-performance and negative short-term and total debt-performance link. [Sheikh and Wang \(2013\)](#) indicated the negative causality of debt finances on the performance of listed non-finance Pakistani companies. Considering the literature, the proposed hypotheses are:

H₁: There is a significant causality of multiple debt finances on the return on asset of non-

financial companies in the diplomatic developing ties.

H₂: There is a significant causality of multiple debt finances on the return on equity of non-financial companies in the diplomatic developing ties.

H₃: There is a significant causality of multiple debt finances on the net profit margin of non-financial companies in the diplomatic developing ties.

Multiple Debt Finances and Sustainability Performance

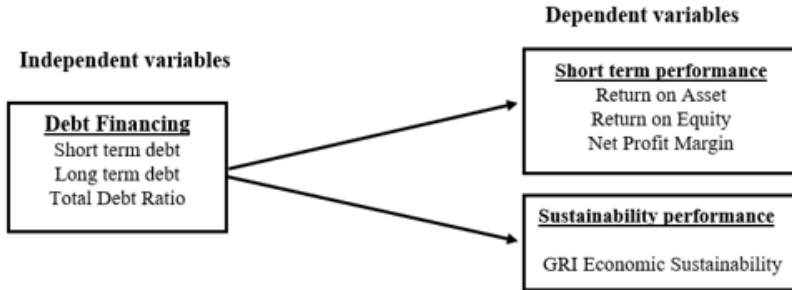
Zhao et al. (2022) applied conditional quantile regression statistics and determined the sustainability effects of financing structure distribution of Chinese listed companies for period 2010-2019. The findings revealed significant negative causality between high leverage levels and profitability. K. Q. Zhang and Chen (2017) proved the positive impact of debt finances on short term and sustainability performance, and preference of long-term loans over short-term borrowing increases financial sustainability. Ardillah (2020) estimated the effect of financing choices and environmental performance on sustainability of financial development in the listed mining Indonesian companies during 2015 to 2018. The study incorporated external financing and proved positive relationship of both long and short-run debts with financial sustainability development. Rao and Madhav (2015) proved the positive impact of capital structure strategies, measured by leverage ratios, on the sustainable growth of corporate sector, specifically concentrated to Dr. Reddy's Pharmaceuticals. Considering GRI sustainability economic performance, the stated hypothesis is:

H₄: There is a significant causality of multiple debt finances on the GRI sustainability economic performance of non-financial companies in the diplomatic developing ties.

Firm Size, Asset Tangibility and Performance Effects

The study incorporated two control variables, including firm size and asset tangibility. According to Vijayakumaran (2017), the larger size firms obtain more economies of scale with considerable competencies in business operational activities and human capital resourcing that positively contributes towards the firm performance (Lazăr, 2016). Dienes et al. in 2016, documented firm size as one of the most prominent control variables for sustainability studies. Wambua (2019) conceptualized asset tangibility as the share of firm's fixed assets over total assets. The referenced study (Nguyen & Nguyen, 2020), applied tangible assets as a control variable and proved the positive causality on firm performance.

Figure 1
Research framing



Research Methodology

Sample Selection

The study sample consisted of two developing diplomatic ties: Pakistan and India, considering the following characteristics: First, both least developed countries belong to same territorial context i.e Indian Sub-continent (Kumar, 2019), Secondly, the nations are listed members of GRI (UNDP, 2021b), Thirdly, they retain strong historical and cultural orientation to the centre. The study only considered non-financial firms, listed in Pakistan Security Exchange (PSX) and Bombay Security Exchange (S&P BSE SENSEX). The financial firms are excluded from the study because of variations in capital structure decisions. The study preferred non-financial companies because GRI sustainability is the focus of the study, includes the framework of items, might not be appropriate to the reporting of financial companies (Laskar et al., 2017).

A report by Nazir et al. (2021) highlighted that Pakistan is on the 30th rank among the manufacturing countries of the world and enhances the overall economic growth. According to Pakistan Economic Survey 2020-21, manufacturing sector contribution to GDP is 12.79% with 16.1% employment generation (UNDP, 2021c). Babar in 2021, highlighted that The economic Times documented a report, declared India on the 2nd rank among the global hub of manufacturing countries in accordance with Global Manufacturing Risk Index (GMRI) 2021. In Indian economy, the manufacturing sector accounts for nearly 78% of the whole industrial productivity. Manufacturing sector contribution in India's GDP is about 17%, but employment decreases from 51% in 2017 to 27.3 million Indians in 2021.

Manufacturing sector consisted of different sub-sectors, out of 15 the study considered 5 industrial sectors with significant contribution towards economic growth of Pakistan and India including: Textile, Automotive, Food and personal care, Chemical and Pharmaceuticals industry. The figures from Pakistan Bureau of Statistics (PBS), that in Pakistan: textile sector has the highest GDP weightage 20.91%. The automotive industry comes with nearly 4.61% contribution, food and personal care sector (12.37%) and chemical and pharmaceutical industry contributes with the lowest GDP i.e 2%.and 3.62%. India Brand

Equity Foundation [UNDP \(2021a\)](#) reported the Economic Survey 2021-2022, that the highest GDP weightage is recorded by food and personal care and pharmaceutical sector i-e 20.2% and 18.7%, while textile and automotive industry shows the lowest GDP weightage i-e 5% and 7.1% and for chemical industry is 11.3%.

Table 1
GDP growth rate of Sub-sectors in Pakistan and India

S. No.	Industry sector	Growth rate	
		Pakistan	India
1	Textile industry	20.91%	5%
2	Automotive industry	4.61%	7.10%
3	Food and personal care industry	12.37%	20.20%
4	Chemical industry	2%	11.30%
5	Pharmaceuticals	3.62%	18.70%

Sources: (PES, 2021); (IBEF, 2022)

The initial sample was 353 firms i-e Pakistan (192) and India (161). The study excluded the firms: 1) that are not listed throughout the entire study period and 2) firms with missing financial data bases. The final sample size consisted of 253 firms i-e Pakistan (137) and India (116). Data gathered for period 2007 to 2020 from the annual reports of the listed companies, present on PSX and S&P BSE SENSEX. For Pakistan data collected from yearly financial data, published by State Bank of Pakistan with title “FSA (Non): Financial Statement analysis of non-financial firms”, provided reliable and authentic information (SBP.org.pk). Thomas Reuters also considered for data collection.

Description of Variables

The independent variable is multiple debt finances, comprehensively measured through short run, long term and total debt ratios, represent the robust combination of debt structure of a firm ([Jones & Edwin, 2019](#)). Multiple debt finances estimate the independent effects of all debt components with different risk-return profiles ([Lucey & Zhang, 2011](#)). These debt ratios are a viable tool for measuring financial leverage, more specifically for developing countries. Table 2 shows the detailed description of variables. Economic performance is a wider concept, considering both short term and sustainability performance aspects of a firm ([K. Q. Zhang & Chen, 2017](#)). Short-term financial impact is measured through financial performance ([Tifow, Sayilir, et al., 2015](#)), proxied by asset returns, equity returns and net profit margin ([UNDP, 2016](#)). The study applied GRI sustainability: 1) Its global acceptance, specifically at firm level, 2) Its high credibility for extracting reporting indicators, used for measuring sustainability impacts ([Rahdari & Rostamy, 2015](#)), 3) The GRI reporting standards are a free general public good, and 4) its generalizability and reliability ([UNDP, 2020](#)).

GRI 201-1, economic performance is one of the modular GRI Standards applied by the firms for measuring their sustainability economic impacts ([UNDP, 2016](#)). It comprised of three components namely: 1) Direct economic value generated (DEG): measured through revenues in terms of net income, net sales, interest earned and dividends received. 2) Economic value distributed (DED): employee salaries and benefits, operating costs, taxes,

community investments and payment of interest on loans and dividends. 3) Economic value retained (DER) is the difference between DEG and DED. To assess the sustainability economic performance, we use the item-wise disclosure measurement and calculation is made by taking the average of total value of items in each category (Sobhani, Amran, & Zainuddin, 2012).

$$GRI = \frac{DEG + DED + DER}{N}$$

Table 2
Description of Variables

Variables	Measurements	Formula	Reference
Multiple Debt finances	STD: Short term debt	Short term loans/total assets	(Jones & Edwin, 2019)
	LTD: Long term debt	Long term loans/total assets	
	TD: Total debt ratio	Total debt/total assets	
Short-term Performance	ROA: Return on Asset	Net income/total Assets	(Tifow et al., 2015)
	ROE: Return on Equity	Net income/shareholder's equity	
	NPM: Net Profit Margin	Net income/net sales	
GRI: GRI Economic Sustainability	GRI = (DEG+DED+DER)/ N		(UNDP, 2016)
Control variables	Fs: Firm size	Natural log of total assets	(Samour & Hassan, 2016)
	At: Asset tangibility	Fixed assets/ Total assets	

Financial Modeling

The equations show the panel data models for investigating debt financing-sustainability performance relationship, In equations, α and β are intercepts, i is the indexes firm, t is the number of years and e_{it} is the idiosyncratic/ random error term:

$$y = \alpha_0 + \alpha_1 x + e_1$$

$$ROA_{it} = \alpha_0 + \alpha_1 STD_{it} + \alpha_2 LTD_{it} + \alpha_3 TD_{it} + \alpha_4 Fs_{it} + \alpha_5 At_{it} + e_{it} \quad (1)$$

$$ROE_{it} = \alpha_0 + \alpha_1 STD_{it} + \alpha_2 LTD_{it} + \alpha_3 TD_{it} + \alpha_4 Fs_{it} + \alpha_5 At_{it} + e_{it} \quad (2)$$

$$NPM_{it} = \alpha_0 + \alpha_1 STD_{it} + \alpha_2 LTD_{it} + \alpha_3 TD_{it} + \alpha_4 Fs_{it} + \alpha_5 At_{it} + e_{it} \quad (3)$$

$$GRI_{it} = \alpha_0 + \alpha_1 STD_{it} + \alpha_2 LTD_{it} + \alpha_3 TD_{it} + \alpha_4 Fs_{it} + \alpha_5 At_{it} + e_{it} \quad (4)$$

Statistical Estimation

Three alternative models: panel Ordinary-Least-Square (OLS) model, fixed effect (FE) and random effect (RE) statistics are analysed for estimation. Panel data analysis provides more degrees of freedom(df), less multi-collinearity, more variation and individual item heterogeneity (Wooldridge, 2015). Hausman specification test is applied. Different

diagnostics tests, proposed by Oscar in 2007: Jarque Bera, Variance Inflation Factor (VIF) and White test are applied for validating the models' appropriateness. STATA software version 12.0 is used for data processing, panel regression analysis and hypothesis testing.

Empirical Analysis

Basic Statistics of Pakistan

The table 3 represents the basic statistics for 1,918 observations of Pakistan, include: Mean, minimum, maximum and standard deviation. The computed mean values indicate that Pakistani firms consider 43% STD, 35% LTD and 31% TD for meeting their financing needs, similar to the statistics of [Sheikh and Wang \(2013\)](#). The mean values for performance metrics show that sample firms generate 7% profit from allocated asset (ROA), 14% profits generation from allocated shareholders' funds (ROE), 7% profits are generated as percentage of revenue (NPM) and high GRI value of 12.739 shows that high economic value generated through operational efficiency, dividends and interest collections. Mean value for firm size is 15.602, with maximum shows that larger size firm has owned Rs 35 million total assets and minimum shows that only Rs 537,821 assets owned by smaller firms. Mean value of asset tangibility is above 1, shows high tangibility of firms.

Table 3
Basic Statistics of Pakistan

Variable	Observations	Mean	Minimum	Maximum	Standard deviation
STD	1,918	0.426	0.103	4.229	0.179
LTD		0.349	0.026	1.379	0.128
TD		0.315	0.064	2.634	0.164
ROA		0.067	-3.507	3.359	0.401
ROE		0.141	-0.861	4.210	0.361
NPM		0.068	-3.51	4.451	0.435
GRI		12.73	5.586	16.668	2.034
Fs		15.60	13.195	19.686	0.988
At		1.062	0.023	1.249	0.181

Basic Statistics for India

The table 4 shows the basic statistics for 1,624 observations of Indian firms. Mean values shows firms consider 44% STD, 37% LTD and 34% TD for meeting their financing needs. Performance metrics, shows that Indian firms generate 9% ROA, 3% ROE, 14% NPM and high mean value for GRI i-e 10.799, indicates long run profits generation through DEG. Mean value for firm size is 13.289, with minimum shows that smaller size sample firm has only Rs 548577 assets and maximum shows 36 million total assets owned by larger size firms. At has value above 0.50, shows asset tangibility.

Preliminary Diagnostic

Normality test

Jarque-Bera statistics evaluates the goodness of fit for study sample based on the skewness and kurtosis coefficients. The table 5 is J-B normality test statistics i-e chi-square 4.725 and p-value 0.094, which is above 5% significance level, indicates the normal distribution of data sample.

Table 4
Basic Statistics of India

Variable	Observations	Mean	Minimum	Maximum	Standard deviation
STD	1,624	0.438	0.109	0.956	0.163
LTD		0.367	0.028	0.804	0.132
TD		0.345	0.025	0.928	0.169
ROA		0.094	-1.523	2.293	0.407
ROE		0.026	-7.086	1.157	0.207
NPM		0.142	-1.029	3.138	0.348
GRI		10.799	2.841	12.336	0.282
Fs		13.289	11.23	16.444	0.851
At		0.937	0.020	1.104	0.166

Table 5
Jarque-Bera normality test

chi-square	P-value
4.725	0.094

Autocorrelation

The current study applied Durbin-Watson test for examining serial correlation among the study variables (Wooldridge, 2015). The value for D-W statistics ranges from 0 to 4, '0' positive correlation and '4' negative autocorrelation and '2' shows no autocorrelation. (Azami, Sharifi, & Alvandpur, 2020). The acceptance range for Durbin-Watson statistics is 1.5 to 2.5. Table 6 highlights the significance value lies between the acceptance criteria, i-e 2.235 and d-statistics is (3, 14). Hence, indicates no autocorrelation.

Table 6
Results of Durbin-Watson serial correlation test

Variable	Observations	Durbin-Watson d-statistic	Significance level (?)
Residuals	3,542	(3, 14)	2.235

Heteroskedasticity

The current study applied White test for heteroskedasticity analysis. For acceptance of H_0 , the p-value should be above 0.05 significance. The table 7 shows that p-value is above 0.05 i-e 0.263, hence constant variance satisfies homoskedasticity assumption.

Table 7
Results of White test

Variable	Observations	Chi-square	P-value
Residuals	3,542	11.19	0.263

Multicollinearity

For detection of multicollinearity, the acceptable values for VIF statistic are less than 5 (Wooldridge, 2015). The mean VIF for explanatory variables is calculated as 1.25, which is less than 5, satisfies the multicollinearity problem.

Panel Regression Models

The RE model tests the null hypothesis ' H_0 ': no correlation between the error term and explanatory variables and FE tests alternate hypothesis ' H_1 ': interrelation between the error term and explanatory variables, by Sheytanova (2015). P-value above 0.05 considers acceptance of H_0 and less than 0.05 considers acceptance of H_1 . Hausman model specification test differentiates between the statistics of FE and RE approach by considering the p-values.

Table 8
Mixed panel regression Statistics for ROA

Regressors	Pakistan			India		
	(P-OLS)	(FE)	(RE)	(P-OLS)	(FE)	(RE)
	1	2	3	1	2	3
Constant (P-value)	0.000	0.000	0.000	0.000	0.000	0.000
(t-statistic)	-32.57	-33.32	-13.89	-32.48	-14.39	-12.69
STD (P-value)	0.012	0.044	0.000	0.000	0.000	0.000
(t-statistic)	2.510	2.020	6.120	4.320	13.19	5.220
LTD (P-value)	0.035	0.000	0.000	0.036	0.025	0.000
(t-statistic)	-2.11	-8.79	-16.83	-2.100	-2.25	-15.21
TD (P-value)	0.013	0.000	0.000	0.008	0.000	0.001
(t-statistic)	-2.49	-37.93	3.960	-2.670	-22.03	3.290
Fs (P-value)	0.000	0.000	0.000	0.000	0.000	0.000
(t-statistic)	49.30	38.42	25.38	46.61	15.86	25.02
At (P-value)	0.000	0.000	0.000	0.010	0.001	0.012
(t-statistic)	3.820	22.18	6.030	2.580	3.190	-2.520
(R-square)	0.579			0.600		
(Adj. R-square)	0.578					
(F-Statistic)	527.96	985.02		486.15	548.66	
(Prob>F)	0.000	0.000	0.000	0.000	0.000	0.000
(Wald χ^2)			3085.05			2732.82
Hausman test		0.001			0.000	

The table 8 shows the panel regression statistics for ROA, for both diplomatic ties: Pakistan and India, comprised of 3,542 observations. STD shows significant positive effect on ROA, and on the contrary LTD shows significant negative influence on ROA, with significant p-value i-e less than 0.05, and t-values $> + 1.69$, for all three panel models. For both Pakistan and India, TD shows mixed results, significant negative effect for panel OLS and fixed effect but significant positive results with random effect. Fs and At shows

significant positive effect on ROA. All the statistics accept the proposed hypothesis i.e 'multiple debt finances have significant effect on ROA', similar to existing literature (Nazir et al., 2021). The results indicate acceptable r-square and adjusted r-square i.e 58% explanation of ROA by debt financing, F-statistics shows high model fitness, Wald χ^2 shows p-value < 0.001. The p-value for hausman test is < 0.05, shows validity of results of fixed effect model.

The table 9 presents the estimated panel regression statistics for ROE. Similar to results of model 1, STD shows significant positive statistics and LTD and TD indicates significant negative statistics for ROE, for both Pakistan and India except insignificant TD for Pakistan with p-value above 0.05. Fs and At shows significant positive effect on ROE, except significant negative At for Pakistan, similar to Pandey and Sahu (2019). The statistics proved H_2 , 'Multiple Debt finances have significant causality on ROE, the results are alike with Tauseef, Lohano, and Khan (2015). R-square and adjusted r-square shows acceptable values. F-statistics shows high model fitness, Wald χ^2 , and Hausman test shows significant p-values, proves consistency of fixed effect models.

Table 9
Mixed panel regression Statistics for ROE

Regressors	Pakistan			India		
	(P-OLS)	(FE)	(RE)	(P-OLS)	(FE)	(RE)
	1	2	3	1	2	3
Constant (P-value)	0.000	0.000	0.000	0.000	0.000	0.000
(t-statistic)	67.31	37.01	34.21	18.23	40.25	22.72
STD (P-value)	0.002	0.004	0.003	0.000	0.000	0.000
(t-statistic)	3.170	2.920	3.020	4.060	12.98	9.850
LTD (P-value)	0.000	0.000	0.000	0.000	0.000	0.000
(t-statistic)	-5.050	-3.57	-3.520	-5.100	-9.970	-25.12
TD (P-value)	0.063	0.273	0.182	0.002	0.000	0.000
(t-statistic)	-1.860	-1.100	-1.330	-3.140	-25.06	-3.990
Fs (P-value)	0.000	0.000	0.000	0.000	0.000	0.000
(t-statistic)	48.37	40.32	46.16	23.49	18.15	19.45
At (P-value)	0.020	0.000	0.003	0.057	0.296	0.001
(t-statistic)	-2.330	3.55	2.970	1.900	1.050	3.200
(R-square)	0.583			0.599		
(Adj. R-square)	0.582			0.598		
(F-Statistic)	534.43	381.15		484.85	602.51	
(Prob>F)	0.000	0.000	0.000	0.000	0.000	0.000
(Wald χ^2)			2410.95			3646.63
Hausman test		0.0472			0.000	

The table 10 highlight the panel statistics for NPM. The statistics are similar to model 2, both STD and TD positively influences NPM, except shows insignificant total debt-performance effects with random effect model, and LTD negatively influences firm NPM with significance levels < 0.05. Hence, H_3 is supported, i.e 'Multiple Debt finances have significant causality on NPM, with t-values above + 1.69, consistent with the results proved by Ashraf, Ameen, and Shahzadi (2017). Fs and At statistics also shows significant effect. The R-square and adj. R-square shows 63% explained variation for NPM. F-statistics shows model fitness with comparatively high values than model 1 and 2. Wald χ^2 , and Hausman test shows significant p-values, proves consistency of fixed effect models.

Table 10
Mixed panel regression Statistics for NPM

Regressors	Pakistan			India		
	(P-OLS)	(FE)	(RE)	(P-OLS)	(FE)	(RE)
	1	2	3	1	2	3
Constant (P-value)	0.000	0.000	0.000	0.000	0.000	0.000
(t-statistic)	67.31	37.01	34.21	18.23	40.25	22.72
STD (P-value)	0.002	0.004	0.003	0.000	0.000	0.000
(t-statistic)	3.170	2.920	3.020	4.060	12.98	9.850
LTD (P-value)	0.000	0.000	0.000	0.000	0.000	0.000
(t-statistic)	-5.050	-3.570	-3.520	-5.100	-9.970	-25.12
TD (P-value)	0.063	0.273	0.182	0.002	0.000	0.000
(t-statistic)	-1.860	-1.100	-1.330	-3.140	-25.06	-3.99
Fs (P-value)	0.000	0.000	0.000	0.000	0.000	0.000
(t-statistic)	48.37	40.32	46.16	23.49	18.15	19.45
At (P-value)	0.020	0.000	0.003	0.057	0.296	0.001
(t-statistic)	-2.330	3.550	2.970	1.900	1.050	3.200
(R-square)	0.583			0.599		
(Adj. R-square)	0.582			0.598		
(F-Statistic)	534.43	381.15		484.85	602.51	
(Prob>F)	0.000	0.000	0.000	0.000	0.000	0.000
(Wald χ^2)			2410.95			3646.63
Hausman test		0.0472			0.000	

Table 11
Mixed panel regression Statistics for GRI

Regressors	Pakistan			India		
	(P-OLS)	(FE)	(RE)	(P-OLS)	(FE)	(RE)
	1	2	3	1	2	3
Constant(P-value)	0.000	0.000	0.000	0.000	0.000	0.000
(t-statistic)	108.83	10.27	9.980	33.45	7.550	7.850
STD (P-value)	0.021	0.000	0.000	0.001	0.000	0.000
(t-statistic)	2.310	27.24	27.99	3.290	30.01	31.37
LTD (P-value)	0.000	0.000	0.000	0.010	0.008	0.009
(t-statistic)	-17.53	-7.500	-8.240	-2.580	-2.680	-2.610
TD (P-value)	0.035	0.027	0.032	0.000	0.016	0.042
(t-statistic)	-2.120	-2.210	-2.150	-4.010	2.410	-2.030
Fs (P-value)	0.000	0.000	0.000	0.000	0.000	0.000
(t-statistic)	37.59	50.30	52.20	50.36	53.53	54.90
At (P-value)	0.000	0.000	0.000	0.001	0.000	0.000
(t-statistic)	20.25	10.21	10.99	3.450	45.66	47.40
(R-square)	0.761			0.616		
(Adj. R-square)	0.760			0.615		
(F-Statistic)	1217.03	1597.63		518.93	1482.67	
(Prob>F)	0.000	0.000	0.000	0.000	0.000	0.000
(Wald χ^2)			46.41			7976.62
Hausman test		0.001			0.000	

The table 11 presents panel regression statistics for GRI sustainability economic performance. Regression statistics shows the positive effect of STD on GRI, both LTD and TD shows significant negative effect on the GRI, with significant p-values and t-statistics. The statistical figures also proved H_4 , 'Multiple Debt finances significantly influences the GRI economic sustainability'. The results are similar to the studies, which proved significant long-term performance effects of debt capital structure (Zhao et al., 2022; Ardillah, 2020). Fs and At statistics also shows significance. The values of r-square and adjusted R-square shows 76% variation of GRI is explained by debt finances. F-statistics are higher

than model 1, 2 and 3. Results show significant Wald χ^2 values, and hausman statistics also supports the validity of fixed effect model, with significant p-values.

Conclusion and Discussion

The study determined the effect of multiple debt finances, comprised of STD, TD and LTD on the economic performance of non-financial corporate sector, measured by financial performance and GRI sustainability economic performance. Sustainability performance is measured through GRI 201-1, economic performance approach. The study applied trade off theory for theoretically supporting the debt financing-sustainability performance relationship and the estimation models are analysed through panel OLS, fixed and random effect statistical approaches. The statistical analysis proved consistent results with the evidenced studies, e.g (Narsaiah, 2020; Barry & Mihov, 2015), proved significant causal effect of STD on ROA, ROE, NPM and GRI sustainability performance effect. On the contrary LTD and TD negatively influence both short-run and GRI sustainability performance. TD are insignificant for ROE and NPM for Pakistan. Firm size has significant causality on ROA, ROE, NPM and GRI sustainability. Asset tangibility has insignificant effect on return on equity for Pakistan. Results of hausman test prove the consistency of fixed effect for all estimation models. For good sustainability performance, companies' optimal debt consisted of large proportion short term debts, and limited proportion of long-term debts. The developing economies, specifically Pakistan may experience high transaction cost, agency cost or bankruptcy cost on long-term loans (Sheikh & Wang, 2011) and long-term debts are risky due to political and economic instability in the country (Sheikh & Wang, 2013), which declines the firm performance.

Policy Implications and Recommendations

The study highlights insightful implications for financial managers and financial policy makers', regarding the implementation of GRI sustainability economic perspective for evaluating the performance of companies. It provides guidance for borrowing firms, lenders, financial advisors and corporate policy makers regarding the optimal debt financing structure, that improves both the short-run and sustainable performance of companies. The study findings will provide grounds for rational decision making with consideration of debt cost and benefit, for developing ties. The study also proved the impact of optimal debt finances on improving the GRI sustainability economic performance of companies.

The clampdowns and future recommendations of the study include, firstly, the study included five commonly researched sectors and inclusion of other less-discussed sectors may deepen the implementation of results. Secondly, the study specifically focused to one financing option i-e debt finance; other financing alternatives may improve the generalizability of the results. Thirdly, the research is limited to only two developing nations, the addition of other developing Asian economies might improve the results generalizability.

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