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DO THE INDUSTRY AFFILIATION OF A COMPANY IMPACT ITS EFFECTIVE TAX RATE? - AN ANALYSIS OF INDIAN FIRMS

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ABSTRACT There are various determinants of the Effective Tax Rate of a company. This study attempts to find out whether industry association impact Effective Tax Rates. Tax Rates and Tax Laws are specific to jurisdictions, and the results may vary from jurisdiction to jurisdiction. The study focuses on Indian conditions to examine the relationship between industry classification and the Effective Tax Rate (ETR) of companies. The study covers the standalone financials of the top 500 listed companies. Results show a significant impact of the industry association on the Average Effective Tax Rate.

INTRODUCTION

Entities prepare Financial Statements to evaluate their performance over a period, usually a year, and the financial position at the end of the period. Financial reporting is the process of communicating such evaluation to the stakeholders such as shareholders and investors. Financial statements, such as the balance sheet, income statement, and cash flow statement, are commonly used to convey this information. An independent auditor audits these statements to ensure their accuracy. The purpose of financial reporting is to provide transparent information so that stakeholders can make informed decisions. Accounting is fraught with a multitude of treatments for various issues, such as the methods of accounting and the way such methods are implemented. There are a variety of ways in which the key elements contained in the financial statements can be measured, presented, and disclosed.

The intelligentsia continuously strives to enhance the quality of such financial statements by ensuring uniformity and reliability. One such aspect that has long been considered a fundamental accounting assumption is the accrual concept. AS-: Disclosure of Accounting Policies defines accrual as "Revenues and costs are accrued, that is, recognised as they are earned or incurred (and not as money is received or paid) and recorded in the financial statements of the periods to which they relate." It is a process to ensure matching costs with revenues. Some aspects that have posed challenges in accrual accounting are long-term employee benefits (retirement benefits) and taxes on profits (income tax).

Accounting for income tax poses a challenge due to the variance in the methods arriving at the quantum of profits on which the Government imposes the taxes. While accounting profits (profits shown in the financial statements) are calculated based on generally accepted accounting principles, the taxable profits (profits on which income tax is levied) are determined based on the provisions of the statute imposing income tax. These provisions of law differ from the generally accepted accounting principles in several ways such as an income considered in accounting may be exempt while calculating the taxable profit, or an expense considered while arriving at the accounting profits may be disallowed in computing the taxable income. While some of these differences hold on forever (like exempted income or disallowed expense), others may be considered for arriving at taxable profits in another period. Thus, the differences are classified as permanent and temporary differences. The puzzle of accounting for income taxes was solved by recognising "deferred taxes.".

Under this method of accounting for taxes on income, "tax expense" is accounted for by aggregating "current tax" and "deferred tax." Current tax is defined by Indian Accounting Standard (Ind AS) 12 Income Taxes as "the amount of income taxes payable (recoverable) in respect of the taxable profit (tax loss) for a period". Deferred taxes can be either positive or negative, depending on the circumstances. Thus, Deferred Taxes can be "Deferred Tax Liabilities" or "Deferred Tax Assets". As per Ind AS 12, Deferred tax liabilities are "the amounts of income taxes payable in future periods in respect of taxable temporary differences", and Deferred tax assets are "the amounts of income taxes recoverable in future periods in respect of (a) deductible temporary differences; (b) the carry forward of unused tax losses; and (c) the carry forward of unused tax credits." While the current tax represents the actual tax liability of the entity for the period, the tax expense represents the tax liability computed under the accrual principle. For the purposes of this study, the Effective Tax Rate is the ratio of tax expense over its accounting profits.

Though the statutory tax rate (rate of income tax applicable to an entity) is uniform for similar entities, the computed tax expense could differ based on the composition of its income and expense and their interplay with the tax provisions, resulting in the effective tax rate of an entity for each year remains unique.

II. Literature Review

Accounting for Deferred taxes is an accounting concept that refers to the accounting for tax consequences of temporary differences between the carrying amount of an asset or liability in the balance sheet and its tax base. Deferred taxes arise due to the tax implications of timing differences between the recognition of certain items on a company's financial statements and their recognition on its tax return. Deferred taxes can be either positive or negative, depending on the direction of the timing difference. There is a large amount of research on the topic of deferred taxes. One can come across studies examining various aspects of this concept, including its definition, measurement, and disclosure. Some research on deferred taxes has focused on how these temporary differences impact a company's financial statements and the potential for deferred taxes to create discrepancies between a company's reported financial performance and its actual economic performance. This review covers the literature since 2012 (last ten years) and is arranged in reverse chronological order.

Tax Expense is a charge in determining the profit for the year. The higher the tax, the higher the expense, i.e., the lesser the profit. Thus, a higher Effective Tax Rate can reduce the

profitability and impact the growth prospects of a company. Saragih, A.H. (2020) examined the impact of the effective tax rate on the growth prospects of companies with earnings performance as a moderating variable by studying financial services companies listed on the Indonesia Stock Exchange. The study revealed that effective tax rates had a significant negative impact on a company's growth prospects. However, earnings performance, as a moderating variable, did not have a significant impact on the weakening of the negative effect of the effective tax rate on the company's future growth opportunities.

Since the Effective Tax Rates are impacted by several factors, Companies attempt to manage them. Drake, K (2020) used the footnote data to find the effect of valuation allowances related to prior period losses on the GAAP Effective Tax Rates. The study observes that the downward bias explains the downward trend in Effective Tax Rates of domestic firms over a period of 20 years. Further, the study finds that the valuation allowances explain the cross-sectional differences in ETRs for both domestic and multinational firms.

Another aspect that can impact the Effective Tax Rate is their debt-equity position. Saragih, A.H. (2019) studied the impact of the debt-to-equity ratio policy on the effective tax rate of companies listed on the Indonesia Stock Exchange. However, this study did not provide evidence that the debt-equity ratio has any significant impact on the effective tax rate. Even the implementation of the debt-to-equity ratio policy did not have any significant impact on the effective tax rates.

A study of the Effective Tax Rates can indicate tax avoidance behaviour. Winarto, K. (2018) studied the GAAP Effective Tax Rates in order to analyse the behaviour of tax avoidance before and after the application of International Financial Reporting Standards (IFRS). The study used the paired sample test and chose GAAP Effective Tax Rate along with three other parameters to find out the tax avoidance behaviour. The study ended up providing suggestions to the Government to make a policy to reduce the ability to avoid tax. Tax Expense is a charge in determining the profit for the year. The higher the tax, the higher the expense, i.e., the lesser the profit. There can be several factors that may have an impact on the Effective Tax Rate of a company. Yinka, M. S., & Uchenna, C. E. (2018) examined the Corporate Effective Tax Rates (ETRs) of non-financial firms listed in the Nigerian Stock Exchange to establish the relationships between ETRs and firm-specific characteristics like size, leverage, profitability, capital intensity, inventory intensity, labour intensity and auditor type. The study found that the Effective Tax Rates (ETRs) were lower than the Statutory Tax Rate during the research period and varied between different economic sectors. The research also showed that larger and more profitable companies had a high tax burden, whereas firms with high leverage, heavy use of capital, and tax expert auditors had lower ETRs. There was no notable connection between ETR and the use of labour.

Researchers have looked at specific issues affecting the Effective Tax Rate of companies, and very rightly, the expenditure on research and development ranks prominent in that. However, in most countries, the allowability of research and development expense in computing the tax income varies in comparison with the GAAP suggested charging-off model. Belz, T., von Hagen, D., & Steffens, C. (2017) performed a quantitative review of the empirical literature on how research and development (R&D) expenses affect the effective tax rate. It observed that the previous studies presented conflicting evidence on the impact of R&D expenses on ETR, and this research provides a unified estimation of that effect. Also, the research delves deeper into this impact by distinguishing between a tax accounting effect and a profit-shifting effect, which had not been explored previously. The research found

that one-third of the impact of R&D on ETR is due to tax accounting, which could be reduced through book-tax conformity. Additionally, the study observed that 10% of the profit-shifting effect could be attributed to R&D tax credits. Lastly, the study's meta-regression highlights possible factors that may have caused variation and bias in previous empirical studies.

GAAP disclosure requirements mandate elaborate disclosures on accounting for income tax and its components. Having understood that the companies may be varying Effective Tax Rates each year, can we observe any trend? Drake, K. D., Hamilton, R., & Lusch, S. J. (2017) examine the sources of declining effective tax rates using firms' tax rate reconciliations. The research found that the decrease in Effective Tax Rates (ETRs) of domestic firms is due to changes in the Valuation Allowance (VA). The study indicates that failure to consider loss years fully leads to lesser ETRs calculated according to Generally Accepted Accounting Principles (GAAP). Since VA decreases mostly happen in profitable years, and VA increases occur in loss years, which are often excluded from tax studies. Although VA changes do not directly impact cash ETRs, the events leading to those changes (e.g. loss carry forward) do. The decrease in GAAP ETRs of multinational firms is due to a decrease in foreign tax rates and a reduction in the amount of income subject to state taxes. The study emphasises how a company's loss history affects its ETRs and how sample selection can impact ETR trends across a sample.

Dyreng, S. D., Hanlon, M., Maydew, E. L., & Thornock, J. R. (2017) examined systematic changes in corporate Effective Tax Rates (ETRs) over a period of 25 years and discovered that ETRs had dropped significantly. Moreover, the study observed that the decrease was not confined only to the multinational firms but observed a similar decline with the domestic firms also. However, an interesting finding was that the changes in firm characteristics and declining foreign statutory tax rates did not explain the overall decrease in effective rates.

A study of the Effective Tax Rates of companies over the years would provide insights into the trend of the rate and its impact. Svitlík, Jan (2015) studied the Effective Tax Rate Development and Analysis based on the companies in the Czech Republic over a 10-year period. The research covered time series as well as cross-sectional analysis. The research found a clear downward trend in the Effective Tax Rate (ETR) during the specified period and a statistically significant relationship between ETR and the statutory Corporate Tax Rate (STR). The study also analysed geographical regions using the companies' ZIP codes and economic sectors using the sample firms' NACE classification. The main finding of the cross-sectional analysis is that the highest ETR is in the region of Prague (the capital).

What are the determinants of the effective tax rate? Elena Fernández-Rodríguez & Antonio Martínez-Arias (2014) studied the listed companies in the BRIC countries: Brazil, Russia, India, and China, to find an answer to this question. The research found that the Effective Tax Rate (ETR) for one year is influenced by the tax burden of the previous year. The only factor that is significant in all the BRIC countries (Brazil, Russia, India, and China) is inventory intensity. The factors of firm size, leverage, and profitability have an impact on the tax burden in three out of the four countries analysed, but with some variations.

Costa, A. G., Martins, F. V., & Brandão, E. F. M. (2012) researched with the objective of examining the relationship between the effective tax rate and some specific characteristics of Portuguese companies. The research found that certain characteristics, such as leverage, capital intensity, inventory intensity, and profitability, have a statistically

significant impact on the Effective Tax Rates (ETR) reported by companies. On the aspect of the impact of changes in the accounting standards on the effective tax rates, the mean and median equality tests conducted on the dependent variables showed that the hypothesis of these measures being equal when comparing 2010 with other years was rejected. Furthermore, the test of permanent structures on the regression level showed that they were not identical. Therefore, the conclusion is that the implementation of international accounting standards may have had both accounting and tax impacts.

Though we came across research on the behaviour, determinants, impact etc., of the Effective Tax Rates of companies in some countries, we could not get any paper based on Indian Companies. Effective Tax Rates should be a consequence of the jurisdictional tax laws and needs to be studied specifically. Of many aspects impacting the Effective Tax Rates, we set out to examine whether the industry classification of a company has an impact on the Effective Tax Rate in Indian conditions.

The Problem:
To investigate if the Average Effective Tax Rate (Average ETR) differs across different industries to which companies belong (e.g. Automobile and Auto Components, Capital Goods, Fast Moving Consumer Goods, Financial Services, etc.)

Hypothesis
H0: There are no significant differences in the Average ETR of companies across industries.
H1: There are significant differences in the average ETR across different industries.

III. MATERIALS & METHODS
We set out to study the variances in the Effective Tax Rate of sample Companies in the Indian Context. Since, for each company, the effective tax rate could be severely impacted by aspects that are specific to an accounting year, it is proposed to conduct the study based on the average numbers for a ten-year period. Further, since the objective is to study the impact on Indian conditions, a study based on numbers contained in the standalone financials is considered appropriate rather than the numbers contained in the consolidated financial statements.

The consolidated financial statements would incorporate the financial results of the foreign subsidiaries also, and hence, the results could be vitiated.

The sample chosen for this study is the constituents of NIFTY 500. According to the National Stock Exchange of India (www.nseindia.com), "NIFTY 500 represents the top 500 companies based on full market capitalisation from the eligible universe. The NIFTY 500 Index represents about 96.1% of the free float market capitalisation of the stocks listed on the NSE as on March 29, 2019. The total traded value for the last six months ending March 2019, of all Index constituents, is approximately 96.5% of the traded value of all stocks on NSE."

The list of companies covered in the NIFTY 500 is downloaded during the month of September 2022 from the official website link https://www.nseindia.com/products-services/indices-nifty 500-index. The downloaded .csv file also provides the industry affiliation of each company.

The Financial Services industry had the highest No. of Companies at 87, followed by Capital Goods and Healthcare, which tied for second at 48.Financial Services accounted for 17.40% of No. of Companies.Across all 21 Industry classifications, No. of Companies ranged from 2 to 87.

The present study of the Effective Tax Rate is based on the average Effective Tax Rate of 10 financial years from 2012-13 to 2021-22. Most companies have subsidiaries in India and/ or abroad. Consequently, they present both Consolidated as well as Standalone financial statements. However, the present study is based on the impact of the Effective Tax Rate in India, it is considered appropriate to base the study on standalone financial statements. The financial data to calculate the Average Effective Tax Rate is obtained from the CAPITALINE databases.

For the sample size of 500 companies, a few companies currently part of NITFY 500 that did not exist (or were listed) 10 years before. Data in respect of some financial years of a few companies were either blank or were simply non-existing due to non-commencement of operations. A few more companies have not provided for any Tax Expenses due to large carry forward of losses or continuing losses. Due to these, and removal of extreme outliers, the remaining list contained 494 companies and they in turn had 4574 firm-year cases.

Some of the specific terms and the operative definitions/ formula are as follows:
- *Effective Tax Rate = (Tax Expense / Profit before Tax) * 100*
- *Average Effective Tax Rate of a company = Average of Effective Tax Rates of Companies over the study period*
- *Average Effective Tax Rate of an industry = Average of Effective Tax Rates of Companies falling under a single industry classification*
- *Statutory Tax Rate = Rate of income tax for companies as per the Income-tax Act for the year*

The financial year-wise comparison of the statutory tax rate (as per the Income Tax Rate) and the Average Effective Tax Rate is given in Figure 3.

Table No.1: Statutory Tax Rate (STR) and Effective Tax Rate (ETR) over the years

Year	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
STR	33.99	33.99	34.61	34.61	34.61	34.61	34.94	34.94	34.94	34.94
ETR	25.48	26.75	26.69	28.31	28.95	31.57	31.42	28.56	25.71	24.79

The last three years saw a reduction in the Average Effective Tax Rate upon introduction of Section 115BA/115BAA/ 115BAB carrying conditional lower rate of taxation. Some companies could have opted for the concessional rates and this could have resulted in reduction in the average rates.

The Statutory Tax Rate and Average Effective Tax Rate for the financial years are positively correlated with each other. The statutory Tax Rate almost remained flat and Average Effective Tax Rate diverged the most. The Statutory Tax Rate during the study period of 10 financial years varied between a minimum of 24.79% and a maximum of 31.57%.

IV RESULTS
Companies are classified as part of specific industry segments based on their core business. The National Stock Exchange (NSE) associates its listed companies with specific industry segments as they are required to build industry based indices. When you access the list of companies included in the NIFTY 500, the list provides the industry classification also.

It is our interest to understand the effect of this industry classification on the Average Effective Tax Rate of the constituent companies. Our sample companies (N=494) fall into the following 21 industry classifications. The basic statistics of Average Effective Tax Rate of sample companies when grouped industry-wise as above is as given below:

Table No.2: Industry-wise Average Effective Tax Rate

Industry Classification	N	Mean	Std. Deviation	Median
1. Automobile and Auto Components	30	26.2707	5.15366	26.3600
2. Capital Goods	48	26.6858	6.03222	27.8950
3. Chemicals	41	27.2454	3.17629	27.6600
4. Construction	13	24.9454	5.28753	25.4700
5. Construction Materials	13	23.5577	5.99008	22.9100
6. Consumer Durables	30	27.0330	4.55528	28.1600
7. Consumer Services	26	23.4346	12.01256	27.9250
8. Diversified	2	24.9950	10.91066	24.9950
9. Fast Moving Consumer Goods	33	23.0224	7.35159	24.3100
10. Financial Services	86	24.9355	7.45378	26.6350
11. Forest Materials	2	25.2550	1.42128	25.2550
12. Healthcare	48	23.2631	7.86083	24.9000
13. Information Technology	26	22.1138	5.96170	22.1200
14. Media Entertainment and Publication	7	22.5986	11.34240	25.6900
15. Metals and Mining	13	26.3762	5.61755	27.1800
16. Oil Gas and Consumable Fuels	17	26.8671	7.04262	29.0500
17. Power	11	23.6709	6.50193	24.2400
18. Realty	11	22.7909	6.94154	22.6900
19. Services	18	21.2083	8.56644	22.0200
20. Telecommunication	8	24.3163	6.36898	25.2250
21. Textiles	11	26.9845	3.40709	27.2200
Total	494	24.8486	7.02224	26.3550

The mean of Average Effective Tax Rate of Services industry is the lowest at 21.2083% as against the highest mean Average Effective Tax Rate of 27.2484% belonging to the Chemicals industry. The overall mean stood at 24.8486%

Our objective is to understand whether there is any variation in the Average Effective Tax Rate of companies belonging to these twenty-one industry classifications. The Null Hypothesis is that the Average Effective Tax Rate is the same across the industry groups of companies. The normality checks showed that the assumption of normality had not been met in case of all the groups, so an ANOVA is not suitable for comparing the groups. Hence the non-parametric equivalent to one-way ANOVA i.e., the Kruskal- Wallis test is chosen to conduct the test. For this, we need to compare the medians of the Average Effective Tax Rate of these twenty-one groups.

The median of Average Effective Tax Rate of Services industry is the lowest at 22.0200% as against the highest median Average Effective Tax Rate of 29.0500% belonging to the Oil Gas and Consumable Fuels industry. The overall median stood at 26.3550%The following result is obtained on running the Independent Samples Kruskal Wallis Test.

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of Average Effective Tax Rate is the same across categories of Industry Classification.	Independent-Samples Kruskal-Wallis Test	.011	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Figure No.1: Results of Statistical Test for impact of Industry Classification

The Kruskal-Wallis test provided strong evidence of a difference (p < 0.05) between the mean ranks of at least one pair of groups. The test showed that the Classification of Companies based on their industry association significantly affected the Average Effective Tax Rate of the Companies, $\chi^2(20, N = 494) = 37.089$, p < .05.

We made an attempt to compare the results with One Way

ANOVA, just to cross verify the result. Anyways, the data displayed normal distribution in the case of some groups and thus an attempt was made to check the ANOVA results. The results of ANOVA is consistent with that of the Kruskal Wallis Test.

ANOVA
Table No.3: ANOVA for Average Effective Tax Rate

	Sum of Squares	df	Mean Square	F	Sig.
Within Groups	22721.552	473	48.037		
Total	24310.711	493			

A one-way ANOVA demonstrated that the effect of industry association was significant for the Average Effective Tax Rate, $F(20, 473) = 1.654$, p =.038. We found a statistically significant main effect.

V. DISCUSSION & CONCLUSION

A company belonging to a particular industry has its own composition of items of assets, liabilities, income and expenses. For example, an industry can be capital intensive, resulting in a higher proportion of fixed assets in the total capital employed. Another industry could have higher employee costs. These components play their part in timing differences in the form of variations in the depreciation and disallowance of provision for long-term benefits to employees between the financial statements and in the computation of taxable income. This gives rise to deferred taxes. Deferred taxes, in turn, impacts the Effective Tax Rate. Hence, there is an ongoing discussion about the industry classification and the size's impact on the Company's Effective Tax Rate.

The current study examined the relationship between the variable industry classification towards the company's Effective Tax Rate. The study is focused on Indian conditions and conducted on the standalone financials of the top 500 listed companies in India. The study finds a strong impact of industry classification on the Average Effective Tax Rate.

REFERENCES
1. Belz, T., von Hagen, D., & Steffens, C. (2017). R&D INTENSITY AND THE EFFECTIVE TAX RATE: A META-REGRESSION ANALYSIS. Journal of Economic Surveys, 31(4), 988–1010. https://doi.org/10.1111/joes.12181
2. Costa, A. G., Martins, F. V., & Brandão, E. F. M. (2012). Effective Tax Rate in Portugal: Determinants and Financial Reporting Impact. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.2180032
3. Drake, K. D., Hamilton, R., & Lusch, S. J. (2017). How Do Effective Tax Rates Vary Across Firms and Time? Insight from Effective Tax Rate Reconciliations. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.2974219
4. Drake, K., Hamilton, R., Lusch, S.J., Are declining effective tax rates indicative of tax avoidance? Insight from effective tax rate reconciliations, Journal of Accounting and Economics, https://doi.org/10.1016/j.jacceco.2020.101317.
5. Dyreng, S. D., Hanlon, M., Maydew, E. L., & Thornock, J. R. (2017). Changes in corporate effective tax rates over the past 25 years. Journal of Financial Economics, 124(3), 441–463. https://doi.org/10.1016/j.jfineco.2017.04.001
6. Elena Fernández-Rodríguez & Antonio Martínez-Arias (2014). Determinants of the Effective Tax Rate in the BRIC Countries, Emerging Markets Finance and Trade, 50:sup3, 214-228. To link to this article: http://dx.doi.org/10.2753/REE1540-496X5003S313
7. Saragih, A.H., Hendrawan, A., Anggraini, P.G., Ayu, P.W.C., Dharsana, M.T. 2020. Can Earnings Performance Weaken the Negative Impact of Effective Tax Rate on Company's Growth Prospects? An Empirical Study Based on Listed Firms of Financial Industry in Indonesia. Journal of Applied Economic Sciences, Volume XV, Fall, 3(69): 540-548.
8. Saragih, A.H., Purnasari, D., Setyowati, M.S. 2019. The impact of thin capitalisation on the effective tax rate of companies listed on the Indonesia stock exchange from 2009 to 2017. Journal of Applied Economic Sciences, Volume XIV, Summer, 2(64): 505- 514. DOI: https://doi.org/10.14505/jaes. v14.2(64).18
9. Svitlík, J. (2015). ETR Development and Analysis: Case from the Czech Republic, European Financial and Accounting Journal, ISSN 1805-4846, University of Economics, Faculty of Finance and Accounting, Prague, Vol. 10, Iss. 4, pp. 5–18, http://dx.doi.org/10.18267/j.efaj.146
10. Winarto, K. (2018). The Impact of International Financial Reporting Standards (IFRS) Against Tax Avoidance : Case Study in Indonesia. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.2923547
11. Yinka, M. S., & Uchenna, C. E. (2018). Firm-specific determinants of the corporate effective tax rate of listed firms in Nigeria. Journal of Accounting and Taxation, 10(2), 19–28. https://doi.org/10.5897/jat2017.0288
12. Indian Accounting Standard (Ind AS) 12 - MCA. https://www.mca.gov.in/ Ministry/pdf/INDAS12.pdf