Leverage Tax Benefit, Non-Debt Tax Shield, Default Risk and External Financing Policy of Listed Small and Medium-Sized Transportation Companies: A Panel Data Approach

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Abstract

In today's business domain, the relevance of this Small and Medium Sector (SME) is amplifying day by day. The transportation industry is widely spread and variegated in a developing country like India and comes within as a frontline sector. In spite of being an emanating sector, often this sector has to combat the narrow scope of SME lending. This Paper makes a facile attempt to find interrelationship among leverage, non-debt tax benefits, and debt policy of transportation SMEs. The sample observations of 140 have been considered with a study period from 2015 – 2021. Applying Panel Regression Analysis, the study result unfolds that Business risk is found negatively correlated with Tax Shield. A positive moderately significant correlation with debt procurement cost obscures Non-debt means to generate Tax benefits. Moreover, a significant, inverse association between Non-debt tax cost and leverage is observed that is indicating towards the selection of the Pecking Order Theory. Among conventional capital structure determinates Profitability is strongly, positively affecting leverage decisions, Asset Structure is found significant regressor of the model, supporting the Trade-off theory. A Fixed effect is persistent in all the models and a long-term relationship is observed for most of the models. No particular means of tax benefit is persistent with Leverage and tax benefit models, as the debt policy of firms is ever changing its dimensions with time horizon. Thus, Non-debt tax benefits might be a substitute of traditional debt cost, nevertheless not a stable tax benefit measure.

Key Words: Cost of Debt, Non-debt Tax Benefits, Default Risk, Debt policy, Panel Data, Panel Co-integration

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Introduction:

In today's business domain, the relevance of Small and Medium Sector (SME) is amplifying day by day. As per the report of World Bank, over 90% of global businesses come under this sector, in terms of employment generation and contribution to GDP, Thus, this sector is engrossed to drive the global economic growth engine sole-handily in near future. Amongst the most vibrant SME sub-sectors, the Transportation industry comes within as a frontline sector and has immense potential to grow in the future. In spite of being an emanating sector, often this sector has to combat the narrow scope of SME lending, thus it requires more research to mitigate those lacunas to make smoother this scope of lending. The transportation industry is widely spread and variegated in a developing country like India. At the beginning years of the 90's decade, a sharp swelling has been observed in the transportation infrastructure and services industry. In the year 2007, the contribution of the transportation sector to the country's total GDP was near about 5.5%, the highest among the others sub-sector in that year, this is perhaps because this sector connects the entire country through a wide communication network. Nevertheless, incapability to keep pace with economic growth, this sector undergoes a havoc crisis regarding demand-supply disparity. The probable causes behind this might be a lack of infrastructure, and government initiatives, mostly in rural areas of the country. Henceforth, this sector demands an apt amelioration to irradiate poverty by connecting underdeveloped areas with industrial and economically advanced cities in India. In spite of being an uprising sector, SME sector firms often undergo a credit crunch mostly due to the unavailability of adequate collaterals, information asymmetry among stakeholders, rigid credit rationing of banks,

market imperfections, bankruptcy code, and complex property litigations, Industrial sickness and many more. (Rao et al, 2018)

Thus, in this circumference, it seems expedient to analyze the factors, especially unexplored factors affecting their capital structure decisions.

Review of Literature:

- **Capital Structure Theories**

Trade-off theory explicitly considers the presence of a certain level of leverage with an object to obtain a target level. If an unlevered firm procures its finance using a threshold limit of debt level of leverage (using a considerably lesser amount of equity and a greater amount of debt), this may lead to expand more scopes to rise interest tax shield benefit, keeping distress cost to a reasonable level, hence still it results into the lesser chance of bankruptcy. Furthermore, a high reliance on debt capital, after crossing a target level leverage leads to more use of leverage (higher proportion of debt) however, this gain will still remain but to a moderate level than that of the previous time. Notwithstanding this will simultaneously enhance bankruptcy costs that eventually result in a decline in the value of the firm. Thus, the benefit of tax shield would be nullified with an increase in the cost of Bankruptcy cost. In 1958 Modigliani & Miller explain the irrelevancy of leverage with the assumptions of a perfect capital market which is rived in 1963 with two important assumptions Tax Shield. Moreover, future earnings, business risk, and Bankruptcy cost these probabilistic determinates remain out of the scope of debt policy in this theorem. *(Kraus and Litzenberger 1973; Scott (1976); Hashemi, R., 2013)*

Pecking Order Theory debunks the financing hierarchy at first a firm prefers an internal source of financing (Retained Earnings or savings from not paying dividend to the equity holders) and then gradually moves towards procurement of finance from external sources. The main principle of the Pecking Order Theory is dependent on Asymmetric Information or Signaling Theory, as the flotation cost increases it leads to an increase in the cost of external financing.

Thus internal financing is the most preferred source. On contrary, retention is also justifiable as it helps to increase the market price of shares. Payment of lower dividend offset that enhances market price. To keep a favourable position in regard to procure finance inadequacy of internal funds arises need of external financing. As per Signalling Theory, a non-convertible debt fund is the most preferred means followed by preference share capital composite securities such as convertible debentures, whereas, equity funding is the least preferred one. *(Khan & Jain, 2011)*

- **Past Empirical Studies:**

Sogrob-Mira & Lopez-Gracia, (2003) this article examines the applicability of behavioral theories of capital structure to interpret corporate financing decisions of Small and Medium Enterprise (SMEs). Panel analysis techniques have been explored to examine the research hypothesis of a sample of 6482 Spanish SMEs during 1994 - 1998. The final result obtained exhibits that both theoretical approaches are persistent to analyse the financial decisions of SMEs but, while finding evidence that small businesses are trying to achieve their goals or optimal leverage, Trade-off theory backs the decisions to a little extent of SMEs whereas to debt-funding requirements advocates towards Packing Order model. ***Deesomsak et al., (2004)*** in this paper tried to find out the factors affecting the financial framework of companies, functioning in the Asia-Pacific region, which different legal, financial, and institutional frameworks mainly in countries such as Thailand, Malaysia, Singapore, and Australia. The findings tell us that a company's capital structure decisions are influenced by both the firm-specific and macroeconomic factors of a country as discovered from past literature. Despite the financial crisis of 1997, a significant but diversified effect has been observed on the determination of corporate capital structures across the region. ***Huang & Song, (2006)*** this paper document the characteristics of the capital structure using a database consisting of the market and financial data for the period ranging from 1994 to 2003 for over 1,200 listed Chinese companies. Similar to other countries, the

proportion of Chinese companies rises with the increase in the size of the company and its fixed assets, and declines pertaining to its profitability, debt-free tax shields, growth opportunities, management ownership, and industry relations. Moreover, they have identified that ownership of governments and institutions did not significantly affect the capital structure, and Chinese companies took into account the tax effects of long-term debt lending. Unlike other countries, Chinese companies tend to have much less long-term debt. ***Lopez-Gracia & Sogorb Mira, (2008)*** In this, the researchers have pursued two of the most popular theories of capital structure viz. Pecking order theory and Trade-off theory to initiate debt procurement policy of Small and Medium Enterprises (SMEs). To statistically interpret the findings, Panel data methodology has been used. The sample of 3569 was selected from Spanish SMEs, for a period of 10 years ranging between 1995- 2004. The empirical outcomes opine that both theoretical models have the credibility to infer the capital structure of SMEs. Despite having clear evidence that SMEs fathom a hierarchy of financing as explained by the Pecking Order Hypothesis to procure funds of enterprise, findings exhibit that SMEs tend to reach their organizational objectives i.e., optimal leverage (based on the trade-off model) is comparatively trustworthy. This is true even if it takes a delayed period to reach this level owing to the costly finance by virtue of transaction costs that SMEs have to bear. Debt tax exemption protection (NDTS), growth opportunities, and owners' resources are found to be the most significant means to procure the capital of the SME industry. Size and age are observed as the most important determinates. Moreover, the empirical findings obtained that the financial behavior is different across the scale of the firm, i.e. SME's financing behaviourally differs notably from that of large companies regarding their as far as financing is concerned. ***KOK Thim et al.***, (***2011)*** in their research article, extracted a sample of 101 companies between 2005 - 2009 Bursa Malaysia. Basically, two basic behavioral models based on the pecking order and trade-off theory have been applied to explain the association between Bankruptcy cost and financial risks. The dependent variables are long-term

debt to total capital and current debt to total capital as short-term debt ratios. Regressor variables are viz. profitability, liquidity, company size, Solvency, growth, and risk. Ultimately the Interest coverage ratio and operating profit is found inversely associated with financial obstacles. ***Almendros & Mira, (2016)*** in their paper tried to identify does Tax-benefits has any significant impact on corporate leverage policymaking. Their study period has been fixed from 2007 – 2013 taking data from Spanish Stock Exchange. Where they have observed Tax benefits as a significant factor affecting leverage decisions. In low-levered firms, the intensity of non-debt measures is more effective than that of debt means, and firms with highly geared capital structures less benefitted by debt funds pertaining to Spanish government interest benefit regulation in 2012. Hence, their estimated non-tax benefit comes forward as a better measure of conventional debt-empowered leverage tax benefits. ***Djaddang & Ghozali, (2017)*** have made an attempt to find the empirical relationship between Interest coverage, non-debt tax benefit, and associated business risks. They have observed 12 companies taking a sample from Indonesian pharma companies with the object to explain the impact of business risk and non-debt on the leverage policy of firms, measured by applying Structural equation modelling (SEM). Finally, they have obtained results that Interest coverage and tax-shield have cabbalistic impact on the debt-equity ratio. The result of this study reveals that NDTS has a robust relationship with debt-equity ratio and business risk, and that companies can save tax by deploying extra debt to fixed assets till the business risk is lower and that further debt is not exhausted fully. This is persistent with the trade-off theory. ***Almendros & Mira (2018***) in their research article initiated to find an interrelationship between debt collection cost and non-debt tax benefits of listed firms in Spain, for the period between 2007- 2013. They have mainly focussed to make a comparative analysis forming a Probit-Panel data regression model, to observe is the conventional debt policy that is computed by a proxy of composite qualitative variables. This paper has analyzed the cost of debt is more beneficial to the firms than that of Non-debt tax measures. Finally, they have concluded that

debt cost has overpowered debt cost, but the latter could be a substitute of the former for the firms. However, this result is not consistent throughout all the firms, mostly for the firms having rigid debt policies. ***Gregova et al., (2021)*** in their study tried to make an analysis how the effect of tax benefits and their different means on firms financing decisions. They obtained a sample of 10627 firms, from V4 countries during the period ranging from 2014 – 2017 using Panel regression methodology. Eventually their study results shows that most of the models are indicating towards Pecking Order theory, although short-term credit is significant way to finance a firm's capital. Moreover, a non-debt tax shield is a less important means to gain tax benefits and is inversely correlated with debt. Again, rigid control on earning management resolves the problem of agency conflict to a certain extent.

Concepts And Variable Measurement: Tax shield refers to the total tax benefit derived by spending several fixed costs. This can be considered as a way to reduce the taxable income, thus tax liabilities of a firm derived by incurring allowable deductions out of fixed operating cost and fixed financial cost e.g. as deductible depreciation, amortization, loan interest, medical expenses, charitable donations,etc. (Sogorb, F, 2002; Mira & Gracia, 2003; Almendros & Mira, 2018; Gregova et al., 2021; Almendros & Mira, 2016). It is helpful to a firm to defer its tax liabilities or reduce tax burden.

$$\textbf{Direct Tax Shield (DTS)} = \frac{\text{Direct Taxes Expenses}}{\text{Earning Before Tax}}$$

Debt Procurement Cost is a proxy of companies' fixed Interest cost which the companies spend to procure debt capital from the market financial institutions. Furthermore, the deployment of too many borrowed funds in capital structure may enhance bankruptcy risk. Therefore, this commitment to repay external fund providers suddenly compels them to dispose of the ownership formally. *(Sogorb, F, 2002; Sogorb-Mira & López-Gracia; 2003, Rubio & Mira, 2012; Suratno et al., 2017; Almendros & Mira, 2018)*

⇨ **Debt Procurement Cost (DPC)** = $\frac{\text{Interest Cost}}{\text{Earning Before Tax}}$

Direct Bankruptcy Cost refers to the loss on the distressed sale of assets to pay out accruals, legal, and accounting trustee charges, disallowed income tax loss carryforwards has a substantial impact on small firms whereas the little impact on large firms. *Indirect Bankruptcy Cost* refers to the implicit cost of disruption among creditors and customers which is associated with the ownership change, which usually has a significant effect on both Smaller and Larger Firms. *(Khan & Jain, 2014; Sinha, 2017)* Both jointly increase the financial solvency risk of the firm to a moderate to a higher extent. Conversely, several non-behavioral and behavioral theories of capital structure have opined that levered firms enjoy more tax benefits than that unlevered firms, hence, it has a significant impact on the corporate Direct tax shield**.** ***(****Modigliani and Miller Irrelevancy capital structure Theory, 1963).*

⇨ **Financial Risk (FR)** = $\frac{\text{EBIT}}{\text{Interest Cost}}$

Thus, **Debt procurement cost has a positive impact on corporate direct tax shield.**

⇨ **Debt Empowered Cost (DE) =** $\left(\frac{\text{Interest Cost}}{\text{Earning Before Tax}} * \frac{\text{EBIT}}{\text{Interest Cost}}\right)$ *(Djaddang & Ghozali, 2017)*

NDTS is computed as the ratio between depreciation to total assets. It's basically a benefit is derived from non-financial leverage, thus called non-debt tax benefit. If firms derive more tax benefit using non-debt benefit by way of higher amount of depreciation cost, loss carry forward using greater proportion of tangible assets in assets structure. . *(Chen 2004; Deesomsak et al.,2004; Huang & Song, 2006; Delcoure, 2007; Chakraborty, 2010; Sinha, 2017; Almendros & Mira, 2018; Rao et al., 2018)*

⇨ **Non-Debt Tax Shield (NDTS)** = $\frac{\text{Depreciation}}{\text{Total Assets}}$

Conversely, a substantive deployment of these enhances default business risk hence directly firms affect profitability, moreover, huge variation in consumer demand, a high degree of commodity market volatility also enhance business risk to a certain extent. Nevertheless, the use of many tangible assets is a means for firms to reduce tax and it is considered as an indirect way to evade tax. *(Gracia & Sogorb-Mira, 2008, Almendros & Sogorb-Mira, 2018)*

⇨ **Business Risk (BR)** = $\sigma \frac{\text{Earning Before Interest and Tax}}{\text{Total Assets}}$

Thus, **Non-debt Tax Benefit Shield has a positive impact on corporate direct tax shield.**

Non-Debt Empowered Cost (NDE) = $\left(\frac{\text{Depreciation}}{\text{Total Assets}} * \sigma \frac{\text{EBIT}}{\text{Total Assets}} \right)$ *(Djaddang & Ghozali, 2017)*

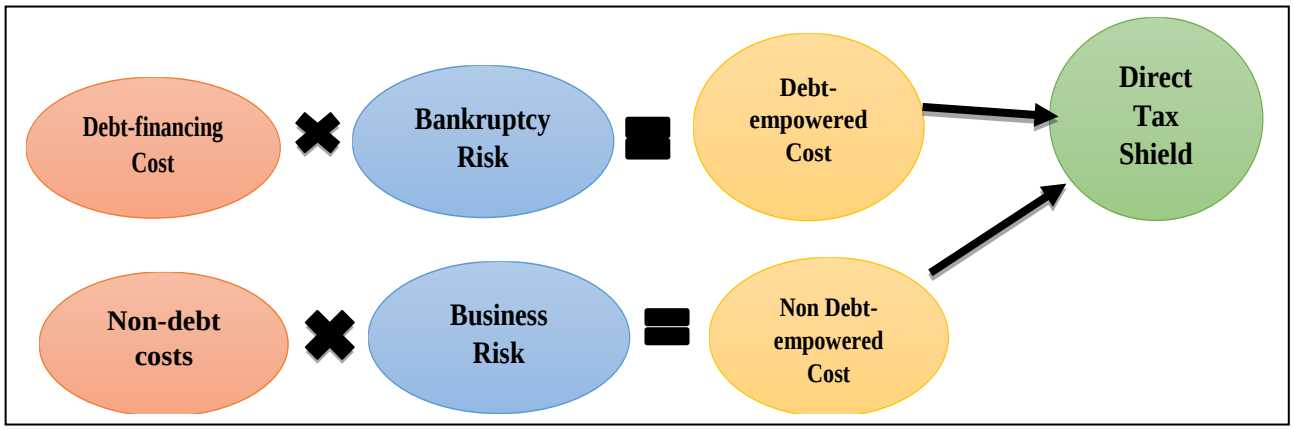

Fig.:1 Flow chart showing relation between Debt Empowered and Non-Debt Empowered cost and Direct Tax Shield

- **Control Variables**:

Profitability is one of the important predictor variables used in capital structure studies. It is consists of Earning before Depreciation Interest, tax, and Amortization divided by Total assets. Any firm that tends to satisfactory level of profitability will enjoy the benefit of marginal tax shield over the marginal bankruptcy cost as higher profitability enables the firm to borrow

higher. Conversely, a greater proportion of external fund will be beneficial for the internal stakeholders by way of a handsome amount of dividends. *(Gaud et al., 2005; Sinha 2017).* Thus, **Profitability is supposed to be negatively related to firm's leverage.**

⇨ **Profitability (PROF)** = $\frac{\text{Earning Before Interest Depreciatio,Tax ,Amortization}}{\text{Total Assets}}$

Firm Size is computed as the Log Value of the annual Net Sales revenue of the firm, cost of procuring external funds is lower for larger firms with higher amount of sales revenue than that of small firms which exhibit a direct relationship between firm size and leverage. Firms with higher revenue tend to borrow much external debt, much sales revenue helps firms to manage borrowed funds easily, as the cost of accounting, and financial bearings seem to be handled properly and hence the firm will enjoy tax benefits using debt. *(Sinha, 2017).* Thus, **Firm Size is supposed to be positively related to the firm's leverage**

⇨ **SIZE** = Ln (Net Sales)

Assets Structure refers to the ratio between fixed assets to total assets of the firm. Bank and financial institutions are inclined to sanction loan to those firms after evaluation of the mortgage hypothecation. Thus, clearly, it is positively related to firms' leverage. Firms having a higher proportion of tangible assets are more consistent with a higher debt-equity ratio, moreover, bankruptcy cost owing to debt procurement is to a certain extent covered by the firm's assets. Thus, **Assets Structure is supposed to be positively related to a firm's leverage.**

⇨ **Asset Structure (AS)** = $\frac{\text{Tangible Assets}}{\text{Total Assets}}$

Growth is a determinant of capital structure researchers suggested two different opinions as per the decisions of *(Myers, 1977; Rao et al., 2018)* Small businesses are often envious of their growth expectations which consequently generates moral hazard thus, growth causes uncertainty and affects firms'

financing. Moreover, growth fluctuation affects the value of a firm, hence SME firms tend to deploy lower borrowed funds in their capital structure to keep the level of bankruptcy risk at a considerable level *(Myers, 1977).* Thus, **GROWTH is supposed to be negatively associated with a firm's leverage.**

⇨ **Growth Opportunities (GO)** = $\frac{(\text{Total Assets}_t - \text{Total Assets}_{t-1})}{\text{Total Assets}_{t-1}}$

Cash flow means to be a very specific greater amount of operating cash flows that give rise to the agency conflict by substituting more debt to keep pressure on managers to use internal funds. *(Jensen and Mackling, 1976).* Now under the assumptions of this approach agency conflict by way of external conflict (Shareholders and lenders) give rise problem of debt overhang and lenders tend to demand a higher rate of interest may indirectly rise the problem of more bankruptcy cost. **Therefore, Cash Flow is supposed to be negatively related to the firm's leverage.**

⇨ **Cash Flow (CF)** = $\frac{\text{Profit After Tax} + \text{Depreciation}}{\text{Total Assets}}$

- **<u>Dependent Variables:</u>**

Leverage Ratio refers to the ratio (LEV): It denotes the proportion of outsiders' funds and owners' funds invested in the business. Usually indicates the degree of solvency of a firm. A Firm with moderately high financial leverage is conducive to enhancing owners' return and earnings, till the risk is diagnosable. *(Sarkar, R., 2016; Almendros & Mira, 2018; Bunyaminu et al., 2021)*

⇨ LEV = $\frac{\text{Total Debt}}{\text{Shareholders Fund}}$

Long-Term Debt to Total Assets Ratio (LTDR): Long-term debt refers to a firm's total debt having a maturity period of over one year. It consists of long-term liabilities, long-term obligations from banks, leasing obligations, directors'

loans, and hire purchase instruments; whereas Total assets include both fixed and current assets. *(Casser & Holmes, 2003; Sogorb-Mira & López-Gracia; 2003; Mateeva et al., 2013)*

$$\textbf{LTDR} = \frac{\text{Long term Debt}}{\text{Total Assets}}$$

Short-Term Debt to Total Assets Ratio (STDR): Short-term debt consists of the firm's total debt, having a maturity period of less than one year or less, includes, such current liabilities, Short term borrowings, bank overdrafts, etc.; whereas Total assets include both fixed and current assets. *(Sogorb-Mira & López-Gracia; 2003, Hasemi, 2013; Rao et al., 2018)*

$$\Rightarrow \textbf{STD} = \frac{\text{Short term Debt}}{\text{Total Assets}}$$

Research Gap:

Minutely reviewing existing literatures, it is found that most of the researchers have initiated their study to analyze the conventional capital structure determinants and their interrelationship with corporate leverage decisions. However, an in-depth study on various un-conventional determinates of capital structure such as Debt and non-debt tax empowered tax benefits, Tax-shield is hard to find specifically in a third world country like India, moreover, this study has taken samples exclusively from SME sectors which is perhaps undone previously by any other researchers to the best of the knowledge of the present researcher. The transportation industry is selected because most of the firms in this industry fulfilled the threshold Turnover and Capital employed criterion of the small and medium sector in India, moreover their contribution to GDP, and employment generation has tremendous future scope to flourish.

Thus, this study has initiated an attempt to find unexplored manifold aspects of capital structure determinants such as Debt and non-debt tax empowered tax benefits, Tax-shield, along with conventional determinants like Assets

Structure, Profitability, Size, etc. are the several aspects, which need to be assessed before initiation of debt capital procurement policy and leverage decisions by such firms. Henceforth, it seems worthy to conduct this study as few research work has been recognized to explore these unconventional determinants, especially in the context of India itself justify the relevance of the research study.

Research Questions: The Probable research questions of the study are as follows:

1. Is there any interrelationship between Direct Tax Benefits and Debt empowered and non-debt-empowered means of tax benefits of the firms?
2. Do the unconventional capital structure determinates (such as debt-empowered and non-debt-empowered tax benefits) along with traditional determinants (such as Profitability, Size, Asset Structure, etc.) have any effect on SME firms' debt procurement policy-making?
3. Do all these capital structure determinates hold any long-term relationship with SMEs' debt financing decisions?

Research Objectives: After conducting an extensive literature study and exploring the probable research gap the following objectives are set –

1. To observe the combined impact of Debt and Non-debt tax benefits on Direct Tax Shields, associated with the use of leverage decisions of SME transportation companies.
2. To analyse the Debt and Non-debt empowered along with typical capital structure determinants on SME transportation companies' overall leverage decisions withholding its categorical debt maturity period.
3. To find out the most appropriate panel effect model and its long-term persistence in the financial planning of Transportation SMEs companies.

Data And Research Methodology:

This study is mainly based on the Secondary source of data. The financial data has been extracted from the PROWESS-CMIE database and companies listed in BSE and panel data methodology is applied to interpret the research questions. "Panel data relate to individuals, firms, states, countries, etc., over time, there is bound to be heterogeneity in these units. The techniques of panel data estimation can take such heterogeneity explicitly into account by allowing for subject-specific variables." *(Gujarati et al, 6th edition, 2021, pp-587, pt. 16.1)*

To analyze the study result, 140 observations having 20 cross sections and a period range 2015-2021, data has been extracted from the PROWESS-IQ database of listed Transportation companies in the BSE Stock exchange. Out of the super sample listed there, 197 companies have been initially taken, however after applying the Turnover of Rs. 2500 Million & Capital Employed of Rs. 500 million (as per the criterion of Revised Definition of Micro Small and Medium Enterprises Vide Notification S.O. 1702(E), Dated: 01/06/2020, issued by MINISTRY OF MICRO, SMALL AND MEDIUM ENTERPRISES, w.e.f. 01/07/2020) under Micro, Small and Medium Enterprises Development MSMED Act, 2006 (https://msme.gov.in/sites/default/files/MSME_gazette_of_india) throughout the study period, 25 companies have been primarily selected, finally after screening sample for the study is fixed to 20 companies having complete data throughout the 7 years period under study.

In a time-series analysis, a non-stationary problem means that mean and autoregressive covariance is independent of time which is popularly known as the presence of Unit Root in the data set. In panel data the several cross-sectional units may create multiple individual time effects on the model, hence it is a pre-requisite to check data stationarity before running further analysis for getting a robust outcome. (*Baltagi & Kao, 2000.)*

To conduct the Regression analysis considering panel data, having a few cross-sections & periods under study in the prediction of parameters by the method of taking the ordinary least squares of

the observations. This technique presumes that it is the Best Linear Unbiased Estimation (BLUE).

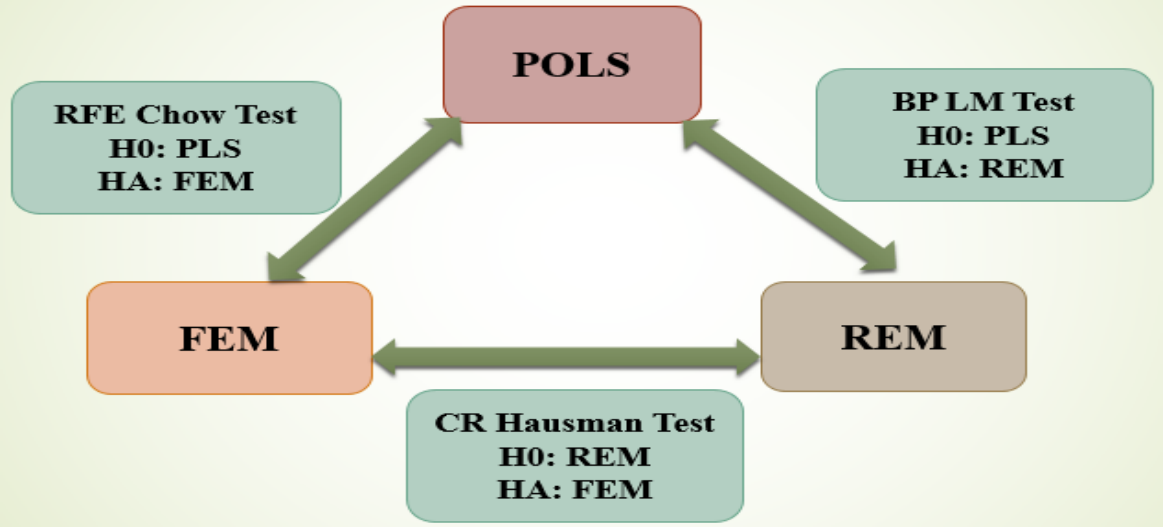

Fig. 2: Flow chat of choosing the Best Fitted Panel Effect Model

Fixed Effect in panel data modeling deals with a divergence between individual firms (each cross-section) due to differences in intercept among them, this is mainly due to differences between intercept of companies pertaining to differences in several firm and industry-specific factors. However, the intercept is said to be similar among companies. *(R. Zulfikar, 2013)*

❖ Steps to choose Best Fitted Panel Data Model:

✓ Step: 1 Run Panel Ordinary Least Square (POLS) to check whether there is any significant effect or not in the individual firm's intercept.

✓ Step: 2 Run Lagrange Multiplier (Bruesh-Pagan Test) to verify randomness in the model

✓ Step: 3 Also run the Fixed Effect Model, to estimate whether there is any variation due to fixed intercept between individual firms.

- ✓ Step: 4 Check the Redundant Fixed effect, to verify persistence between the fixed effect and Common Effect (POLS)-by running the Chow test.
- ✓ Step: 5 finally, choose the best fitted model to interpret and observe the effect persistence in the model based on the above test Result.

The use of independent variables which are itself non-stationary [i.e., I (0)] however, the related error terms u_i is stationary, hence the linear trend reduces the stochastic trend estimation of two series in regression. According to *Granger,* it is a pre-condition to check data stationery to run a regression to avoid spurious regression in the outcome. *(Gujarati et al, 2021, Basic Econometrics, pp-765-766).* However, to estimate stationery in the dataset Augmented Dicky Fuller (ADF) t-statistics is an Engle-Granger based methodology for estimating trend value with residual using co-integrated parameter of regressor variables to observe any deterministic long-term trend in the regression.

Analysis & Findings:

In this part, the analysis of the sample data set will be done using different statistical and econometrical tools discussed in the methodology section. The findings are explained to provide logical answers to the previously formulated research problems.

- ➢ DESCRIPTIVE STATISTICS: The below ***Table-1*** Exhibits the descriptive Statistics of individual variables. The mean values of STDR are the highest amongst all the variables followed by LTDR and LEV clearly expressing that firms have significant debt capital in their capital structure it detonates the use of leverage in capital structure however ranges between 0 to 508.085 cover a wide range of variation along with moderate to a high degree of deviation ranges between 5.233 to 42.874. In the case of dependent variables, PROF, AS, GO and SIZE shows higher mean values along with a wide range of variation ranging from 0 to 214.509.

Table: -1 Descriptive Statistics

Variables	Mean	Median	Maximum	Minimum	Std. Dev.	Observations
AS	2.558	0.961	128.187	0.000	11.321	140
BR	0.989	1.006	1.211	0.000	0.129	140
CF	1.987	0.986	100.724	-32.243	11.658	140
DPC	2.233	0.869	57.252	-60.038	10.565	140
DE	1.410	0.987	151.667	-92.698	15.208	140
DTS	0.246	0.880	20.197	-44.838	5.233	140
FR	2.784	0.924	244.562	-30.333	21.172	140
GO	-2.881	0.062	91.616	-214.509	28.306	140
LEV	2.971	1.009	262.441	-3.340	22.129	140
LTDR	4.518	0.986	255.706	0.000	23.969	140
NDTS	2.135	0.991	55.243	0.000	6.482	140
NDE	2.126	1.022	55.451	0.000	6.510	140
PROF	2.605	1.001	221.732	-11.034	18.771	140
SIZE	1.030	0.998	4.167	0.000	0.379	140
STDR	4.800	0.971	508.085	0.000	42.874	140

- CORRELATION ANALYSIS:

Table:- 2 Pairwise Correlation Matrix

Variable	Dependent Variable: DTS	Variable	Dependent Variable			Variance Inflation Factors	
			LEV	LTDR	STDR	Variable	Centred VIF
	Coefficient		Coefficient	Coefficient	Coefficient		
BR	-0.046	DTS	0.016	0.032	0.025	AS	2.126
DPC	0.193**	DE	0.944***	-0.003	-0.005	BR	1.193
DE	0.209**	NDE	0.955***	0.985***	0.984***	CF	1.192
FR	0.039	PROF	0.952***	0.997***	0.998***	DPC	1.218
NDTS	0.043	AS	-0.029	0.996***	0.995***	DE	1.246
NDE	0.030	SIZE	0.923***	-0.046	-0.051	DTS	1.083
		GO	0.937***	0.966***	0.967***	FR	1.019
		CF	0.079	0.871***	0.973***	GO	1.026
Note: ***p-value significant at 1% level, **p-value significant at 5% level, *p-value significant at 10% level						NDE	1.271
						PROF	2.026

The above ***Table-2*** Exhibits DE is moderately, positively, and significantly correlated with DTS (0.209) as compared to NDE (0.030) which has been found insignificant with the same. Moreover, in estimating the interrelationship between LEV and its determinants, DE is found more intensely, and positively correlated as that of NDE (0.955), however, DE is negatively, weakly associated with LTDR (-0.003) and STDR (-0.005). While analyzing debt by type of maturity period, LTDR (0.985) and STDR (0.984) are highly correlated with NDE. BR (-0.046) is negatively and weakly associated with DTS. Among other conventional variables PROF (0.997, 0.998); AS (0.996, 0.995); GO (0.966, 0.967) are intensely positively correlated with LTDR and STDR respectively, except AS which is negatively weakly associated with LEV (-0.029). Moreover, SIZE is negatively, and weakly correlated with LTDR (-0.046) and STDR (-0.051). The Value of VIF is less than 10, which means no severe problem of multicollinearity exists between regressor variables of the respective models, considered in the study.

- DATA STATIONERITY TEST:

Table: - 3 Panel Unit root test Summary

Variables involved: AS, BR, CF, DPC, DE, DTS, FR, GO, LEV, LTDR, NDTS, NDE, PROF, SIZE, STDR

Exogenous variables: Individual effects, individual linear trends

Method	At Level		At first difference	
	Statistic	Prob.**	Statistic	Prob.**
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t	-62.901	0.000***	-23.446	0.000***
Breitung t-stat	-18.463	0.000***	-5.637	0.000***
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-49.840	0.000***	-37.816	0.000***
ADF - Fisher Chi-square	1146.560	0.000***	886.601	0.000***
PP - Fisher Chi-square	1148.650	0.000***	276.310	0.000***

** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.

Note: ***p-value significant at 1% level, **p-value significant at 5% level

The below ***Table-3*** shows the several tests of Unit Root from the aspect of a common and individual unit root in process, considering Individual and linear trends. All the t test, ADF test, and fisher chi-square test results are found significant at 1% both at the level and 1st difference. Thus, the null hypothesis i.e. unit root is present is rejected hence alternative hypothesis is accepted, thus it clearly concludes that all the variables under study don't have Unit Root.

- PANEL REGRESSION MODELS:

- Tax benefit Regression Model:

$$DTS_{it} = \beta_0 + \beta_1 * DPC_{it} + +\beta_2 * DE_{it} + \beta_3 * NDTB_{it} + \beta_3 * NDE_{it} + \varepsilon_{it} \ldots\ldots\ldots\ldots (1)$$

Where, β_{oi} = Y – intercept of each company

DTS = Dependent variable of the model

DPC, DE, NDTS, NDE = Regressor Variables of the Model

i = each company in panel

t = time period

$\beta_{1....}\beta_8$ = respective coefficients of each explanatory variables

ε_{it} = Error term of the model

- ANOVA Hypothesis:
  - **H_{01}:** There is no effect on Direct Tax Shield due to the variation in Debt and Non-debt empowered Tax benefits related to SME's leverage decisions.
  - **H_{11}:** There is an effect on Direct Tax Shield due to the variation in Debt and Non-debt empowered Tax benefits related to SME's leverage decisions.

ANOVA Table					
DTS	df	SS	MS	F	p-value
Regression	4	1385.439	346.360	19.316	0.000***
Residual	135	2420.711	17.931		
Total	139				

Table: 4.1 Debt and Non-debt Tax Benefit Regression Model			
Dependent Variable: DTS			
Variable	Coefficient	t-Statistic	Prob.
C	-0.036	-0.081	0.936
DPC	0.006	0.152	0.879
DE	0.086	2.965	0.004***
NDTS	6.349	3.909	0.000***
NDE	-6.308	-3.901	0.000***
Effect Summary			
R-squared	0.364		
Adjusted R-squared	0.314		
S.E. of regression	4.856		
F-statistic	19.316		
Prob.(F-statistic)	0.000		
Durbin Watson Stat	1.944		

Note: ***p-value significant at 1% level, **p-value significant at 5% level, *p-value significant at 10% level

The above ***Table-4.1*** shows the regression analysis of the Tax benefit regression model. Among the individual regressor variables, DE, NDTS, and NDE are found significant at 1% level, and hold a positive relation with DTS, except NDE which is negatively regressing DTS. The ANOVA table Regression and Residual Shows that F-statistic (19.316) is significant at 1% level hence the null hypothesis (H_{01}) is rejected, so the alternative hypothesis (H_{11}), *i.e. "There is an effect on Direct Tax Shield due to the variation in Debt and Non-debt empowered Tax benefits related with SME's leverage decisions"* is accepted. To observe the overall predictability of the model, the value of R^2 is 0.364, and Adj.R^2 is 0.314, which means this model can predict almost 36.40% variation in DTS. D-W Stat is 1.944 clearly shows that this model doesn't suffer from a severe autocorrelation problem.

- Leverage decisions Models:

$$LEV_{it} = \beta_0 + \beta_1 * DTS_{it} + \beta_2 * DE_{it} + \beta_3 * NDE_{it} + \beta_4 * PROF_{it} + \beta_5 * AS_{it} + \beta_6 * SIZE_{it} + \beta_7 * GO_{it} + \beta_8 * CF_{it} + \varepsilon_{it} \quad \ldots\ldots (2)$$

$$LTDR_{it} = \beta_0 + \beta_1 * DTS_{it} + \beta_2 * DE_{it} + \beta_3 * NDE_{it} + \beta_4 * PROF_{it} + \beta_5 * AS_{it} + \beta_6 * SIZE_{it} + \beta_7 * GO_{it} + \beta_8 * CF_{it} + \varepsilon_{it} \quad \ldots\ldots (3)$$

$$STDR_{it} = \beta_0 + \beta_1 * DTS_{it} + \beta_2 * DE_{it} + \beta_3 * NDE_{it} + \beta_4 * PROF_{it} + \beta_5 * AS_{it} + \beta_6 * SIZE_{it} + \beta_7 * GO_{it} + \beta_8 * CF_{it} + \varepsilon_{it} \quad \ldots\ldots (4)$$

Where, β_{oi} = Y – intercept of each company

LEV, LTDR, STDR = Dependent variables of the model

DTS, DE, NDE, PROF, AS, SIZE, GO, CF = Regressor Variables of the Model

i = each company in panel

t = time period

$\beta_{1....}\beta_8$ = respective coefficients of each explanatory variables

ε_{it} = Error term of the model

Table: - 4.2 Panel Lest Square Model of Leverage Decision

Regressor Variable	Dependent Variable								
	LEV			LTDR			STDR		
	Coefficient	t-Statistic	Prob.	Coefficient	t-Statistic	Prob.	Coefficient	t-Statistic	Prob.
C	-3.325	-5.722	0.000	-0.075	-0.030	0.976	-4.520	-3.921	0.000
DTS	0.017	0.427	0.670	-0.028	-0.170	0.865	-0.010	-0.127	0.899
DE	-0.012	-0.930	0.354	0.014	0.251	0.802	-0.035	-1.325	0.187
NDE	-0.414	-6.263	0.000***	-1.491	-5.321	0.000***	-0.678	-5.171	0.000***
PROF	0.882	21.343	0.000***	0.089	0.508	0.612	1.831	22.336	0.000***
AS	0.655	7.316	0.000***	2.455	6.463	0.000***	1.016	5.716	0.000***
SIZE	3.083	5.842	0.000***	1.324	0.591	0.555	3.290	3.142	0.002***
GO	-0.002	-0.309	0.758	0.005	0.154	0.878	-0.004	-0.264	0.792
CF	0.018	0.835	0.405	-0.057	-0.640	0.523	0.023	0.547	0.585
Effect Summary									
R-squared	0.920			0.848			0.940		
Adjusted R-squared	0.910			0.839			0.919		
S.E. of	2.267			9.614			4.497		

Table: - 4.2 Panel Lest Square Model of Leverage Decision

Regressor Variable	Dependent Variable								
	LEV			LTDR			STDR		
	Coefficient	t-Statistic	Prob.	Coefficient	t-Statistic	Prob.	Coefficient	t-Statistic	Prob.
regression									
F-statistic	1639.369			91.611			1562.616		
Prob.(F-statistic)	0.000			0.000			0.000		
Durbin-Watson Stat	1.960			2.086			2.378		
Observations	140			140			140		

Note: ***p-value significant at 1% level, **p-value significant at 5% level, *p-value significant at 10% level

The above ***Table no. 4.2*** exhibits the leverage decisions Panel data Model:

i) In the LEV model, it is observed that NDE, PROF, AS, and SIZE are significant at 1% level, whereas the rest are mostly found insignificant at individual level. Except DE, NDE, and GO all the variables have a positive impact on LEV, which shows the debt and non-debt empowered tax benefit and Growth Prospect of firms are inversely affecting Leverage decisions. This model itself can estimate almost 92% (R^2 = 0.920) variation on LEV. D-W stat 1.960 denotes this model doesn't suffer from serious autocorrelation problems.

ii) In LTDR model, it is observed that NDE, AS are significant at 1% level, where the rest are mostly found insignificant at individual level. Except for NDE and CF all the variables have a positive impact on LTDR, which shows the non-debt empowered tax benefit and Cash Flow of firms are inversely affecting long term debt procurement decisions. This model itself can estimate almost 84.8% (R^2 = 0.848) variation on LEV. D-W stat 2.086 denotes this model doesn't suffer for serious autocorrelation problems.

iii) In the STDR model, it is observed that NDE, PROF, AS, and SIZE are significant at 1% level, whereas the rest are mostly found insignificant at individual level. Except NDE and GO all the variables have positive impact on STDR, which shows the non-debt empowered tax benefit and

Growth Opportunities of firms are inversely affecting short term debt procurement decisions. This model itself can estimate almost 94% (R^2 = 0.940) variation on LEV. D-W stat 2.378 denotes this model doesn't suffer from serious autocorrelation problems.

➢ PANEL FIXED EFFECT:

- Fixed Effect Models:

$$LEV_{it} = \beta_0 + \beta_1 * DTS_{it} + \beta_2 * DE_{it} + \beta_3 * NDE_{it} + \beta_4 * PROF_{it} + \beta_5 * AS_{it} + \beta_6 * SIZE_{it} + \beta_7 * GO_{it} + \beta_8 * CF_{it} + [CX = F, PER = F] + \varepsilon_{it} \quad \text{.....(5)}$$

$$LTDR_{it} = \beta_0 + \beta_1 * DTS_{it} + \beta_2 * DE_{it} + \beta_3 * NDE_{it} + \beta_4 * PROF_{it} + \beta_5 * AS_{it} + \beta_6 * SIZE_{it} + \beta_7 * GO_{it} + \beta_8 * CF_{it} + [CX = F, PER = F] + \varepsilon_{it} \quad \text{..... (6)}$$

$$STDR_{it} = \beta_0 + \beta_1 * DTS_{it} + \beta_2 * DE_{it} + \beta_3 * NDE_{it} + \beta_4 * PROF_{it} + \beta_5 * AS_{it} + \beta_6 * SIZE_{it} + \beta_7 * GO_{it} + \beta_8 * CF_{it} + [CX = F, PER = F] + \varepsilon_{it} \quad \text{..... (7)}$$

Where, β_{oi} = Y – intercept of each company

LEV, LTDR, STDR = Dependent variables of the model

DTS, DE, NDE, PROF, AS, SIZE, GO, CF = Regressor Variables of the Model

$[CX = F, PER = F]$ = CX are cross-section Dummy, PER is time dummy of panel data.

i = each company in panel

t = time period

$\beta_{1....}\beta_8$ = respective coefficients of each explanatory variable

ε_{it} = Error term of the model

Table: 5 Fixed Effect Model

Regressor Variable	Dependent Variable								
	LEV			LTDR			STDR		
	Coefficient	t-Statistic	Prob.	Coefficient	t-Statistic	Prob.	Coefficient	t-Statistic	Prob.
C	-3.797	-6.389	0.000	0.895	0.336	0.738	-5.686	-4.768	0.000
DTS	-0.006	-0.157	0.876	-0.080	-0.444	0.658	-0.042	-0.515	0.608
DE	-0.007	-0.516	0.607	-0.016	-0.260	0.796	-0.017	-0.615	0.540
NDE	-0.403	-5.970	0.000***	-1.424	-4.701	0.000***	-0.637	-4.700	0.000***
PROF	0.900	21.134	0.000***	0.199	1.041	0.300	1.866	21.838	0.000***
AS	0.658	7.068	0.000***	2.154	5.162	0.000***	1.008	5.398	0.000***
SIZE	3.501	6.458	0.000***	0.645	0.265	0.791	4.330	3.980	0.000***
GO	-0.004	-0.531	0.597	-0.009	-0.260	0.795	-0.007	-0.444	0.658
CF	-0.003	-0.139	0.890	-0.013	-0.130	0.897	-0.022	-0.486	0.628
Effect Summary									
R-squared	0.993			0.878			0.992		
Adjusted R-squared	0.991			0.840			0.990		
S.E. of regression	2.140			9.598			4.295		
F-statistic	447.068			23.057			416.509		
Prob. (F-statistic)	0.000***			0.000***			0.000***		
Durbin-Watson Stat	2.191			2.039			2.581		

Note: ***p-value significant at 1% level, **p-value significant at 5% level, *p-value significant at 10% level

The above ***Table no. 5*** exhibits the leverage decisions Panel data Model, in consideration with fixed effect-

a) LEV model itself can estimate almost 99.3% (R^2 = 0.993) variation on LEV. D-W stat 2.191 denotes this model doesn't suffer from serious autocorrelation problems.
b) LTDR model itself can estimate almost 87.8% (R^2 = 0.878) variation on LEV. D-W stat 2.039 denotes this model doesn't suffer from serious autocorrelation problems.

c) STDR model itself can estimate almost 99.2% (R^2 = 0.992) variation on LEV. D-W stat 2.581 denotes this model doesn't suffer from serious autocorrelation problems.

➢ BEST FITTEED PANEL MODEL:

To observe which effect is pertinent to the models of the study we may plan for several subsequent test one by one as the following process-

Breusch-Pagan LM Test			
Test effect	Cross section and panel random		
	Dependent Variable		
Test hypothesis	LEV	LTDR	STDR
BP test Stat	1.879	0.701	4.936
Prob.	0.170	0.402	0.026***
Note: ***p-value significant at 1% level,**p-value significant at 5% level			

The above result of Breushch Pagan LM Test, STDR is only found significant at 1% level, however, rest models don't found consistent with random effect. Thus we can select the null Hypothesis (H_0) i.e. there exists consistency in randomness for STDR over Common or no effect as per POLS estimation. Conversely, the insignificant test result for LEV and LTDR show these models are consistent with Common Effect.

Redundant Fixed Effects Tests						
Test cross-section and period fixed effects	Dependent Variable					
	LEV		LTDR		STDR	
	Statistic	Prob.	Statistic	Prob.	Statistic	Prob.
Cross-Section/Period F	1.638	0.044***	0.815	0.047***	2.848	0.012***
Cross-Section/Period Chi-square	45.736	0.007***	30.129	0.020***	17.937	0.006***

Note: ***p-value significant at 1% level, **p-value significant at 5% level

The above outcome of the Redundant Fixed Effect Test, fixed effect is found consistent with all in regard to Cross section and period as well. All the three models are found significant at 5% level. Thus, we can reject the null Hypothesis (H_0) i.e., there exists consistency in the common effect for over Fixed Effect for all the models. Thus, Fixed Effect is persistent in panel data.

Finally, to accept the best-fitted panel model, Fixed effect model estimators are always consistent when the common intercept i.e., β_0 is correlated with stochastic error term as that POLS or ECM model. *(Gujarati et al., 2021) which is obvious*, as the Transportation companies differ significantly among themselves pertaining to certain firm-specific qualitative and quantitative factors.

- PANEL COINTEGRATION TEST:

The equation of ADF test as suggested by Kao *(Baltagi & Kao, 2000)* is –

$$\widehat{e_{it}} = \rho\widehat{e_{it-1}} + \sum_{j=1}^{p} \vartheta_j \, \Delta\widehat{e_{it-J}} + \upsilon_{itp} \ldots\ldots\ldots\ldots\ldots\ldots \quad (8)$$

With the null hypothesis (H_0) no co integration, the ADF statistics can be constructed as –

$$\text{ADF} = \frac{t_{ADF} + \sqrt{\frac{6N\widehat{\sigma_\upsilon}}{2\widehat{\sigma_\upsilon}}}}{\sqrt{\frac{\widehat{\sigma_{0\upsilon}}^2}{\widehat{2\sigma_\upsilon}^2} + \frac{3\widehat{\sigma_\upsilon}^2}{10\widehat{\sigma_{0\upsilon}}^2}}}, \text{ Where converged ADF t-statistics} \sim (\mu_0, \sigma^2) \ldots\ldots\ldots\ldots\ldots\ldots \quad (9)$$

Where,

ρ = ADF t statistics; ϑ_j = variance of jth time period;

$\Delta\widehat{e_{it-J}}$ = change in lagged during the jth time period;

υ_{itp} = varince in error term, $\widehat{\sigma_\upsilon}$ = proportion standard deviation in the error term,

N = total time period under study; p = degree of freedom.

Table: -6 Kao Residual Panel Co-integration Test								
Included observations: 140								
Null Hypothesis: No co-integration								
Trend assumption: No deterministic trend								
Automatic lag length selection based on SIC with a max lag of 1								
Test Name	Dependent Variable							
	DTS		LEV		LTDR		STDR	
	t-Statistic	Prob.	t-Statistic	Prob.	t-Statistic	Prob.	t-Statistic	Prob.
ADF	-1.274	0.101	-24.338	0.000***	-3.694	0.000***	-16.566	0.000***
Residual variance	43.878		4.947		106.323		39.188	
HAC variance	15.578		4.422		104.405		24.735	

Note: ***p-value significant at 1% level, **p-value significant at 5% level, *p-value significant at 10% level

The above result of the Kao Residual Panel Co-Integration Test of all the models except DTS is found significant at 1% level. Thus we can reject the null hypothesis that there exists no long-term deterministic trend between variables, however, in the case of DTS, no deterministic long-term trend is observed. Moreover, several HAC Variance test results show that the models don't suffer from severe serial autocorrelation even in long run.

General Observations and Concluding Comments:

Business risk is found negatively correlated with Direct Tax benefits, this is probably because higher business risk doesn't give much scope to generate tax benefit because the firms intend to use operating fixed costs to increase the sales revenue, nevertheless, it enhances the greater business risk that reduces initial operating revenues of the firms which in turn become ineffective to give corporate income tax benefit to that kind of firms, hence non-debt empowered tax benefit doesn't work as a better way to reduce tax liability. Conversely, a positive moderately significant correlation with debt procurement cost directly affects direct Tax-shield, this is most likely related to the privilege of using a considerably levered capital structure. Moreover, considering all determinates of capital structure, the debt-empowered cost has an inverse relation with Long-term and Short term debt, this may be due to associated financial risk generated from using a highly geared capital structure, perhaps discouraging

external borrowing. Notwithstanding it is not in commensuration with a debt-equity ratio as a considerable weightage of debt in capital structure benefits a firm to reduce the tax liability to a certain extent. The size of the firm is inversely associated with LTDR and STDR, as the business expands, they have much scopes to procure equity investments by attracting large corporate investors, so as to maintain a reasonable solvency status of the firm, and this is further justified by the strong positive association of the same with LEV ratio.

From the regression analysis, it is observed that a constant negative and significant association between NDE and LEV, LTDR and STDR may be interpreted from two different aspects

Firstly, DTS has a positive effect on LEV clearly shows tax-shield has an impact on SMEs' Leverage decisions. Moreover, NDE benefits are mainly derived from the use of heavy tangible assets in asset structure, which require long maturity period investment that can be certainly financed either by two ways or by a mixture of both of these, owners fund or by procuring long-term borrowed capital, inverse association between this NDE and Debt capital clearly justifies towards the much use of owner's long-term fund (out of reserve funds) initially. Moreover, the associated business risk doesn't permit SMEs to procure external funds, which clearly fathoms the Pecking Order Theory. From another aspect, perhaps primarily the firms are prone to use debt-empowered cost to compute tax-shield leverage tax benefit but an inverse relationship between DE and LEV, STDR but positive effect on LTDR clearly exhibit that during initial years, they procure long-term borrowed funds as an easily accessible source of long-term capital from Banks, NBFCs. Finally, as the firms are not able to use both debt and non-debt empowered costs to gain tax benefits (justified by the negative association of DTS with LTDR and STDR), this is mainly owing to an increase in both Financial and Business risk which certainly compels them to deploy funds from their own source, mainly private savings, reserve funds, etc.

However, as time passes, an expansion of operating activities reduces high business risk, furthermore, as age increases a firm gets recognized in the stock market and it easily opens several avenues to procure equity investment in the long run also justified by negative effect of GO on debt procurement decisions. However, a positive association with SIZE again compels firms to procure debt funds in the future. As far as the other conventional determinates of capital structure are concerned, PROF is strongly and positively affecting Leverage decisions this is because high fixed financing and operating cost certainly result in a decrease in internal reserves, hence they have to rely much on external funds. AS is found significant regressor of this regression model as much use of tangible assets needs long-term immediate funds, sometimes variation in profitability, rigid compliance to procure capital from the share market, compels firms to borrow long-term loans to finance its fixed capital and short-term loans to plan their working capital as well. Furthermore, Size is a significant regressor variable of the model except for LTDR, this may be due to much use of internal funds in the capital structure to mitigate the bankruptcy risk of the firms. After conducting several tests, all the leverage decisions models are found consistent with fixed effect and most of the models have long-term deterministic trends except the Tax benefit model, this is might be due to the high range of deriving tax benefits from a typical means of long-run funds, associated with external factors like solvency, market situations, company policies, investors' expectations etc. Nevertheless, the leverage regression models are found significant even in long-run. It exhibits robustness of the model both in short and long-run as well.

Thus, finally this study result gives an insight about the transportation companies' finance procurement policy. Primarily they deploy capital investments out of business reserve funds, it clearly advocates towards Pecking order theory. Furthermore, while they require huge amount of long-term investments, they are tending to use external borrowings from banks, financial institutions instead of equity investment when paucity of internal reserve funds

declines. Thus, debt-empowered means to gain tax benefits such as much interest cost, legal charges which are usually enjoyed by a levered firm as opined by *Modigliani Miller, (1969)* in Arbitrage Theory and other behavioural theories of Capital structure. It seems to be more beneficial to the firms till it is more than the distress cost that arises due to much use of external debt; hence trade-off theory is persistent there. Nevertheless, it gradually enhances corporate distress cost and creates a scope to increase probability of bankruptcy and reduces the tax benefits as it declines the solvency positions of the firms. Along with this Assets Structure, Profitability, Size and Growth opportunities of firms are found significant indicators of expanding their operations. They are mostly prone to use tangible assets in Assets Structure, as they have to purchase travel cars and busses which require huge initial investment, out of owners' funds. Notwithstanding after a point of time, positive effect on LEV due to AS clearly indicates towards debt-funded fixed assets procurement which in turn supports the Trade-off Theory. However, SMEs having high debt procurement cost and related high financial risk again compels them to use internal funds which fathoms Pecking Order Theory. Furthermore, the profitability of the firms remains stable, limited access towards open capital market funds, high business risk associated with financial risk make the solvency of those firms questionable and that further creates ambiguity before the potential investors of those SME firms, thus eventually they can't to procure funds from the capital market easily. It is also observed that due to more cost of borrowing some firms are compelled to use internal reserves sometimes leads to cash crunch owing to deferred period of pay-back of long-investments hence they hire short-term debt which has also substantial impact on firm's liquidity and related aspects. That's inevitably affecting the smooth running of daily business operations from a moderate to greater extent. Here lies the plight of those Transportation SME firms in regard to business financing. Therefore, deploying highly levered capital structure sometimes flings them towards a great problem. To borrow capital in the

market and simultaneously their solvency and liquidity crunch sometimes leads to sudden liquidation of business.

Thus, the policy makers can focus on the factors like how to make financing easier to the most deprived firms who have much need of investment but have limited access of external borrowings, banks and financial institutions could come up with borrower-friendly interest rates, less rigid credit norms, collateral-free (or with less collateral) easier accessibility of private lending towards this sector. Furthermore, the managers or owners of the firm may take requisite policies to procure funds from the emerging source of financing such as Fintech-based lending, P2P lending, Debt and Equity crowdfunding which could be potential alternative means to procure funds, and most importantly its cost of financing is relatively cheaper than that of conventional sources of SME financing.

Limitations And Future Scopes:

This study also has limitations pertaining to using smaller sample size, furthermore only Transportation sector has been considered here, instead a mixture of several sub-sectors comes under the definitions of SME sectors may exhibit a better study outcome. Researchers may use most relevant micro determinates (such as Liquidity, ROE etc.) of capital structure determinates, along with macro-economic variables such as GDP, Bank size, Inflation Rate, Monetary policy measures, market performance which still remain out of the scope of this study, which in turn also widens the of future scope of research in this particular and related area of study.

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