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Role of personal taxes in capital structure decisions: Evidence from India

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The study investigates the role of personal taxes in corporate financing decisions and its impact on the corporate tax advantage of debt in domestic manufacturing companies in India. Incremental financing decisions have been analyzed through pooled cross section of time series data on 288 firms from 1989-2011. The effect of personal taxes is captured through two different methods; in one specification marginal tax rates have been adjusted for personal tax penalty and in the other, effect of personal taxes has been captured separately. Results reveal a strong effect of relative personal tax disadvantage of debt on leverage decisions of Indian firms. After including personal taxes, marginal taxes become insignificant. The study also documents that the specification considering the individual effects of corporate and personal taxes is found to be better than the one which adjusts corporate taxes for personal tax penalty.

JEL Classifications: G32, G38

Keywords: Personal tax rate, Miller tax term, marginal tax Rate, debt, leverage, capital structure, tax, incremental debt, debt to equity ratio, corporate finance

Introduction

The trade off theory of capital structure suggested by Modigliani and Miller (1963) points to one of the primary advantages of debt over other sources of finance. This feature of interest tax deductibility attached to debt renders it to be the most viable option to a finance manager. In the presence of high expected future returns, the finance manager may choose to finance all the investments by debt and minimize the corporate tax burden. But if at the personal level, the tax system discriminates between different types of return; the personal tax disadvantage (advantage) of debt may weaken (strengthen) the existing corporate tax advantage. Miller (1977) states that if the personal tax on equity income is lower than the personal tax on interest, then for the firms operating at the margin the investors may demand higher risk adjusted returns for risky debt so as to maintain the attractiveness of debt at the personal level also. Thus according to him sometimes the net tax disadvantage on debt at the personal level may totally wipe out the benefits of borrowings at the corporate level.

DeAngelo and Masulis (1980), Graham (1996a; 1999) and Gordon and MacKie-Mason (1990) are some of the pioneering and early studies to test these relations on U.S. companies. Shum (1996) and Alworth and Arachi (2001) conduct test for the companies in Canada and Italy respectively. Though all these studies analyze debt-tax relationship but still fewer studies incorporate the effects of personal taxes. In India, major research on capital structure of firms emerges after 2000. Guha-Khasnobis and Bhaduri (2002) and Chakraborty (2010) seek to identify the determinants of capital structure of Indian firms and capture the effect of tax through non debt tax shields. Bhaduri (2002) in a similar study documents that the capital structure of Indian firms is mainly influenced by size,

cash flow, growth and other industry characteristics with no special emphasis on tax. Sinha and Bansal (2013) is the first study to employ marginal tax rate (MTR) to study exclusive effect of tax on leverage decisions of Indian companies. The study considers only profitable companies and considers only corporate tax advantage of debt.

Few cross country analysis also exist, reporting the results on debt tax relations of Indian firms (La Porta, Lopez-De-Silanes, Shleifer, and Vishny; 1997; Booth, Aivazian, Demirguc-Kunt, and Maksimovic, 2001; De Jong, Kabir, and Nguyen, 2008; Fan, Titman, and Twite, 2012). Studies taken together, cover the time period from 1980 to 2006. Booth, Aivazian, Demirguc-Kunt, and Maksimovic (2001) analyze the data from 1980 to 1990 and reports that India does not enjoy Miller tax advantage of debt over equity. Graham and Harvey (2001) through a survey of 390 CFO's could not find enough evidence to conclude that firms consider personal taxes directly after conducting a survey involving 390 CFO's. De Jong, Kabir, and Nguyen (2008) find that there are differences in firm specific factors across countries. Rajagopal (2011) emphasizes on the need and importance of research based on capital structure in Indian economy due to the differences between developing and developed economies and due to the occurrence of specific events in Indian economy. De Mooij (2011) conducts the meta analysis and documents that there are many variations in the methodology of analyzing the debt tax relationship. The study reports that most of the researches consider only corporate taxes. Further different methods are used to include personal taxes, each leading to different results. Differences in results also exist between countries.

Brealey, Myers, Allen, and Mohanty (2012) observe that when personal tax rates are introduced, optimally the aim of the corporation should be to minimize the overall tax burden. Therefore it is very essential to include personal taxes while analyzing the relationship between taxes and debt.

Thus, on the basis of the above discussion following research gaps are identified. First, the major research work on debt-tax relationship is concentrated in the developed countries; developing countries still lag behind. Second, researchers have identified country specific differences in determinants of debt. Third, the interrelation of corporate taxes, personal taxes and leverage decisions has not been tested at all for Indian companies. In comparison to other economies, different tax provisions such as difference in carry forward provisions, non existence of carry backward provisions, absence of investment tax credits, other changes in the tax rates over a period of time and the introduction of two most important tax laws, namely DDT and STT gives enough scope and reason to undertake a specific research for Indian firms.

Hence, this study seeks to fill the existing gap by analyzing the impact of both corporate and personal taxes on the incremental changes in debt of 288 Indian domestic manufacturing companies for a period of 23 years (1989-2011). Tax rates faced by corporate has been measured through simulated MTR based on Graham-Shevlin methodology (Shevlin, 1990; Graham and Lemmon, 1998). To measure personal tax disadvantage of debt, two different method have been employed and evaluated, one is the variation of the Miller Tax Term (net effect of both corporate and personal taxes) and other is relative disadvantage of debt at personal level (here corporate taxes are considered separately). The study also seeks to exclusively test that how important is the inclusion of personal taxes while considering the debt tax relationship in India and what impact does personal taxes have on corporate tax advantage of debt in India.

The model

The following model depicts the relationship between tax and debt:

$Lev = f(\text{Tax, Retained earnings, Risk, Tangibility, Size, Non debt tax shield, Negative owners equity, Free cash flow, Growth, Dividend, Deviation from average debt to capital ratio})$

Leverage (INCD)

The relationship between tax and debt has been analyzed by studying the incremental changes in borrowings. Hence leverage has been calculated as change in borrowings divided by the lagged value of total assets. Total Assets here means total assets net of revaluation reserve as provided by CMIE prowwess.

Tax

Since Modigliani and Miller (1963) and Miller (1977) have developed the theories on capital structures, two types of taxes are known to affect capital structure namely corporate income taxes and personal taxes. At the corporate level firms enjoy interest deductibility advantage of debt but at the personal level there may exist, advantage or disadvantage of debt depending upon the tax law of a particular country. In India, the tax provisions create a relative disadvantage of debt at the personal level and it has increased further with the changes in tax rules over a period of time. Accordingly, because of this disadvantage an investor may demand a higher risk adjusted return especially for risky firms. Thus in that case, personal taxes may shift the demand supply equilibrium point of debt upward by shifting the supply curve of debt to the left. There is a possibility at this stage that the personal tax disadvantage completely wipes out the benefits of corporate tax advantage (Miller, 1977).

Thus to test the relation between India's tax policies and capital structure of Indian domestic firms, both the taxes have been considered. These taxes and Indian provisions related to them are described below.

Corporate Income Taxes

Corporate income tax means the direct tax imposed on the net profits of the company calculated as per Income Tax Act 1961. In India presently, two other laws affect the corporate income taxes, these are loss carry forward provision and the minimum alternate tax. The company is allowed to carry forward losses for a period of 8 consecutive years and there is no carry back provision. Minimum alternate tax is applicable since 1997 and ensures that each company pays at least some tax even if the profit and loss account shows a negative balance. Further in a case where a company is earning a loss today, an additional rupee earned will reduce the amount of losses to be carried forward and thus, will create a tax incidence in the future on that additional unit of income. Hence MTR for the purpose of this study has been defined as the present value of current and future taxes paid on the additional rupee of income earned today. To integrate all these factors into the corporate tax rate, simulated MTR has been calculated, according to the Graham-Shevlin methodology (Graham and Lemmon, 1998). The MTR are calculated with the help of MATLAB, using the codes developed in Sinha and Bansal (2012). The said paper discusses in detail the above mentioned methodology and Indian tax provisions for the calculation of MTR for Indian companies. The authors develop MATLAB codes for two algorithms. For the purpose of this study, MTR has been calculated according to Algorithm 2.

The concentration of sample companies on the basis of their respective MTR has been shown for different years in figure1. The chart suggests that majority of the companies fall in the highest tax rate category for the respective years. The corporate income tax for domestic companies was 50%, 45%, 35%, 35%, 30% and 30% for the years 1989, 1993, 1998, 2004, 2008 and 2011 respectively. In the sample used in this study the MTR is highly influenced by the corporate tax rate. This may be due to the fact that around 80% of the sample companies are profitable on an average and thus their MTR may be equal to the statutory corporate tax rate. Other important information provided by the chart is that the number of companies approaching tax exhaustion has increased over a period of time.

Here the lagged values of MTR have been employed to avoid endogeneity bias in order to study its impact on capital structure of firms (Graham, Lemmon, and Schallheim, 1998). It is expected that companies facing higher MTR would employ more debt to exploit the tax advantage of debt.

FIGURE 1.

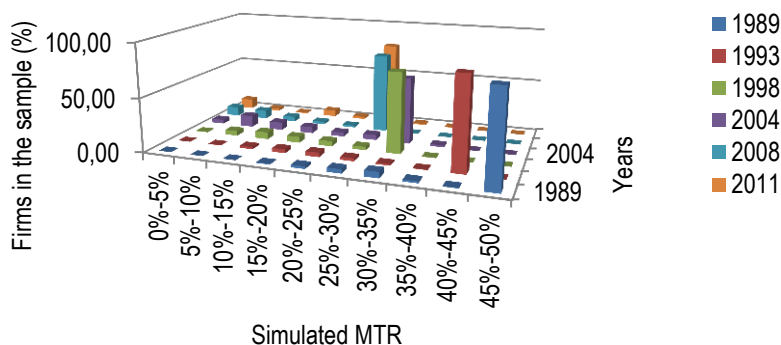


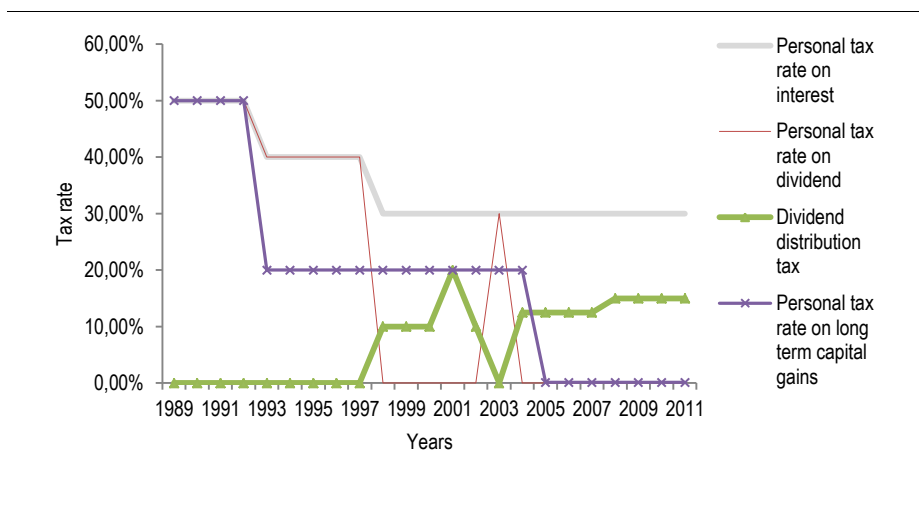
Figure 1 shows the simulated marginal tax rate (MTR) for companies in the sample (288 companies) for select years. Those years are included here in which the major tax law changes took place. In the year 1993 tax on long term capital gains was introduced, in 1998 DDT was introduced and in 2004 STT was introduced.

Personal taxes

The investor whether, Institutional or Individual, has to bear tax on returns from equity and debt. In India, debt returns are in the form of interest and are taxable in the hands of the investor at the rate applicable to him according to his income. The tax rule on debt interest remains same throughout 1989-2011. Equity returns accrue in the form of dividends and capital gain. Tax liability on equity returns has undergone multiple changes over the concerned period. Both dividends and capital gains were initially taxable in the hands of the investor at the same rate as interest. In 1993 long term capital gain tax was introduced which was lower than the tax rate applicable to highest slab of income thus leading to advantage for owners of equity. In 1997 dividend was made exempt in the hands of the investors with the introduction of dividend distribution tax. It was withdrawn for a year in 2003 but was reintroduced in 2004. This further strengthened the edge enjoyed by equity shareholders. Further, in the year 2004-05, Securities Transaction Tax was introduced with the abolition of long term capital gain tax for investors complying with STT. Accordingly an investor has to pay a nominal charge per rupee of transaction. Thus each investor would bear a very minor charge on marginal rupee of capital gain earned on the concerned security and is exempt from any tax on long term gain. This law may create bias for equity amongst Indian investors. The effect of various amendments in the tax law over a period of time leads to a lot of variation in the tax rates borne by individuals and the corporate and is presented in figure 2. The change in the personal tax rate on interest is due to change in the tax rate applicable to highest slab of income. As is clear from the presentation, personal tax on long term capital gains approaches zero after the introduction of STT in 2004.

As progressive tax rate structure is applicable on personal income in India, an assumption has been made here that all the investors face the same tax liability and their income is taxable at the tax rate applicable to highest slab. This is generally followed in most of the studies. Also (Anand, 2002), a survey of 81 CFO's of India, reports that 59% of CFO's prefer debt from financial institutions as second most important source of debt. Institutions have to pay tax at the rate of 30% in India, thus such an assumption is not expected to create a bias in results.

FIGURE 2.



The Figure 2 shows the movement in personal tax rate on equity, dividend and long term capital gain. It also shows the changes in dividend distribution tax for the period of 23 years. (1989-2011)

Two different methods have been employed in the study to check the impact of personal taxes on the financing decision of the firm. One is to calculate the relative advantage or disadvantage of debt at the personal level; in this case effect of corporate and personal taxes has been judged separately. Second is to calculate the net tax advantage of debt (deducting net disadvantage of debt from simulated corporate MTR); in this method one single tax variable is calculated. Both the methods have been explained below:

A) Firm specific personal tax disadvantage of debt (FPERS)

Through this method we calculate the relative tax advantage of debt in comparison to equity at personal level. The formula for calculating this variable has been adopted from (Alworth and Arachi, 2001) and is given below:

$$FPERS = \frac{(1 - di_p)}{[\alpha(1 - ed_p)\theta + (1 - \alpha)(1 - cg_p)]} \quad (1)$$

Where:

di_p - personal tax on debt interest

ed_p - personal tax on equity dividend

cg_p - personal tax on capital gain

α - dividend payout ratio

$(1 - \alpha)$ - retained earnings ratio

$\theta = 1 - \frac{DDT}{(1+DDT)}$, where DDT is the dividend distribution tax.

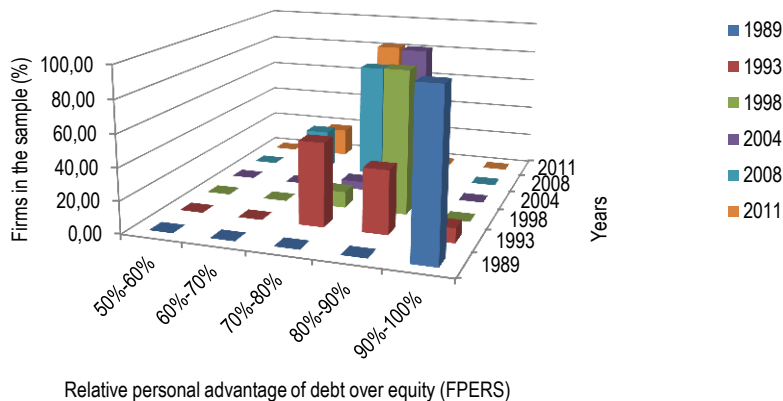
θ is the actual amount of dividends that a shareholder would receive if 1 unit of after tax earnings would be distributed and captures the effect of dividend distribution tax.

Here the numerator represents the proceeds from debt that an investor actually receives when one unit of interest is distributed. The unit of interest is reduced by the personal tax paid on interest income by the investor.

For example: If the company distributes 1 Rupee of interest and the current rate on interest income is 30%, the investor would receive 70 paise as net interest income from debt.

The denominator represents the proceeds from equity when one unit of after tax income is distributed. The after tax income is divided into two parts; one is in the form of dividends and the other one is retained earnings. In the denominator the first part presents the net proceeds received by investor in the form of dividends distributed by the company. Here $(1 - ed_p)$ and θ takes care of the dividend distribution tax. Before 1997 when investor had to pay tax on dividend income, ed_p had some positive value and θ was always one. After the introduction of DDT ed_p was always zero and θ assumed some value depending upon the DDT rate. But although DDT was paid by the company, it did affect the amount of dividend remaining in the hands of the investor. It is based on the assumption that company being a rational decision maker would declare dividend after taking DDT into consideration.

FIGURE 3.



The second part $(1 - \alpha)(1 - cg_p)$ shows the net proceeds received by an investor in the form of capital gain.

This variable is mainly affected by personal tax on debt and equity returns and companies' policies regarding dividend payout and retention ratios. Thus the impact of change in these indicators is shown in figure 3 by presenting the concentration of companies on the basis of relative advantage of debt offered by them to their respective marginal investors.

In the year 1989 each investor was indifferent towards the form of return and the company. But in 1993, with the fall in the long term capital gain tax rate relative advantage of debt declined. With the introduction of dividend distribution tax in 1998 debt became advantageous for most of the companies. With the implementation of securities transaction tax in 2004, the advantage of debt with respect to equity declined further as shown for the years 2008 and 2011. Hence relative advantage of debt for the marginal investors of majority of the companies declined over a period of time.

FPERS is applied in model 2 to judge the significance of personal taxes in capital structure decisions. This variable captures only the personal relative tax advantage of debt. The corporate advantage of debt is captured through MTR which is a separate variable in the model. The higher values of this variable are expected to induce decisions in favour of debt.

The Figure 3 shows the concentration of companies in the sample on the basis of their relative advantage of debt over equity for select years. This variable captures the changes in tax laws and also the difference in the dividend and payout policies of the firms. Those years are included here in which the major tax law changes took place. In the year 1993 tax on long term capital gains was introduced, in 1998 DDT was introduced and in 2004 STT was introduced.

B) Firm net tax effect (FNTE)

In the second method net benefit from interest deductions has been calculated. Miller (1977) states that there is a personal tax penalty linked with interest deductions. This personal tax penalty arises due to the fact that net proceeds to investors from debt are lower relative to net proceeds from equity; thus they demand a higher risk adjusted return. Thus the MTR must be adjusted for the personal tax penalty to calculate the net benefit of interest deductions for a firm (Graham, 1999). To arrive at the net tax benefit to debt following formula can be used:

$$FNTE = (1 - t_p) - \{(1 - t_c)(1 - t_e)\} \quad (2)$$

which is same as :

$$FNTE = t_c - (t_p - (1 - t_c)t_e) \quad (3)$$

Where:

t_c - Corporate tax

t_p - Personal rate on debt

t_e - Personal tax on equity

Applying the connotations used in this paper equation 3 can be rewritten as:

$$FNTE = MTR - (di_p - (1 - MTR)(\alpha(ed_t) + (1 - \alpha)(cg_p)) \quad (4)$$

Where:

di_p - personal tax on debt interest

MTR - marginal tax rate

ed_t - tax on equity dividend

cg_p - personal tax on capital gain

α - dividend payout ratio

$(1 - \alpha)$ - retained earnings ratio

$\theta = (1 - \frac{DDT}{(1+DDT)})$, where DDT is the dividend distribution tax.

Equation 4 shows MTR net of personal tax penalty to arrive at net tax benefit to debt (FNTE). t_e (tax on equity) in equation 3 has been substituted by $(\alpha(ed_t) + (1 - \alpha)(cg_p))$. Here ed_t is equal to ed_p when the investor had to pay tax on dividend and is equal to θ when the dividend distribution tax law is in force, hence creating a firm's liability to pay tax on dividends. This variable calculates the net marginal tax benefit of debt and is applied in model 3. The variable is expected to bear a positive sign. The presence of dividend payout ratio in the calculation of FPERS and FNTE helps in identifying the tax advantage/disadvantage of a marginal investor of each firm. The changes in respective tax law and dividend payout ratio of firms, over a period of time, gives enough scope to analyze the impact of personal taxes on financing decisions of firm.

Retained earnings (RETA)

Pecking order theory of capital structure suggests that the manager's most preferred source of finance is retained earnings because of its easy availability and low cost. Once this option is exhausted their next choice is debt and then equity. Hence in the presence of retained earnings, it is expected that the relationship between debt and tax may get affected. Lagged values of the variable are used and this variable is expected to bear a negative sign.

Risk (BRISK)

According to the trade off theory, as long as the company is facing tax liability, use of debt can increase the value of the firm but beyond a certain level debt can be risky and may even threaten the existence of the organisation. Z score (Altman, 1968) has been modified (BRISK) and is being used here to gauge the risk faced by the organisation. This indicator is used by Alworth & Arachi (2001). Lagged values of the risk indicator (BRISK) have been used to avoid endogeneity issue (Graham, Lemmon, & Schallheim, 1998).

Debt substitution effect (SUBST)

Theory suggests that firms with high levels of non debt tax shield would issue more debt as they would not be able to reap the benefit of interest tax deductions. In this study, the effect of non debt tax shield (NDTS) has already been considered in the calculation of MTR. DeAngelo & Masulis (1980) have pointed out that NDTS have an effect on the issuance of debt when the firm is near tax exhaustion, so for above reasons NDTS is not considered here. Rather a variable capturing both the presence of NDTS and risk is employed to capture the debt substitution effect. Thus a variable SUBST has been calculated, it has also been included by Alworth & Arachi (2001) and suggested by Mackie-Mason (1990). Higher the values of SUBST lower would be the amount of debt issued by the firm.

Tangibility (TANG)

The organisations having higher levels of tangible assets are able to claim higher credit worthiness, hence when capital requirements crop up these organizations stand a better chance to raise capital through debt instruments. In this study it is calculated as change in fixed assets divided by the lagged value of total assets.

Size (SIZ)

Size of the organization is expected to directly affect its capital requirements larger firms are expected to have a higher margin to enjoy tax advantage of debt. Hence it is expected to have a positive relation with the debt issuance.

Negative owner's equity (NEGOE)

This variable has been considered by Graham (1999). A dummy variable has been used for this indicator. Variable assumes a value 1 if a firm has a negative owners equity in any given year else it assumes zero. Firms with negative owner's equity are expected to issue less debt.

Free cash flow (FC)

According to the agency theory, the presence of free cash flow may lead to value destroying activities by managers such as increasing their perks or investing in risky projects and hence discipline can be imposed on them by increasing leverage (Jensen, 1986; Graham; 1999). Hence, it is expected that firms with high free cash flows may have higher leverage.

Growth (GROW)

Firms facing good growth opportunities are expected to issue more capital, but the source of funds would depend upon the riskiness of the projects. It is expected to influence firm's capital structure decisions but may bear any sign.

Dividend (DIVI)

Firms paying dividends signal (though a costly signal) good future prospects and suffer less from informational asymmetries and hence would be able to issue equity at a lower premium compared to firms which are not paying dividends (Mackie-Mason, 1990). This is the dummy variable which assumes a value 1 for firms paying dividend. It is expected to bear a negative sign.

Deviation from average debt to capital ratio (DADOC)

Dynamic trade off theory suggests that the firm tends to revert back to an average debt to equity ratio. Therefore, this tendency of a firm may affect the debt tax relationship to a great extent as profitable firms may not issue debt beyond a certain level even if the debt tax advantage is available.

Formulas for all the variables are presented in Appendix A.

Objectives and hypothesis

The tax norms in India allow debt interest to be tax deductible, thus creating a tax advantage for the use of debt at the corporate level. But in the current scenario, at the

personal level after tax marginal return from equity (including dividend and capital gains) is more advantageous in comparison to after tax marginal return from debt. Multiple amendments in tax policies since 1989 give us enough scope to study tax impact on debt issuance of corporate.

Further, literature review reveals the existence of several methods by which personal taxes can be included in the study. Out of them, two prominent methods have been identified. According to the first method personal tax variable is calculated as a relative advantage of debt over equity (FPERS); in this case MTR is considered separately (Model 2). In line with the second method personal taxes are included in the study by deducting the net marginal disadvantage of debt at the personal level from MTR (FTTE, Model 3).

Thus the purpose of this study is twofold. First objective is to find out that whether personal tax norms affect the issuance of corporate debt or not.

Through Second objective an attempt is made to identify a better method of including personal taxes, out of the two methods considered in the study.

On the basis of the objectives, following three null hypotheses have been framed.

H1: Personal taxes significantly affect the issuance of corporate debt in India.

H2: Inclusion of Personal taxes over MTR improves the understanding of the debt - tax relationship.

H3: FPERS performs better than FTTE in explaining the relation between debt and taxes.

Data and methodology

A sample of 290 manufacturing, non financial Indian companies has been selected to test the significance of personal taxes in financing decisions of a company. The data has been collected from CMIE Prowess database. The database contains financial data on around twenty thousand domestic firms. Only those companies were selected for study for which uninterrupted data was available for 23 years i.e. from 1989-2011. The reason of choosing only domestic, manufacturing, non financial companies is that the tax law in India employs differential tax treatment for different sectors.

Analyses have been performed in two parts on the data.

I. In the first part least square, linear regression analyses have been performed on pooled cross section of time series data. All the variables are checked for unit root and found to be stationary. White (1980) heteroskedastic consistent estimates have been obtained.

II. In the second part, models have been compared to select the best approach. This is explained below:

a) Comparison of model 1 and 2:

Model 2 contains all the independent variables present in model 1, except one additional variable (FPERS) which is explaining the effects of personal tax. These are called nested models where all the variables of the smaller model occur in larger model. These models are compared through F test. (Give one citation). In EVIEWS omitted or redundant variable test can be used to compare nested models.

b) Comparison of model 2 and 3:

It is not possible to transform either of the two models (model 2 and 3) into another one by adding or reducing a term. That is none of the models is the particular case of another model. Such models are called non-nested models. Thus (Davidson & MacKinnon, 1993)describes the process and proposes J-test to compare non nested models. The

central idea behind the proposed test is that a model is said to be a better model if the fitted values from the competing model are not found significant while estimating the model under consideration. Hence model 2 and 3 are compared through J-test.

All the tests have been performed in EVIEWS.

Results and discussions

In this paper the relationship between tax and debt has been analyzed with the help of three regression models. Model 1 tests the significance of only corporate MTR, Model 2 test significance for relative tax advantage of debt at both corporate and personal levels (MTR and FPERS) and Model 3 tests the effects of net tax advantage of debt (FNTE). The effects are being tested on incremental financing decisions of firm. The overall analysis is divided in two parts. Part 1 describes the regression results obtained in all the three models and Part 2 contains the results on comparison of models. The results on all the three models are shown in Table 1.

a) Regression results:

The results related to tax variables and control variables have been discussed separately and are given below:

Tax variables:

MTR is significant at 1% level of significance in model 1 and is not significant in model 2. FPERS is significant at 5% level of significance in model 2. In model 3 also, the tax variable FNTE is highly significant.

Control variables:

Variables BRISK, GROW, FC and DIVI are not significant in any of the models. TANG and DADOC are weakly significant (p value is around .06). RETA, SUBST, SIZ are highly significant in all the cases and NEGOE is significant at 5% level in model 1 and 2 and at 1% level in model 3. All the variables except BRISK, GROW, TANG and FC bear the hypothesised signs. Results regarding dividend are contradictory.

TABLE 1. REGRESSION RESULTS OF MODELS 1,2 AND 3 WITH INCD AS THE DEPENDENT VARIABLE

Dependent Variable (->)	INCD _{it}		
Variables	Model 1	Model 2	Model 3
C	-0.023971*	-0.059011*	-0.010866*
Tax Variables			
MTR _{it}	0.065351*	0.03126	NA
FPERS _{it}	NA	0.051190**	NA
FNTE _{it}	NA	NA	0.058124*
Control Variables			
RETA _{it}	-0.278583*	-0.269065*	-0.272747*
BRISK _{it}	0.0000908	0.0000848	0.0000844
SUBST _{it}	-0.002383*	-0.002405*	-0.002359*
GROW _{it}	-0.004059	-0.004131	-0.003973
TANG _{it}	-0.06828	-0.068317	-0.068650
SIZ _{it}	0.508293*	0.509677*	0.510589*
FC _{it}	-0.046767	-0.043455	-0.043490
DADOC _{it}	0.001361	0.001332	0.001335
DIVI _{it}	-0.001181	0.002802	0.001935
NEGOE _{it}	-0.025642**	-0.026924**	-0.025945*
Other statistics			
R ²	0.342654	0.34337	0.34288

Adjusted R ²	0.341511	0.342122	0.341734
F-statistic	299.6826*	275.5375*	299.9792*
Sum squared resid	97.56422	97.45822	97.53115
Durbin-Watson stat	1.926459	1.924902	1.925247
AIC	-1.331827	-1.332599	-1.332166

Notes: * Shows significance at 1%** Shows significance at 5%

Model 1 shows that dividend paying firms issue less debt but model 2 and 3 shows that dividend paying firms issue more debt.

b) Results pertaining to comparison of models:

Comparison of model 1 and 2:

Model 1 and 2 are a set of nested models, where model 1 is nested within model 2. Here F test is applied to compare the models. In EVIEWS redundant variable test or omitted variable test can be applied to identify a better model. At this point omitted variable test has been applied in model 1 with FPERS as the omitted variable. Results have been shown in Table 2 below:

Null Hypotheses: The omitted variable is not significant.

Omitted Variables: FPERS

TABLE 2. RESULTS OF F TEST PERFORMED FOR THE COMPARISON OF NESTED MODELS 1 AND 2

F-statistic	6.877345	Prob. F(1,6323)	0.0088
Log likelihood ratio	6.887739	Prob. Chi-Square(1)	0.0087

The results show that the null hypotheses are rejected which implies that FPERS significantly improves the equation. Hence it is concluded on the basis of results that model 2 is better than model 3 as model 2 has a scope of improvement by adding the variable FPERS.

Comparison of model 3 and 4:

Model 2 and 3 are non nested models and hence been compared by applying J-test proposed by Davidson and MacKinnon (1993). According to this test, if the estimated values of the dependent variable of one model are found significant in another model, it implies that the first model has an additional explanatory power over the second model and thus first model is said to be better than the second model. Table 3 shows the results of J test, here INCD2 represents the estimated values of INCD in model 2 and INCD3 represents the estimated values of INCD in model 3.

TABLE 3. RELEVANT RESULTS OF J TEST PERFORMED FOR THE COMPARISON OF NON-NESTED MODELS 1 AND 2

Dependent Variable (->)	INCD	
Variables	Model 2	Model 3
P values		
INCD2	NA	0.0488
INCD3	0.5060	NA

P values for other variables are not shown here as only INCD2 and INCD3 are relevant variables. As p value for INCD2 is less than 0.0488, it shows that model 2 provides some additional information when compared to model 3 at 5% level of significance. Also the p

values of INCD3 signifies that model 3 do not add to the existing information provided by model 2. Hence it clearly shows that model 2 is better.

Results from both the comparisons show that model 2 is a better model, therefore we may conclude on the basis of this study that personal taxes significantly affect the financing decisions of the firm and it is better to consider the effects of personal and corporate taxes separately rather than adjusting the MTR for personal tax penalty.

There is a possibility that corporate tax advantage affects the demand side of the financing decisions and personal tax advantage affects the supply side.

Findings

Results from all the models suggest that taxes have a significant effect on the financing decisions of a firm. The three models differ only in terms of the tax variables used. Model 1 contains the effects of only corporate taxes, model 2 includes both corporate and personal taxes and model 3 contains the net effect of personal and corporate taxes. All the tax variables are respectively significant except MTR in model 2.

Although in model 1 MTR is significant and in model 3 adjusted MTR (adjust for personal tax penalty) is significant, however comparison of the three models show that model 2 contains the maximum information and is better than the other two. Thus considering the results from model 2, it is noted here that when the effects of personal taxes are controlled, marginal tax rates lose their significance. The outcome suggests that in India the relative personal tax disadvantage of debt is high enough to wipe off the benefits of debt at the corporate level. Although personal tax disadvantage do not affect the financing decision directly but because of the existence of high disadvantage of debt at the personal level vis-a-vis equity the investors would demand a higher return for debt as compensation, thus shifting the supply curve of debt investment to the left. That is the supply of money for debt instruments would reduce for the rate of return offered by the company or the same demand for debt would get fulfilled only at the higher rate of return. It implies that the managers are not able to issue debt because of non availability of debt at the rate of return offered by them; at the higher rate it may be more advantageous for them to issue equity rather than debt.

In this study, apart from tax, other variables which significantly affect the financing decisions of Indian firms are SUBST, retained earnings, size and negative owners' equity. Variable SUBST captures the role of non debt tax shields for the firms operating near tax exhaustion. The significant SUBST in this study and insignificant status of non debt tax shields in Sinha and Bansal (2013) confirms the proposition made by DeAngelo and Masulis (1980). They state that the presence of non debt tax shields in the profit and loss account affects the financing decisions of only those firms which are near tax exhaustion. As BRISK is found insignificant the result also point towards the fact that risk is not a significant determinant of firms which are reaping high profit margins. The results confirm that larger firms issue relatively more debt and if the owners' equity is below zero firms issue less debt. The negative owners' equity affects the credit worthiness of the company and hence directly affects the supply of debt. Presence of retained earnings in the firm provides for a cheap and easily available source of finance and hence in this case also the firms having high amounts of retained earnings would issue less debt.

Tangibility and deviation from average debt to outside capital ratio is weakly significant. Presence of free cash flow and future growth prospects does not affect the leverage decisions of the firm.

Conclusion

The aim of this paper is to test the effect of taxes on financing decisions of the firm. This paper essentially analyses a proposition made by Miller (1977) about the role of personal tax in eliminating the tax advantage of debt at the corporate level. Marginal tax rates and Miller tax term has been used to assess the impact of corporate tax and personal tax respectively. The results indicate that taxes play a significant role in policy matters regarding capital structures. A specification without personal taxes shows that corporate tax disadvantage does matter but once personal taxes were induced, MTR became insignificant. This indicates that miller's proposition is partially true in the case of India. On the basis of the results it is proposed here that though after including personal taxes in the study corporate tax advantage distinguishes but significance of the personal taxes clearly show that overall taxes affect financing decisions of the firm. here it is proposed that there is a possibility that personal taxes affects not the demand but the supply side of the debt and hence higher cost of debt force managers to issue equity. Thus unlike corporate taxes the presence of personal taxes affects the decision of financial managers indirectly as personal tax disadvantage of debt do not affect the demand of debt but would shift the supply curve of debt to the left as investors demand a higher risk adjusted return.

Total tax effect is also calculated, it is found significant too but the specification that controls for corporate and personal taxes dominates the other two specifications i.e., one with only marginal tax effects and the other with total tax effect. Hence we conclude that it is important to consider personal taxes in studies related to capital structure.

Tax authorities around the world are concerned about this issue. Rapid growth of hybrid securities to avoid tax is yet another big matter. A lot of work is done in capital structures in developed countries but huge gap exists between the theory and practice of financing decisions, in India and other developed countries. This study is done on manufacturing, domestic Indian companies. Different industries face different tax scenario, hence it is worthwhile to study other industries and sectors to arrive at the overall conclusion. Further, tax laws have been amended many times which affect the relative tax advantage of debt at the personal level. Effect of individual tax policy on the financing decision would throw more light on this issue.

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