DOI : 10.18843/ijms/ v6si6/03
DOI URL :http://dx.doi.org/10.18843/ijms/v6si6/03

Impact of Corporate Taxation on Profitability of Selected Companies – An Empirical Investigation

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ABSTRACT

The present paper is aimed at empirically evaluating the effect of corporate taxation on profitability of the selected companies under manufacturing and service sectors in India using financial data from the year 2001-02 to 2016-17. The pharmaceutical companies under manufacturing sector and hotels under service sector are considered for the study. Return on Assets (ROA) is used as proxy for profitability and statutory tax, effective tax and tax savings are the variables for corporate taxation. Correlation and Multiple regression analysis are used to analyze the data. In the regression, profitability is the dependent and tax variables are independent. Apart from tax variables, the firm characteristics such as financial risk, growth, size, tangibility, liquidity, non-debt tax shield. It is found from the results of the analysis that the profitability is affected by effective tax and tax savings but not by statutory tax.

Keywords: Corporate taxation, Statutory tax, Effective tax, Tax savings, Return on Assets, Control variables, Correlation analysis and Regression analysis.

INTRODUCTION:

The taxation is a major component of fiscal policy of any Government all over the world. Through taxes, a country seeks to collect financial resource to its budget. Particularly, the corporate taxation is an important component in budget revenue. In contributing to the exchequer through income tax, the corporate companies under manufacturing and service sectors play a very important role. These sectors apart from creating jobs contribute more the exchequer as tax. At the same time, the profitability of the corporate companies is much affected by the high tax rates. Hence, in this paper, an attempt is made to analyze the same in the Indian context.

REVIEW OF LITERATURE:

Desai and Hines (2002)[1] analyzed the firm performance and tax planning behaviour of firms. They investigated the relationship between tightening of tax systems and market value of firms based on 850 listed firms in US and it was cross sectional study. Simple regression and t-tests were used to establish the relationships. The authors established that intensive tax planning was associated with higher firm performance. On the other hand, they reported that tightening of the tax system was positively associated with higher market performance of firms.
Gatsi, Gadzo and Kportorgbi (2013)[2] empirically determined the effect of corporate income tax on financial performance using panel data methodology covering ten listed manufacturing firms over seven years. Their study revealed that there was a significant negative relation between corporate income tax and financial performance. At the same time, firm size, firm age and firm growth showed a significant positive relationship with financial performance.

Rotimi and Henry (2017)[3] examined corporate taxes and performance of manufacturing firms in Nigeria using correlation and regression analysis. The findings of the study confirmed that there was significant relationship between corporate tax and performance of manufacturing companies in Nigeria. The study further showed that high corporate tax rate could impair profits leading to distorting investment decision.

Martin, John and Mary (2018)[4] investigated the impact that corporate income tax on profitability of mining companies in Ghana using ten years data from the year 2005 to 2014. Return on assets (ROA) was used as proxy for profitability against tax and company size, liquidity, leverage and growth were considered as control variables. The results showed that corporate income tax negatively influenced profitability. On profitability, the impact of company size positive and that of liquidity, leverage and growth is negative.

Ayuba and Tanko (2018)[5] studied the impact of corporate tax and firm characteristics on the performance of manufacturing firms in Nigeria for a period of 10 years. Regression analysis was used to analyze the secondary data extracted from the financial reports of the selected manufacturing firms. Corporate tax, firm age and firm size were used as independent variables while ROA (Return on Assets) was used as proxy for performance. The findings revealed that corporate tax and firm age positively and significantly influence the profitability while firm Size had a significant but negative effect on the profitability.

OBJECTIVES OF THE STUDY:

The following are the objectives for the present research paper:

1. To evaluate the degree of relationship between corporate tax and profitability.
2. To ascertain the effect of corporate tax on profitability after controlling the effect of firm characteristics.

RESEARCH METHODOLOGY:

The present work is mainly based on financial data of the selected pharmaceutical and hotel companies for the period between 2001-02 and 2016-17. The simple correlation analysis is used to identify the relationship between tax variables and profitability proxy, ROA. The tax variables considered in the study are statutory tax, effective tax and tax savings. Tax saving is the difference between statutory tax and effective tax, i.e., tax actual paid by the companies. The effect of tax on ROA in the presence of firm characteristics, viz., financial risk, growth, size, tangibility, liquidity and non-debt tax shield is also evaluated using regression analysis. The regression is run for each tax variable. Two separate regressions, one for manufacturing and another for service sector is run. The significance of the difference in effect of tax (difference in the estimated beta coefficient of tax variable) between two regression models (between two sectors) is tested by Z statistics as proposed by Clogg et al (1995). The model equation and Z statistics formula are given hereunder.

$$Y_{it} = \alpha + \beta_1 X_{it} + \beta_2 FR + \beta_3 Growth + \beta_4 Size + \beta_5 Tang + \beta_6 Liq + \beta_7 NDTS + \varepsilon$$

Where

Y_{it}	=	Return on Assets (ROA) for firm 'i' at time 't'
X_{it}	=	Tax variable (Statutory Tax, Effective tax and Tax Savings)
FR	=	Financial risk (Earnings before interest tax divided by Earnings after interest and tax)
Growth	=	Growth in sales (($Sales_{it} – Sales_{it-1}$)/ $Sales_{it-1}$)
Size	=	Business size (Natural log of Total Assets)
Tang	=	Tangibility (Fixed assets / Total assets)
Liq	=	Liquidity (Current assets / Current liabilities)
NDTS	=	Non-debt tax shield (Earnings before interest and tax plus depreciation divided by Total assets)

The formula for Z-statistic is:

$$Z = \frac{\beta_1 - \beta_2}{\sqrt{SE\beta_1{}^2 - SE\beta_2{}^2}}$$

Where

Z	=	Test statistics
β_1	=	Coefficient of tax in model for Sector 1
β_2	=	Coefficient of tax in model for Sector 2
$SE\beta_1$	=	Standard error of β_1
$SE\beta_2$	=	Standard error of β_2

RESULTS AND DISCUSSION:

The results of the analysis are tabulated and discussed in the following part of this chapter. Table 1 shows the results of correlation analysis between tax variables and ROA. As shown in the table, effective tax is significantly correlated with ROA in pharma manufacturing and hotel service companies. The ROA is negatively correlated with statutory tax and positively correlated with tax savings but they are all insignificant in both type of companies.

Table 1: Correlation between Return on Assets (ROA) and Corporate Tax Variables

Tax Variables	Return on Assets	
	Manufacturing Sector	Service Sector
Statutory Tax	-0.0806	-0.0584
Effective Tax	0.2748**	0.6944**
Tax Savings	0.1550	0.0840

Source: Financial Statements of selected years; **Significant at 1% level

Table 2 provides the regression results exploring the impact of statutory tax on ROA (Return on Assets). The regression results shown in the table indicates significant fit of all three models, but the coefficient of statutory tax is significant with negative sign only in the model for service sector. Among the control variables, the coefficients of Growth and Size in manufacturing sector and the coefficient of size in service sector are significant. The Z value of 2.12 for the difference in estimated beta coefficient of statutory tax between first and second model is significant at 5 per cent level. So, the profitability (ROA) of the hotel companies tend to decline with increase in statutory tax when there is notable decline in asset level and this impact in hotel service companies is significantly higher than that of pharma manufacturing companies.

Table 2: Effect of Statutory Tax on Return on Assets (ROA) between Manufacturing and Service Sector

Variables	Regression Equation	
	Manufacturing Sector	Service Sector
Intercept	-11.460	46.546**
	-(0.69)	(3.18)
Statutory Tax	0.344	-0.850*
	(0.811)	-(2.29)
Financial Risk	-0.001	-0.062
	(0.00)	-(0.42)
Growth	9.295**	0.552
	(4.35)	(0.42)
Size	1.279*	-1.870**
	(2.31)	-(3.60)
Tangibility	-3.516	-1.601
	-(0.49)	-(0.87)
Liquidity	-0.567	0.913
	-(1.24)	(1.29)
Non-Debt Tax Shield	57.642	-23.417

Variables	Regression Equation	
	Manufacturing Sector	**Service Sector**
	(0.71)	-(0.73)
R Square	0.2078	0.4660
Adjusted R Square	0.1545	0.4141
F Value	3.90**	8.98**
Degrees of Freedom	7,104	7,72
Z normal test comparing beta coefficient of statutory tax between two sectors		
Difference in betas	**SE of Beta difference**	**Z normal test value**
0.5638*	1.1937	2.12* (p value = 0.0342)

Source: Annual Reports of Selected Pharmaceutical and Hotel Companies;
*Significant at 5% level; **Significant at 1% level

Table 3 shows the results of the analysis regressing ROA with effective tax along with firm characteristics as control variables. An observation of the table shows that the fit of regressions for manufacturing and service sector is significant with degrees of freedom adjusted explained variation of 23.10 per cent and 59.30 per cent by the predictors respectively. The coefficient of effective tax is significant in both models. Among the control variables, growth is positive and significant for pharma manufacturing companies, financial risk & size are negative and significant for hotel service companies. The effect of the effective tax on ROA does not differ by sector as Z value for the difference in beta coefficients between individual models is insignificant.

Table 3: Effect of Effective Tax on Return on Assets (ROA) between Manufacturing and Service Sector

Variables	Regression Equation	
	Manufacturing Sector	**Service Sector**
Intercept	4.486	11.263**
	(0.82)	(2.86)
Effective Tax	0.171**	0.157**
	(3.33)	(6.26)
Financial Risk	-1.281	-0.254*
	-(1.32)	-(1.97)
Growth	9.401**	0.975
	(4.67)	(0.90)
Size	0.691	-1.331**
	(1.35)	-(3.22)
Tangibility	-0.904	0.072
	-(0.13)	(0.05)
Liquidity	-0.545	0.228
	-(1.25)	(0.39)
Non-Debt Tax Shield	26.317	-36.351
	(0.34)	-(1.38)
R Square	0.2795	0.6290
Adjusted R Square	0.2310	0.5930
F Value	5.76**	17.44**
Degrees of Freedom	7,104	7,72
Z normal test comparing beta coefficient of statutory tax between two sectors		
Difference in betas	**SE of Beta difference**	**Z normal test value**
0.0571^{NS}	0.0141	0.2468 (p value = 0.8051)

Source: Annual Reports of Selected Pharmaceutical and Hotel Companies;
*Significant at 5% level; **Significant at 1% level

Table 4 depicts the results of the analysis showing the impact of tax savings on ROA after controlling for the firm characteristics. An examination of the results depicted in the table indicates that the regression models for manufacturing and service sectors are fitted significantly and the coefficient of tax savings is significant with negative sign in both models, in turn indicating that tax savings has impact on ROA. However, from insignificant Z statistic value for difference in beta coefficients between individual models for manufacturing and service sectors, it is apparent that that the impact of tax savings does not differ between two sectors. This envisages that the profitability tend to be higher if there is significant decrease in tax savings when higher the growth and lower the financial risk. The degree of impact of tax savings on ROA is same between two sectors.

Table 4: Effect of Effective Tax on Return on Assets (ROA) between Manufacturing and Service Sector

Variables	**Regression Equation**	
	Manufacturing Sector	**Service Sector**
Intercept	10.626#	17.146**
	(1.74)	(4.44)
Tax Savings	-0.168**	-0.160**
	-(3.238)	-(6.53)
Financial Risk	-1.179	-0.266*
	-(1.22)	-(2.09)
Growth	9.255**	1.027
	(4.59)	(0.96)
Size	0.622	-1.397**
	(1.20)	-(3.44)
Tangibility	-0.894	0.378
	-(0.13)	(0.25)
Liquidity	-0.534	0.257
	-(1.22)	(0.44)
Non-Debt Tax Shield	30.460	-40.981
	(0.39)	-(1.57)
R Square	0.2758	0.6401
Adjusted R Square	0.2270	0.6051
F Value	5.66**	18.30**
Degrees of Freedom	7,104	7,72
Z normal test comparing beta coefficient of statutory tax between two sectors		
Difference in betas	**SE of Beta difference**	**Z normal test value**
0.0573^{NS}	-0.0084	-0.1458 (p value = 0.8841)

Source: Annual Reports of Selected Pharmaceutical and Hotel Companies;
*Significant at 5% level; **Significant at 1% level

CONCLUSION:

From the results of correlation analysis, it is understood that there is positive relationship between profitability and effective tax. The regression results revealed that statutory tax had influence on profitability relative to assets on hotel service companies when all the control variables were held constant and this influence was remarkably higher than that of pharma manufacturing companies. The effect of effective tax was positive and that of tax savings was negative on profitability (ROA) and the extent of such effect does not differ by sectors. On the whole, it is understood that there was impact of effective tax and tax savings on profitability of the pharma manufacturing and hotel service companies, in turn revealing the profitability is affected by corporate taxation and the level of these impacts is similar between two sectors.

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