# Impact of Personal Income Tax on Cost of Debt: Evidence from Sri Lankan Listed Firms: Evidence from Sri Lankan Listed Firms

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**Abstract**

This study examines whether changes in personal income taxation can indirectly influence the cost of debt of firms in Sri Lanka. The underlying argument is that personal taxation affects investors' after-tax returns from interest-bearing securities. Changes in the tax burden may therefore alter investor preferences, required yields, and, ultimately, the borrowing cost faced by firms. The study uses a quantitative research design and firm-level observations obtained from companies listed on the Colombo Stock Exchange (CSE). Personal income tax policy is represented through a pre- and post-policy indicator, while the cost of debt is measured as interest expense divided by total debt. A difference-in-differences framework is used to compare treatment and control groups across the pre- and post-tax-policy periods. Firm-level controls include return on assets (ROA), return on equity (ROE), cash, sales, and firm size, together with industry/category controls. The regression results indicate that the treatment-post variable has a negative coefficient providing borderline evidence of an association between the tax-policy period and cost of debt at the 5% significance level. ROA and sales are negatively associated with cost of debt, whereas cash is positively associated with it. ROE and firm size are statistically insignificant. The findings highlight the importance of considering personal taxation alongside corporate taxation when evaluating corporate financing costs and capital-market behavior in Sri Lanka. The paper discusses implications for firms, lenders, investors, and policymakers and identifies directions for stronger future identification using more detailed tax-rate and interest-income data.

***Keywords***: Cost of Debt, Personal Income Tax, Sri Lankan Listed Firms

## 1. Introduction

Even though companies usually focus on how taxes on company income affect their money plans, taxes on people's income can also affect how companies get money. This is especially true for loans because the money people get from loans is usually taxed. If the way that loan money is taxed changes, it can affect how much people want to lend money and what return they. How much companies have to pay for loans. Understanding this connection is important because the rules for people’s taxes can also affect how companies get money and what they invest in.

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The idea of how people's taxes affect company loans has been studied before. Miller in 1977 showed that how company taxes and people's taxes work together can change what kind of financing plans companies choose. Later, Graham in 1999 wrote a study called Do Personal Taxes Affect Corporate Financing Decisions? Found that people's taxes do matter for how companies get money. His study showed that if you include people's taxes, it helps explain why companies choose to use loans. It also showed that the taxes on people can reduce the benefits companies get from loans. In 2000, Graham found that when people's taxes are taken into account, the benefits of using loans are much lower. This shows that both company and people's taxes should be considered when looking at the benefits of borrowing. These findings show that company decisions are not about company taxes. However, how people's taxes affect the cost of loans for companies is still something that needs more study, especially in different places and situations.

Why this is important comes from the difference between a company deciding to use loans and the cost it has to pay for those loans. The cost of loans is how much it really costs a company to borrow money. If the cost goes up, it adds to the company's costs. It may make it harder to invest. If the cost goes down, it can help the company grow. When people have to pay taxes on the money they get from loans, they might want a higher return before taxes to still be happy with the deal. In some cases, this could make it more expensive for companies to get loans. If the taxes on loan money are lower, the return people want might be lower, and the cost for companies might go down. However, what really happens depends on how people react, what money options they have, what interest rates are, how much inflation there is, what the money policy is, and how risky the company is. So it is important to look at data to find out what really happens instead of just guessing.

The studies done before provide a basis for looking at how taxes affect how companies get money. They also show that it is important to tell the difference between how much a company’s uses loans and how much it costs to get those loans. For example, Graham in 1999 looked at how people’s taxes affect company money decisions while Graham in 2000 looked at how much benefit companies get from loans after taking peoples taxes into account. These studies show that people's taxes can change company decisions. They don't directly look at how a change in people's tax rules affects how much a company pays for loans in Sri Lanka. This is important because when a company uses loans, it doesn't always mean the cost of those loans goes up. Companies can change how they get money without changing the interest rate they pay. Also, even if the number of loans a company takes doesn't change, the interest rate they pay can go up or down. So, looking at the cost of loans as part of a company's money decisions can help us understand how people's taxes affect the way companies get money.

Sri Lanka is a place to look at this because the way people pay taxes has changed a lot in recent years. According to the IMF, in 2023 there were changes in how people pay taxes, including an amount of money that is not taxed and higher tax rates on income. These changes were part of efforts to get money for the government. The IMF also says there were changes in 2025. These changes show that how people pay taxes is a part of the economy. But tax changes happen along with things that can change how much companies pay for

loans, like changes in monetary policy, inflation, the risk of the country, how easy it is to borrow money, and the overall economy. There are many changes in the cost of loans after a tax change can't be blamed on taxes. That is why it is important to do research to see what exactly is happening.

The main problem this study looks at is that there is no reliable data to say whether changes in people's taxes are linked to changes in how much companies pay for loans in Sri Lanka. Even though other studies have shown that people's taxes can affect whether companies use loans or shares, there is no clear data to say for sure what happens in Sri Lanka. This creates a question: How much do changes in people's taxes affect the cost of loans for companies in Sri Lanka? This question is important for money decisions because the cost of loans affects how companies get money, what they invest in, and how they do financially. It is also important for the people who make the rules because tax changes may affect how people invest and how the money market works.

To address this question, the study compares companies before and after a change in people's tax rules. It uses a group that was affected and one that was not. It looks at how the cost of loans changed in each group. This method helps find out if the change in cost is because of the tax change or other things. The study also looks at things that can change how much a company pays for loans. The results depend on how good the groups are and how much data is available. It also depends on how the study handles other changes that happen at the same time.

The study has three goals: first, to look at how changes in people's tax rates affect how much it costs to get loans for people and businesses; second, to see how people's tax deductions might change if they choose to borrow; and third, to look at how taxes that get higher as income increases might affect how much debt different groups have. This study looks at the goal by looking at how a change in people's tax rules affects the cost of loans for companies. The other goals give context for how taxes might affect borrowing, but they are not directly tested unless the data supports it. This study helps add to what we know about how companies get money in a country that is changing its tax and money policies. It adds to the focus on company taxes and how much interest can be taken off taxes. It looks at how people's taxes might affect the cost of loans in a way that's not direct. The results might help the people who make the rules see if changes in people's taxes affect how companies get money. They might also help people who manage money see what outside factors affect how much it costs to borrow. By looking at this in Sri Lanka, the study tries to provide data and help us better understand how people's taxes and company loans are connected.

## 2. Literature Review

### 2.1 Personal Income Taxation and Investor Behaviour

Personal income taxation can influence financial behaviour by changing individuals' disposable income and the after-tax returns earned from savings and investments. When tax rates or the tax treatment of investment income change, investors may reconsider how they allocate their financial resources among deposits, bonds, shares and other investment

opportunities. These adjustments can influence the demand for different financial instruments and, consequently, the prices and returns observed in financial markets. For this reason, personal income taxation is relevant not only to individual financial decisions but also to the wider allocation of capital within an economy.

Miller (1977), in his influential study Debt and Taxes, developed a theoretical explanation of how personal and corporate taxes interact in determining the attractiveness of debt financing. His analysis demonstrated that the tax advantages associated with corporate interest deductions may be partly offset by the personal income taxes paid by investors receiving interest income. The central implication is that the benefits of debt financing cannot be assessed solely by considering the corporate tax position. Investors' tax liabilities also matter because they influence the net return received from debt investments. This theoretical argument provides an important foundation for examining how personal taxation may affect the demand for corporate debt and the financing decisions of firms.

Empirical evidence further supports the relevance of investor-level taxation. Graham (1999) examined whether personal taxes affect corporate financing decisions using firm-level data covering the period from 1980 to 1994. The study found that corporate debt usage was positively associated with corporate tax rates, while personal taxes had a distinct negative relationship with debt usage when the personal tax disadvantage of interest income was considered. The findings suggest that personal taxation can influence the relative attractiveness of debt financing and should therefore be incorporated into analyses of corporate financial decisions. However, Graham's principal outcome was firms' use of debt rather than the direct effect of personal tax changes on the measured cost of debt. This distinction is important for the present study, which focuses on borrowing costs among Sri Lankan listed firms.

More direct evidence of the relationship between investor taxation and debt-market returns is provided by Poterba (1989), who examined the market for tax-exempt debt. The study found that the yield spread between taxable and tax-exempt bonds responded to changes in expected individual income tax rates. This finding supports the argument that investor taxation can influence bond pricing and the returns required by investors. Poterba's (1984) earlier research also found that changes in personal income tax rates had pronounced effects on long-term municipal interest rates, although the effects on short-maturity yields were smaller. Together, these findings indicate that the sensitivity of debt-market returns to personal taxation may depend on the maturity of the securities and the characteristics of the investors supplying capital. Although these studies concern the United States municipal bond market rather than Sri Lankan corporate borrowing, they provide empirical support for the mechanism through which personal tax changes can influence debt yields.

Further evidence is presented by Liu, Qi and Wu (2006), who investigated the effects of personal taxes and endogenous default on corporate bond yield spreads. Their study showed that personal tax effects can influence corporate bond yield spreads and improve the explanatory performance of models that account for corporate credit risk. Similarly, the study by Dhaliwal, Heitzman and Li (2006), Taxes, Leverage, and the Cost of Equity Capital, is not the appropriate source for a direct claim about personal taxes and debt yields; therefore, the

more directly relevant evidence for the present research is provided by studies that explicitly incorporate investor taxes into debt pricing. Elton et al. (2001), although focused on explaining corporate bond yield spreads through several components, also provide relevant background for distinguishing credit risk and other pricing factors from the tax component of bond returns. These studies reinforce the importance of examining tax effects alongside credit risk and market conditions rather than treating borrowing costs as a consequence of corporate characteristics alone.

The literature therefore identifies a plausible transmission mechanism linking personal income taxation to corporate financing costs. When taxes reduce the after-tax return on interest income, some investors may require higher pre-tax yields to maintain their desired net returns. If these requirements are reflected in the prices of newly issued debt or the rates charged on borrowing, firms may face higher financing costs. Conversely, changes in relative tax treatment may redirect investor demand towards particular debt instruments, potentially lowering their required yields. The ultimate effect depends on the investor base, available investment alternatives, market conditions, and the extent to which tax changes are reflected in security prices. Accordingly, the literature does not justify assuming that every increase in personal income taxation must increase the cost of debt. Instead, it supports testing the direction and magnitude of the relationship empirically.

### 2.2 Cost of Debt and Its Determinants

The cost of debt is the effective cost incurred by a firm when obtaining borrowed capital through bank loans, corporate bonds, and other debt instruments. It is an important component of corporate financial management because it affects financing expenses, investment appraisal, profitability and the weighted average cost of capital. When borrowing costs increase, firms may postpone investment, reduce borrowing or seek alternative financing sources. Lower borrowing costs, in contrast, may improve financial flexibility and support business expansion. Consequently, understanding the determinants of the cost of debt is essential when examining the potential financial implications of changes in taxation.

Van Binsbergen, Graham and Yang (2010) examined the costs and benefits of corporate debt and demonstrated that the cost of debt varies with firm-specific characteristics, including collateral, size and book-to-market measures. Their findings emphasise that the economic cost of borrowing cannot be understood solely by considering tax advantages. Firms also face costs associated with their financial position and the risks arising from their capital structure. This evidence is directly relevant to the present study because differences in financial characteristics between firms may influence their borrowing costs independently of personal income tax policy.

The cost of debt is also influenced by credit risk, liquidity, market interest rates, and broader economic conditions. Lenders and investors generally require compensation for the possibility that borrowers will fail to meet their contractual obligations. Firms with weaker financial performance or greater uncertainty may therefore face higher borrowing costs, while firms with stronger repayment capacity may obtain financing on more favourable terms. At the macroeconomic level, monetary policy, inflation expectations, government borrowing and

financial-market uncertainty can affect the general level of interest rates and the availability of credit. These factors are especially important when analysing a policy change over time because the pre-policy and post-policy periods may differ in several respects beyond taxation.

Measurement is another important consideration in cost-of-debt research. A commonly used accounting-based proxy is the ratio of interest expense to debt. This measure is useful when firm-level financial statements are available for multiple companies and years. However, it should be distinguished from the contractual interest rate on a newly issued loan or the market yield on a particular bond. The accounting-based ratio reflects interest expenses relative to the selected debt measure and may be affected by the composition of debt, repayment schedules, changes in outstanding borrowing, and differences in reporting practices. Consequently, results based on an accounting measure should be interpreted as evidence about the measured cost-of-debt proxy rather than as a direct observation of the interest rate on every borrowing arrangement.

For the present study, the cost of debt is measured using the ratio of interest expenses to debt, represented by the dependent variable costcod in the empirical analysis. This operational definition allows the study to compare borrowing-cost measures across firms and periods. However, consistency in the definition of interest expenses and debt is essential to ensure that the measured changes are comparable between the treatment and control groups. The literature on debt costs therefore provides two important insights. First, the cost of debt is an economically meaningful outcome that reflects both firm-level risk and wider financing conditions. Second, any assessment of the relationship between personal income taxation and borrowing costs must account for other determinants that could explain differences in firms' financing expenses. This justifies incorporating relevant firm-level control variables into the empirical model.

### 2.3 Personal Taxation, Debt Financing and Corporate Debt Costs

The relationship between taxation and corporate financing is traditionally explained through the tax benefits associated with debt. Under applicable corporate tax rules, deductible interest expenses can reduce taxable corporate profits, making debt financing potentially more attractive than equity financing. However, the tax treatment of interest received by investors can offset some of this advantage. The overall attractiveness of debt therefore depends on the interaction between corporate-level tax benefits and personal-level tax costs.

Miller (1977) developed the theoretical argument that personal taxes can offset the corporate tax advantage of debt in market equilibrium. In this framework, investors compare the after-tax returns from debt and equity investments, and their required returns influence the terms on which firms can raise finance. If interest income faces a higher effective tax burden than alternative investment income, taxable investors may require compensation through higher pre-tax yields. This mechanism suggests that investor taxation can be reflected in debt-market pricing rather than influencing only the quantity of debt issued by firms.

Graham (1999) provided empirical evidence that personal taxes have a distinct relationship with corporate debt usage after accounting for corporate tax effects. The study is particularly important because it demonstrates that personal taxation should not be ignored

when analysing corporate financing choices. Nevertheless, its findings about debt usage do not establish that the cost of debt necessarily changes in the same direction. A firm can alter its debt-to-equity ratio without an equivalent change in the rate paid on its outstanding borrowing. Similarly, market yields can change even when a firm's total debt remains relatively stable. Therefore, the relationship between personal taxes and corporate debt costs requires separate empirical consideration.

Research focusing directly on debt pricing provides further support for this distinction. Poterba (1989) found that changes in expected individual tax rates were reflected in the yield spread between taxable and tax-exempt bonds. Liu, Qi and Wu (2006) demonstrated that personal tax effects can also help explain corporate bond yield spreads after incorporating credit-risk considerations. These studies provide evidence that investor taxation may be reflected in the required returns on debt securities. However, the institutional setting, investor composition and tax treatment of the securities examined in these studies differ from those prevailing in Sri Lanka. Their findings therefore support the theoretical mechanism but cannot be assumed to establish the magnitude or direction of the relationship among Sri Lankan listed firms.

Two competing explanations consequently emerge from the literature. Under the first explanation, an increase in the personal tax burden on interest income reduces investors' after-tax returns. Investors may respond by demanding higher pre-tax yields, potentially increasing firms' borrowing costs. This mechanism provides a theoretical basis for expecting a positive relationship between the relevant personal tax burden and the cost of debt. Under the second explanation, changes in tax treatment may alter the relative attractiveness of debt instruments and redirect savings towards debt securities. If this increases demand sufficiently, required yields may decline, potentially reducing firms' borrowing costs. The strength of either mechanism depends on the design of the tax reform, the tax treatment of competing investments, investor responses and the structure of the debt market.

These competing explanations demonstrate why the relationship should be tested empirically rather than inferred from theory alone. In particular, a tax-policy change may influence different investor groups in different ways, and the effect on firms' financing costs may be offset or reinforced by changes in monetary policy, inflation, credit risk, and overall market liquidity. The estimated effect is therefore likely to reflect the conditions under which the reform occurs, rather than a universal relationship applicable to all firms and markets.

### 2.4 Profitability and Firm-Level Characteristics

Firm-level financial characteristics must also be considered because they can influence lenders' assessments of repayment capacity and the risk associated with providing credit. Profitability is particularly relevant because firms that generate stronger earnings may be better positioned to meet interest and principal obligations. As a result, lenders may perceive profitable firms as less risky and offer them more favourable borrowing terms. However, the relationship between profitability and borrowing costs is not necessarily uniform, since firms may differ in their financing requirements, leverage, collateral and access to credit markets.

Return on assets (ROA) measures how effectively a firm uses its assets to generate earnings, while return on equity (ROE) measures the return generated relative to shareholders' equity. These indicators capture different aspects of financial performance and may provide useful information about a firm's financial condition. However, ROE can be influenced by leverage and may become volatile when shareholders' equity is small. ROA may therefore provide a different perspective on operating performance. Including both measures can help account for observed differences in firm financial characteristics, although their interpretation should consider possible correlation between the variables.

Cash holdings are also relevant because liquid assets can support debt servicing and reduce the risk of short-term financial distress. Firms with greater cash availability may be better able to meet immediate obligations and withstand temporary declines in operating cash flow. Nevertheless, cash holdings may also reflect precautionary saving, limited investment opportunities or financing constraints. Therefore, the relationship between cash holdings and the cost of debt may depend on the reasons firms retain cash and how lenders assess their financial position. Sales provide an indicator of business activity and may capture differences in operating scale. Firms with higher sales may have more diversified operations, stronger relationships with lenders, or greater capacity to generate revenue. These characteristics can potentially improve access to finance. However, sales alone do not establish creditworthiness because firms with high revenue may also face high operating costs, weak margins, or substantial existing debt. The effect of sales on borrowing costs should consequently be evaluated empirically rather than assumed

Van Binsbergen, Graham and Yang (2010) reinforce the importance of considering firm characteristics when examining debt costs, while the broader corporate-finance literature recognises the role of profitability, liquidity, firm size and risk in financing decisions. In the present study, ROA, ROE, cash holdings and sales are included as controls where specified in the regression model. Their purpose is to account for observable firm-level differences that may influence the measured cost of debt and could otherwise complicate the interpretation of the policy-related coefficient. The coefficients of these controls should be interpreted separately from the estimated policy effect. A statistically significant relationship between a control variable and cost of debt does not, by itself, demonstrate that the variable causes borrowing costs to change. Likewise, the inclusion of firm-level controls does not automatically eliminate the effects of unobserved characteristics or economy-wide changes. These considerations are particularly important in a before-and-after policy analysis, where firms may experience changes in financial conditions during the same period as the tax reform.

The theoretical relationship between personal income taxation and the cost of debt is not necessarily unidirectional. Changes in personal income tax rates may affect the after-tax returns earned by investors on interest income, which may influence their required returns on debt securities and, consequently, firms' borrowing costs. For example, an increase in taxes on interest income may reduce investors' after-tax returns and encourage them to demand higher pre-tax yields, potentially increasing the cost of debt for firms. Conversely, changes in the relative attractiveness of debt securities compared with alternative investments may

influence investor demand and result in a different effect on borrowing costs. Therefore, the direction of the relationship between personal income taxation and the cost of debt cannot be determined in advance and requires empirical investigation.

Given these competing theoretical arguments, the study does not assume that personal income tax changes necessarily increase or decrease the cost of debt. Instead, it examines whether the selected personal income tax policy change is significantly associated with changes in the cost of debt among firms listed on the Colombo Stock Exchange (CSE). Accordingly, the following hypothesis is formulated:

> *$H_1$: The selected personal income tax policy change is significantly associated with the cost of debt of listed firms in the treatment group relative to those in the control group.*

To test this hypothesis, the study employs a Difference-in-Differences (DiD) model that compares changes in the cost of debt between treatment and control groups before and after the selected policy change. The dependent variable is the cost of debt, measured as the ratio of interest expenses to total debt. The key explanatory variable is the treatment-by-post interaction term, which captures the difference between the change in the cost of debt for the treatment group and the corresponding change for the control group. The regression model also includes relevant firm-level control variables, including return on equity (ROE), return on assets (ROA), cash holdings, and sales, subject to the final model specification.

The hypothesis is evaluated using the estimated coefficient and the statistical significance of the variable. A statistically significant positive coefficient would indicate an increase in the cost of debt for the treatment group relative to the control group following the policy change, whereas a statistically significant negative coefficient would indicate a relative decrease. If the coefficient is not statistically significant at the selected significance level, the study will not find sufficient evidence of a statistically significant relationship between the policy-period change and the relative change in the cost of debt.

The findings must be interpreted in the context of the study's research design. In particular, the estimated DiD coefficient represents the relative change in the cost of debt associated with the policy period and does not, by itself, establish that personal income taxation alone caused the observed outcome. A causal interpretation requires a clearly identified policy change, an appropriate treatment classification, and support for the parallel-trends assumption, together with consideration of other factors that may affect the cost of debt, industry classification of firms listed on the Colombo Stock Exchange (CSE), and the accessibility of financial data about the firms in the period from 2016 to 2022. The treatment group consists of firms that belong to the Energy, Household and Personal Products, Consumer Services, and Consumer Durables and Apparel industries. On the contrary, the control group is formed of firms in the Food, Beverage and Tobacco, Healthcare and Equipment Services, and Utilities industries.

The control group was chosen to serve as a basis for comparison of the treatment group with respect to the changes in the cost of debt in different industries over time. The inclusion of firms from the Food, Beverage and Tobacco, Healthcare and Equipment Services, and

Utilities industries will enable the use of the available financial information of firms to measure the cost of debt changes before and after the policy of each firm and estimate the Difference-in-Differences (DiD) model. The accessibility of the data concerning the interest expenses, total debt, total equity, cash holdings, and revenue of the firms makes it possible to estimate the cost of debt and the DiD model. Moreover, the presence of several industries in the control group creates an opportunity for more comparative analysis as compared to the single industry choice.

The DiD method involves the comparison of the change in the cost of debt in the treatment group to the change in the control group in response to the chosen personal income tax policy. However, the industry classification and the accessibility of financial information do not prove that the control group was not affected by the policy and can be used as a base for comparison with the treatment group. Thus, the suitability of the chosen control industries in the context of the policy and pre-policy cost of debt comparability should be evaluated. Specifically, the parallel-trends assumption is to be made. Accordingly, the chosen treatment and control groups form the empirical base for the examination of the difference in the cost of debt changes in the two groups within the period of the policy implementation.

## 3. Methods

The study adopts a quantitative research approach to examine the impact of personal income tax changes on the cost of debt of firms listed on the Colombo Stock Exchange (CSE). The empirical analysis employs a Difference-in-Differences (DID) design to examine changes in the cost of debt between treatment and control groups before and after the relevant policy change. This approach enables the study to assess whether the changes in the cost of debt differ between the two groups during the study period. The study uses firm-level financial data collected from approximately 100 companies listed on the CSE, covering the period from 2016 to 2022. The sample comprises companies belonging to seven industry categories: Consumer Services, Food, Beverage and Tobacco, Healthcare and Equipment Services, Energy, Utilities, Household and Personal Products, and Consumer Durables and Apparel. These industries were selected to establish the treatment and control groups required for the DID analysis. The treatment group includes Energy, Household and Personal Products, Consumer Services, and Consumer Durables and Apparel, while the control group comprises Food, Beverage and Tobacco, Healthcare and Equipment Services, and Utilities.

The study collects annual financial information for each selected company throughout the seven-year study period. The variables include interest expenses, total debt, and profit before tax, total tax, total equity, cash, revenue, share price, number of shares, cost of debt, return on assets (ROA), and sales. These data are used to measure the dependent variable, examine the relationship between the policy-related changes and the cost of debt, and account for relevant firm-level financial characteristics in the empirical analysis. The cost of debt is measured using the ratio of interest expenses to total debt. The sample selection process is based on the identification of companies operating within the selected industry categories and the collection of relevant financial information for the period 2016–2022. The availability and completeness of the required financial data are considered when preparing the dataset for analysis. Where applicable, observations with missing or insufficient information for the

variables required in the empirical model are identified and excluded from the relevant analysis. The final number of firms and firm-year observations is determined after checking the completeness and suitability of the collected data.

The resulting dataset is used to estimate the DID regression model and examine changes in the cost of debt between the treatment and control groups across the pre-policy and post-policy periods. By combining firm-level financial information over time with the industry-based treatment and control classification, the study seeks to provide empirical evidence on the relationship between the relevant policy change and the cost of debt among companies listed on the CSE.

The dependent variable in this study is the cost of debt, measured as the ratio of interest expenses to total debt. This ratio provides an operational measure of a firm's borrowing cost by indicating the amount of interest expense incurred relative to its reported debt balance. The cost of debt is calculated by total interest dividing by total debts. The calculation is based on annual financial information collected from companies listed on the Colombo Stock Exchange (CSE) for the period 2016–2022. To ensure the reliability of this measure, the interest expense and total debt figures must be checked for consistency across firms and financial years. In particular, observations with zero or negative debt balances, unusually small debt values, or exceptionally high cost-of-debt ratios require careful examination because they may generate misleading or extreme values. Differences in financing arrangements and the timing of interest expenses and reported debt balances may also contribute to variations in the calculated ratios.

The independent policy-period variable is represented by a pre/post indicator. In the Stata analysis, the variable is initially assigned a value of zero and then assigned a value of one for the years 2019, 2020, 2021, and 2022. This indicator is interacted with the treatment-group indicator to generate the treatment-by-post variable (treatpost). The interaction term captures the difference between the change in the cost of debt for the treatment group and the corresponding change for the control group across the pre-policy and post-policy periods. The regression model also includes return on assets (ROA), return on equity (ROE), cash holdings, sales, and firm size as control variables, together with the relevant categorical or industry controls specified in the final model. These variables are included to account for differences in firms' financial characteristics that may be associated with their borrowing costs.

Particular attention is given to the descriptive statistics of the cost-of-debt variable, including its mean, standard deviation, minimum, and maximum values. Unusually high values may arise from exceptionally large interest expenses relative to debt, small debt balances, inconsistencies in the underlying financial data, or genuine differences in firms' financing conditions. Therefore, extreme observations should be examined against the original financial records before deciding whether they represent data errors or valid firm-year outcomes. Any data corrections, exclusions, or outlier-treatment procedures should be documented transparently and applied consistently.

Finally, the interpretation of the cost-of-debt measure depends on the consistency of the underlying accounting figures and the scale in which the ratio is reported. The ratio may be

expressed as a decimal or converted into a percentage by multiplying it by 100. The same convention must be maintained throughout the descriptive statistics and regression analysis. These checks are important to ensure that unusually high descriptive values are appropriately interpreted and that the estimated relationship between the policy-period indicator and the cost of debt is not driven by data errors or extreme observations. The relationship is tested using the following regression model.

$$CD_{it} = \alpha + \beta_1(Treatment_i \times Post_t) + \beta_2 ROA_{it} + \beta_3 ROE_{it} + \beta_4 Cash_{it} + \beta_5 Sales_{it} + \beta_6 FS_{it} + IC + \varepsilon_{it} \text{----------(1)}$$

In the regression model, CD denotes cost of debts, ROA is return on assets, ROE is return on equity, FS is firm size, IC is industry controls, $\varepsilon_{it}$ is the error term for firm I and year t.

The analysis was conducted in Stata. The dissertation reports the use of winsor2 to reduce the influence of extreme observations, encode to convert categorical string variables into numeric form, rename to improve variable labels, gen to construct new variables and br to inspect the prepared dataset. A multiple linear regression was subsequently used to estimate the association between the policy-period treatment variable and cost of debt. The dissertation also reports descriptive statistics and Pearson correlation analysis. These procedures were used to understand the distribution of the variables and their pairwise relationships before interpreting the multivariate regression results.

## 4. Results and Findings

The reported descriptive statistics cover 728 observations for the principal cost-of-debt analysis. Cost of debt (costcod) has a mean of 354.06 and a standard deviation of 200.43, with values ranging from 1 to 673. The treatment-post indicator has a mean of approximately 0.571 in the cost-of-debt descriptive output. ROE has a mean of 0.0667 and a standard deviation of 0.862, with a wide range from -12.38 to 6.21, indicating substantial dispersion. ROA has a mean of 0.048 and a standard deviation of 0.15. Cash (R) has a mean of 0.052, while sales has a mean of 0.518. The firm variable has a very large numerical scale, with a reported mean of approximately 6.59 billion. The wide ranges, particularly for ROE and firm size, indicate substantial heterogeneity among the listed firms. The reported use of winsorization is therefore relevant for limiting the influence of extreme observations in the regression analysis.

The correlation analysis indicated that the cost of debt was negatively correlated with ROA ($r = -.29$), sales ($r = -.32$), ROE ($r = -.15$), firm size ($r = -.14$), cash ($r = -.06$), and the treatment–post variable ($r = -.04$). The treatment–post variable exhibited weak pairwise correlations with the other variables. Furthermore, ROE was positively correlated with ROA ($r = .63$), while ROA was positively correlated with cash ($r = .43$) and firm size ($r = .64$). Sales was also positively correlated with ROE ($r = .21$), ROA ($r = .36$), and firm size ($r = .22$). The correlation results provide preliminary evidence that profitability and sales are associated with lower cost of debt. The relatively strong correlation between ROA and firm

size, and between ROE and ROA, also indicates that the relationships among financial controls should be considered when interpreting the multivariate estimates.

The coefficient for the treatment–post interaction term was negative (β = −26.70, $p$ = .052), indicating that the policy intervention was associated with a reduction in the cost of debt for the treatment group relative to the control group, conditional on the model specification. However, the result was not statistically significant at the 5% level, although it provides weak evidence of a negative effect.

The regression results indicate that ROA has a negative and statistically significant association with the cost of debt (β = −426.22, $p$ < .001), suggesting that firms with higher asset profitability tend to experience lower borrowing costs. In contrast, cash has a positive and statistically significant coefficient (β = 216.45, $p$ = .004), while sales has a negative and statistically significant coefficient (β = −89.69, $p$ < .001). ROE and firm size do not exhibit statistically significant effects in the reported model. The industry/category dummy variables indicate heterogeneous effects relative to the omitted reference category. Specifically, category 0002 has a positive and statistically significant coefficient (β = 94.09, $p$ < .001), whereas the remaining reported category effects are not statistically significant. Overall, these findings suggest that asset profitability, cash holdings, sales, and industry-specific characteristics are associated with variations in the cost of debt, although the interpretation of the category effects depends on the reference category and the coding structure used in the model.

**Table 1: Baseline results of regression**

| Variable | Coefficient | *p*-value | Direction | Interpretation |
|---|---|---|---|---|
| Treatment × Post | -26.70 | 0.052 | Negative | Borderline evidence of a policy-period association |
| ROE | 6.37 | 0.541 | Positive | Not statistically significant |
| ROA | -426.22 | 0.001 | Negative | Strong statistically significant association |
| Cash (R) | 216.45 | 0.004 | Positive | Statistically significant association |
| Sales | -89.69 | 0.001 | Negative | Strong statistically significant association |
| Firm size | 4.51e-10 | 0.323 | Positive | Not statistically significant |

Following the regression analysis, a multicollinearity test was conducted to determine whether correlations among the independent variables could affect the stability and reliability of the regression estimates. Particular attention was given to ROA, ROE, and firm size, as these variables may be correlated due to their relationships with firm performance and characteristics. Multicollinearity was assessed using the Variance Inflation Factor (VIF). Generally, VIF values below 5 indicate that multicollinearity is unlikely to be a serious concern, although this threshold is not absolute. Therefore, the VIF results were considered alongside the correlation matrix to determine whether multicollinearity posed any potential issues for the regression analysis.

The Variance Inflation Factor (VIF) is applied in order to establish the presence of the high correlation between the independent variables which could influence the validity of the

regression. The application of VIF in the present research is especially relevant since the factors such as ROA, ROE and the size of firms could be correlated with each other. Multicollinearity is known for its potential to increase the standard errors of the regression coefficients thus making the estimation of the impact of each particular independent variable difficult. Usually, VIF lower than 5 suggest no problem with multicollinearity. Hence, in order to establish whether the multicollinearity is present, the VIF and the mean VIF need to be analyzed.

The Treatment × Post interaction term had a negative coefficient ($\beta = -26.70$, $p = 0.52$) but it was not statistically significant. As the p-value exceeded the .05 significance threshold, the result was not statistically significant at the 5% level. The negative coefficient indicates that the change in the cost of debt for the treatment group during the post-policy period was lower than the corresponding change for the control group, after controlling for the other variables in the model. Therefore, the findings do not provide sufficient statistical evidence to conclude that the personal income tax policy change was associated with a change in the cost of debt.

The main result of this study is that the Treatment × Post coefficient is negative (-26.70) with a p-value of 0.052. Even though the coefficient is near the 5% level of significance it is not considered statistically significant at the 5% level. The negative coefficient aligns with the direction expected the hypothesis; however, the data is not strong enough to say that the personal income tax policy change had a major effect on the cost of debt. Therefore the result should be seen as a hint that there may be a drop in the cost of debt for treated firms compared to control firms after the policy not as proof of a direct cause-and-effect relationship.

This result can be explained by the investor-demand process that was discussed in the theory. Changes in income tax can change the returns investors get after taxes from interest-bearing investments and change how attractive different kinds of investments are. These changes can affect how much investors want debt and the returns they expect. If investors want corporate debt or are okay with lower returns companies might be able to borrow money at a lower cost. However the results here do not prove that this process caused the coefficient. The results point to a connection between personal taxes and how companies get money that needs more research. With the control variables return on assets (ROA) has a significant coefficient ($\beta = -426.22$, $p < 0.001$). This means that in the model companies with profits from their assets tend to have a lower cost of debt when other variables are the same. One reason could be that profitable companies are seen better at paying their debts, which might lower the risk and the returns that lenders ask for. Sales also has a significant coefficient ($\beta = -89.69$, $p < 0.001$) meaning there is an opposite link between sales and the cost of debt in the model. This could be because of differences in company performance, size or other features. So it should not be seen as proof that more sales directly lower borrowing costs.

Cash holdings had a positive and statistically significant coefficient ($\beta = 216.45$, $p = .004$). This finding contrasts with the expectation that higher cash holdings may be associated with lower borrowing costs. However, the positive coefficient should not be interpreted as

evidence that higher cash holdings increase the cost of debt. Instead, it may reflect differences in firms' operational requirements, working capital needs, or investment decisions that are not fully captured by the model. Further research is required to explore the reasons for this relationship. Return on equity (ROE) had a positive but statistically insignificant coefficient ($\beta = 6.37$, $p = .541$). Similarly, firm size did not have a statistically significant effect on the cost of debt ($p = .323$). Therefore, the results do not provide sufficient statistical evidence of significant relationships between ROE or firm size and the cost of debt at the 5% significance level.

Overall the results offer proof about how the personal income tax policy change affects the cost of debt for listed companies in Sri Lanka. Even though the negative Treatment × Post coefficient matches what hypothesis predicted the p-value of 0.052 means the result is not strong enough to be considered significant at the 5% level. So H2 should not be seen as supported at the 5% level. The findings should not be shown as solid proof that the policy change lowered the cost of debt. The results should be looked at carefully considering the model and the assumptions of the Difference-, in-Differences method. More research using models, more data and checking for trends before the policy could help find out if this negative link is real.

## 5. Conclusion and Implications

The findings suggest that policymakers should consider the interaction between personal taxation and corporate financing markets. A personal tax reform may influence firms indirectly through investors' required returns and debt-market conditions. Tax policy evaluation should therefore consider both the immediate fiscal effect on individuals and potential secondary effects on corporate financing and investment. Financial managers should consider the investor-side tax environment when evaluating debt financing. Focusing only on the firm's statutory tax treatment may underestimate the broader economic cost of debt. Managers may benefit from monitoring changes in investor taxation, debt-market demand and the composition of potential lenders when selecting financing instruments. Lenders can use the results as an indication that tax-policy changes may interact with firm profitability and financial characteristics when determining borrowing conditions. Investors should also consider after-tax returns rather than relying solely on nominal yields when comparing debt and equity instruments.

Several limitations should be recognized. First, the study represents personal income tax policy using a binary pre/post indicator rather than a continuous firm-specific measure of investors' marginal tax rates or effective tax rates. Consequently, the coefficient captures the association with the policy period rather than a direct one-unit change in the personal income tax rate. Second, the analysis uses listed firms and therefore may not generalize to private firms or smaller businesses. Third, the validity of a difference-in-differences interpretation depends on the treatment and control groups satisfying the parallel-trends assumption. The dissertation does not report a formal parallel-trends test, so the causal interpretation should be stated cautiously. Fourth, the Sri Lankan economy experienced other macroeconomic and financial changes during the study period. Interest rates, inflation, exchange rates, credit

conditions and firm-specific shocks may therefore contribute to the observed changes in debt costs.

Future research should use more precise personal tax-rate measures, investor-level tax classifications and firm-level interest-rate or bond-yield data. Researchers could also conduct an event-study or dynamic DiD analysis, formally test parallel trends, incorporate year and firm fixed effects, and use robust or clustered standard errors. Extending the sample to non-listed firms and comparing Sri Lanka with other emerging markets would further improve external validity.

This study examines the indirect relationship between personal income taxation and the cost of corporate debt in Sri Lanka. The conceptual argument is that personal taxation may influence investors' after-tax returns, investment preferences, and required yields, thereby transmitting the effects of tax policy to corporate debt markets. Using a treatment–control, pre- and post-policy framework with firm-level financial controls, and the study provides empirical evidence on this relationship among listed firms. The principal regression results indicate that the Treatment × Post interaction term has a negative coefficient, suggesting an inverse relationship between the policy period and the cost of debt. However, this result is not statistically significant at the conventional 5% level. Stronger evidence is observed for ROA and sales, both of which are negatively and statistically significantly associated with the cost of debt, whereas cash holdings have a positive and statistically significant association. ROE and firm size do not exhibit statistically significant relationships with the cost of debt.

Overall, the findings highlight the importance of considering personal taxation as part of the broader corporate finance and capital market environment. However, the results should be interpreted as evidence of an association rather than definitive causal evidence. Future research using continuous tax measures, more comprehensive debt-market data, and formal difference-in-differences (DID) diagnostics could provide a more rigorous assessment of the proposed mechanism. Despite these limitations, the study contributes to the discussion of how tax policy may extend beyond individual taxpayers to influence firms' financing conditions, investor behaviour, and broader economic activity.

The findings give limited statistical evidence about how the selected personal income tax policy change relates to the cost of debt of listed firms in Sri Lanka. The Difference-in-Differences analysis produced a Treatment × Post coefficient of –26.70 with a p-value of 0.052. Although the negative coefficient shows that the cost of debt in the treatment group fell more than in the control group after the policy change the result is not statistically significant, at the 5% level. Therefore the findings should not be taken as proof that the policy change affected the cost of debt. Instead the results point to an estimated link that must be interpreted with care. Further research using specifications a larger sample or extra policy periods might help clarify this relationship.

## References

Adegbite, T. A. (2024). Personal income tax and domestic debt servicing: Verdict from panel fixed effects. *Jurnal Akuntansi, 16*(2), 343–362. https://doi.org/10.28932/jam.v16i2.9910.

Alm, J. (2019). Measuring, explaining, and controlling tax evasion: Lessons from theory, experiments, and field studies. Springer.

Baule, R. (2019). The cost of debt capital revisited. *Business Research, 12*(2), 721–753. https://doi.org/10.1007/s40685-018-0070-6.

Brealey, R. A., Myers, S. C., & Allen, F. (2020). Principles of corporate finance (13th ed.). McGraw Hill.

Damodaran, A. (2016). The cost of capital: the Swiss army knife of finance. New York: Stern School of Business, New York University.

Dirman, A. (2020). Cost of debt: The impact of financial factors and non-financial factors. *Dinasti International Journal of Economics, Finance & Accounting*, *1*(4), 550–567. https://doi.org/10.38035/dijefa.v1i4.527.

Erero, J. L. (2022). Personal income tax: Evidence from South Africa. *Turkish Economic Review, 9*(1), 15–36. https://journals.econsciences.com/index.php/TER/article/view/2290.

Ete, S. N. (2023). An overview of the reforms of personal income tax (PIT) in Bangladesh. *International Journal of Science and Business, 21*(1), 42–53. https://doi.org/10.58970/IJSB.2075.

Graham, J. R. (2000). How big are the tax benefits of debt? *The Journal of Finance, 55*(5), 1901–1941. https://doi.org/10.1111/0022-1082.00277.

Haley, C. W. (1966). A note on the cost of debt. *Journal of Financial and Quantitative Analysis, 1*(4), 72–93. https://doi.org/10.2307/2329774.

Jit Bahadur K. C., & Karn, A. L. (2019). Personal income tax structure in Nepal: An evaluation. *NCC Journal, 4*(1), 69–84. https://doi.org/10.3126/nccj.v4i1.24739

Kabir, R., Li, H., & Veld-Merkoulova, Y. V. (2013). Executive compensation and the cost of debt. *Journal of Banking & Finance, 37*(8), 2893–2907. https://doi.org/10.1016/j.jbankfin.2013.04.020.

Modigliani, F., & Miller, M. H. (1958). The cost of capital, corporation finance and the theory of investment. *The American Economic Review, 48*(3), 261–297.

OECD (2015) Corporate Bond Markets in Times of Unconventional Monetary Policy. Paris: OECD Publishing.

OECD (2022) Taxing Wages 2022. Paris: OECD Publishing.

Shin, H.-J. and Woo, Y.-S. (2017) 'The effect of tax avoidance on cost of debt capital: Evidence from Korea'. *South African Journal of Business Management, 48*(4). https://doi.org/10.4102/sajbm.v48i4.45.