Longitudinal Study of Corporate Tax Planning: Analysis on Companies’ Tax Expense and Financial Ratios

Nik Mohd Norfadzilah Nik Mohd Rashid1*, Rohaya Md Noor1, Nor’ Azam Mastuki1 and Barjoyai Bardai2

1Faculty of Accountancy, Universiti Teknologi MARA, 40450 Shah Alam, Selangor, Malaysia
2Graduate Business School, Universiti Tun Abdul Razak, Malaysia

ABSTRACT
Globally, the corporate tax planning activities remain unresolved issues faced by the various tax authorities. In Malaysia, these issues have received serious attention from policymakers, especially among the tax authorities concerned with either direct or indirect taxes. The transformations in the tax systems and accounting standards have given companies opportunities to manage their tax affairs for the benefit of their shareholders. Hence, using the longitudinal approach, this study analysed tax expense and financial ratios of 4,500 firm-years from publicly listed companies prepared for the years 2001 to 2012. A company’s tax planning is reflected in its effective tax rate reported in the financial statements. Thus, the difference between the statutory tax rate and the effective tax rate shows the gap which indicates the level of aggressive tax planning undertaken by the companies. The statistical results from the pooled OLS regression model disclosed that financial ratios such as inventory intensity, capital intensity, leverage and research, as well as development expenditure have a significant relationship with the level of companies’ tax expense. Thus, the findings implied that companies’ financial ratios could be used as red flags to identify aggressive tax planners which can be further investigated for potential tax frauds.

Keywords: Effective Tax Rate, Financial Ratios, Tax Expense, Tax Planning

INTRODUCTION AND BACKGROUND
Nowadays, Tax Planning research has become a widely discussed topic among academic researchers as Tax Planning activities can be used as business strategies to minimise companies’ income tax...
expenses towards the federal government. Furthermore, business organisations will be able to enjoy minimum income tax expenses towards the government. One of the largest sources of government revenue comes from the tax collection from the corporate sectors in the capital market (Aminu, Eluwa, & Malgwi, 2013). This scenario has contributed to a negative relationship between the interests of the business organisations and the government since an approximate 70 percent of the government’s revenue is derived from tax collection activities (Noor, Matsuki, & Bardai, 2008). Therefore, when business organisations employ aggressive Tax Planning activities in their business transactions, the government will lose its optimum revenue from the companies’ income tax expenses. There might be an increase in strategies for Tax Planning activities due to the initiative schemes provided by the tax authorities. Such an initiative is known as a tax incentive scheme to the corporate sectors. This means that business organisations have been provided by the tax authorities with certain tax provisions under the tax regulation system to enable them to utilise the tax provisions for the purpose of Tax Planning strategies. With such a provision for Tax Planning activities, the business organisations usually will try to utilise the incentives given by the tax authorities to minimize their income tax expense level.

Nevertheless, it is important for stakeholders to understand that the provisions of tax incentives to business organisations in the capital market have not directly contributed to the loss of revenue on behalf of the federal government. The government’s aim in the provision of tax incentives to business organisations is to attract more participants to the capital market activities. Therefore, the tax authorities should make a continuous assessment of the tax regulation system to meet the complexity of the business organisations’ activities. This is because business transactions in the capital market are not limited to their local boundaries since they also involve global business transaction activities. In addition, the continuous assessment of the tax regulations system will enable business organisations to continuously utilise the optimum Tax Planning activities for their business transactions.

Meanwhile, in order to safeguard all stakeholders’ interest with regards to Tax Planning activities, it is important to know how the accounting transactions in business organisations may influence Tax Planning activities in the capital market transactions (Graham, Raedy, & Shackelford, 2012). This is because potential or existing stakeholders usually focus on how business organisations are able to minimise their expense level and increase profits to an optimum level. This concern includes business organisations’ level of income tax expenses. In other words, Tax Planning activities will interest them as a way to assess how business organisations manage their business expenses to generate an optimum level of profits (Bryant-Kutcher,
In addition, when potential and existing stakeholders have a better understanding of how business organisations manage their income tax expenses, it will lead to a better decision making process with regards to business organisations. Therefore, one of the possible ways to assess the Tax Planning activities of business organisations is through key components of the financial ratios in a company’s financial statements. This study has provided some evidence to explain how the financial ratios in the income statement of business organizations may influence the Tax Planning activities in business organisations. Hence, the goal of this study is to investigate the possible association between the financial ratios towards the effective tax rate level (ETR) among business organisations in the capital market. Several financial ratios have been identified in order to test their possible association with the income tax expense level in business organizations (Noor, Fadzillah, & Mastuki, 2010; Richardson & Lanis, 2007).

**Tax Planning Activities**

In this particular study, the term “Tax Planning” is defined as an initiative by business organisations in minimising their corporate tax burdens to the tax authorities. In other words, corporate taxpayers employed Tax Planning activities in order to get some tax benefits in the future (Abdul Wahab & Holland, 2012). This is because Tax Planning activities will allow business organisations to bear less tax burdens to the tax authorities. Further, corporate taxpayers usually utilise the tax incentive schemes provided to them by the tax authorities. They will also try to reduce their tax expenses with certain tax exemptions provided from the tax incentive schemes for their Tax Planning strategies. Meanwhile, Tax Planning activities can also be described as tax mitigation activities in order to safeguard the economic benefits in a future (Rydqvist, Schwartz, & Spizman, 2014). It was expressed as tax mitigation activities because under Tax Planning strategies, managers in business organisations will usually mitigate the expense level to the minimum level. Thus, this approach has been related to Tax Planning activities in business organisations because the mitigation approach for Tax Planning activities has contributed to an increase in business organisations’ business income level.

The term “Tax Planning” arose from a wide discussion among previous and current academic researchers. The issues covered were between the impacts of this activity towards business organisations as well the interest from the government revenue issues. Business organisations will try to implement efficient Tax Planning activities in their business transactions because lower levels of actual income tax expenses derived from the business transactions will lead to an optimum level of income for companies in the capital market activities (Armstrong, Blouin, & Larcker, 2012). Meanwhile, the federal government has provided a comprehensive
platform to business organisations in order to safeguard its interests from the collection of income tax expenses from the companies.

However, the complexity of the tax regulation systems provided by the federal government towards all of the stakeholders in the capital market activities will lead to inefficient Tax Planning strategies by business organisations (Hebous & Lipatov, 2014). For example, despite pressure from their stakeholders to meet targets from business transactions, poor Tax Planning activities are still employed to have a lower burden of income tax expenses and a higher company business income level. Nevertheless, the problems of understanding the complexity of the Tax Planning system in companies may be resolved by having an alternative method to determine the appropriate level of income tax expenses in the business organisation. Thus, the financial ratios can be used by the stakeholders to assess the companies’ capability in managing their Tax Planning activities in the business transactions (Edgerton, 2010). Apart from this, the performance level of business organisations is closely related to the Tax Planning activities in their transactions (Graham et al., 2012). Therefore, it is important to take note that the financial ratios could be used as a methodology by the stakeholders to assess the capabilities of business organisations’ Tax Planning activities.

Financial Ratios and Tax Planning

In the accounting ratios, there are several types of financial ratios which might be used in assessing business organisations’ Tax Planning activities. Some of them, as suggested by Richardson and Lanis (2007) and Noor et al. (2010), are classified as inventory intensity ratio (INVINT), capital intensity ratio (CAPINT), return on asset ratio (ROA), leverage ratio (LEV) and research and development ratio (R&DINT). The term “inventory intensity ratio” (INVINT) can be defined as the amount of investment made by a business organisation towards the inventory level (Kolias, Dimelis, & Filios, 2011). The inventory intensity is a crucial factor that managers in the business organisations should be concerned with because proper management of an inventory intensity system could lead to better production costs in the business transaction activities. Further, this approach could also directly affect the level of business income and the income tax expense level in business transaction activities. In other words, the inventory intensity is believed to have a significant impact on various ETR (Tax Planning activities) among business organisations. Thus, the inventory intensity ratio can be further interpreted by dividing the inventory towards the total asset of the business organisations.

Furthermore, another financial ratio that is believed to have an association with the ETR level in this particular study is capital intensity ratio or (CAPINT). This ratio can be defined as the amount of
investment made by the companies towards the business properties, plants and the equipment. In other words, capital intensity refers to the investment made by business organisations on their fixed assets (Lee, Koh, & Kang, 2011). The capital intensity ratio can be interpreted by dividing the total fixed asset towards the total asset in the business organisation. In addition, the investment in fixed asset which is related to the capital intensity ratio is believed to have an association towards the variation of ETR in business organisations (Wong, 2011). This is because the current tax laws in Malaysia have provided some capital allowances to the companies with the ETR level. Another useful financial ratio in assessing business financial performance is return on asset ratio or (ROA). This ratio can be defined as the portion of pre-income tax towards the total asset in the companies (Santoro, & Wei, 2011). In other words, this ratio can be interpreted by dividing the amount of pre-income tax to the total asset in business organisations. Meanwhile, this ratio also represents companies’ profitability level from their business transaction activities. This means an increase in return on asset level will result in an increase in the pre-income tax level in companies’ transaction activities. Therefore, it is believed that the return on asset will have a positive association towards the income tax expenses by business organisations. Consequently, potential and existing stakeholders might use this financial mechanism in order to evaluate the performance of business organisations in their capital market activities.

Leverage ratio (LEV) is also widely used to measure the portion of long term debts towards the total asset of business organisations’ activities. In other words, leverage ratio can also be defined as the capability of a business organisation in financing its total asset with long-term debt for the business activities in the capital market (Danielova & Sarkar, 2011). Moreover, the previous study by (Ruf, 2008) showed that the leverage level of the business organisation would result in a negative association towards the income tax expenses in the business activities. Lim (2011) argued that such an occurrence is due to the interest in the long-term debts which might be used as a tax deductible item in the business transaction activities. The last financial ratio that has been tested in this particular study is the research and development intensity ratio (R&DINT). This ratio can be defined as the amount of sales that could be generated from business organisations’ research and development activities in the capital market (Richardson & Lanis, 2007). In other words, this financial ratio is measured by research and development expenses divided by the total sales from the business activities. A study by Gallemore and Labro (2014) also observed that R&DINT ratio had a negative association with effective tax rate levels in business organisations. This is due to this financial ratio being entitled to the tax deductions for the business transaction activities. Hence, the more cash flow on these types of expenses, the more tax deductions will be accounted for the purpose of Tax Planning activities.
RESEARCH METHODOLOGY

This particular research comprised of selected public listed companies on Bursa Malaysia from 2001 to 2012. Therefore, companies not listed during the investigation period were excluded from the sample selection for this research. Therefore, the samples were collected based on the availability of the companies which had already been listed during the period of the investigation. Meanwhile, the second criterion that was considered for sample selection was the availability of the selected companies’ financial data required for the analyses in this study. Besides that, companies which had losses in their business transaction activities were also excluded from the samples in this research.

Furthermore, selection of the samples was based on the list of companies provided by the Securities Commission of Malaysia (SC). Therefore, the database of Thompson Data Stream was used in order to retrieve the data from the selected companies. Thus, the final sample that was gathered for this particular study comprised of 375 public listed companies on Bursa Malaysia. The type of data used in this study is in the form of balance panel data. Hence, from these samples, the total firm years of companies tested in this particular study was 4500.

For the data analyses, the study employed Pooled OLS regression method in order to investigate the association between financial ratios and Tax Planning activities or the ETR level among the selected companies. Consequently, from the data recoding aspects, those selected companies which had negative tax expenses were recoded as “0” while for those who had an ETR with more than 100% were recorded as 100. This step is crucial in order to eliminate the extreme values in the data analysis process.

Next, the analyses of the study began with some descriptive analyses related to the variation of ETR and statutory tax rate or STR among the selected companies on Bursa Malaysia. Based on these analyses, further research was conducted to investigate the relation between the independent variables and the corporate income tax expenses (ETR). At this stage of the research, the investigation was concerned with the significant level between the variables tested. In addition, the analyses focused on the association between the variables. Finally, the study also examined the extent of the relationships between all the financial ratios towards effective tax rate (ETR). Therefore, the model developed for the purpose of this study is:

\[
ETR = \beta_1 INVNT + \beta_2 CAPINT + \beta_3 ROA + \beta_4 LEV + \beta_5 R&DINT + \varepsilon
\]
EMPIRICAL RESULTS

TABLE 1
Descriptive statistics of ETR (2001-2012)

<table>
<thead>
<tr>
<th></th>
<th>ETR %</th>
<th>STR %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>0.146</td>
<td>0.268</td>
</tr>
<tr>
<td>Median</td>
<td>0.148</td>
<td>0.275</td>
</tr>
<tr>
<td>Maximum</td>
<td>0.250</td>
<td>0.280</td>
</tr>
<tr>
<td>Minimum</td>
<td>0.113</td>
<td>0.250</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>0.004</td>
<td>0.013</td>
</tr>
<tr>
<td>Observations</td>
<td>4500</td>
<td>4500</td>
</tr>
</tbody>
</table>

This figure was compared to the minimum statutory tax rate, i.e. 0.250 or 25%. The following section provides details the regression results for the model tested in current of the study.

REGRESSION RESULTS

Table 2 shows the regression results obtained from the pooled OLS regression method of analyses. The results indicate there are significant associations exist between the INVINT, CAPINT, LEV, R&DINT towards the effective tax rate level (ETR). However, the results also show that there is an insignificant association between the ROA and the corporate tax rate level or ETR. Furthermore, the regression model shows that there is a negative association between the INVINT towards the effective tax rate (ETR). Thus, this result is not consistent with the findings in the previous study by Taylor and Richardson (2014) whereby a positive association was found to exist with the corporate Tax Planning level. Meanwhile, CAPINT, LEV and R&DINT indicate negative associations towards the effective tax rate (ETR) or
Tax Planning activities in the business organisations. In other words, these results support the findings in the previous study indicating a negative association existed with the effective tax rate (ETR) level in the companies.

### TABLE 2
Summary of the Regression Analyses

<table>
<thead>
<tr>
<th></th>
<th>Pooled OLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean ETR</td>
<td>0.146</td>
</tr>
<tr>
<td>(P-Values)</td>
<td></td>
</tr>
<tr>
<td>Coefficient</td>
<td></td>
</tr>
<tr>
<td>INVINT</td>
<td>0.0000***</td>
</tr>
<tr>
<td>CAPINT</td>
<td>0.0000***</td>
</tr>
<tr>
<td>ROA</td>
<td>0.6427</td>
</tr>
<tr>
<td>LEV</td>
<td>0.0000***</td>
</tr>
<tr>
<td>R&amp;DINT</td>
<td>0.0000***</td>
</tr>
<tr>
<td>R²</td>
<td>0.513</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.512</td>
</tr>
<tr>
<td>F-Statistic</td>
<td>947.155</td>
</tr>
<tr>
<td>Prob (F-statistic)</td>
<td>0.000***</td>
</tr>
</tbody>
</table>

Note: *** Significant at 1% level

### DISCUSSION AND CONCLUSION

The results obtained from the analyses indicate that there is a negative association between inventory intensity (INVINT) and the effective tax rate (ETR) among the selected companies listed on Bursa Malaysia. However, these results do not support the findings of the study by Taylor and Richardson, 2013) since inventory intensity is not applicable to Tax Planning strategies in business organisation activities in the capital market transactions (Lee & Swenson, 2012). This is because inventory intensity was not subjected to tax deductible under tax system. Nevertheless, managers in the business organisations need to be more creative in managing their inventory intensity to minimise the corporate tax burden level. In other words, inefficient of inventory evaluation method will lead to high operation cost and consequently affect the level of business income. Meanwhile, capital intensity ratio or CAPINT was identified to have a significant association towards effective tax rate or ETR in business organisations’ activities. This result is supported by the previous findings of Hong and Smart.
(2010) which indicated a significant association between CAPINT and corporate Tax Planning strategies (Heltzer, Mindak, & Shelton, 2012). Furthermore, this result is also consistent with the tax system in Malaysia, particularly since some tax incentive schemes have been provided for the transactions related to the capital intensity in the business transaction activities. For instance, corporate taxpayers usually enjoyed the capital allowance provision for their capital investment in the business organisations. The rationale from this provision is that it encourages the corporate taxpayers to expand their business facilities in the current capital market activities (Oueslati, 2014). With rapid development in the current capital market, it is believed to influence the movements of infrastructure development activities for the local capital market.

Further, another result presented in Table 2 indicates an insignificant association between the return on asset or ROA towards effective tax rate or ETR level in the business organisations. Additionally, the regression result also reported a negative association between ROA and the corporate Tax Planning strategies in the business organisations. This situation is a consequence of the initiatives employed by the business organisations in order to reduce their corporate tax burden of their business income. In other words, the business organisations tend to minimise their corporate tax burden to be as low as possible so as to increase the net income from their business activities (Armstrong et al., 2012). Therefore, this financial ratio is suitable as another financial mechanism among stakeholders in order to access the corporate Tax Planning strategies in the business organisations’ activities. In other words, potential and existing stakeholders will be able to use this financial ratio to monitor the corporate Tax Planning strategies in their business transaction activities and to assist their decision making process.

With reference to Table 2 in the previous section, a significant association could be seen between leverage ratio or LEV and corporate Tax Planning or ETR. Consequently, a negative association was found between leverage levels with effective tax rate or ETR, which means that higher leverage levels in the business transaction activities contribute to a lower level of effective tax rate. Thus, this situation contributes to lower the tax burden by business organisations from their Tax Planning strategies. This result agrees well with the finding of a previous study by Richardson, Taylor, and Lanis (2015) which revealed a significant association with a negative relationship towards the actual level of corporate income tax expenses. This is because under accounting tax transactions, tax deductible from interest payments activities is allowed. In other words, the higher the interest paid by business organisations, the lesser the corporate tax burden to be enjoyed by the tax authorities. In addition, other findings in this study also suggested a negative association between research and
development intensity (R&DINT) and ETR. Therefore, the hypotheses made during the investigation process are accepted. The rationale from this result is the element of R&DINT, which was considered as a tax exemption to the companies. This means that the business organisations were able to reduce their corporate income tax level through tax deductions from their research and development expenses. Thus, this activity has contributed to lower income tax expenses to the tax authorities, which is also supported by a previous study that found a negative association between R&DINT and ETR (Huseynov & Klamm, 2012).

As a conclusion, this study has revealed several evidences regarding the associations between the financial ratios and Tax Planning activities among the selected companies on Bursa Malaysia. The results have indicated significant associations between INVINT, CAPINT, LEV and R&DINT towards effective tax rate or ETR in the business transaction, which means that the financial ratio information can influence the level of corporate Tax Planning activities in the capital market. Thus, such information could be used as a financial mechanism by stakeholders to assess the efficiency of Tax Planning strategies by business organisations in the capital market activities. Therefore, inefficiency in managing these financial ratios will lead to inefficient Tax Planning strategies by business organisations. Nevertheless, this study has its limitation because it has only provided the empirical evidence regarding the financial ratios towards Tax Planning strategies without considering changes in the accounting tax legislations during the period of study. Any future research in this area of the study should therefore consider embarking on another research activity to investigate these financial ratios and the earnings management level in the business transaction activities in the capital market. Furthermore, future researchers should explore other methods of panel data analyses such as Fixed Effect and Random Effect regression methods as this particular study only utilised the Pooled OLS regression method to assess any possible association between the financial ratios and effective tax rate “ETR” or corporate Tax Planning activities among the business organisations.

**REFERENCES**


