

MEASURES OF CORPORATE TAX AVOIDANCE: EMPIRICAL EVIDENCE FROM AN EMERGING ECONOMY

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ABSTRACT

The prevalence of tax avoidance practices has necessitated several efforts in understanding the determinants of the menace. While these efforts are highly commendable, the studies so far lack the proper construct for measuring the term 'corporate tax avoidance'. This has posed some limitations to the interpretation of research findings in this respect. To this end, Hanlon and Heitzman (2010) proposed a measure for the conforming tax avoidance, which has not received any empirical investigation. The objective of this study, therefore, is to provide empirical evidence for or against the proposed measure. To achieve this objective, three established measures were compared with the proposed measure using the annual reports of the Malaysian top 100 companies based on FTSE tradable index. The results of the ANOVA and post hoc test show the proposed measure to be statistically and significantly different at 5%. The finding of the study is of great relevance for proper interpretation of research findings, especially within the context of the study.

Keywords: Corporate Tax Avoidance; Conforming Tax Avoidance; Malaysia.

1. INTRODUCTION

Although tax avoidance practices are "as old as taxes themselves" (Andreoni, Erard & Feinstein, 1998:818), the manners and ways they are being perpetrated by corporate organizations have transmuted so sophisticated in recent times. It is now apparent that the continuous war between corporate taxpayers and the taxing authorities is taking new dimensions, as corporate tax avoidance has been identified as one of the biggest challenges of our generation (Hundal, 2011). The fact that taxes represent significant costs to a business and subsequent reductions

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in its distributable profit is sufficient as a reason for such endless war. Consequently, news about corporate tax aggressiveness is now outmoded information given its prevalence in both developed and developing economies, especially since the collapse of Enron Corporation and similar large companies.

Given this worrisome development, improved approaches are now being adopted to modelling the menace by tax researchers (Korobow, Johnson & Axtell, 2007). This becomes necessary as the individual non-compliance/compliance factors identified in Allingham and Sandmo (1972) may not provide the in-depth understanding of the complex situation obtainable in the corporate settings (Hanlon & Heitzman, 2010). To this end, several recent studies have focused on understanding the corporate taxpayers' behaviour with special attention on corporate tax avoidance (Chen & Chu, 2005; Chen, Chen, Cheng & Shevlin, 2010; Desai & Dharmapala, 2006; 2009a; 2009b; Frank, Lynch & Rego, 2009). Despite these efforts, the term 'corporate tax avoidance' still lacks an adequate measurement construct for the conforming tax avoidance besides the ongoing debates and discussions on its actual meaning. A review of tax research by Hanlon and Heitzman (2010) produced twelve (12) utilized measures of corporate tax avoidance in the prior studies. In this review, Hanlon and Heitzman (2010) criticised all the previously used measures for capturing only the non-conforming tax avoidance and thus proposed a measure for the conforming tax avoidance. Unfortunately, the proposal has not been empirically investigated. It is the objective of the study; therefore, to provide an empirical proof in support or otherwise the proposed measure of conforming tax avoidance.

The stated objective was pursued by comparing three established measures of corporate tax avoidance with the proposed measure to see if it is statistically and significantly different from the established measures. The result of the analysis of variance showed a significant difference among the four measures of tax avoidance. A further post hoc test revealed the proposed measure to be statistically different from the other three measures. It was concluded that the proposed measure might capture the conforming tax avoidance which has remained uncovered in the previous studies. The finding of this study is of high relevance to the field of corporate tax avoidance for proper interpretation of research findings. This is more important in Malaysian context where corporate ownership is highly concentrated with less capital market pressure that offers companies the opportunity of conforming the book and tax treatments of business transactions. This is quite obvious as the companies might place less importance on earnings reporting. Thus, this study is unique for providing such empirical evidence. Another uniqueness of this study is the review of the prior studies that used the previous measures, which was lacking in the review by Hanlon and Heitzman (2010).

The remaining sections of the study are as follows: section 2 presents the literature review on the meaning and the measures of tax avoidance. Section 3 deals with the empirical method adopted for the study. Section 4 presents the results of the descriptive and inferential statistics and section 5 provides the conclusion of the study.

2. LITERATURE REVIEW

2.1. *The Meaning of Corporate Tax Avoidance*

Like any management terminology, corporate tax avoidance might mean “different thing to different people” (Hanlon & Heitzman, 2010:137) and hence the lack of a universal definition for the term. In fact, many scholars are of the opinion that corporate tax avoidance practices are usually erroneously defined (Desai & Dharmapala, 2009b). This is due to the general misconception about tax avoidance as a legal activity. While there are clear-cut cases of tax law violations, the blind classification of tax evasion as illegal and tax avoidance as legal by lawyers and economists has been described as a quick conclusion as the legality of any tax behaviour could not be easily determined (Weisbach, 2003). The difference between what is legal and what is illegal in tax management seems too thin to warrant a lucid dichotomy.

Given this argument, terms such as tax management, tax planning and tax aggressiveness have been interchangeably used in the literature to mean tax avoidance (see for instance: Chen et al., 2010; Dyreng et al., 2008; Lanis & Richardson, 2011; 2012; Minnick & Noga, 2010). This suggests the wide view of the meaning of tax avoidance. This meaning is strengthened by the definitions provided in the recent literatures. A brief insight into these literatures follows.

According to Dyreng et al. (2008) tax avoidance is “the ability to pay a low amount of tax per dollar of reported pre-tax financial accounting income” (p. 63). To Frank et al. (2009) it is the “downward manipulation of taxable income through tax planning that may or may not be considered fraudulent tax evasion” (p. 468). More explicitly, it was viewed to “encompass tax planning activities that are legal, or that may fall into the gray area, as well as activities that are illegal” (Chen et al., 2010). This last definition, though adapted from that of Frank et al. (2009), is seen to be more explicit and broad. Hence, Lanis and Richardson (2011:50); (2012:86) just adopted the definition in their studies.

A more all-encompassing meaning is found in Hanlon and Heitzman (2010), wherein they presented tax avoidance as “a continuum of tax planning strategies where something like municipal bond investments are at one end (lower explicit tax, perfectly legal), then terms such as “noncompliance,” “evasion,” “aggressiveness,” and “sheltering” would be closer to the other end of the continuum” (p. 137) and therefore defined the term “as the reduction of explicit taxes”. Thus, their view “reflects all transactions that have any effect on the firm’s explicit tax liability” (Hanlon & Heitzman, 2010:137). In line with this trend, this paper views corporate tax avoidance, adapting the definitions of Dyreng et al. (2008) and Hanlon and Heitzman (2010), as the reduction in the explicit corporate tax liabilities.

2.2. *The Constructs for Corporate Tax Avoidance*

Measuring corporate tax avoidance is one of the major challenges in the study of the phenomenon. Two main issues that usually relate to the measurement are (1) the source of the tax information for the measures and (2) what the utilized measures actually captured? While the first issue relates to the choice between confidential tax returns and public financial statements as the appropriate source for companies’ tax information, the second as to do

with whether the employed measure captures either conforming or non-conforming aspects of tax avoidance¹. These two issues are very crucial in the measurement of tax avoidance; unfortunately there are diverged opinions among tax researchers regarding the issues. The position of this paper on these issues goes thus:

2.2.1. Tax Returns versus Financial Statements

The measurement of tax avoidance relies on two main factors - the taxable income and the tax liability. While the first factor helps in evaluating the gap between the accounting income and the taxable income, tax liability is used to estimate the proportion of a firm's income paid/payable as taxes. The information about these factors could be obtained from either the tax returns filed by the company or the financial statements in the company's annual reports. Unfortunately, the information from both sources might not be the same given the divergences in the objectives and regulatory laws of the financial accounting system and that of tax accounting.

While tax returns provide the accurate tax information of a company, they are highly confidential and accessible to only few people. Therefore, tax information in the financial statements could be used to estimate tax avoidance, but how sound are these estimates?

While Hanlon (2003) and McGill and Outslay (2004) argued theoretically for the non-representation of the financial statements estimated measures of tax burden, Mills, Newberry and Novack (2003) and Plesko (2006) provided empirical evidences for the divergences between the tax returns' estimates of tax burden and that of financial statements. Contrarily however, Zimmerman (1983); and Graham and Mills (2008) documented high correlations between the two sets of estimates. Their findings suggested that the estimated tax burden from financial statements could represent that of tax returns.

The issue of inferring tax liability from financial statements has been revisited extensively by Lisowsky (2009). Wherein he developed a model that could address the various measurement issues highlighted by Hanlon (2003), though the act of grossing-up the tax expenses to estimate the taxable income from the financial statements still remains questionable. While, the model by Lisowsky (2009) has been a commendable effort (Frank, 2009), it is most relevant in the US context.

Without estimating the taxable income of a company, the financial statements' estimates for tax liability provide the only alternative to that of tax returns (Desai & Dharmapala, 2008) and have to be used when the latter is not accessible. It also reflects the public interpretation of the tax status of a company that an empirical research should reflect considering its practical relevance (Hanlon & Heitzman, 2010). Moreover, the outcome of a research could be verifiable and replicable when the public financial statements' estimates are utilized. As such, several studies² in both developed and developing economies have used the public financial statements to estimate tax avoidance.

¹ Conforming tax avoidance is a tax planning that reduces both book and tax incomes.

² These studies are reported in sub-section 2.2.2 while discussing the prior measures of tax avoidance.

Following these studies, this study concentrates on the constructs that measure tax avoidance proportional to business income. These measures do not involve the estimation of the difference between accounting and taxable incomes. They are, therefore, not affected by the problem associated with the grossing up of the tax expenses with the statutory tax rate to obtain taxable income.

2.2.2. Measures of tax avoidance

Several measures have been used in the prior studies for tax avoidance based on the financial statements' data. These measures could be categorically grouped into three – tax proportions of business income; the multitude of the gap between accounting income and taxable income and others. The review of the measures and the studies that have employed them, are as follows:

2.2.3. Effective tax rate (ETR)

A widely used measure of tax avoidance is the ETR. It is utilized because ETR helps to estimate the effectiveness in companies' tax planning activities (Mills et al., 1998; Phillips, 2003). While ETR is measured generally as the proportion of tax liability to accounting income, several variants have been documented in the literature. The various variants are discussed below.

(a) Accounting ETR

This is known as GAAP ETR in the US context. It is the reported ETR as per the financial statements. It is computed as the total tax expenses divided by the accounting income before tax. Thus, it reflects the aggregate proportion of the accounting income payable as taxes. It, therefore, measures tax avoidance relative to accounting earnings.

This measure has been used by Chen et al. (2010) to capture tax aggressiveness among 1003 firms on S&P 1500 index to unfold the relationship between tax avoidance and family ownership. Dyreng et al., (2010), though make adjustments for certain items, also uses the measure to capture tax avoidance while examining the effects of top executive on corporate tax avoidance. Similarly, Armstrong, Blouin and Larcker (2012) utilize the measure for tax avoidance to see the effects of tax directors on tax avoidance. Also, Huseynov and Klamm (2012) employ the measure for tax avoidance in their study of the relationship between some measures of corporate social responsibility (CSR) disclosure and corporate tax avoidance.

Although accounting ETR has been a widely used measure of tax avoidance, it does not go without certain limitations. Firstly, accounting ETR could only capture the non-conforming tax avoidance because it measures tax avoidance relative to accounting earnings. Secondly, it might not also reflect the strategies for tax deferral due to use of aggregate tax expenses.

(b) Current ETR

Slightly different from accounting ETR, current ETR is calculated as the current-year tax expense to the total accounting income before tax. It reflects the tax deferral strategies of a firm by using the current income tax as against the total tax expense, hence, its advantage over the accounting ETR.

Given its merit, Hope, Ma and Thomas (2012) employ current ETR to measure tax avoidance while examining the association between corporate tax avoidance and geographical earnings' disclosure practices among US multinationals. Similarly, Lanis and Richardson (2012) measure tax aggressiveness using the current ETR in their study of the relationship between tax aggressiveness and corporate social responsibility (CSR) among 408 Australian companies.

Although, current ETR reflects firms' deferral strategies, it could capture only the non-conforming type of tax avoidance. Also, both accounting and current ETR suffer the problem year-to-year volatility and cannot reveal long-term tax avoidance. An alternative to these two measures, found in the literature, is the long-run cash ETR.

(c) Long-run cash ETR

Long-run cash ETR is the proportion of cash taxes paid to the accounting income before tax. The use of cash amount of tax paid as opposed to tax expense help to minimize the likely effects of items such as valuation allowance and tax cushions (Dyreng et al., 2008). Minnick and Noga (2010:709) also argue that cash tax measured "ETR takes into account the tax benefits of employee stock options, which accounting ETR does not".

Besides this merit, long-run cash ETR also uses the tax information for multiple years (say 3-10 years, Hanlon & Heitzman, 2010:140) which helps to eliminate the volatility in the year level measures. It should be noted that the volatility in tax avoidance measurement is mostly caused by the timing differences between the treatments of certain items under financial and tax accounting (otherwise known as temporary difference). Dyreng et al. (2008) argue that over time, this volatility will disappear and tax avoidance should be measured using multiple year data instead of annual data.

Subsequently, studies like Chen et al. (2010); Dyreng et al. (2010); Minnick and Noga (2010); Kim, Li and Zhang (2011); Armstrong et al. (2012); Hope et al. (2012) and Huseynov and Klamm (2012) use long-run cash ETR to measure tax avoidance/aggressiveness in addition to either accounting ETR or current ETR with varying period of 3 to 16 year-level analyses.

(d) Income tax expense/operating cash flow

The proportion of income tax expense to operating cash flow has been identified to better measure the tax burden of a firm (Zimmerman, 1983). It is argued that the substitution of accounting earning with operating cash flow helps to reflect the actual tax burden of a firm as "it excludes the effects of accrual accounting procedures" (Zimmerman, 1983:123). Similar argument is found in a much later study by Buijink, Janssen and Schols (2002). As such, Lanis and Richardson (2012), in line with their earlier proposal in Richardson and Lanis (2007), use the measure to capture tax aggressiveness among 408 companies in Australia while examining the relationship between CSR and tax aggressiveness.

While this measure overcomes the problem of using accrual accounting item as the denominator, the inclusion of the accounting income tax expense also suffers the effects of accrual basis. Thus, the measure also reflects only the non-conforming tax avoidance. Therefore, Hanlon and

Heitzman (2010) propose a measure which does not measure tax avoidance relative to accrual accounting. This measure is discussed next.

(e) Cash taxes paid/operating cash flow

The ratio of cash taxes paid to the operating cash flow of a firm is believed to measure tax avoidance in such a way not relative to accrual accounting and hence the conforming tax avoidance (Hanlon & Heitzman, 2010). However, this has not been empirically proven.

2.2.4. Book-tax gap (BTG)

The other group of tax avoidance measures focus on the magnitude of the difference between the accounting income and taxable income (book-tax gap). Although the causes of BTG are many and usually classified as permanent and temporary differences, the size of the gap suggests the presence of tax avoidance practices (Kim et al., 2011). To buttress the argument, Mills (1998) find a positive relationship between BTG and larger audit adjustment and tax audit among US firms. There are two commonly used measures of BTG to capture tax avoidance; these are total book-tax gap and residual book-tax gap.

Manzon and Plesko (2002) developed a model for measuring total BTG and Chen et al. (2010) use the model for the measurements of tax aggressiveness among US companies. As total BTG may also be affected by the firm's earning management practices, Desai and Dharmapala (2006) try to capture the unexplained portion of the total BTG, otherwise known as "abnormal total BTG" (Hanlon & Heitzman, 2010), and thus develop the residual BTG. This measure has been used to measure tax avoidance in Chen et al. (2010); Desai and Dharmapala (2009a); and Kim et al. (2011).

Another form of BTG is developed in Tang and Firth (2011). The measure is termed Tax-effect BTG. It is argued that commonly used BTG is an income-effect BTG, and it uses the general company income tax rate. As for tax-effect BTG, it is based on the difference between income tax expense and current tax expenses, and thus relevant in a business setting where firms are subjected to different tax rates.

2.2.5. DTAX

DTAX is ETR differential measure of tax avoidance. While ETR differential is the difference between statutory company income tax rate and a firm's ETR, the unexplained portion of ETR differential is captured in its differentiation developed by Frank et al. (2009). It was developed using the discretionary permanent difference (PERMDIFF).

Armstrong et al. (2012) use this measure in addition to the other measures of tax avoidance in their study of the effects of tax directors' compensation on tax aggressiveness. It should be noted that DTAX is more appropriate when the researcher is interested in the second extreme end of Hanlon and Heitzman (2010)'s continuum of tax avoidance.

2.2.6. Tax Shelter Measures

Wilson (2009) develops a model for determining tax sheltering firms. He uses the profile of the US firms accused of tax shelters in the study. The measure has been a useful guide in estimating tax avoidance practices. And Armstrong et al. (2012) employ the measures in their above-referred study. While this measure is useful in inferring tax avoidance, its development suffers “selection biases” (Hanlon & Heitzman, 2010:143). This is because of the sample of accused firms involved. While all tax sheltering firms may not be caught, many firms do avoid taxes without sheltering.

2.3. Summary

The review of the previously used measures of tax avoidance presented above shows that many of the measures could capture the non-conforming tax avoidance except for Hanlon and Heitzman (2010)’s proposed measure. While there are other measures for tax avoidance besides the ones reported, they are not being widely used among researchers. It is therefore, imperative to prove the viability of the proposed measure of capturing conforming tax avoidance.

2.4. The Malaysian Context

In Malaysia, while there is dearth of studies on corporate tax avoidance, studies like Adhikari, Derashid and Zhang (2005; 2006); Derashid and Zhang (2003); Kim and Limpaphayom (1998); Mahenthiran and Kasipillai (2011); Noor, Mastuki and Bardai (2008) have utilized measures such as accounting ETR; current ETR; long-run cash ETR; and the proportion of income tax expenses to operating cash flow to capture firms’ tax planning.

As noted earlier, these measures only capture the non-conforming tax avoidance and not appropriate in Malaysian context. It should be emphasized that corporate ownership is highly concentrated in Malaysia (Claessens, Djankov, & Lang, 2000; Liew, 2007). This suggests a less pressure from the capital market since firms’ owners have little incentive going to the market for capital. Given this, firms might place less emphasis on earnings reporting and thus conform the book and tax treatments of their business transactions to reduce their tax liabilities. Consistently, Adhikari et al. (2005) documented the use of accounting choices for tax reduction purpose among Malaysian large companies.

Thus, any construct of tax planning that measures tax avoidance relative to accrual accounting system would not be appropriate in Malaysian context. This gives the importance of capturing the conforming aspect of tax avoidance in this context for proper interpretation of research findings.

3. EMPIRICAL METHOD

3.1. Employed Measures of Tax Avoidance

To achieve the stated objective of this study, three different measures of non-conforming tax avoidance similar to the proposed measure of conforming tax avoidance are employed. These are (1) accounting ETR; (2) long-run cash ETR represented; and (3) the ratio of income tax

expenses to operating cash flow. For the proposed measure, it is the ratio of cash taxes paid to operating cash flow. The three measures are chosen because of their similarities to the proposed measure as they all measure tax avoidance proportional to the business income. By using these measures, a plain level ground of comparison is created for a better conclusion. Secondly, the three measures have been extensively used to measure tax avoidance, as it is evident from the literature review above, and hence they are established constructs. Thus, their comparison with the proposed measure will be worthwhile for an insightful investigation.

3.2. The Hypothesis

Given the inappropriateness of the previous measures in capturing the conforming aspect of tax avoidance, Hanlon and Heitzman (2010) proposed a construct that measure tax avoidance not relative to accounting earnings and hence could capture the conforming tax avoidance. This suggestion, however, has not received any empirical attention. If this measure could capture conforming tax avoidance, it has to be empirically and significantly different from other similar measures. Putting this measure to test, this paper hypothesizes:

H_1 : *There is a significant difference among the four measures of corporate tax avoidance.*

3.3. Sample Source of Data

The data for this empirical test were collected from the top 100 companies listed on Bursa Malaysia based on the FTSE Bursa Malaysia Top 100 Index³. This index indicates “the performance of the top-capitalized companies, which pass the size, free float and liquidity screens” (FTSE, 2013:15). Given the huge resources required for tax planning, it is believed that large companies are more effective in tax management (Dyreg et al., 2008; Huseynov & Klamm, 2012) and that accounts for the choice of these companies. Consistently, Adhikari et al. (2005) find large Malaysian companies to be more effective in earning management practices in order to influence the government tax policies.

In addition, similar studies on corporate tax avoidance such as Minnick and Noga (2010); Vafeas (2010); and Huseynov and Klamm (2012) sample companies on S&P 500 Index. It is only Chen et al., (2010) who extended the sample to include companies on S&P 1500 Index. Thus, this study follows the majority of the prior researchers by focusing on the large companies.

The data related to the tax avoidance measures stated above were hand collected from the selected companies' annual reports after the reports had been downloaded from the website of Bursa Malaysia (<http://www.bursamalaysia.com/market/listed-companies/company-announcements>) for the financial periods of 2009, 2010 and 2011. The fact that year 2009 marks the end of the gradual reduction in the company income rate from 40% in 1988 to 25%

³ The FTSE Bursa Malaysia Top 100 Index represents one of the five tradable indices used to reflect the performance of the Bursa Malaysia's market. It comprises of the companies on FTSE Bursa Malaysia KLCI and the FTSE Bursa Malaysia Mid 70 Index. While 30 top-most companies are on the first index, the second has 70 companies, hence 100 companies.

in 2009 gives the justification for the choice of the beginning period. As at the time of gathering the data, most companies only have their annual reports online up to year 2011. While the process of the data collection seemed laborious, it provided the necessary confidence for the quality of the information. The reason is that public listed companies are required to have their financial statements certified by qualified auditors before being made public. The same method of data collection was used in Minnick and Noga (2010) for the employed ETRs.

The initial sample of 100 companies was later filtered by excluding the following companies:

- (1) companies with incomplete financial data for the three financial periods under consideration (15 companies);
- (2) companies with tax refunds or operating loss, given the distortion in measuring their tax burden (Zimmerman, 1983) (5 companies);
- (3) companies with negative operating cash flow, given the same reason above (16 companies); and
- (4) companies with any of the measures greater than one, to avert model estimation problems (Stickney & McGee, 1982) (1 company).

Thus, the final sample comprised of 63 companies for the empirical analysis. Similar to Chen et al. (2010), the data from the final sample for the three financial periods were averaged to mitigate statistical concerns for the potential time-series dependence. Thus, each company's measures of tax avoidance appeared once in our analysis for each of the four measures.

4. RESULTS

4.1. *Descriptive Analysis*

The descriptive statistics are shown in Table 1. Accounting ETR has the highest mean of 22.68%, followed by cash ETR with 22.08% and next tax expenses to operating cash flow with 19.78% and cash tax paid to operating cash flow with least mean of 18.23%. The values of the standard deviation show that the data are clustered around the means and hence there is no need for any other measure of the data central tendency. This also suggests that distribution of the data is approximately normal. Generally, the mean values of all the measures of tax avoidance are less than the statutory rate of 25%. This suggests a low-tax burden among the large companies.

A comparison among the means shows that the proposed measure has the lowest rate of tax avoidance measures. This suggests an initial presumption that the measure could capture an aspect of tax avoidance not captured by the others. However, the same measure has the highest range of .61, which suggests a high variation among the data though a low standard deviation coefficient. Thus, there is a need for further insight into the data to ensure the difference is not due to sampling error.

Table 1: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Accounting ETR	63	.01	.41	.2268	.06717
Cash ETR	63	.00	.56	.2205	.10072
Tax expense to operating cash flow	63	.01	.56	.1978	.07818
Cash tax paid to operating cash flow	63	.00	.61	.1823	.09315

4.2. Inferential Analysis

To ensure the difference in the observed means among the different measures of tax avoidance is not due to sampling error, the variations among and within the means is statistically compared using one-way analysis of variance (ANOVA). The result of the analysis of variance is shown in Table 3. Prior to the ANOVA, the test for the homogeneity of variance using Levene's statistical test was carried out, and the result (presented in Table 2) shows the assumption of homogeneity of variance is not violated as the *p*-value is greater than 0.5. With this, the ANOVA result could then be interpreted. According to the ANOVA result shown on Table 3, F-ratio statistic of 3.621 is significant at the 5% level ($p = 0.14$). This means that the means of the four measures are significantly different from one another. It further suggests that the difference observed among the means, was not due to sampling error. Thus, our hypothesis stands supported i.e. there is a significant difference among the four measures of corporate tax avoidance. As a conclusion, all the employed four measures of tax avoidance are not equally capturing the same aspect of tax avoidance. Given this conclusion, it is assumed that at least one the measures should be different from the others. To uncover the measure(s) that may be different from the others, the post hoc test of significance was conducted. The result of the post hoc is presented in Table 4. The mean difference between accounting ETR and cash ETR of .006 is not statistically significant at 5% level. The same insignificance is found for the mean difference of .029 between accounting ETR and tax expenses to operating cash flow. But the mean difference of .045 between accounting ETR and cash tax paid to operating cash flow is found to be significant at 1% level. For the mean difference of .023 between cash ETR and tax expenses to operating cash flow is not significant at 5% level. But cash ETR mean difference from cash tax paid to operating cash flow of .038 is found significant at 5% level. However, the mean difference of .016 between the tax expense to operating cash flow and cash tax paid to operating cash flow is not significant. This is not surprising as the means of the two measures are close. But it is interesting to note the proposed measure – cash tax paid to operating cash flow - is significantly different from accounting and cash ETR, which tax expenses to operating cash flow, is not.

Table 2: Test of Homogeneity of Variances
(Different measures of tax avoidance)

Levene Statistic	df1	df2	Sig.
1.794	3	248	.149

Table 3: Anova (Different measures of tax avoidance)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.080	3	.027	3.621	.014
Within Groups	1.826	248	.007		
Total	1.906	251			

Table 4: Post Hoc Tests Multiple Comparisons (Different measures of tax avoidance)

Tax avoidance measures (I)	Tax avoidance measures (J)	Mean difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Accounting ETR	Cash ETR	.00626	.01529	.683	-.0239	.0364
	Tax Expenses to Operating Cash Flow	.02902	.01529	.059	-.0011	.0591
	Cash Tax Paid to Operating Cash Flow	.04448*	.01529	.004	.0144	.0746
Cash ETR	Accounting ETR	-.00626	.01529	.683	-.0364	.0239
	Tax Expenses to Operating Cash Flow	.02277	.01529	.138	-.0073	.0529
	Cash Tax Paid to Operating Cash Flow	.03822*	.01529	.013	.0081	.0683
Tax Expenses to Operating Cash Flow	Accounting ETR	-.02902	.01529	.059	-.0591	.0011
	Cash ETR	-.02277	.01529	.138	-.0529	.0073
	Cash Tax Paid to Operating Cash Flow	.01546	.01529	.313	-.0147	.0456
Cash Tax Paid to Operating Cash Flow	Accounting ETR	-.04448*	.01529	.004	-.0746	-.0144
	Cash ETR	-.03822*	.01529	.013	-.0683	-.0081
	Tax Expenses to Operating Cash Flow	-.01546	.01529	.313	-.0456	.0147

Note: *the mean difference is significant at the 0.05 level.

5. CONCLUSION

The study provides an empirical evidence for the proposed measure of corporate tax avoidance which could capture the conforming tax avoidance. The study compared three established measures to the proposed measure. The preliminary descriptive analysis shows the mean of the proposed measure to the lowest. This suggests the proposed measure might reflect the true nature of tax avoidance. A further inferential analysis of the significance of the differences among the means through the analysis of variances (ANOVA) shows a significant difference among the four measures of tax avoidance. This result was further analyzed using post hoc test to detect which of the measure is actually different from others. The result of post hoc test shows

the proposed measure – cash tax paid to operating cash flow – to be significantly different from the other measures except tax expenses to operating cash flow, a much similar measure to the proposed measure. However, tax expense to operating cash flow is not significantly different from both accounting and cash ETRs.

This finding is of great importance to the young literature in the field of tax avoidance. Especially, within the context of the study, where corporate ownership is highly concentrated with less capital market pressure that makes companies placing less importance on earnings reporting. In fact, Adhikari et al. (2005) document the habit of earnings management as an influence of government tax policy among large Malaysian firms. It is therefore, imperative to have such a measure that helps unveil the conforming treatments of book and tax treatments of business transactions.

As a conclusion, this study contributes to the body of tax literature by providing empirical evidence for the proposed measure of conforming tax avoidance by Hanlon and Heitzman (2010) which received little or no attention from prior researchers. Notwithstanding this contribution, the finding of the study must be interpreted with caution as the employed measures are restricted to those that measure tax avoidance as tax expenses/cash taxes proportional to business income. Future study could set to investigate the difference between the proposed measure and other measures of book-tax difference. Secondly, while the study averaged each measure for the study period, a more insightful investigation could be done using a longer financial period and repeated ANOVA for the analysis.

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