THE INTERSECTION OF CAPITAL INTENSITY, PROFITABILITY, AND TAX MANAGEMENT IN MALAYSIA'S TELECOM SECTOR

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Abstract

Capital intensity and profitability are two important variables that affect a company's effective tax rate. Greater capital intensity can reduce the tax burden through advantages like depreciation whereas profitability affects the tax liability based on earnings. For understanding effective tax management strategies, it is important to investigate the relationship between capital intensity, profitability and tax management. Therefore, this study examines how capital intensity, profitability, firm size, and leverage affect tax management as indicated by the effective tax rate (ETR) in selected Malaysian telecommunications companies. This study uses a quantitative approach to evaluate the impact of these structural and financial factors on tax management techniques using annual data for four large telecom companies from 2011 to 2023. The results show a strong inverse link between ETR and profitability, suggesting that more successful businesses typically reduce their tax obligations, possibly as a result of smart tax planning techniques. Leverage and firm size have positive correlations with ETR, indicating that larger and more leveraged companies pay higher tax rates, maybe as a result of more funding commitments or regulatory scrutiny. However, ETR is not greatly impacted by capital intensity, suggesting that telecom companies' capital-intensive structure may not have a direct impact on how they handle taxes. These observations are especially pertinent to policymakers because they point out the possible tax benefits that highly successful companies may take advantage of and recommend a need for balanced tax policies.

Keywords: tax management, capital intensity, profitability,

Introduction

Although the term "telecommunication" originally referred to telephone services, it can also refer to communication across a distance via cable, phone, telegraph, broadcasting, and other means (Huurdeman, 2003; Ryzhov, 2020). Information transmission is another name for telecommunication (Van Bosse, 1998). These days, the telecom services sector is expanding globally (Dowling et al., 1994). Every nation in the globe understands how vital telecommunications services are to its citizens, and advancements in telecommunications follow the rise of mobile devices and communication technology (Slimani et al., 2024). With only adequate telecommunications, users can work with anyone in the world and remain linked on a global scale without having to travel (Anwar et al., 2020).

Asia's telecommunications sector, which includes Malaysia, has grown significantly in the last several decades (Chang et al., 2011). Telekom Malaysia was established in 1984 as the nation's first fixed-line provider of telecommunications services. Since then, a number of businesses have formed in Malaysia to meet the increasing need and complex requests from clients for wireless services, including Celcomdigi, Axiata, Maxis, and U Mobile (Chuah et al., 2015; Munyanti & Masrom, 2018). The regulatory environment, institutions, and market structure for the telecommunications industry are all still changing (Lee, 2002). As the foundation for connection and digital communication, Malaysia's telecommunications industry plays a significant role in the country's economy. The industry has grown significantly over the last ten years due to both increased demand for communications services and technical

developments. But there are drawbacks to this expansion as well, mainly in handling telecom businesses' financial stability and valuation. Decisions about a company's capital structure, such as how much debt and equity financing it uses, are very important in determining its financial performance.

Capital Intensity refers to the extent to which a business or industry relies on capital (such as machinery, equipment, and technology) rather than labor to produce goods and services. A capital-intensive firm or industry requires significant investment in physical assets and fixed costs, often measured as the ratio of capital to labor or capital expenditure relative to output (Suciarti et al., 2020; Rodríguez and Arias, 2012). Profitability also plays a critical role in shaping tax management practices. Highly profitable firms often face increased scrutiny and tax obligations, which may incentivize them to engage in tax planning activities. Taxes are a very important source of state revenue besides revenue from natural resources and income from other non-tax sectors. However, the revenue received from the tax sector is not in accordance with what is desired by the state. This happens because there are still interests that encourage individual and corporate taxpayers to minimize their taxes by means of tax avoidance (Dewi & Andriyani, 2023).

The objective of Darsani and Sukartha (2021) is to gather actual data regarding the impact of the capital intensity ratio on taxes. This study was carried out at mining businesses between 2015 and 2019. The study's findings suggest that the capital intensity ratio has a positive impact on taxe avoidence. Kalbuana et al. (2020) investigate how capital intensity affects tax avoidence. Companies listed in the Jakarta Islamic Index (JII) between 2015 and 2019 are the main subject of this study. Multiple linear analysis results indicate that capital intensity has a positive relationship with tax avoidence. The impact of capital intensity on tax evasion is examined by Bivianti and Yuniarsih (2022). 310 primary consumption sector businesses from 2016 to 2020 make up the study's population. The outcome demonstrates that capital intensity has a favorable impact on tax avoidence. Sugeng et al. (2020) investigate the relationship between tax aggression and capital intensity. This study created a single model by combining the tax aggression element from several viewpoints. Purposive sampling was employed in this study using manufacturing companies that were listed between 2015 and 2017 on the Indonesia Stock Exchange. The outcome demonstrates that capital intensity and tax aggression have a substantial relationship. Putra and Kirana (2023) examine how the cash effective tax rate (CETR) assesses capital intensity's impact on tax evasion. According to the analysis, there is no statistically significant relationship between capital intensity and CETR.

Elen et al. (2024) examine how tax aggression is impacted by profitability. Purposive sampling was employed in the study, which gathered information from 26 manufacturing businesses in the food and beverage subsector between 2018 and 2021. The findings demonstrated that tax aggression was significantly and favorably impacted by profitability. The impact of profitability on tax evasion was investigated by Aprianti et al. in 2024. The research employed quantitative techniques. According to the findings of studies on the relationship between profitability and tax evasion, there is no correlation between the two. Haloho and Rahmadhani (2024) examine how tax planning is affected by profitability. There are 73 businesses in the basic and chemical industries sectors that make up the study's total population. A logistic regression test was the data analysis method employed in this investigation. The findings indicate that tax planning benefits from profitability. The impact of profitability on tax evasion was examined, investigated, and empirically demonstrated by Widyastuti et al. (2022). Companies in the mining and agriculture sectors for the years 2015–2019 make up the research population. Multiple linear regression was employed in the analysis process. According to the test results, tax evasion is positively impacted by the variable profitability. The hypothesis that discusses the relationship between tax evasion and profitability is

examined by Setyaningsih et al. (2023). The methodology used in this study is a literature review. Agency theory and exchange theory serve as the theoretical foundation for this study. According to these findings, there is no consensus since the relationship between tax evasion and profitability is diverse.

The current study adds to the body of literature in several ways. First, it offers factual data regarding how Malaysia's telecom sector's capital intensity affects tax management. Second, the study looks into how profitability affects tax management in Malaysia's telecom sector. The study also investigates the impact of control variables such as firm size and leverage. The study's thorough findings will contribute to the body of knowledge on the effects of capital intensity and profitability on tax management proxied by effective tax rate (ETR) in the telecommunications industry in Malaysia. This study is also helpful for policymakers, they may need to think about modifying tax laws to promote profitable ventures while guaranteeing fair taxation for businesses with different sizes and degrees of leverage.

Research Objectives

- To examine the impact of capital intensity on tax management in Malaysia's telecommunications sector.
- To analyze the influence of profitability on tax management within the telecommunications industry in Malaysia.
- To assess the role of firm size and leverage as control variables in the relationship between capital intensity, profitability, and tax management.

Scope of the Research

This study examines the correlation among capital intensity, profitability, and tax management in Malaysia's telecoms industry. This study focuses on the analysis of telecommunications businesses in Malaysia because to their substantial capital demands, strategic economic importance, and distinct regulatory framework. The study analyzes capital intensity and profitability as independent factors, investigating their impact on tax management strategies. Tax management is characterized as the dependent variable, signifying the tactics employed by firms to maximize or reduce their tax liabilities. Firm size and leverage are used as control variables to mitigate their potential influence on the relationships between the independent and dependent variables. The data for this research is sourced from publicly accessible financial reports from 2011 to 2023. The study's scope is limited to quantitative analysis, employing statistical tools to evaluate the correlations among variables. The results aim to deliver industry-specific insights that may guide policymakers, industry stakeholders, and telecommunications firms regarding appropriate tax management strategies in the setting of high capital intensity and fluctuating profitability levels.

Research Methodology

This study employs a quantitative research methodology to analyze the influence of capital intensity and profitability on tax management in Malaysia's telecoms industry. The research approach encompasses data collecting, variable measurement, and statistical analysis, as outlined below.

Data Collection

The research employs secondary data derived from the annual financial statements of Malaysian telecoms firms spanning 2011 to 2023. Data is collected over a designated timeframe to identify contemporary trends and practices in tax management. Table 1 presents the factors employed in this investigation.

Table 1 Variables Measurement

Dependent Variable	
Tax Management	Tax management is measured by using the Effective Tax Rate (ETR), this ratio is calculated by dividing total tax expense with the pre-tax income. ETR provides an indication of the company's tax minimization practices, with lower rates potentially indicating more aggressive tax management.
Independent Variables	
Capital Intensity	Capital intensity ratio is calculated by dividing fixed assets with total assets, this ratio indicates the level of capital investment relative to a company's asset base.
Profitability	Profitability is measured using Return on Assets (ROA) providing insight into the company's ability to generate profits from its resources.
Control Variables	
Firm Size	Firm size is measured by the natural logarithm of total assets of a firm
Leverage	Leverage is measured as the ratio of total debt divided by total assets; this ratio indicates the extent of a company's dependence on debt financing

Data Analysis Techniques

The research use statistical techniques to examine the correlations among the variables. The subsequent analytical methodologies are employed:

1. **Descriptive Statistics**

Descriptive analysis offers a summary of the data, encompassing mean, median, standard deviation, and range for each variable, thereby elucidating the sample's attributes.

2. **Correlation Analysis**

Correlation tests analyze the links between variables, finding multicollinearity concerns and assessing the strength and direction of associations among capital intensity, profitability, and tax management.

3. **Multiple Regression Analysis**

Multiple regression analysis is performed to evaluate the influence of capital intensity and profitability on tax management, while adjusting for business size and leverage. This method quantifies the impact of independent factors on the dependent variable along with some control variables.

Research Results

Descriptive Statistics

The descriptive statistics for the variables in this study offer significant insights into the financial attributes of Malaysian telecoms firms. The average effective tax rate (ETR) is 28.1%, with a standard deviation of 6.4%, signifying substantial variability among enterprises; ETR values span from 20.3% to 40.0%, illustrating diverse tax management strategies or responsibilities. Capital intensity, averaging 43.2%, indicates that fixed assets constitute a substantial fraction of total assets in these capital-intensive enterprises, but with notable variability, as evidenced by a standard deviation of 16.4% and a range from 16.8% to 89.3%.

The profitability statistic, indicated by return on assets (ROA), averages 10.2%, implying reasonable profitability within the sector. The ROA has significant variation, ranging from -1.1% to 47.2%, with a standard deviation of 11.2%, indicating that certain organizations

are experiencing losses while others attain big profits. The mean firm size, quantified as the natural logarithm of total assets, is 13.44, with a standard deviation of 3.32, indicating a varied spectrum of firm sizes ranging from 8.50 to 17.34. Ultimately, leverage, averaging 69.4%, signifies that telecommunications firms in Malaysia predominantly depend on debt funding. The standard deviation is 12.9%, with a range of 44.8% to 93.5%, indicating that leverage levels differ among companies; still, significant debt dependence is prevalent in this capital-intensive industry. The descriptive statistics reveal considerable variation in the financial frameworks and strategies of Malaysian telecommunications companies, potentially impacting their tax management methods.

Table 2 Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ETR	52	0.2814	0.0636	0.2029	0.3996
CI	52	0.4316	0.1641	0.1682	0.8933
ROA	52	0.1017	0.1115	-0.0109	0.4719
FS	52	13.4385	3.3198	8.5014	17.3406
LEV	52	0.6938	0.1289	0.4480	0.9348

Correlation

The correlation study elucidates many findings on the interrelationships among effective tax rate (ETR), capital intensity (CI), profitability (ROA), firm size (FS), and leverage (LEV) within Malaysian telecoms firms. The ETR exhibits a moderate negative connection with ROA (-0.4797), indicating that more profitable enterprises typically possess lower effective tax rates, potentially as a result of tax optimization techniques. The ETR correlations with other variables, such as CI (0.0062), FS (0.0859), and LEV (-0.0605), are weak or negligible, signifying minimal direct impact. Capital intensity (CI) exhibits minimal correlation with ROA (0.0657) and LEV (0.1050), and demonstrates a weak negative correlation with FS (-0.2403), indicating that larger firms may possess marginally lower capital intensity. Profitability (ROA) exhibits a modestly positive connection with leverage (0.5784), suggesting that more profitable enterprises are likely to possess higher leverage, potentially attributable to advantageous financing conditions. Simultaneously, firm size and leverage have a weak negative connection (-0.1565), suggesting that larger organizations tend to utilize debt less frequently. These findings indicated that profitability appears to exert a more significant influence on tax outcomes than other variables.

Table 3 Correlation Analysis

	ETR	CI	ROA	FS	LEV
ETR	1				
CI	0.0062	1			
ROA	-0.4797	0.0657	1		
FS	0.0859	-0.2403	0.1874	1	
LEV	-0.0605	0.1050	0.5784	-0.1565	1

The Variance Inflation Factor (VIF)

The Variance Inflation Factor (VIF) table evaluates multicollinearity among the independent variables (ROA, LEV, FS, and CI) in the model. All variables exhibit VIF values

beneath the conventional threshold of 5. The average VIF is 1.43, further corroborating the lack of substantial multicollinearity concerns.

Table 4 VIF Test

Variable	VIF	1/VIF
CI	1.0800	0.9295
ROA	1.7200	0.5812
FS	1.2400	0.8078
LEV	1.6900	0.5926
Mean VIF	1.43	

Regression Analysis

This regression table delineates the impacts of capital intensity (CI), return on assets (ROA), firm size (FS), and leverage (LEV) on the tax management (ETR) within Malaysia's telecoms industry. The coefficient for capital intensity (CI) is 0.0354; nevertheless, it lacks statistical significance ($p = 0.444$), suggesting that capital intensity does not exert a substantial influence on tax management in this model. Profitability (ROA) exerts a substantial negative influence on tax management (coef. = -0.4603, $p < 0.001$), indicating that more prosperous enterprises generally exhibit lower ETR, possibly attributable to proficient tax management strategies.

Table 5 Regression Analysis

ETR	Coef.	P-value
CI	0.0354	0.444
ROA	-0.4603	0.000
FS	0.0063	0.013
LEV	0.2210	0.004
_cons	0.0748	0.284
Prob > F		0.0001
R-squared		0.3887
Adj R-squared		0.3367
Number of obs		52

Firm size (FS) exhibits a modest yet statistically significant positive impact on tax management (coef. = 0.0063, $p = 0.013$), suggesting that larger enterprises may incur somewhat higher tax rates. Leverage (LEV) exhibits a positive correlation with tax management (ETR) (coef. = 0.2210, $p = 0.004$), indicating that enterprises with greater leverage are likely to have elevated effective tax rates. The model's R-squared is 0.3887, signifying that roughly 38.9% of the variance in ETR is explain by the independent variables, while the adjusted R-squared is 0.3367, denoting a decent fit. The model has overall statistical significance (Prob > F = 0.0001), indicating that these variables collectively offer a substantial explanation for changes in the effective tax rate.

Conclusion and Discussion

This study analyzes the impact of capital intensity, profitability, firm size, and leverage on tax management, as shown by the effective tax rate (ETR), in Malaysia's telecoms industry.

The findings demonstrate a significant negative correlation between profitability and ETR, implying that more profitable telecom companies are likely to utilize effective tax management measures to mitigate their tax liabilities. Furthermore, firm size and leverage exhibit a positive correlation with effective tax rates, suggesting that larger and more leveraged firms may incur greater tax liabilities. Nonetheless, capital intensity does not exhibit a substantial impact on ETR in this model. These findings provide insights into the financial and structural determinants affecting tax management methods in the capital-intensive telecommunications sector.

The research presents significant consequences for policymakers, corporate executives, and industry stakeholders. Policymakers should recognize that more prosperous corporations often lower their tax rates, indicating a necessity for tax policies that reconcile the enhancement of corporate profitability with fair tax responsibilities. Managers should recognize that the favorable correlations among ETR, business size, and leverage suggest that large, highly leveraged enterprises ought to implement tax solutions to mitigate prospective tax liabilities linked to their size and financial structure. The findings indicate that corporations can gain from reassessing their capital allocation methods to augment profitability and increase tax efficiency.

This study possesses some limitations that warrant acknowledgment. The sample is confined to telecommunications enterprises in Malaysia, perhaps limiting the generalizability of the findings to other sectors or geographical areas. The utilization of secondary data limits the thoroughness of study about particular tax techniques and firm-specific situations that may affect tax management. Furthermore, although the model accounts for a significant percentage of the variance in ETR, other unobserved factors not incorporated in this analysis may potentially influence tax management, like industry-specific policies or managerial expertise.

Future study may mitigate these constraints by broadening the sample to encompass telecom firms in more countries, facilitating comparative analysis across nations. Furthermore, examining the influence of additional financial and managerial elements, such cash flow, governance procedures, or the strategic management of intangible assets, may yield a more thorough understanding of tax management techniques. Ultimately, qualitative studies that include interviews with tax managers or financial officers would provide significant insights into the decision-making processes related to tax management and could improve our comprehension of the interplay between these financial factors and the wider strategic and regulatory context.

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References

Anwar, A., Malik, M., Raees, V., & Anwar, A. (2020). Role of mass media and public health communications in the COVID-19 pandemic. *Cureus*, *12*(9).

Aprianti, I. A., Nazier, D. M., & Umiyati, I. (2024). Effect of Profitability, Leverage, and Fixed Asset Intensity on Tax Avoidance. Journal of Taxation Analysis and Review, 4(2), 45-52.

Chang, P. K., & Chong, H. L. (2011, July). Customer satisfaction and loyalty on service provided by Malaysian telecommunication companies. In Proceedings of the 2011 International Conference on Electrical Engineering and Informatics (pp. 1-6). IEEE.

Chuah, H. W., Marimuthu, M., & Ramayah, T. (2015). Wireless telecommunications industry in Malaysia: Trends, challenges, and opportunities. In consumption in Malaysia: Meeting of new changes. Universiti Sains Malaysia Publisher, Penang.

Darsani, P. A., & Sukartha, I. M. (2021). The effect of institutional ownership, profitability, leverage and capital intensity ratio on tax avoidance. *American Journal of Humanities and Social Sciences Research (AJHSSR)*, *5*(1), 13-22.

Dewi, G. K., & Andriyani, D. (2023). The effect of accounting conservatism, capital intensity and leverage on tax avoidance. *Jurnal Mantik*, *7*(2), 1281-1294.

Dowling, M. J., Boulton, W. R., & Elliott, S. W. (1994). Strategies for change in the service sector: The global telecommunications industry. *California Management Review*, *36*(3), 57-88.

Elen, T., Prihatini, D., & Utami, Y. M. (2024). The Effect of Corporate Social Responsibility, Profitability, and Leverage on Tax Aggressiveness. *International Journal of Accounting, Management, Economics and Social Sciences (IJAMESC)*, *2*(3), 928-938.

Haloho, Y. W. Y. B., & Rahmadhani, S. (2024). The effect of leverage, profitability, company size, proportion of institutional ownership, and corporate social responsibility on tax planning. *Jurnal Mantik*, *8*(2), 986-996.

Huurdeman, A. A. (2003). *The worldwide history of telecommunications*. John Wiley & Sons.

Kalbuana, N., Solihin, S., Yohana, Y., & Yanti, D. R. (2020). The influence of capital intensity, firm size, and leverage on tax avoidance on companies registered in Jakarta Islamic index (Jii) period 2015-2019. *International Journal of Economics, Business and Accounting Research (IJEBAR)*, *4*(03).

Lee, C. (2002). Telecommunications reforms in Malaysia. Annals of Public and Cooperative Economics, 73(4), 521-540.

Munyanti, I., & Masrom, M. (2018). Customer satisfaction factors towards mobile network services. Journal of Advanced Research in Business and Management Studies, 13(1), 9-18.

Putra, D. M., & Kirana, A. P. (2023). Impact of Leverage, Capital Intensity, Inventory Intensity, Cash Effective Tax Rate on Tax Avoidance: Assessment for Energy Sector Corporate. *Atestasi: Jurnal Ilmiah Akuntansi*, *6*(2), 419-433.

Rodríguez, E. F., & Arias, A. M. (2012). Do Business Characteristics Determine an Effective Tax Rate ? Evidence for Listed Companies in China and the United States. The Chinese Economy, 45 no. 6, 60–83. https://doi.org/10.2753/CES1097- 1475450604.

Ryzhov, E. V. (2020). Telephone. *The Gale Encyclopedia of Science*, *8*, 4399-4405.

Setyaningsih, F., Nuryati, T., Rossa, E., & Machdar, N. M. (2023). Pengaruh Profitabilitas, Leverage, dan Capital Intensity terhadap Tax Avoidance. *SINOMIKA Journal: Publikasi Ilmiah Bidang Ekonomi Dan Akuntansi*, *2*(1), 35-44.

Slimani, K., Khoulji, S., Mortreau, A., & Kerkeb, M. L. (2024). Original Research Article From tradition to innovation: The telecommunications metamorphosis with AI and advanced technologies. *Journal of Autonomous Intelligence*, *7*(1).

Suciarti, C., Suryani, E., & Kurnia, K. (2020). The effect of leverage, capital intensity and deferred tax expense on tax avoidance. *Journal of Accounting Auditing and Business*, *3*(2).

Sugeng., E. P., & Zaman, B. (2020). Does Capital Intensity, Inventory Intensity, Firm Size, Firm Risk, and Political Connection Affect Tax Aggresiveness? Accounting Journal, 17(1), 78–87.

Van Bosse, J. G. (1998). *Signaling in telecommunication networks* (Vol. 36). John Wiley & Sons.

Widyastuti, S. M., Meutia, I., & Candrakanta, A. B. (2022). The effect of Leverage, Profitability, Capital Intensity and Corporate Governance on Tax Avoidance. *Integrated Journal of Business and Economics*, *6*(1), 13-27.