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ACCOUNTING, CORPORATE GOVERNANCE & BUSINESS ETHICS | RESEARCH ARTICLE

Corporate tax avoidance and firm value: Evidence from Taiwan

Messaoude Nebie^{1*} and Ming-Chang Cheng¹

Abstract: Corporate tax avoidance practice has gathered a certain attention from researchers in recent years with the advent of corporate social responsibility and the need for firms and managers to find ways to maximize firm value while using more sustainable practices. In this study, using data from 2009 to 2019, we investigate the relationship between firm value and its determinants, but more importantly the correlation and causal relationship between effective tax rate (ETR) and firm value (Tobin's Q). We used a Pooled OLS, fixed effects and random effects and found that ETR is negatively correlated with firm value. We also found debt, size and return on equity to be negatively correlated with firm value, while cash dividend paid and return on assets are not positively correlated with Tobin's Q. Furthermore, we use Dumitrescu & Hurlin (2012) Granger non-causality test and Juodis, Karavias and Sarafidis (2021) Granger non-causality test to assess the causal relationship between ETR and Tobin's Q; the results suggest that ETR does Granger-cause firm value.

Subjects: Business, Management and Accounting, Corporate Governance; Finance

Keywords: tax avoidance; Granger-causality; effective tax rate; firm value; firm performance

1. Introduction

In the era of globalized economies, corporate taxation has emerged as an important component in governments' fiscal strategies to procure resources for delivering essential public services. Policymakers establish regulations and propose statutory tax rates that mandate businesses to contribute a portion of their economic activity results to support governmental functions. While these tax revenues are instrumental in providing goods and services to the public and developing the economy, they simultaneously represent a substantial financial obligation for companies. From the corporate perspective, taxes are an integral part of operating costs, prompting many businesses to engage in strategies aimed at diminishing their tax liabilities. As proposed by Pohan (2013), one such strategy involves tax avoidance, which can effectively reduce a firm's effective tax rate (ETR) to a level below the government's prescribed statutory tax rates. The manifestation of tax avoidance practices can be discerned through disparities between financial accounting and taxable incomes, as noted by Noor et al. (2010). Consequently, tax avoidance is often perceived as a means of optimizing shareholder wealth by diverting resources from the government to the firm. This viewpoint, however, has been contested by a growing body of literature that supports the

agency theory perspective, asserting that inadequate management of tax strategies can lead to high agency costs and consequently undermine firm value.

According to Lee et al. (2015), managers and shareholders must find a balance between costs and benefits to enhance firm value, thus enriching shareholders' wealth. In the financial literature, firm value is quantified as the sum of the market value of equity and the market value of debt, as stated by Kwarbai et al. (2015), and it rises as shareholders' wealth expands through profits and cash flows.

A firm's value can be influenced by many factors such as the financial performance, the risk profile, the type of market, the corporate and management quality and the tax planning activities. Several theories and studies have explored the probable relationship between tax avoidance and firm value, showing diverse and sometimes conflicting findings. Supporters of tax planning practice argue that efficient tax management can lead to higher profitability, an increase in cash flow and subsequently higher firm value. On the contrary, critics assert that excessive tax avoidance may raise concerns about a firm's corporate governance, agency costs, transparency and long-term viability, thus negatively affecting its value. Hanlon and Heitzman (2010) contend that the connection between tax avoidance and firm value remains unclear or nonexistent, Chadeaux and Rossignol (2006) and Vinh Khuong et al. (2020) assert that tax avoidance positively impacts firms, either by alleviating the tax burden or by conveying favourable information to the market. Conversely, Lestari and Wardhani (2015) argue that tax avoidance activities can exert a negative influence on firm value due to the firm's exposure to non-tax costs. Nguyen Minh et al. (2021) also show a negative relationship between tax avoidance and firm value.

Understanding the dynamic of the impact of tax avoidance on firm value is crucial, given the vital role played by firms in driving economic growth, job creation, and wealth generation. In Taiwan, a dynamic economy in East Asia, this issue takes on added significance as companies strive to achieve a competitive edge while adhering to evolving regulatory and tax frameworks.

The business environment has been marked by a rapidly changing tax landscape and a fervent pursuit of international competitiveness. Facing domestic and global pressures, Taiwanese firms navigate a complex tax environment that presents opportunities and challenges; for instance, the 2012 reform in which many Articles of the Regulations on the Tax Audit of Profit-Seeking Enterprise Income were revised to bridge differences between financial accounting and tax law requirements and simplify the filing for computation of profit-seeking enterprise income tax.

Despite several studies investigating the implications of tax avoidance on firm value, the mechanisms underlying this relationship remain unclear. The mixed results in the literature and the relative lack of evidence on the Taiwanese context constitute gaps that we sought to cover. Moreover, while many studies have focused on establishing the existence of a relationship between tax avoidance and firm value, there is limited understanding regarding whether this relationship is indeed causal. Most studies finding significant results use methods that generally provide the correlation coefficients and the direction of the relationship but fail to confirm whether or not tax avoidance practices directly impact firm value. In this research, we utilize the concept of value from the shareholders' standpoint, measured through Tobin's Q and profitability, measured through return on assets (ROAs) and return on equity (ROE). We delve into the extent of the connection between tax avoidance and firm value in the context of Taiwan.

Our analysis explores both the correlation and the causal relationship between firm financial variables and tax avoidance (ETR). Two central research questions guide our investigation: (1) How does tax avoidance influence firm value? (2) Is there a causal relationship between tax avoidance and firm value? We initially examine the correlation and find that ETR is inversely related to firm value. Subsequently, we find evidence that ETR Granger causes fluctuations in firm value through two causality analyses. Our study also probes into the determinants of firm value, revealing that

Debt, Size, and ROE are negatively correlated with firm value in the Taiwanese market, while Dividends and ROA exhibit a positive relationship.

In light of these findings, our paper seeks to make several contributions to existing literature: Firstly, to offer insights into the impact of tax avoidance on Taiwanese listed firms; secondly, to provide research-backed recommendations for companies and policymakers on the prudent use of tax avoidance; and lastly, to advance the literature by asserting the existence of a causal link between tax avoidance and firm value in Taiwan.

The rest of the paper proceeds as follows. The next section presents the background of the study. Section 3 outlines the theoretical framework, while Section 4 reviews the literature and hypotheses development. In Section 5, the research design and empirical methods are presented, and we have followed by the results and discussion in Section 6. The last part, section 7 is the summary and conclusion.

2. Background of the study

Developed markets usually have well-defined regulatory frameworks to ensure that a minimum level of corporate governance standards is met. Taiwan has made strides in enhancing corporate governance. From 2010 to 2017, the statutory corporate tax rate was 17%, but in 2018, Taiwan's Legislative Yuan has passed and enacted tax reforms that increase corporate income tax while reducing individual income tax rates. The corporate tax rate was then increased to 20%.

While the government increased corporate tax rates, some challenges related to family control and transparency may persist in some cases. Transparency and financial reporting quality may vary between Taiwan and other countries. Lai et al. (2019) mention that firms with higher transparency levels and clear communication about tax management may be viewed more positively by market participants. In Taiwan, many firms that are family-owned or controlled often have long-term orientation and see family control and legacy as priorities. This orientation could affect their tax planning strategies, as they may focus on sustaining business for future generations rather than solely focusing on maximizing short-term profits. Consequently, family-owned firms may employ conservative tax avoidance strategies to ensure compliance with tax laws while avoiding taking excessive risks associated with aggressive tax planning.

Family-owned firms may exercise a significant level of influence over corporate decisions, including tax management strategies, and practice preferences of the controlling family could shape to which extent the tax avoidance goes within the firm. In cases where the family emphasizes responsible tax planning and corporate social responsibility, the relationship between ETR and firm value might be less pronounced, as tax avoidance practices are more unlikely to deviate drastically from the set legal and ethical boundaries. But in some cases, managing directors can excessively use tax avoidance to please the owners or themselves, which could negatively impact firm value. The ownership concentration can also lead to agency conflicts between shareholders and managing directors.

According to Yeh (2003), up to 58.2% of the total number of Taiwanese listed firms was family-controlled with over 50% of the board seats being completely held by members of the same family, which means that the independence of managerial decisions might be compromised. Lee and Kao (2020) mentions that because the setup of an audit committee is not yet mandatory in Taiwan, the percentage of listed companies with audit committees is not high. Chiang et al. (2021) mention that during the 2017 annual conference of the Taiwan Institute of Directors, an analysis report on 1624 listed firms in Taiwan showed that family businesses accounted for 63% of the total market value in Taiwan and 70% of the total number of enterprises in the country.

Taiwan, as a dynamic and economically vibrant nation, has witnessed substantial growth in its corporate sector with a competitive business environment and well-established legal framework. These businesses have increasingly employed tax avoidance strategies to remain profitable and

competitive. They often exhibit distinctive traits such as their long-term orientation and a strong commitment to traditions and values. As a result, Taiwanese firms' tax management practices and consequently the markets' response to tax avoidance may differ from other developed economies. This business environment then provides a unique dimension that should be investigated.

3. Theoretical framework

The roots of the shareholder theory can be traced back to the Industrial Revolution and shifts in business structure where business owners started to delegate their responsibilities to managers with the main objective of increasing share prices. In search of profits, managers are often pressured by risk-indifferent shareholders to produce higher corporate profit and firm value (Hanlon & Heitzman, 2010). Alkausar et al. (2023) argue that firms with high levels of tax aggressiveness induce corporate governance mechanisms to be more effective.

There are four main arguments in support of the shareholders theory; the agency perspective, which states that managers have a contractual obligation to prioritize shareholder value maximization. The control perspective, where shareholders are seen as the controlling party and thus the most important stakeholder. The residual claims perspective argues that shareholders invest in the firm; therefore, any assets purchased with shareholders' funds are the property of the shareholders. The social wealth perspective in which the assumption is made that shareholders' wealth maximization benefits other stakeholders.

Graham and Tucker (2006), identify positive associations between the size and profitability of firms and their engagement in tax avoidance activities. From this viewpoint, tax avoidance activities can serve as substitutes for interest deductions in shaping a firm's capital structure. While the direct impact of tax avoidance is to augment the after-tax value of a firm, these effects may be offset, particularly within poorly governed firms, by the heightened potential for managerial rent diversion. Wilson (2009) finds that tax avoidance has a positive relationship with firm value, especially for well-governed firms, underlying the importance of corporate governance in tax avoidance management.

As corporations engage in tax-reducing tactics, the effective tax rate (ETR) can serve as a key metric to gauge the extent to which they deviate from the statutory tax rates set by governmental authorities. The distinction between financial accounting and taxable incomes, as revealed in ETRs, is an empirical indicator of the tax avoidance practices adopted by firms.

Several studies on tax avoidance and firm value provide evidence that tax avoidance can increase firm value. Swenson (1999) found evidence of a negative relationship between ETR and firm value. Armstrong et al. (2012) argue that managers are more inclined to reduce the tax rates since the compensation of tax managers is negatively correlated to the firm's effective tax rate.

The agency view of tax avoidance states that without good corporate governance, agency costs might arise and imbalance the cost-benefit approach that should be taken when engaging in tax avoidance. When a company engages in tax planning, it will weigh in both the costs and benefits, with the advantages being among others, saving on tax expenditure, reducing the tax burden on the business, and making more and better flexible use of the saved funds to increase the firm value for shareholders. We argue that with the prominence of family-controlled businesses in Taiwan, managers' resource diversion might not be a common practice.

4. Empirical literature review and hypotheses development

When a firm engages in tax avoidance, it conducts a comprehensive analysis that considers both the associated costs and benefits. The advantages of such strategic tax planning include the potential for saving on tax expenses, alleviating the tax burden on the business, and enhancing the flexibility in fund utilization to ultimately augment firm value. Extensive research efforts have been dedicated to investigating corporate tax avoidance, primarily with the goal of influencing firm

value dynamics. The literature on the relationship between tax avoidance and firm value provides mixed results. Although it is generally accepted that the main benefit of tax avoidance activities is the increase in value to the firm, some factors might negatively impact this relationship.

According to Hanlon and Heitzman (2010), agency conflicts might arise within corporations when managers diverge the unpaid taxes to themselves, lowering the real profits to the firms and shareholders. Managers can seize opportunities and redirect resources when engaging in tax avoidance (Desai & Dharmapala, 2009). Desai et al. (2006) also supports the idea that managerial opportunism has a key negative effect on firm value. The cost of capital has also been raised as one major factor linked to tax avoidance's negative impact on firm value; Shevlin et al. (2019), in investigating public debt, document that bond yields are higher for tax-avoiding firms, especially when firms are subject to a high possibility of IRS audits. Hasan et al. (2014) show that bank loan spreads are positively correlated with tax avoidance activities and that lenders tend to put in place some more restrictive loan covenants. Banks often don't have ways to ensure the integrity of firms and the risk-taking tendencies they might have; which is why they rely on a firm's transparency just like analysts and investors would. Goh et al. (2016) show that firms could pay a higher cost of equity due to their tax avoidance practices and firms with inferior outside monitoring and low information transparency might lose even more. Consequently, creditors seem to associate tax avoidance with risk-generating activities and thus ask for higher premiums for their loans. Interestingly, most family businesses tend to reduce in most cases, outside monitoring and independent directors to better align the firm's objectives and behaviour to their vision. Balakrishnan et al. (2019), Desai and Dharmapala (2006), and Frank et al. (2009) support the channel that tax avoidance facilitates managerial siphoning through complexity and low information transparency; this is due to earnings management, arrangement of related transactions and failure to provide detailed disclosures. Some other studies also try to focus on the market price reactions to tax avoidance. For instance, Hanlon and Slemrod (2009) explored the news and stock price of companies that were engaged in tax avoidance and noted that companies share prices will fall with the market seeing tax avoidance news and activities as negative events. Although a share price reaction occurs, it is much smaller compared to the accounting incident response. Gallemore et al. (2014) came to the same conclusion after revealing that information on corporate tax avoidance can make stock prices sink quickly after the news, but the prices tend to bounce back up shortly after, underlining that market reactions are rather temporary. In line with the shareholder theory and the theoretical framework, our main hypothesis is stated as follows:

H1: *Tax avoidance has a positive relationship with firm value*

Investigating firm value is analyzing the core value of a company which in essence can be linked to an exponential number of factors, because of this, researchers tend to focus on the common factors that can be found in most corporations. The capital structure theory elaborates that companies often set their balance of leverage to equity in their policy to gain the maximum in terms of firm value. Leverage (Debt) is one of the main sources of financing for firms, and it can impact firm value directly or indirectly. This relationship can be positive or negative (Miswanto et al., 2017; Sutarna & Lisa, 2018) but few cases find no relationship between leverage and firm value (Fauzi & Nurmatias, 2015; Jiarni, 2019). The optimal capital structure of a firm is a mix and balance between the amount of debt and capital that maximizes the company's stock price. Company management has always established a target capital structure and used leverage to reach that threshold. Leverage can be seen as the use of assets or funds to support the firms' fixed costs which are depreciation or interest (Tondok et al., 2019). If used right, it is an amazing tool, but excessive leverage ratios can enhance the risks of losses. This idea is supported by Hirdinis (2019) where it is mentioned that following the trade-off theory, companies can use debt to increase their value. A decreasing debt ratio signifies that fewer corporate operations and belongings are financed by the use of debt and on the opposite when this ratio gets higher, and the company might be overusing their leverage and increasing its overall risk. According to Rifai et al.

(2015) managing the capital structure is balancing the amount of short-term and long-term debt, the preferred stocks and the common stocks. To reduce agency costs, firm management has to work to the best of their capabilities to meet the company's goals and ensure the payment of interest expenses and principles of debt, thus reducing the need for shareholders to excessively supervise managers. Although leverage can have a negative impact on firm value, it is generally assumed that debt as an instrument is beneficial for firms. Therefore, our second hypothesis is as follows:

H2: *Debt has a positive impact on firm value*

Rahayu and Sari (2018) argue that firm size can directly affect firm value. It's often seen as the quantity of assets at its disposal and is expressed in terms of total assets or total net sales (Afiezan et al., 2020). Using those assets and belongings as collateral can facilitate loan obtention from banks and other economic establishments (Warraich et al., 2014). This underlines the importance of size and the fact that large companies are relatively easy to meet sources of funds from debt through the capital market, companies that have good company growth rates show their ability to increase company value. The larger the firm or the larger the field in which it operates, the easier it can be to obtain both internal and external funding sources. Pantow et al. (2015) argue that investors see positively the prospects of fund attractiveness that larger firms have. However, a few studies such as Mulyati and Kalbuana (2016) and Niesh and Velnampy (2014) found a negative relationship between the firms' size and their value which could be due to overleverage, mismanagement of funds or some external factors to the firms. Thereby, the third hypothesis is stated as follows:

H3: *Firm Size has a positive impact on firm value*

In theory, the more profitable a firm is, the more likely it is to distribute dividends but also to attract more investors. Miswanto et al. (2017), and Akhmadi and Ariadini (2018) state that profitability can be used as an interaction variable with the firm value, with the company's stock valuation above or below its book value. Investors use profitability as an indicator to make their investment decisions since profits generated can be expected depending on the magnitude of the firm performance. Therefore, many companies strive to improve their profitability because the more profitable a company is, the more guaranteed the continuity of the business unit is. Based on signaling theory, we can argue that investors see profitability as a signal of good prospects. It shows the ability of a company to generate net incomes from their accounting activities, and financial ratios are commonly used to assess how good firms are at generating those incomes. Such financial ratios can be the return on an asset or the return on equity (Anton, 2016) and according to Jihadi et al. (2021), these ratios should impact the overall firm value to some extent more so in the presence of good CRS (corporate social responsibility) practices. Even though most empirical research supports the idea of a positive relationship (Annisa & Chabachib, 2017; Endri & Fathony, 2020), some such as Hirdinis (2019) and Anton (2016) find no relationship between profitability and firm value. From the above-mentioned literature, we establish our fourth hypothesis:

H4: *Firms' Profitability has a positive impact on firm value*

A firm may choose to pay cash dividends per semester, yearly, or declare bonus shares. Erasmus (2013) demonstrated that the focus shouldn't be only on the number of attractive dividend payments but also on how stable those dividend payments are. In addition, many investors emphasize the importance of dividend growth, meaning it is a good sign when companies have continuous increases in dividend payments over the years. The signaling theory is a prominent concept that was developed primarily by Michael Spence and Joseph E. Stiglitz in the 1970s, it seeks to explain how information asymmetry between parties in a transaction can be mitigated through the transmission of signals. In line with this theory, dividend payments can be perceived

as positive information by the market and lead to an increase in firm value. This positive effect was found by Anton (2016) while examining the consequences of dividend policies on firm value. They sampled 63 non-financial firms and found, using a fixed-effects model that dividend payouts positively impact firm value. According to Barman (2008), the dividend effect is reflected in the share price, and the share price is the main indicator of shareholders' value maximization; however, when the dividend payments are too small, it might not have a huge impact on the firm value. Ismawati (2018) examined the Indonesian stock market focusing on the effect of capital structure and dividend policy on the firm value and found that dividend policy had no significant impact on the value of the firm, especially when dividend payments were small. In contrast to the signaling theory argument that dividend payment has a positive effect on firm value, Lumapow and Tumiwa (2017) found a negative relationship between both variables, they also found that size and productivity impact the firm value at a significant influence. Priya and Mohanasundari (2016) justify some negative results in the literature by citing inconsistencies in dividend policies as the main reason for the markets' unfavourable reception. In the absence of precise and truthful corporate reports and/or if firms find themselves in bad financial health, dividend payouts could be seen as a bad sign since a firm could use those funds to target actual issues the company is going through. In line with the signaling theory, the fifth hypothesis is as follows:

H5: *Dividend payment has a positive impact on firm value*

According to Afiezan et al. (2020), liquidity is how capable a firm is of fulfilling obligations or paying off short-term debt. Thus, if liquidity does not run smoothly, the company's financial performance will also decline and have a negative impact on interested parties. Liquidity can be defined as the ability of a firm to pay its current and short-term liabilities or the amount of assets that can be easily and quickly changed into cash. Companies need to maintain a certain level of liquidity to fund their activities on a short-term basis but also for backup in case of an increase in the need for liquidity or financial distress. It can be argued a higher current ratio correlates with the firm's ability to pay debts faster (Nguyen & Bui, 2020) and increases firm value. This argument sustains the fact that if a firm has enough liquidity to pay its debt (short-term), then it is seen as safe by creditors and well managed by investors which at term should enhance firms' value. According to Gitman et al. (2010), the current ratio is one of the financial ratios that can be used to assess a firm's ability to pay short-term debt; the higher the current ratio the more likely the firm is to fulfil its obligations in short terms and increase the firm's value. As for many factors influencing a firm's value, liquidity has shown contrasted findings in the literature. While most studies find that liquidity affects firm value (Noerirawan & Muid, 2012; Saleem et al., 2015), some do not find evidence of a relationship between them (Anton, 2016; Iqbal & Zhuquan, 2015; Mahardhika & Roosmawarni, 2016). Therefore, the last hypothesis is as follows:

H6: *Firms' liquidity has a positive impact on firm value*

5. Research design

The sample of the study was collected from Taiwan Economic Journal (TEJ). The TEJ platform offers users, the possibility to choose the criteria imputed to the selected firms. In our case, we omitted firms with missing or unreported values for any variables which enabled us to obtain 374 firms. All firms are Taiwanese publicly traded companies (excluding depository receipts) on the Taiwan Stock Exchange (TWSE) from 2009 to 2019. Two main reasons restricted our sample period between 2009 and 2019: The 2008 financial crisis and the COVID-19 pandemic. These events could compromise the integrity of the data and lead to biased results and interpretations, thus we chose 2008 as our starting year and 2019 as our ending year. The tax avoidance variable (ETR) and the firm value (Tobin's Q) were calculated by the authors using the data gathered from TEJ.

5.1. Dependent variable

We use the firm's Tobin's Q (Q) as a proxy for firm value. This variable is often used to measure firm value in finance and economics (see Vinh Khuong et al., 2020).

5.2. Independent variables

Following the literature (Cheng et al., 2012; Dyreng et al., 2008, 2010) we use effective tax rate (ETR) as a proxy for Tax Avoidance. According to Chen et al. (2014), this measurement based on the numbers from the statement of cash flow avoids the use of tax avoidance measures subject to accrual-based earnings management.

This study offers the possibility to also investigate some other determinants of firm value. As Shown in Table 1, Leverage (Debt) is calculated as the debt-to-equity ratio. Following (Chen et al., 2014; Desai & Dharmapala, 2009), firm size (SIZE) is calculated as the natural logarithm of the book value of total assets. The return on asset (ROA) and the return on equity (ROE) are used as proxies for firm profitability. Cash dividend paid (CDP) and dividend payout ratio (DPR) are calculated and used as proxies for Dividend. In line with Gitman et al. (2010), we use the Current ratio as a proxy for Liquidity. We used the Retained Earnings as a control variable, it is represented by the "Profits not paid as dividends".

5.3. Estimation method

To conduct our analysis of the relationship between tax avoidance and firm value we use different steps:

First, we use panel data analysis to examine the correlation between ETR and firm value in which we intend to find whether or not there is a relationship between tax avoidance and firm value on one side and between the above-mentioned determinants of firm value and firm value. The panel data analysis methods consist of pooled OLS, fixed effects and random effects.

The regression model is as follows:

$$Q_{it} = \beta_0 + \beta_1 ETR_{it} + \beta_2 DER_{it} + \beta_3 Size_{it} + \beta_4 ROA_{it} + \beta_5 ROE_{it} + \beta_6 CDP_{it} + \beta_7 DPR_{it} + \beta_8 CR_{it} + \beta_9 RE_{it} + \varepsilon_{it} \quad (1)$$

Second, we conduct a causality analysis between tax avoidance and firm value. The objective here is to find whether or not tax avoidance Granger-causes firm value. The Lopez and Weber (2017)

Table 1: Variable summary

Variables	Type of Variables	Definition	Expected Sign with dependent variable
Q	Dependent	(Market value of equity + liabilities)/(Total Assets)	+
ETR	Independent	(Income tax expenses)/(Earnings before tax)	+
DER	Independent	(Total debt)/(Total equity)	+
ROA	Independent	(Net income after tax)/(Total assets)	+
ROE	Independent	(Net income after tax)/(Total equity)	+
CDP	Independent	Amount of dividend paid (in New Taiwanese Dollars)	+
DPR	Independent	(Total Dividends) / (Net Income)	+
CR	Independent	(Current assets)/(Current liabilities)	+
RE	Control	Profits not paid out as dividends	N/A

Stata command “xtgcause” which implements the already widely used Dumitrescu and Hurlin (2012) Granger model. We employ a unit root test and a panel cointegration test to test for stationarity and co-integration of our variables in the panel dataset.

We also performed the recent Juodis, Karavias and Sarafidis (2021) Granger non-causality test. Juodis, Karavias and Sarafidis (2021) Granger non-causality test is a novel method which provides a better size and power performance by using a pooled estimator that has a faster convergence rate. Some other advantages of this model are that it can be used in multivariate systems and works against homogeneous and heterogeneous alternatives (Juodis, Karavias, and Sarafidis; 2021). It provides the regression results with respect to the Half Panel Jackknife (HPJ) bias-corrected pooled estimator of Dhaene and Jochmans (2015), the Wald test statistic and an automatic lag-length selection using the Bayesian Information Criterion (BIC) criterion (Juodis, Karavias, and Sarafidis; 2021).

The regression model is as follow:

$$Q_{i,t} = \theta_{0,i} + \sum_{p=1}^P \theta_{p,i} Q_{i,t-p} + \sum_{p=1}^P \beta_{1,p,i} ETR_{i,t-p} + \varepsilon_{i,t} \tag{2}$$

with $i = 1, \dots, N$ and $t = 1, \dots, T$.

6. Empirical results and discussion

6.1. Panel data analysis

6.1.1. Descriptive statistics

Table 2 shows the descriptive statistics for the sample of 374 firms which provides 4114 observations. The descriptive statistics show that the firms in the sample have on average, a Tobin’s q (Q) of 1.137, which is lower than 1.782 from Chen et al. (2014) and 1.79 from Inger (2013). This suggests that on average the companies in our sample are valued higher by the market compared to what they own in terms of assets. The average effective tax rate is 0.285 with a standard deviation of 4.537. The mean value of 28.5% for the ETR is relatively higher than the statutory tax rate in Taiwan, suggesting that Taiwanese firms pay on average more taxes than the statutory tax rate mandate. In terms of leverage, the average debt-to-equity ratio of 46% which is high; another interesting statistic to note is that the average ROA and ROE are close in value, respectively, 4.405% and 6.218%.

Table 3 displays the correlation matrix between the variables. Firm value (Q) is negatively correlated with tax avoidance (ETR) with a coefficient of -0.013, this provides a hint at the relationship that those

Table 2. Descriptive statistics					
Variable	Obs	Mean	Std. dev.	Min	Max
Q	4114	1.137	.894	0	14.51
ETR	4114	.285	4.537	-23.279	215.263
DER	4114	46.311	278.626	-507.72	15944.99
Size	4114	15.878	1.455	9.757	21.949
ROA	4114	4.405	8.616	-95.23	53.36
ROE	4114	6.218	20.043	-315.9	152.76
CDP	4114	1293500.3	8121471.8	0	2.593e+08
DPR	4114	60.918	501.558	-348.28	31704.65
CR	4114	258.397	297.474	26.73	8646.71
RE	4114	8056264.2	58492555	-2.412e+08	1.377e+09

Table 3. Correlation matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) Q	1.000									
(2) ETR	-0.013	1.000								
(3) DER	-0.036	-0.005	1.000							
(4) Size	-0.142	-0.018	0.014	1.000						
(5) ROA	0.285	-0.005	-0.094	0.150	1.000					
(6) ROE	0.102	-0.002	-0.338	0.193	0.855	1.000				
(7) CDP	0.114	-0.004	-0.009	0.380	0.120	0.085	1.000			
(8) DPR	0.001	0.003	-0.010	0.005	0.023	0.021	0.002	1.000		
(9) CR	0.132	-0.005	-0.068	-0.221	0.064	0.039	-0.030	0.034	1.000	
(10) RE	0.067	-0.003	-0.030	0.374	0.106	0.088	0.883	0.000	-0.024	1.000

two variables have. Also, we notice that debt and size are negatively correlated with firm value (respectively, -0.036 and -0.142) with the deduction that the higher the debt, the less value the firm has and the bigger the firm the less value it has. Moreover, tax avoidance seems negatively correlated with all other variables except for the dividend payout ratio (0.003). The pair return on assets (ROAs) and return on equity (ROE) has a correlation of 0.855, which is higher than the usually accepted 0.5. The Retained Earnings (RE) also have a correlation of 0.883 with cash dividend paid (CDP). To enhance the robustness of our results, we conduct a VIF coefficient test to confirm whether the model has any multicollinearity. The results are displayed in Table 5.

6.1.2. Regression analysis

To assess the pertinence and significance of these preliminary results, we proceed to the regression analyses. Table 4 presents the results of the regression analysis; in this section, we used

Table 4. Panel data analysis

Variables	Pooled OLS	Fixed effects	Random effects
ETR	-.0024369 (0.368)	-.0043528** (0.041)	-.0040479* (0.059)
DER	-.0005334*** (0.00)	-.000265*** (0.000)	-.0003102*** (0.000)
Size	-.1079863*** (0.000)	-.0687841** (0.015)	-.1012091*** (0.000)
ROA	.0842799*** (0.000)	.0526686*** (0.000)	.0583056*** (0.000)
ROE	-.0279843*** (0.000)	-.0134088*** (0.000)	-.0158077*** (0.000)
CDP	2.49e-08*** (0.000)	2.07e-08*** (0.000)	2.31e-08*** (0.000)
DPR	-.0000141 (0.565)	.0000106 (0.582)	7.15e-06 (0.712)
CR	.0001781*** (0.000)	-.0000102 (0.826)	.0000407 (0.356)
RE	-1.56e-09*** (.001)	-2.29e-09*** (0.000)	-2.04e-09*** (0.000)
Constant	2.61456*** (0.00)	2.087337*** (0.000)	2.576227*** (0.000)
F-test	132.70	50.47	-
R-squared	0.225	0.2013	0.2135
Number of obs	4114	4114	4114

The numbers in parenthesis show p-values for each regression with *** $p < .01$, ** $p < .05$, * $p < .1$

pooled OLS, fixed effects and random effects regression methods to assess the relationship between our dependent variable (Q) and independent variables (ETR, DER, Size, ROA, ROE, CDP, DPR and CR). The retained earnings (RE) is used as a control variable.

The results show a negative relationship between ETR and firm value with significant results for fixed and random effects, while the pooled OLS result was negative but not significant. The fixed effect coefficient is -0.00435 , and the random effects coefficient is -0.00404 . This suggests that there is a positive relationship between the practice of tax avoidance and firm value. According to Swenson (1999), when firms engage in tax avoidance practices, their goal is to ultimately reduce their effective tax rate which ultimately translates into a negative relationship between the effective tax rate and the Firm value. In our case, the more the ETR increases, the less value the firms gain. Taiwanese firms have more interest in reducing their Effective Tax rates. These results are inconsistent with some prior research (Desai & Dharmapala, 2009; Inger, 2013; Wang, 2010) which argue that higher tax payment is associated with better firm performance.

Leverage is negatively related to firm value for all 03 methods with respective coefficients of -0.00053 , -0.00026 and -0.00031 . We can interpret the results as the more leverage those firms use, the less value they gain. These results are inconsistent with Hirdinis (2019) which states that following the Trade-off theory, firms can find value in increasing their debt-to-equity DER.

Size is also significant and negatively correlated with the value of the firm; pooled OLS regression provides the highest negative coefficient (-0.10798) next to -0.10120 for the random effect method; the coefficient of the fixed effect model is -0.06878 . The results are inconsistent with Pantow et al. (2015) which found a positive relationship between firm size and firm value. However, the results are consistent with (Mulyati & Kalbuana, 2016; Niesh & Velnampy, 2014) which argue that mismanagement and overleveraging are some characteristics of larger firms.

The variable Liquidity (CR) is only significant with the pooled OLS method with a low positive coefficient of 0.00017 , suggesting that the market perceives well when firms are liquid as suggested by the literature. Although not supported by Anton (2016), the results are consistent with the findings of Aggarwal and Padhan (2017) which showed a positive relationship between firm value. Following Nguyen and Bui (2020), this could mean that most Taiwanese firms have the ability to pay their short-term debts.

Other aspects of firm structure we are testing for are profitability and dividends. First, for the profitability we used two (02) proxies ROA and ROE; the results show contrasted results, while ROA is significant and positively related to firm value, ROE is significant and negatively correlated. The ROA coefficients are 0.08427 (pooled OLS), 0.05266 (fixed effects), 0.05830 (random effects) and the ROE coefficients are, respectively, -0.02798 , -0.01340 and -0.01580 . Based on the mixed results on profitability, we assume that the difference is due to the intrinsic nature of each variable, the ROA referring to the asset side and the ROE linked to the equity side of the firms. The results are not consistent with those of Anton (2016) and Hirdinis (2019) which argued that profitability does not affect firm value. However, they are consistent with Endri and Fathony (2020) view that profitability is seen as a business status, and investors are more attracted to firms with higher profitability.

Second, the dividend variables are only significant for the amount of cash dividend paid variable CDP. The dividend payout ratio (DPR) is not significant in any of the methods used. CDP is positive and significant for each method with coefficients of $2.49e-08$ with pooled OLS, $2.07e-08$ with fixed effects and $2.31e-08$ with the random effects method. The results of the dividend payout ratio are not consistent with previous research such as Oliver and Edori (2016) which found DPR to positively impact firm value. According to Endri and Fathony (2020), legal certainty and good corporate governance related to dividend policy should increase the value of a company. Firms with growth potential will prefer to distribute small dividends in order to

Table 5. Variance inflation factor

	VIF	1/VIF
ROE	5.157	.194
CDP	4.651	.215
RE	4.605	.217
ROA	4.55	.22
DER	1.371	.729
Size	1.306	.766
CR	1.071	.934
DPR	1.002	.998
ETR	1.001	.999
Mean VIF	2.746	.

Table 6. Wooldridge test for autocorrelation in panel data

H0: no first-order autocorrelation

F(1, 373) = 20.803

Prob > F = 0.0000

Table 7. Modified Wald test for groupwise heteroskedasticity

H0: $\sigma(i)^2 = \sigma^2$ for all i

chi2 (374) = 1.4e+06

Prob>chi2 = 0.0000

reinvest in the company, which will increase firm value at term. The negative coefficient between cash dividend paid and firm value is also inconsistent with the literature and suggests that an increase in Taiwanese firms' dividend payment reduces firm value.

To ensure the validity of the results, we proceeded to the Variance Inflation Factor (VIF) test. The results are shown in Table 5 displays a mean VIF of 2.746 which is lower than 5 the usually accepted threshold. This result signifies that there are no multicollinearity issues in our dataset.

In Table 6, we test for the null hypothesis that there is no first-order autocorrelation using the Wooldridge test; the results are significant at 1% level showing that there is no autocorrelation between variables. Lastly, we use the Modified Wald test to test for heteroskedasticity.

Table 7 provides the results that there is no heteroskedasticity in the sample with Prob>chi2 equal to 0.0000. From the above assumption tests, we can conclude that the variables in use are fit for the model and the results are not biased.

6.2. Causality analysis

The panel data analysis conducted above supports the hypothesis of a relationship between effective tax rate and firm value (Q). The established relationship is a correlation which does not infer causality since variables can be correlated without necessarily causing each other in any way. In this section, we try to establish the causal relationship between ETR and Q, that is whether or not ETR does cause Q or not.

6.2.1. Causality assumptions tests

Before proceeding to the causality tests, we first have to test for stationarity and cointegration to ensure the integrity of the data.

Table 8 displays the Harris-Tzavalis unit-root test for stationarity for both variables ETR and Q. The null hypothesis that the panel data contains unit roots can be rejected for both variables since the p-value is significant at 1% level. The statistics and z values are, respectively, 0.4907 and -19.7667 for Q and -0.1097 and -65.5245 for ETR. To comfort these results, we add the Levin-Lin-Chu (LLC) unit-root test which has the particularity of automating the number of optimal lags and provides adjusted t in the results. In Table 9, the null hypothesis is that the data contains unit roots, the Adjusted t* is -58.2352 and significant at 1% level for the variable Q and an Adjusted t* of -24.5304 significant at 1% level for ETR. Following LLC, we assume both variables to be stationary.

In Table 10, the Westerlund ECM panel cointegration test is used to test for cointegration. The null hypothesis is that there is no cointegration. The results support the hypothesis that our variables are cointegrated with Gt of -1.224 significant at 1% and Pt of -11.7232 significant at 10%. Both results for stationarity and cointegration validate that our data is not biased and that the main causality assumptions are respected; we are thus able to proceed to the causality tests.

6.2.2. Granger-causality tests

In this section, we test if ETR granger-causes Q. To do so we first use the Dumitrescu & Hurlin (2012) Granger non-causality test and then the more recent Juodis, Karavias and Sarafidis (2021) Granger non-causality test.

Table 8. Harris-Tzavalis unit-root test

Ho: Panels contain unit roots	Number of panels = 374		
Ha: Panels are stationary	Number of periods = 11		
AR parameter: Common	Asymptotics: N → Infinity		
Panel means: Included	T Fixed		
Time trend: Not included			
Harris-Tzavalis unit-root test for Q			
	Statistic	z	p-value
rho	0.4907	-19.7667	0.0000
Harris-Tzavalis unit-root test for ETR			
	Statistic	z	p-value
rho	-0.1097	-65.524	0.0000

Table 9. Levin-Lin-Chu unit-root test

Ho: Panels contain unit roots	Number of panels = 374	
Ha: Panels are stationary	Number of periods = 11	
AR parameter: Common	Asymptotics: N/T → 0	
Panel means: Included		
Time trend: Not included		
ADF regressions: 1 lag		
LR variance: Bartlett kernel, 7.00 lags average (chosen by LLC)		
Levin-Lin-Chu unit-root test for Q		
	Statistic	p-value
Unadjusted t	-73.0026	
Adjusted t*	-58.2352	0.0000
Levin-Lin-Chu unit-root test for ETR		
	Statistic	p-value
Unadjusted t	-52.7734	
Adjusted t*	-24.5304	0.0000

Table 10. Westerlund ECM panel cointegration tests

Results for H0: no cointegration			
With 374 series and 1 covariate			
Statistic	Value	Z-value	P-value
Gt	-1.224	-4.602	0.000
Ga	-1.968	7.798	1.000
Pt	-11.732	-1.593	0.056
Pa	-0.775	1.680	0.954

Lopez and Weber (2017) propose a user-written command for Stata that implements the Dumitrescu and Hurlin (2012) test for Granger causality in panel datasets. This command automates the optimal number of lags using Akaike, Bayesian, or Hannan-Quinn information criteria and provides both standardized statistic \bar{Z} (for large N and T panel data) and \tilde{Z} (for or large N but relatively small T data). Table 11 shows significant results for \bar{Z} (at 1% level) and \tilde{Z} (at 5% level). The optimal number of lags suggested by Bayesian Information Criteria (BIC) is 1 lag. These results reject the null hypothesis and suggest that ETR does Granger-cause Q.

Juodis, Karavias, Sarafidis and Xiao (2021) provide a new command to implement the panel Granger non-causality test approach developed by Juodis et al. (2021). This method aims to be an alternative to Lopez and Weber (2017) by providing more tests in one command.

Table 12 displays the results of the Juodis, Karavias and Sarafidis (2021) Granger non-causality testing for causality between ETR and Q. The null hypothesis is that ETR DOES NOT Granger-cause Q. The HPJ (Half Panel Jackknife) Wald test is significant at 1% level which shows that the pooled estimator does not have a Nickell bias. The optimal BIC lag is 1 and the results reject the null hypothesis at 1% level of significance with a coefficient of -0.008 which proves that ETR does Granger-cause Q in our panel dataset. According to Onyinyechi Omodero and Eriabie (2022), the Granger causality test contributes by providing the causation effect of variables. In this study, the Granger causality test results support the regression results and confirm that effective tax rates in Taiwan, negatively impact firm value directly. By engaging in tax practices that reduce their effective tax rates, these firms can increase their after-tax profits and increase their value.

6.3. Robustness

In addition to the Variance Inflation Factor (VIF) test, the Wooldridge test and the Modified Wald test, we use the lagged variable of ETR (lagETR) as a proxy for ETR. The regression equation is as follows:

$$Q_{it} = \beta_0 + \beta_1 ETR_{it-1} + \beta_2 DER_{it} + \beta_3 Size_{it} + \beta_4 ROA_{it} + \beta_5 ROE_{it} + \beta_6 CDP_{it} + \beta_7 DPR_{it} + \beta_8 CR_{it} + \beta_9 RE_{it} + \epsilon_{it} \tag{3}$$

With ETR_{it-1} representing the value of ETR in the previous period.

Table 11. Dumitrescu & Hurlin (2012) Granger non-causality test results

Optimal number of lags (BIC): 1 (lags tested: 1 to 1).	
W-bar = 1.7283	
Z-bar tilde = 2.2675	(p-value = 0.0234)
Z-bar = 9.9593	(p-value = 0.0000)

H0: ETR does not Granger-cause Q
 H1: ETR does Granger-cause Q for at least one panel (id).

Table 12. Juodis, Karavias and Sarafidis (2021) Granger non-causality test

Number of units = 374	Obs. per unit (T) = 10			
Number of lags = 1	BIC = -5189.204			
JKS non-causality test H0: ETR does not Granger-cause Q. H1: ETR does Granger-cause Q for at least one panel var. HPJ Wald test : 18.4979 p-value : 0.0000 BIC selection:				
lags = 1, BIC = -5189.2042*				
lags = 2, BIC = -4984.8303				
lags = 3, BIC = -4453.1481				
Results for the Half-Panel Jackknife estimator Cross-sectional heteroskedasticity-robust variance estimation				
	Coef.	Std. Err.	z	P>z
ETR				
L1.	-0.008	0.002	-4.300	0.000

The results in Table 13 show the coefficients and p-values of the regressions of Equation (3). We can notice that the significance of the Pooled OLS coefficient for lagETR remains the same, while the random effects results have become more significant (from 10% for Equation (1) to 5% significance for Equation (3)) with a coefficient of -0.0044587 and a p-value of 0.037. The fixed effect results show a coefficient of -0.0048473 , significant at 5% level. Together, these results support the robustness of our findings but also suggest that the effective tax rate at the period $t-1$ still impacts Firm value at time t . That argument implies that Tax avoidance practices could be more efficient on the long term.

Table 13. Robustness

Variables	Pooled OLS	Fixed effects	Random effects
lagETR	-0.025821 (0.340)	-0.0048473** (0.023)	-0.0044587** (0.037)
DER	-0.0005332*** (0.000)	-0.0002646*** (0.000)	-0.0003099*** (0.000)
Size	-0.1078977*** (0.000)	-0.0681331** (0.016)	-0.1010107*** (0.000)
ROA	0.0842358*** (0.000)	0.052568*** (0.000)	0.0582229*** (0.000)
ROE	-0.0279734*** (0.000)	-0.013389*** (0.000)	-0.0157899*** (0.000)
CDP	2.49e-08*** (0.000)	2.07e-08*** (0.000)	2.31e-08*** (0.000)
DPR	-0.0000143 (0.561)	0.0000104 (0.591)	6.91e-06 (0.722)
CR	0.0001783*** (0.000)	-9.98e-06 (0.830)	0.0000409 (0.353)
RE	-1.56e-09*** (0.001)	-2.28e-09*** (0.000)	-2.04e-09*** (0.000)
Constant	2.613197*** (0.000)	2.077303*** (0.000)	2.57339*** (0.000)
F-test	132.60	50.58	-
R-squared	0.2253	0.2010	0.2134
Number of obs	4113	4113	4113

7. Conclusion and implications

Firm value reflects the present value of the cash flows of a company in the future, and it will directly affect investment decisions rendering the factors that influence firm value and importance of prime order. This study mainly investigates the relationship between Tax avoidance (ETR) and Firm Value (Tobin's Q) in Taiwan. We also analyze the determinants of firm value and how they affect firms' value in the 2009 to 2019-time span. The data was collected from Taiwan Economic Journal (TEJ) and is comprised of Taiwanese publicly traded companies (excluding depository receipts) from Taiwan Stock Exchange. Most research focus on establishing a correlation between firm value or firm performance and its main determinants, omitting that a correlation could be due to external factors without causal relationship between the variables. As tax avoidance appears as one of many focuses of Corporate Social Responsibility and Sustainability among scholars, we establish in this article both the existence of correlation and causality between firm value and effective tax rate. Effective tax rate appears to be negatively correlated with firm value and ETR does granger-cause firm value. Tax avoidance has a positive impact on firm value, and these results suggest that family firms might encounter less agency conflicts, resulting in the decrease of agency costs and the increase in value.

These results provide insights to managers on how to navigate the taxation in order to increase shareholder value.

Further, we also examined other determinants of firm value and found that some variables such as size and debt are negatively correlated with firm value in the context of Taiwan market. Cash dividend paid results suggest that Taiwanese firms providing dividends to shareholders benefit more than the ones who do not; this case is supported by the signaling theory which stipulates that dividends convey information to market participants. One interesting finding is that the return on assets and the return on equity are affecting firm value in different ways. If a firm does not use debt, its ROA and ROE are the same, but in our case, we have shown the negative relationship between debt and firm value; this relationship seems to be the main factor leading the difference of the profitability ratios. The return on asset is positively correlated with firm value, while return on equity is negatively correlated.

Overall, this study provides new insights on firm value's relationships and contributes to the literature but some limitations still remain. Firstly, we focused on Taiwanese firms, and some suggestions for future research could be include other markets with similar characteristics. With a number of recent literature showing agency costs as the main drawback to the practice of tax avoidance, we argue that family firm structure can mitigate those costs. Similar findings could support this argument.

Secondly, this article focused on all industries, it would be interesting to analyze the markets through industry specifics since each industry has different characteristics, more so when we address the fact that Taiwan's market is dominated by technology firms. For instance, Taiwan has a prevalence of technology companies which are known to often have little to no inventory and issue debt to fund research and development. These characteristics of technology firms differ, for example, from entertainment firms or food and beverage firms and could be determinant of the tax management culture and its impact on firm value.

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References

- Afiezan, A., Wijaya, G., & Claudia, C. (2020). The effect of free cash flow, company size, profitability and liquidity on debt policy for manufacturing companies listed on IDX in 2016–2019 periods. *Budapest International Research and Critics Institute-Journal (BIRCI-Journal)*, 3(4), 4005–4018. <https://doi.org/10.33258/birci.v3i4.1502>
- Aggarwal, D., & Padhan, P. C. (2017). Impact of capital structure on firm value: Evidence from the Indian hospitality industry. *Theoretical Economics Letters*, 7(4), 982–1000. <https://doi.org/10.4236/tel.2017.74067>
- Akhmadi, A., & Ariadini, A. (2018). Profitabilitas dan dampak mediasinya terhadap nilai perusahaan (Studi empirik pada perusahaan sektor pertambangan yang terdaftar di Bursa Efek Indonesia periode 2011–2015). *Sains: Jurnal Manajemen dan Bisnis*, 11(1), 105–112. <https://doi.org/10.35448/jmb.v11i1.4328>
- Alkausar, B., Nugroho, Y., Qomariyah, A., & Prasetyo, A. (2023). Corporate tax aggressiveness: Evidence unresolved agency problem captured by theory agency type 3. *Cogent Business & Management*, 10(2), 2218685. <https://doi.org/10.1080/23311975.2023.2218685>
- Annisa, R., & Chabachib, M. (2017). Analisis pengaruh current ratio (cr), debt to equity ratio (der), return on assets (roa) terhadap price to book value (pbv), dengan dividend payout ratio sebagai variabel intervening. *Diponegoro Journal of Management*, 6(1), 188–202. <https://ejournal3.undip.ac.id/index.php/djom/article/view/17551>
- Anton, S. G. (2016). The impact of dividend policy on firm value: A panel data analysis of Romanian listed firms. *Journal of Public Administration, Finance and Law*, 10(10), 107–112.
- Armstrong, C., Blouin, J., & Larcker, D. (2012). The incentives for tax planning. *Journal of Accounting and Economics*, 53(1–2), 391–411. <https://doi.org/10.1016/j.jacceco.2011.04.001>
- Balakrishnan, K., Blouin, J., & Guay, W. (2019). Does tax aggressiveness reduce financial reporting transparency? *The Accounting Review*, 94(1), 45–69. <https://doi.org/10.2308/accr-52130>
- Barman, G. P. (2008). *An evaluation of how dividend policies impact on the share value of selected companies*. Nelson Mandela Metropolitan University. <http://hdl.handle.net/10948/806>
- Chadefaux, M., & Rossignol, J. L. (2006). Le taux effectif d'imposition. *Revue Française de Comptabilité n° 386, mars*, 8–9.
- Cheng, C. A., Huang, H. H., Li, Y., & Stanfield, J. (2012). The effect of hedge fund activism on corporate tax avoidance. *The Accounting Review*, 87(5), 1493–1526. <https://doi.org/10.2308/accr-50195>
- Chen, X., Hu, N., Wang, X., & Tang, X. (2014). Tax avoidance and firm performance: Evidence from China. *Nankai Business Review International*, 5(1), 25–42. <https://doi.org/10.1108/NBRI-10-2013-0037>
- Chiang, H.-T. Lin, Y.-C. & Chen, W.-W. (2022). Does family business affect the relationship between corporate social responsibility and brand value? A study in different industry Taiwan. *Asia Pacific Management Review*, 27(1), 28–39. <https://doi.org/10.1016/j.apmr.2021.04.002>
- Desai, M. A., & Dharmapala, D. (2006). Corporate tax avoidance and high-powered incentives. *Journal of Financial Economics*, 79(1), 145–179. <https://doi.org/10.1016/j.jfineco.2005.02.002>
- Desai, M. A., & Dharmapala, D. (2009). Corporate tax avoidance and firm value. *The Review of Economics and Statistics*, 91(3), 537–546. <https://doi.org/10.1162/rest.91.3.537>
- Desai, M. A., Dyck, A., & Zingales, L. (2006). Theft and taxes. *Journal of Financial Economics*, 84(3), 591–623. <https://doi.org/10.1016/j.jfineco.2006.05.005>
- Dhaene, G. & Jochmans, K. (2015). Split-panel jackknife estimation of fixed-effect models. *The Review of Economic Studies*, 82, 991–1030. <https://doi.org/10.1093/restud/rdv007>
- Dumitrescu, E.-I. & Hurlin, C. (2012). Testing for Granger non-causality in heterogeneous panels. *Economic Modelling*, 29(4), 1450–1460. <https://doi.org/10.1016/j.econmod.2012.02.014>
- Dyregren, S. D., Hanlon, M., & Maydew, E. L. (2008). Long-run corporate tax avoidance. *The Accounting Review*, 83(1), 61–82. <https://doi.org/10.2308/accr.2008.83.1.61>
- Dyregren, S. D., Hanlon, M., & Maydew, E. L. (2010). The effects of executives on corporate tax avoidance. *The Accounting Review*, 85(4), 1163–1189. <https://doi.org/10.2308/accr.2010.85.4.1163>
- Endri, E., & Fathony, M. (2020). Determinants of firm's value: Evidence from financial industry. *Management Science Letters*, 111–120. <https://doi.org/10.5267/j.msl.2019.8.011>
- Erasmus, P. (2013). The influence of dividend yield and dividend stability on share returns: Implications for dividend policy formulation. *Journal of Economic and Financial Sciences*, 6(1), 13–32. <https://doi.org/10.4102/jef.v6i1.274>
- Fauzi, A., & Nurmatias, N. (2015). Pengaruh profitabilitas dan leverage terhadap nilai perusahaan dengan kebijakan dividen sebagai variabel intervening pada perusahaan yang terdaftar di BEI tahun 2013. *Ekonomi dan Bisnis*, 2(2), 177–202. <https://doi.org/10.35590/jeb.v2i2.719>
- Frank, M. Lynch, L. J. & Rego, S. O. (2009). Tax reporting aggressiveness and its relation to aggressive financial reporting. *The Accounting Review*, 84(2). <https://doi.org/10.2139/ssrn.647604>
- Gallemore, J., Maydew, E. L., & Thornock, J. R. (2014). The reputational costs of tax avoidance. *Contemporary Accounting Research*, 31(4), 1103–1133. <https://doi.org/10.1111/1911-3846.12055>
- Gitman, J. L., Joehnk, M., & Smart, S. (2010). *Fundamentals of investing* (11th ed.). Textbook, Prentice Hall.
- Goh, B. W., Lee, J., Lim, C. Y., & Shevlin, T. (2016). The effect of corporate tax avoidance on the cost of equity. *The Accounting Review*, 91(6), 1647–1670. <https://doi.org/10.2308/accr-51432>
- Graham, J. R., & Tucker, A. L. (2006). Tax shelters and corporate debt policy. *Journal of Financial Economics*, 81(3), 563–594. <https://doi.org/10.1016/j.jfineco.2005.09.002>
- Hanlon, M., & Heitzman, S. (2010). A review of tax research. *Journal of Accounting and Economics*, 50(2–3), 127–178. <https://doi.org/10.1016/j.jacceco.2010.09.002>
- Hanlon, M., & Slemrod, J. (2009). What does tax aggressiveness signal? Evidence from stock price reactions to news about tax shelter involvement. *Journal of Public Economics*, 93(1–2), 126–141. <https://doi.org/10.1016/j.jpubeco.2008.09.004>
- Hasan, I., Hoi, C. K., Wu, Q., & Zhang, H. (2014). Beauty is in the eye of the beholder: The effect of corporate tax avoidance on the cost of bank loans. *Journal of Financial Economics*, 113(1), 109–130. <https://doi.org/10.1016/j.jfineco.2014.03.004>
- Hirdinis, M. (2019). Capital Structure and Firm Size on Firm Value Moderated by Profitability. *International*

- Journal of Economics & Business Administration (JEBBA)*, VII(1), 174–191. <https://doi.org/10.35808/ijeba/204>
- Inger, K. K. (2013). Relative valuation of alternative methods of tax avoidance. *The Journal of the American Taxation Association*, 36(1), 27–55. <https://doi.org/10.2308/atax-50606>
- Iqbal, A., & Zhuquan, W. (2015). Working capital Management and profitability evidence from firms listed on Karachi stock Exchange. *International Journal of Biometrics*, 10(2), 231. <https://doi.org/10.5539/ijbm.v10n2p231>
- Ismawati, L. (2018). The influence of capital structure and dividend policy to firms value listed at Indonesian stock Exchange. *International Conference on Business, Economic, Social Science and Humanities (ICOBEST)*.
- Jiarni, T. (2019). Nilai perusahaan: Leverage, profitabilitas dan ukuran perusahaan. *Jurnal Riset Akuntansi (JUARA)*, 9(2), 92–99.
- Jihadi, M., Vilantika, E., Hashemi, S. M., Arifin, Z., Bachtiar, Y., & Sholichah, F. (2021). The effect of liquidity, leverage, and profitability on firm value: Empirical evidence from Indonesia. *The Journal of Asian Finance, Economics & Business*, 8(3), 423–431. <https://doi.org/10.13106/jafeb.2021.vol8.no3.0423>
- Kwarbai, J. D., Nwaobia, A. N., & Ajibade, A. T., Corporate risk Management and firm value: Empirical study of selected manufacturing firms in Nigeria (October 1, 2015). Available at SSRN: <https://ssrn.com/abstract=3880928>
- Lai, K., Gul, F., Li, T., & Pittman, J. (2019). Auditors' responses to asset redeployability. *SSRN Electronic Journal*, 3543067. <https://doi.org/10.2139/ssrn.3543067>
- Lee, B. B., Dobiyski, A., & Minton, S. (2015). Theories and empirical proxies for corporate tax avoidance. *Applied Business and Economics*, 17(3).
- Lee, R.-J., & Kao, H.-S. (2020). The effect of Ceo power on tax avoidance: Evidence from Taiwan. *Global Journal of Business Research, the Institute for Business and Finance Research*, 14(1), 1–27.
- Lestari, N., & Wardhani, R. (2015). The effect of the tax planning to firm value with moderating board diversity. *International Journal of Economics and Financial Issues*, 5(15), 315–323.
- Lopez, L., & Weber, S. (2017). Testing for Granger causality in panel data. *The Stata Journal*, 17(4), 972–984. <https://doi.org/10.1177/1536867X18017004>
- Lumapow, L. S., & Tumiwa, R. A. F. (2017). The effect of dividend policy, firm size, and productivity to the firm value. *Research Journal of Finance & Accounting*, 8(22), 20–24.
- Mahardhika, B. W., & Roosmawarni, A. (2016). Analisis karakteristik perusahaan yang mempengaruhi nilai perusahaan pada perusahaan manufaktur yang terdaftar di Bursa Efek Indonesia (BEI) tahun 2010–2014. *BALANCE: Economic, Business, Management and Accounting Journal*, 13(2), 23–47. <https://doi.org/10.14710/jaa.13.1.80-96>
- Miswanto, M., Abdullah, Y. R., & Suparti, S. (2017). Pengaruh efisiensi modal kerja, pertumbuhan penjualan dan ukuran perusahaan terhadap profitabilitas perusahaan. *Jurnal Bisnis dan Ekonomi*, 24(2), 119–135.
- Mulyati, K. H., & Kalbuana, N. (2016). Pengaruh Leverage, Profitabilitas, dan Ukuran Perusahaan Terhadap Nilai Perusahaan (Studi Empiris pada Perusahaan Garment dan Textile yang terdaftar di Bursa Efek Indonesia Tahun 2011–2015), *Seminar Nasional, The 3rd Call for Syariah Paper*.
- Nguyen, T., & Bui, T. (2020). Determinants of firm value in Vietnam: A research framework. *International Journal of Science and Research (IJSR)*, 9(1). <https://doi.org/10.21275/ART20204002>
- Nguyen Minh, H., Tuan Anh, P., Yue, X.-G., Hoang Phi Nam, N., & Ntim, C. G. (2021). The impact of tax avoidance on the value of listed firms in Vietnam. *Cogent Business & Management*, 8(1), 1930870. <https://doi.org/10.1080/23311975.2021.1930870>
- Niesh, A. J., & Velnampy, T. (2014). Firm size and profitability: A study of listed manufacturing firms in Sri Lanka. *International Journal of Business & Management*, 9(4), 57–64. <https://doi.org/10.5539/ijbm.v9n4p57>
- Noerirawan, M. R., & Muid, A. (2012). Pengaruh faktor internal dan eksternal perusahaan terhadap nilai perusahaan (studi empiris pada perusahaan manufaktur yang terdaftar di Bursa Efek Indonesia periode 2007–2010). *Diponegoro Journal of Accounting*, 1(1), 582–593. <https://doi.org/10.21831/nominal.v1i2.1000>
- Noor, R. M., Fadziilah, N. S. M., & Mastuki, N. A. (2010). Corporate tax planning: A study on corporate Effective tax rates of Malaysian listed companies. *International Journal of Trade, Economics and Finance*, 1(2), 189–193. <https://doi.org/10.7763/IJTEF.2010.V1.34>
- Oliver, E., & Edori, D. (2016). Effect of dividend policy on the value of firms (empirical study of quoted firms in Nigeria stock Exchange). *Research Journal of Finance and Accounting*, 17(3), 17–24. <https://iiste.org/Journals/index.php/RJFA/article/view/28940>
- Onyinyechi Omodero, C., & Eriabie, S. (2022). Valued added taxation and industrial sector productivity: a granger causality approach. *Cogent Business & Management*, 9(1), 2126120. <https://doi.org/10.1080/23311975.2022.2126120>
- Pantow, M. S. R., Murni, S., & Trang, I. (2015). Analisa Pertumbuhan Penjualan, Ukuran Perusahaan, Return On Asset. *Dan Struktur Modal Terhadap Nilai Perusahaan Yang Tercatat Di Indeks Lq 45*, 3(1), 961–971.
- Pohan, H. T. (2013). Analisis Pengaruh Kepemilikan Institusi, Rasio Tobin Q, Akrual Pilihan, Tarif Efektif Pajak, Dan Biaya Pajak Ditunda Terhadap Penghindaran Pajak Pada Perusahaan Publik. *Jurnal Informasi, Perpajakan, Akuntansi Dan Keuangan Publik*, 4(2), 113–135. <https://doi.org/10.25105/jipak.v4i2.4464>
- Priya, P. V., & Mohanasundari, M. (2016). Dividend policy and its impact on firm value: A review of theories and empirical evidence. *Journal of Management Sciences and Technology*, 3(3), 59–69.
- Rahayu, M., & Sari, B. (2018). Faktor-faktor yang mempengaruhi nilai perusahaan. *Ikraith Humaniora*, 2(1), 69–76.
- Rifai, M., Arifati, R., & Minarsih, M. M. (2015). Pengaruh ukuran perusahaan, struktur modal dan pertumbuhan perusahaan terhadap profitabilitas studi pada perusahaan manufaktur di BEI tahun 2010–2012. *Journal of Accounting*, 1(1), 1–8.
- Saleem, S., Ur Rahman, S., & Muhammad Umar, R. (2015). Measuring customer-based beverage brand equity: Investigating the relationship between perceived quality, brand awareness, brand image, and brand loyalty. *International Journal of Marketing Studies*, 7(1), 7(66–77. <https://doi.org/10.5539/ijms.v7n1p66>
- Shevlin, T. J., Urcan, O., & Vasvari, F. P. (2019). Corporate tax avoidance and debt costs. *Forthcoming Journal of the American Taxation Association*, 42(2), 117–143. <https://doi.org/10.2139/ssrn.2228601>

- Sutama, D. R., & Lisa, E. (2018). Pengaruh leverage dan profitabilitas terhadap nilai perusahaan. *Jurnal Sains Manajemen & Akuntansi*, 10(1), 21–39.
- Swenson, C. (1999). Increasing stock market value by reducing effective tax rates. *Tax Notes*, (June7), 1503–1505. <https://www.taxnotes.com/tax-notes-today-federal/tax-policy-issues/increasing-stock-market-value-reducing-effective-tax-rates/1999/06/07/10yzh>
- Tondok, B. S., Pahlevi, C., & Aswan, A. (2019). Pengaruh struktur modal, pertumbuhan perusahaan, ukuran perusahaan terhadap profitabilitas dan nilai perusahaan pada perusahaan manufaktur yang terdaftar di Bursa Efek Indonesia periode 2013–2017. *Hasanuddin Journal of Business Strategy*, 1(3), 66–78. <https://doi.org/10.26487/hjbs.v1i3.254>
- Vinh Khuong, N., Thanh Liem, N., Thu, P. A., & Khanh, T. H. T. (2020). Does corporate tax avoidance explain firm performance? Evidence from an emerging economy. *Cogent Business & Management*, 7(1), 1780101. <https://doi.org/10.1080/23311975.2020.1780101>
- Wang, X. (2010). Tax avoidance, corporate transparency, and firm performance. (Doctoral thesis), University of Texas at Austin
- Warraich, U. A., Ahmed, R., Ahmad, N., & Khoso, I. (2014). Impact of stress on job performance: An empirical study of the employees of private sector universities of Karachi, Pakistan. *Research Journal of Management Sciences*, 3(7), 2319–1171.
- Wilson, R. (2009). An examination of corporate tax shelter participants. *The Accounting Review*, 83(2), 519–548. <https://doi.org/10.2308/accr.2008.83.2.519>
- Yeh, Y. H. (2003). Corporate ownership and control: New evidence from Taiwan. *Corporate Ownership & Control*, 1(1), 87–101. <https://doi.org/10.22495/cocv1i1p8>