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An empirical investigation of factors affecting corporate tax avoidance strategies for public listed companies in Malaysia

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An Empirical Investigation of Factors Affecting Corporate Tax Avoidance Strategies for Public Listed Companies in Malaysia

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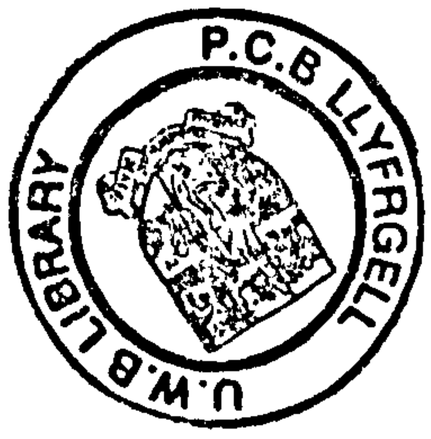

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Introduction

1.1 Introduction

Since the work of Allingham and Sandmo (1972), numerous studies have focused on tax evasion which analyze the incentives to evade taxes. Tax evasion is illegal whereas tax avoidance is not necessarily and it is more difficult to determine whether the transaction is permissible or not. Tresch (2002, p.512) defines tax avoidance and tax evasion:

> *"Tax avoidance refers to taxpayers taking advantage of the provisions of the tax laws to reduce their tax liability. Avoidance of taxes is legal and its consequences certain. Tax evasion refers to hiding sources of taxable income from the tax authorities to reduce one's tax liability. Evading taxes is illegal and its consequences are uncertain depending on the probability of the taxpayer being caught."*

Given this definition, tax evasion is illegal and may be punishable by substantial fines and, in extreme cases, imprisonment whereas tax avoidance is the use of legal loopholes and tax allowances to reduce legitimately the size of a tax bill. To reduce avoidance, tax authorities are likely to attempt to eliminate loopholes but this may lead to an overly complex system. As each loophole is closed, tax advisers will search for other loopholes and indeed the closing of a particular loophole may inadvertently lead to other loopholes being found. These activities are referred to as aggresive tax planning, which is an attempt to reduce tax liability and often requires an intelligent application of expert knowledge to avoid tax. Lymer and Oats (2006, p.350) define tax planning as activity that "involves strategic use of available tax concessions in order to minimize tax liability." As previously mentioned, the government effort to eliminate loopholes may,

however, lead to a more complex tax system. As the government realizes that tax advisers have discovered effective methods of avoiding tax, the government will make an effort to instigate tax reform. However, taxpayers always find other opportunities in response to these reactions. It could result in the government discovering that taxpayers take more advantage of the new tax law than of prior provision.

Tax avoidance thrives where there is some structural defect or loophole in the tax legislation. An example of such a loophole enables the common practice of tax avoidance through transfer pricing, where profit or income is shifted between countries. Even though there is the transfer pricing arm's length principle, multinational companies might still be able to use developing countries with less sophisticated tax system, to reduce the overall tax burden. According to Buckley and Hughes (1998, p.622) it is difficult to quantify transfer pricing owing to "insufficient documentation available to the taxing authorities to 'prove' a lack of arm's length price and different methods of costing between companies." With different tax rates or systems to avoid the total amount of tax payable, tax avoidance also includes income shifting, investing in loss companies, income splitting and gift schemes.

At one time, the distinction between tax avoidance and tax evasion was relatively clear. Tax avoidance was legally permissible and tax evasion was not. In more recent times, there has been a blurring of these two concepts. Potas (1993) has

coined the term 'avoision' to describe the grey area between avoidance and evasion. Even now the confusion is such that some tax officers prefer the terms 'compliance' and 'non-compliance', rather than seeking to distinguish between avoidance and evasion. In the past, the term tax avoidance was used to denote that the taxpayers had employed legal methods or schemes for reducing their tax liability. It did not imply any conscious wrongdoing, but merely planning which resulted in paying less tax than otherwise required. This process is sometimes referred to as tax minimization and is the end product or objective of tax planning. Potas (1993) has described tax planning as the exploitation of tax law. He comments that, in the last decade or so, tax avoidance has acquired a distinctive pejorative connotation. There is no longer a guarantee that avoidance arrangements entered into by the taxpayer are free from illegality. In other words, some forms of tax avoidance are illegal. There is much case law relating tax avoidance and two cases which are very well-known are the Peabody case in Australia and Furniss v. Dawson in the U.K.. Both are cases relate to individuals, not companies. The Australian case, Peabody v. The Commissioner for Taxation [1994] ATC 4140,[1] is one case of many where the taxpayer had overstepped the mark between acceptable and unacceptable behaviour.

[1] Peabody's case involved a complicated series of transactions where the amount of $8.6 million value of shares was added to the Peabody family trust. The business, Pozzolanic Group, was owned by the Peabody family (62%) and Kleinschmidt (38%). Kleinschmidt sold his 38% stake ($8.6m) to Peabody but, instead of buying the shares directly, the shares were transferred through a complicated series of transactions and gained a tax advantage without giving any legal profit to the tax authority.

Tax avoidance is legal but may be considered unacceptable behaviour, for example in the U.K case of Furniss v. Dawson [1984] A.C. 474,[2] the courts found that there was no commercial purpose other than the avoidance of tax for a set of transactions and required the tax thus avoided to be paid. Even though Dawson argued that, the Ramsey Principle[3] did not apply in their case, the court decided that they had generated such artificial transaction only for tax saving.

Potas (1993) claims that during the 1970s the tax avoidance industry mushroomed. Taxation planning was actively promoted by professional lawyers and accountants. In the Australian case, for example, the Treasury's Draft White Paper cited in Grabosky and Braithwaite (1987) indicated that, in 1985, the activity of tax avoidance and tax evasion was estimated to have cost the Australian revenue authorities about $3 billion per year. This offence is generally regarded by criminologists as belonging to the category of white-collar crime. Grabosky and Braithwaite (1987) mention that traditionally, white-collar crime is taken to relate to persons of relatively high social status who commit crimes in the course of their occupation. However, that label does not sit comfortably with tax evaders.

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[2] Furniss v. Dawson is an important example of tax avoidance case in the UK. Dawson, owned two successful companies called Fordham and Burton Ltd. and Kirkby Garments Ltd., and wished to sell his family company to Wood Bairstow Holdings Ltd. He did not sell the company directly (so as to avoid capital gain tax), and thus adopted a pre-arranged plan and formed Greenjacket Investments Ltd. Dawson sold his family share to Greenjacket and owned Greenjacket shares as an exchange in lieu of money. On the same day, the newly formed Greenjacket sold the family shares to Wood at a previously negotiated price. Dawson had a capital gain tax exemption from the disposal of family company shares to Greenjacket in respect of the company amalgamation. The court had made the decision that pre-arranged artificial transactions had taken place for no commercial purpose, but only to avoid tax.

[3] W.T. Ramsey Ltd v. Inland Revenue Commissioners (1982) A.C. 300 was the earlier case. Ramsey entered into a complex and self-cancelling series of transactions which had created an artificial capital loss. It involved pre-arranged artificial transactions which have no commercial purpose other than to save tax.

Grabosky and Braithwaite (1987) stated that tax evasion and tax avoidance activities are generally associated with the rich and powerful and involve large companies and large amounts of money and yet the offence can also apply to ordinary people, to almost anyone in fact who derives an income and has an obligation to pay tax. Grabosky and Braithwaite (1987) continued that naturally, the greater the income or capital that a person or corporation derives, the greater is the potential for large scale tax avoidance and fraud. For example, The Canberra Times (10 May 1993) reported that, since 1988, the Australian Tax Office has been conducting a large scale audit programme which has targeted the top 100 Australian companies. When only about half of these audits had been completed, records kept by the Corporate Tax Association revealed that tax adjustments arising from these audits had already exceeded $1 billion, although some 30 per cent of these adjustments were still in dispute.

The China Daily (2004) reported that China's tax authorities have accused multinationals of widespread tax avoidance, causing the country to lose as much as 30 billion yuan each year. Asia Times (2007) claimed that foreign manufacturer use transfer pricing to shift revenue abroad and avoid paying tax in China. They reported that, from 1990 to 2004, revenue shifted by foreign-invested enterprise in China reached $250.6 billion.

In the United States, a study organized by the Institute of Taxation and Economic Policy (ITEP, 2000), including the 250 largest and profitable corporations in the

U.S for the 1996 to 1998 period, reports resurgence in corporate tax avoidance. The study found that although big corporations are supposed to pay 35 per cent of their profits in taxes, the 250 companies in ITEP's survey paid only 20.1 per cent in 1998, which was down from 22.9 per cent in 1996. This is far below the 26.5 per cent that a similar group of large companies paid in 1988. If all 250 companies paid the full 35 per cent corporate tax rate on their $735 billion in pretax U.S profits from 1996 to 1998, their federal income tax would have totalled $257 billion. However instead, tax breaks for the 250 companies lowered their taxes by $26.9 billion in 1996, $31.8 billion in 1997 and $39.3 billion in 1998, for a total of $98 billion in tax saving over the three years[4]. Almost half of those tax-break dollars went to just 25 companies, which each received more than a billion dollars in tax breaks. The study found that companies used a variety of means to lower their federal income taxes, including accelerated depreciation write-offs, tax credits for activities such as research and oil drilling, and tax breaks for doing business in Puerto Rico. The other significant tax break involved leasing activities and stock options. They found that 233 of the 250 companies lowered their taxes through stock options by a total of $25.8 billion over the three years.

More recently, a study organized by the Citizens for Tax Justice (2005) concerning state corporate tax avoidance by 252 of American's largest and most profitable corporations from 2001 through to 2003, found that those companies on average failed to include two-thirds of their actual U.S. pretax profits on their state

[4] This study does not provide profit and tax breaks for individual years, and elaborates more on the industry approach.

tax returns. These 252 companies dramatically reduced their state income tax payments to an average of only 2.3 per cent of their U.S. profits. Since the average statutory state corporate tax rate is about 6.8 per cent (weighted by gross state product), that means that two-thirds of their profits escaped state taxes entirely. It is found that 71 of the 252 companies managed to pay no state income tax at all in at least one year from 2001 through to 2003, despite telling their shareholders they made $86 billion in pretax U.S. profits in those no-tax years. Twenty-five of these companies enjoyed multiple no tax years. In 2003 alone, 35 companies paid no state income tax. Another 138 of the companies paid less than half the statutory state corporate tax rate that particular year. The study stresses that, if these 252 corporations had paid the 6.8 per cent average state corporate tax rate on the almost $1 trillion in U.S. profits that they reported to their shareholders, they would have paid $67.1 billion in state corporate income taxes over the 2001 to 2003 period. Instead, they paid only $25.4 billion. Thus, these 252 companies avoided a total of $41.7 billion in state corporate income taxes over the three years.

Even though some studies (for example, Fletcher, 2002; ITEP, 2000) contend that tax incentives are not effective, are costly, distort investment, facilitate corruption, make the tax system complicated and in certain cases promote tax avoidance, tax authorities have long viewed tax incentives as necessary and vital to promote investment, provide a more conducive business environment particularly to lower the cost of doing business and also to ensure a more efficient taxation system. In

Malaysia, tax incentives have been offered for several reasons. There is a need to implement those incentives to achieve the national plan. As for the Malaysian government, they have provided a list of tax breaks as well as tax incentives for several objectives. Most of the incentives offered are listed in the Promotion of Investment Act (PIA) of 1986 and the Income Tax Act of 1967. The different tax incentives have been formulated accordingly to its objective, and are discussed in Chapter 2. Generally, tax incentives have been designed to develop certain industrial bases for economic growth, attract foreign investments to gain access to new technology and to make the cost of doing business internationally competitive. Thus, in line with government aspirations, the tax incentives offered will assist the government in expediting technology transfer, lowering production costs, simulating exports and boosting economic development.

In Malaysia, income tax revenue is a major contributor to Malaysian government revenues. The Bank Negara Annual Report (2003) reported that income tax represents approximately 50 per cent of the total revenue of the Federal Government of Malaysia. The Inland Revenue Annual Report (2000) reported that the largest contributors to the income tax collected were incorporated businesses which made up about 47.93 per cent of the total tax collected. From the data, more than MYR400 million were collected from back taxes which were from cases under investigation. This suggests that there may be tax evasion activities in Malaysia. However, very little research regarding tax evasion, and no research regarding tax avoidance, has been carried out in Malaysia to the author's

knowledge. A study by Kasipillai (1997) suggested that tax evasion accounts for an average of around 20 per cent for the period 1971 to 1994. In this study, Kasipillai (1997) estimated the size of the hidden economy as a proxy to evaluate the extent of tax evasion. He reported the estimated tax losses from 1971 to 1994 as a low of MYR192 million (in 1971) and a peak of MYR1,350 million (in 1984). Even though Kasipillai's study only estimates hidden economy as it is difficult to accurately measure the hidden economy, however, the prevalence of tax evasion is a major concern for the Government. Deputy Minister of Finance Datuk Chan Kong Choy reported that although tax collection reached a record high (MYR45 billion) in 2002, the number of defaulters are also believed to have increased. By July 2002, over 13,000 individuals owing some MYR1 billion in taxes were barred from leaving the country. This compares to under 4,000 in 2001 (Business Time, 2003). Therefore, from the above, it is believed that tax avoidance activity has been increasing over time.

This thesis focuses on tax avoidance and not tax evasion. Unlike tax avoidance, tax evasion is always against the law. It is the activity of not paying taxes either by under-declaring income or over-declaring deductions or exemptions. Taxpayers who engage in tax evasion will face deterrent penalties, and in some cases, custodial sentences for tax evasion. On the other hand, tax avoidance is legal, but the consequence is same as with tax evasion, that is it will reduce the tax revenue. Thus, this is an interesting phenomenon that needs to be studied.

This study will help to explain, in part, the determinants of corporate tax avoidance strategies in Malaysian.

1.2 Background to the Study

Countries frequently change their tax laws and regulations, being prompted by budgetary needs, general economic conditions, and the political situation at that time. For example, according to Auerbach and Hines (1988), the United States introduced 17 separate corporate tax reforms over a 33 year period from 1953 to 1985. Stiglitz (1988) provides a discussion of the changing composition of US taxation. Over the same period, in that country, the federal government had drawn relatively more from social security taxes, a similar amount from personal income tax, and less from corporation tax and from excises. Slemrod (2001) noted that, over the past half century, corporate tax collections have been in steady decline. They amounted to about 5 per cent of GDP in the 1950's, about 4 per cent in the 1960s, about 3 per cent in the 1970s, and just over 2 per cent since then.

A report by the Citizens for Tax Justice (CTJ, 2004) focuses on the $210 billion provided in the new corporate tax breaks, mostly for corporations over the next decade. Many of the tax subsidies will further reward multinational corporate tax avoidance. In another CTJ report (2003), it was documented that corporate tax reductions in the past two years have been unwarranted as they have not had a positive effect on jobs. Instead, Congress should move in exactly the opposite

direction, by closing loopholes and restoring corporate tax payments to a reasonable level. This is because the most recent Organization for Economic Co-operation and Development (OECD) data shows that U.S. corporate taxes as a share of the economy are now virtually the lowest in the industrialized world. Some of the corporate tax shortfalls reflect the weak economy, and the vast amount of offshore tax sheltering in which corporations now engage. Counting tax breaks that have been on the books for longer, corporations now pay considerably less than half of what they should. They also pay far less than they used to pay. These statements have been reported by Citizens for Tax Justice (2004) for large companies in the Fortune 500.

In the U.K., similar trends have also been reported. For example Kay (1990) reported that the number of tax reforms or changes in the tax structure has resulted in the increased importance of social security taxes and of Value Added Tax (VAT). National insurance contributions have grown steadily. VAT, which was introduced in Britain in 1973, has increased greatly in significance and raises a far greater proportion of revenue than did purchase tax, the wholesale sales tax which it replaced. Personal income tax makes much the same contribution to revenue as in the 1960s. Most other taxes, such as excises on particular commodities, the corporate income tax and other taxes on capital are in relative decline. However, one recent study by Devereux et al. (2004) does not continuously support this finding. They found that, even though the statutory tax rate for the UK corporations has been reduced over the last two decades, tax revenues have

increased substantially over these years. However, they argue that this does not necessarily suggest an increase in tax compliance but may be partly explained by higher rates of profitability and the expansion of the financial sector.

A tax system is one tool that a government can use to promote overall economic stability and growth. Since the tax system generates revenues to fund a country's expenditure, it is important to ensure that taxpayers pay their appropriate share of taxes. However, the tax system may itself create opportunities for unintended distortion behaviour. Distortion behaviour exists as a consequence of tax loopholes in the tax system. One of the unintended behaviours is aggressively minimizing tax liabilities, which is a device used in tax avoidance activity. The government may try to stimulate the economy by providing particular tax incentives for managers and companies to achieve in particular ways. Frequently the incentive gives rise to behavior unintended and unexpected by the authorities.

Managers' reactions to tax legislation are not predictable. Managers might alter the financing, investing, or production activities of the firm in order to minimize tax in ways other than originally intended by the tax authorities when providing an incentive. This study examines managerial behavior in using accounting policy and tax legislation to avoid corporate tax.

1.3 Objectives of the Study

Tax avoidance is the basic way of keeping taxes as low as possible by taking advantage of every possible technicality in the tax law. Sometimes the line between tax evasion and tax avoidance becomes blurred, which is why many taxpayers pay often quite substantial fees to lawyers and accountants to ensure that aggressive tax avoidance does not result in criminal charges for tax evasion.

The principal objective of this thesis is to document the determinants of corporate tax avoidance behaviour in public listed companies in Malaysia for the period of 2001 to 2005. Seven firm characteristics were chosen either on the basis of their economic implications for tax avoidance behaviour or because they proxy for the hypotheses developed in this thesis.

Specifically, the research objectives are:

a) To investigate the existence of tax avoidance in Malaysia.

b) To examine whether the following potential determinants of corporate tax avoidance behaviour are relevant in the Malaysian corporate setting.

   i. Political Cost

   ii. Profitability

   iii. Leverage

   iv. Foreign Activity

   v. Capital Intensity

vi. Dividend

vii. Managerial Ownership

c) To identify which characteristics distinguish firms that avoid corporate tax.

d) To identify whether the extent of tax avoidance and its determinants differs depending on the industry.

This thesis is the first attempt to study the factors affecting company tax avoidance behavior in Malaysia. In examining the company characteristics that affect the company's tax avoidance behavior, the thesis offers an opportunity to explore the industry effect towards tax planning based on tax incentives given for each industry. Unlike previous studies in the main stream effective tax rate (ETR) literature, this study extends the range of theoretical determinants to cover characteristics in the Malaysian business environment. The thesis provides new evidence of the importance of dividend policy and managerial ownership in tax avoidance strategies.

While most of the existing studies employed ordinary least squares (OLS) regressions, this thesis utilizes recent developments in the econometrics of panel data to estimate the parameters in the tax avoidance model. A distinct advantage of panel data is that it facilitates testing of economic relationships over time and across companies. The analyses in the thesis therefore are able to examine the effects of macro-economic factors, such as the tax system, on a company's tax avoidance behaviour.

1.4 Significance of the Study

Tax and financial advisers have become much more sophisticated about engineering transactions to avoid tax. The cost of such strategies has been declining because the supply of tax avoidance experts has increased which has produced competitive pressures to lower the costs of advice and has expanded the arrangement of shelter schemes. Some commentators explain the growth in corporate tax avoidance activity as a reflection of the more accepting attitudes of tax advisers and corporate executives towards engaging in aggressive tax planning. Furthermore, corporations might view the current tax system as unfair. In such an environment, some corporations may be more willing to take aggressive tax positions.

Thus, the focus of this study is to provide at least a partial explanation as to why some companies (tax avoiders) systematically avoid income taxes while other companies (tax non-avoiders) pay their fair share of taxes. The results of this study may partly assist tax authorities in the development of an equitable and fair national tax policy in Malaysia. Since the tax system potentially generates such large amounts of revenue, it is important that policy makers create a consistent, logical and fair set of laws to ensure compliance. Care must be exercised in creating tax statutes to create a fair and equitable tax system for all taxpayers. However, to obtain this equitable system, it is important that tax authorities understand the economic consequences of their regulations on all tax paying

entities. This study does determine which characteristics of companies lead them increasingly to avoid taxes. The benefits of this study also include exploring the impact of national tax policy on financial reporting and could help explain managerial behavior.

Maydew (2000) provides comments and critiques on empirical tax research in accounting and suggests that, in future research there is a need to clarify why some companies appear to be more aggressive tax avoiders than other companies; to identify whether companies engaging in foreign operations heavily utilize opportunities in tax planning and corporate tax shelters.[5] His discussion is designed, first and foremost, for PhD students interested in conducting tax research.

Most research on corporate tax avoidance has been conducted in the U.S., the U.K. and Australia. This is the first study of its kind to the author's knowledge to be carried out in an emerging market. This study investigates corporate tax avoidance in Malaysia, thus adding to the corporate tax avoidance literature by examining an emerging market.

Another factor of importance is the potential to pass to the tax authorities valuable information regarding tax avoiding activity which will be an essential factor in

[5] Corporate decisions are potentially affected by tax provisions. For example, Rego (2003) claims that companies engaging in foreign operations are more able to avoid income taxes than domestic-only companies, and Philip (2003) indicates that managers' after-tax compensation leads to the companies' propensities to engage in tax planning.

assisting tax authorities to develop a fairer tax system. The Malaysian tax system is an old tax system which has not changed much since it was developed. The Income Tax Ordinance, 1947, was the first income tax legislation enacted for the Federation of Malaysia. The Act, which took effect from 1 January 1948, was subsequently repealed and replaced with the Income Tax Act (ITA), 1967. However, ITA 1967, which came into force on 1 January 1968, did not introduce a new taxation system. While the Malaysian economy has progressed and developed, the tax system has not changed much to cope with increasing complexities in business operations within the changing economy. The principles and rules of income taxation embodied in the tax law which was introduced in 1948 and consolidated in 1968 still apply today. Now, modern businesses have become increasingly large and complex but the tax system has not kept pace. With more complex businesses, the loopholes in the tax system have become increasingly exploited. It is now the right time to close some of these loopholes and protect the tax base. It is hoped that this study would be able to assist partly the tax authorities in developing tax reforms to reduce the opportunities for unintended tax avoidance. The outcome from the reform and the closing of the loopholes may help to improve the integrity of the Malaysian tax system.

1.5 The Thesis in Brief

Most previous studies in this area have attempted to examine the determinants of tax avoidance in a univariate framework. This thesis provides new evidence on the

Abstract

This thesis seeks to contribute to the tax avoidance literature by researching the importance of various firm characteristics as possible determinants of corporate tax avoidance strategies. Corporate tax avoidance studies have been addressed for a number of years within the developed market context, whereas corporate tax avoidance research for companies in developing countries is largely non-existent. The determinants of tax avoidance strategy used in previous research are carried over into the Malaysian context, with additional new factors identified as relevant in the Malaysian business environment. This thesis is the first to document the link between corporate tax avoidance and firm characteristics in an emerging market.

Seven explanatory variables are hypothesized in associating firm characteristics with corporate tax avoidance activities. These variables, which are included in the tax avoidance model, are political cost, profitability, leverage, foreign activity, capital intensity, dividend and managerial ownership. Industry affiliations are also included as potential explanatory variables because tax avoidance activity may also depend on the sensitivity of certain industries.

This thesis tests the corporate tax avoidance model by using a cross-sectional valuation, which is OLS estimation, and a cross-sectional-time series valuation using panel data analyses including three panel types, which are fixed-effects, random-effects and tobit estimations. The results reveal that all of the explanatory variables have a statistically significant coefficient with predicted sign except for the foreign activity dummy variable and the dividend which is significant with sign different from expected. The results also confirm the importance of industry differences in explaining corporate tax avoidance activity.

determinants of corporate tax avoidance in a multivariate framework, using micro-level longitudinal (panel) data. Specifically, the thesis examines the determinants of tax avoidance strategies by examining the association between the effective tax rate (ETR) and political cost, profitability, leverage, foreign activity, capital intensity, dividend and managerial ownership. The proxies used to measure the explanatory variables and their predicted influences on avoidance behaviour are discussed below.

- Firm size proxies the political cost characteristic of the company. This thesis hypothesizes that corporate ETR is positively associated with the political cost. This is consistent with several studies (for example, Rego, 2003; Kim and Limpaphayom, 1998; Omer et al., 1993) which argue that larger companies suffer from political cost that increases their ETR. Political cost hypothesis asserts that large companies face greater government scrutiny than smaller companies which in turn suffer from a higher corporate tax burden.

- Profitability is measured by income before income tax (IBIT) and is hypothesized to have negative association with ETR. Rego (2003) documents that corporations with greater pre-tax income have lower ETR, as companies with greater pre-tax income have greater resources to engage in tax planning.

- Capital intensity is measured by the ratio of tangible fixed assets to total assets and it is hypothesized to have a negative influence on ETR. This is consistent with Gupta and Newberry (1997) who reported a negative significant association between capital intensity and ETR as investment in tangible assets would lead to greater tax savings due to increased tax deductions associated with investment in physical assets.

- Leverage, measured by the ratio of debt to equity, is hypothesized to have a negative relation with ETR. Stickney and McGee (1982) observe that companies with low ETR tend to be highly leveraged.

- Foreign activity is measured by two proxies that are a foreign activity dummy variable (DFA) and foreign activity (FA). DFA value is 1 if the company reported foreign income or foreign assets and zero otherwise. FA is measured by the ratio of foreign sales to total sales. Foreign activity is hypothesized to have a negative relation with ETR. This is consistent with Rego's (2003) argument that companies engaging in foreign operation have greater opportunities to avoid income taxes due to cross-border investments and by exploiting differences between tax rules of different countries as well as shifting income from high-tax locations to low-tax locations.

- Dividend is measured by dividend payout ratio. It is hypothesized that companies will decrease dividend payments to avoid increase in tax liability due to restriction of dividend payment in Section 108 Franking Account. The increase in dividend payout ratio will increase the company's effective tax paid. Thus, dividend is presumably to have a positive relationship with ETR. Dividend is a new variable included in the tax avoidance model.

- Managerial ownership is measured by the per centage of equity shares owned by executive directors and it is hypothesized to have a negative relationship with ETR. Managerial ownership is also a new explanatory variable included in the tax avoidance model. With the theory of synergy and agency which simultaneously exist and interact, it is hypothesized that higher managerial ownership will lower the corporate effective tax rate.

The natural logarithmic transformation is used in most of variables to reduce the skewness of the distribution and to minimize the standard error of the regression coefficient. In addition, the industry effects are controlled for because company characteristics might differ systematically by industry.

In term of the research methodology perspective, this thesis differs from most prior studies by examining the determinants of tax avoidance with longitudinal (panel) data. Earlier studies have examined the relationship by using either cross-

sectional (for example, Porcano, 1986) or time-series data (for example, Zimmerman, 1983). Although Rego (2003) used panel data, he examined only firm size, income and multinational corporation effects. The thesis also includes cross-sectional estimation by using ordinary least squares (OLS) regression. In addition, fixed-effects and random-effects regression models are estimated to exploit fully panel data properties. Fixed-effects regression models offer the advantage of controlling for unobserved or immeasurable variables if these variables do not vary much over time.

The objective of the thesis is to determine corporate tax avoidance strategies in an emerging market in Southeast Asia, Malaysia. The thesis examines specifically the corporate tax avoidance determinants of 1,645 firm-years for public listed companies in Malaysia between 2001 and 2005, inclusively.

The thesis addresses four research questions. First, does corporate tax avoidance exist in Malaysia and to what extent do corporations avoid tax? Second, what are the driving factors of corporate tax avoidance strategies? Third, what are the characteristics of companies that avoid tax? Finally, does the type of industry affect corporate tax avoidance activity?

The empirical results confirm that corporate tax avoidance is associated with all the explanatory variables in this thesis which are political cost, profitability, leverage, foreign activity, capital intensity, dividend and managerial ownership.

Furthermore, the empirical evidence shows that the industry effects have a significant impact on corporate tax avoidance activity.

Even though tax administration in Malaysia is armed with anti-avoidance provisions which empower the Director-General of the Inland Revenue Board (IRB) to make adjustments to taxable income whenever there are reasons to believe that the company altered business transactions to lower tax, it is found that public listed companies in Malaysia do engage in tax avoidance activity.

The rest of the thesis is organized in the following manner. Chapter 2 highlights Malaysian corporate tax legislation. Chapter 3 presents theoretical arguments and develops the hypotheses based on analytical models from previous studies. Chapter 4 discusses research methods, including data gathering, sample selection procedures, research models and the measurement of the variables. The analysis and results are presented in Chapter 5. Lastly, Chapter 6 contains discussions, implications, concluding comments, indications of future research directions and potential limitations.

Malaysian Corporate Tax Legislation

2.1 Introduction

Taxation is an important economic tool for the Malaysian government to employ to regulate the economy. The principal aims of implementing tax policies are to develop economic growth and to provide funds for numerous development projects and provide funds for public goods, such as education, defence, etc.

In its early years of development, the Malaysian tax system depended heavily on indirect taxes as sources of revenue, in part owing to the imposition of tax on rubber exports in 1907. The introduction of income tax in 1917, on a temporary basis in Malaya (Malaysia was known as Malaya until 1963), was clouded with uncertainty as it faced strong opposition from the general public. For example, the draft bill for imposing a tax on income, which was introduced by the Straits Settlements Legislative Council in 1910, was withdrawn the following year as it did not receive the support of the tax-paying public. Furthermore, early attempts to introduce income tax prior to 1948 were interrupted by the two World Wars.

The new era of income tax in Malaysia was finally introduced in the Income Tax Ordinance 1947, which took effect from 1 January 1948. The provisions of this Ordinance were based substantially on the Model Colonial Territories Income Tax Ordinance 1922 (United Kingdom) which was designed for the British colonies at that time. The tax laws of a number of Commonwealth countries were initially

based on this model of legislation. Generally, the Malaysian tax structure is adapted from those of the United Kingdom and Australia.

The Income Tax Ordinance 1947 was subsequently repealed and replaced by the Income Tax Act (ITA) 1967 which came into effect on 1 January 1968. The Income Tax Act 1967 is actually the combination of three income tax[6] laws in Malaysia, namely:

i. The Income Tax Ordinance 1947 for Peninsular Malaysia;

ii. The Sabah Income Tax Ordinance 1956 for Sabah; and

iii. The Sarawak Inland Revenue Ordinance 1960 for Sarawak

The Malaysian income tax law is set forth in the Income Tax Act 1967 and supplementary legislation. Other principal tax laws are the Real Property Gain Tax Act 1976, Sales Tax Act 1972 and Service Tax Act 1975. Changes in tax laws can be introduced by the government at any time to regulate and control the economy. Any changes are normally proposed in the annual national budget, which is usually announced in October every year. The whole process of these changes usually commences with invitations to various organisations to submit their input for the national budget. Then, pre-budget dialogues are organised, one part being between the minister of finance and treasury officials and the other part between various organisations. Subsequently, various meetings are held by the treasury to

[6] The term income tax is generic for tax on company income and profits.

formulate recommendations and the budget strategy. Finally they are drafting the finance bill, presenting the budget and gazetting the act.

The Ministry of Finance, in Malaysia, has two separate departments to manage the administration of taxes. Direct taxes are administered by the Inland Revenue Board while indirect taxes are managed by the Royal Customs and Excise Department. Income tax is currently the main source of revenue for the Malaysian government. From the Economic Report (2006), 52.3 per cent of the federal government revenue was from direct taxes and the remainder was from indirect taxes and non-tax revenues. Direct taxes contributed a large portion of federal tax revenue. This can be seen in Table 2.1 as follows:

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Table 2.2 shows direct tax and indirect tax for federal government revenue from 2002 to 2006. Figures in the parentheses show an annual percentage change in revenue.

Table 2.3 shows the breakdown of direct taxes (2006). Direct taxes comprise corporate tax, personal income tax, petroleum income tax and others. Table 2.3 shows the importance of corporate tax for Malaysian government revenue as corporate tax contributes the major portion of direct taxes.

The computation of a company's income tax is based on its audited accounting profit, as adjusted for tax purposes. The principal adjustments to accounting profits in determining taxable income are in respect of expenses of a capital nature, expenses which have not been incurred for tax purposes such as general provisions for expected future liabilities, specifically prohibited expenses such as contributions to unapproved savings, provident or pension schemes and excess contributions to approved schemes, and expenses not incurred wholly and exclusively in the production of income. The computation of a company's income tax payable can be seen in Appendix A.

2.2 Basis of Taxation

Malaysia had a preceding year basis of assessment before the calendar year or financial year ending in 1999. The taxable income for a year of assessment was determined by reference to the income for the basis period (year immediately preceding that year of assessment). In the year 2000, Malaysia switched from the preceding year basis of assessment to the current year basis of assessment. As a result of the change, income tax on taxable income (other than dividend income) for the basis year or basis period ending in 1999 was waived from taxes. The first year of assessment under this basis was the year of assessment 2000 for the financial or calendar year ending in 2000. The basis year and year of assessment is the same year which is usually from 1 January to 31 December annually. However, the business organisations that may have accounting year ends which do

not end on 31 December and the Act (current year basis of assessment) allows the accounting year to be the basis period.

2.3 Corporate Income Tax

2.3.1 Resident Companies

As indicated in Section 8, Income Tax Act, 1967, a company is deemed to be resident in Malaysia for the basis year if at any time during the basis year the management and control of its business or businesses is exercised in Malaysia. Management and control generally refer to the place where the board of directors meet to make a decision.

Income tax is charged on a company's income that accrues in or is derived from Malaysia. Overseas income remitted by companies is tax exempt except for companies carrying on sea and air transport business, insurance and banking which are taxable. Resident companies carrying on sea and air transport business, insurance, and banking operations are taxed on a world income basis. No tax, however, is charged on offshore income derived by an offshore company. Offshore business activities are governed under the Labuan Offshore Business Activity Tax Act, 1990.

2.3.2 Tax Rates

Malaysia, similar to other countries such as the UK and the US, has lowered its corporate tax rate gradually over the years, from 40 per cent in 1988 to the current rate of 28 per cent. In the 1998 Budget, the rate of income tax imposed on companies was reduced from 30 per cent to 28 per cent. The rationale given for this is to help ease the tax burden of the private sector. In the 2006 Budget, the corporate tax rate was announced as being reduced to 27 per cent in 2006 and 26 per cent for 2007. The reduction of tax rates is summarized in Table 2.4 as follows:

Table 2.4
Changes in Malaysian Corporate Tax Rates

Year of Assessment	Corporate Tax Rate (%)
Before 1988	40
1989 – 1992	35
1993	34
1994	32
1995 – 1997	30
1998 – 2005	28
2006	27
2007	26

Other objectives of the reduction in the Malaysian corporate tax rate are to attract foreign investors and provide an incentive for companies to expand their activities. The reduction in the tax rate not only resulted in lower income taxes being payable on an on-going basis but also created an opportunity for companies to utilize a short term benefit by managing revenues and expenses so as to defer the payment of income taxes. In the U.S., Guenther (1994) found empirical evidence that companies deferred revenues and accelerated expenses to increase tax saving when faced with lowering corporate tax rates.

From the year of assessment 1998, all companies in Malaysia have been subject to a flat 28 per cent tax on their chargeable income, while the income of non-resident companies is taxed at varying rates depending on the nature of income (Table 2.5).

There is no minimum income tax.

Table 2.5
Malaysian Corporate Income Tax Rates

Companies	Corporate Tax Rate (%)
Resident Companies	
- all income	28
Non-resident Companies	
- Royalties	10
- Rental of Moveable Properties	10
- Technical or Management Service Fees	10
- Interest	15
- Dividend	28
- Business and Other Income	28

Malaysian companies are required to make payments of tax in 12 equal monthly instalments, beginning from the second month of the company's basis period (financial year). An estimate of tax payable for the year of assessment must be provided to the Director General one month before the beginning of the basis period. The balance of the tax payable by a company is due to be paid on the last day by which the return must be submitted. Tax on royalties, rental of moveable properties, technical or management service fees and interest received by non-resident companies are collected by means of a withholding tax. The withholding tax is payable within one month of crediting or paying the non-resident company.

Table 2.6 shows the corporate tax rates for Association of Southeast Asian Nations (ASEAN) countries. Malaysian corporate tax rate (28 per cent) is the second lowest in the ASEAN region. This is statutory rate and not the effective tax rate. There is a set of various incentives available for the manufacturing, hotel, tourism-related and certain other strategic industries, like IT companies. With all these incentives in place, the effective tax rate is much lower than the statutory rate of 28 per cent.

Table 2.6
Corporate Tax Rates of ASEAN Countries

ASEAN Countries	2005 (%)	2006 (%)
Singapore	20	20
Malaysia	28	27
Vietnam	28	28
Brunei Darussalam	30	30
Indonesia	30	30
Thailand	30	30
Philippines	32	35

In addition, from the year of assessment 2003, companies with a paid-up capital of MYR2.5 million and below (small and medium sized companies) are assessed at a lower rate of 20 per cent on the first MYR100,000 of taxable income, while any excess is subject to tax at the statutory rate of 28 per cent. The threshold of MYR100,000 was increased to MYR500,000 from the year of assessment 2004. The reduction in tax rates for these small and medium sized companies was brought in by the government due to promoting investment in small and medium enterprise (SME).

2.3.3 Self Assessment System

Malaysia has in place a self assessment system (SAS) in the computation, disclosure and payment of taxes. Self assessment for companies came into effect from 2001. Under the self assessment system, taxpayers assess their own tax liability and pay taxes based on their disclosed figures. Taxes are paid in the financial period in which profits are earned. The responsibility of correctly assessing tax liabilities has been transferred from the Inland Revenue Board (IRB) to companies. The main objective of SAS is to inspire a practice of voluntary compliance by taxpayers and at the same time, reduce the workload of the IRB to enable them to focus on tax audits and potentially increase revenue collection.

2.3.4 Collection of Tax

Before the year of assessment 2001, tax was payable within 30 days of the issue of the notice of assessment by the tax authorities. This was under the preceding year basis.

From the year of assessment 2001, when the self assessment system came into effect, tax payable by a company is due to be paid on the last day by which the return must be submitted. The due date is eight months from the accounting period end, in line with the extension of time for submitting the return. An estimate of tax payable for the year of assessment must be furnished to the Director General one month before the beginning of the basis period.

This thesis uses data collected from 2001 onwards (2001 being the year the self assessment system started in Malaysia).

2.3.5 Profit Distribution (Dividend)

Malaysia adopts a dividend imputation system of taxation. Malaysia's dividend imputation system applies to dividends paid by Malaysian resident companies to resident individual shareholders. Malaysian corporate taxes paid by companies are allocated to shareholders by way of imputation credits. These credits are included in the shareholder's taxable income, which are then eligible for a tax rebate equal

to a tax credit included in their income. Under this system, tax paid by companies on profits is imputed to shareholders when dividends are paid.

Under the dividend imputation system, the income tax paid by a resident company is credited into a tax credit account, which can be utilised to frank dividend payments to shareholders. Any unutilised tax credits can be carried forward for franking future dividend payments. Where the tax franking for a dividend payment exceeds the available tax credits, the shortfall becomes a debt due to the tax authorities. This payment cannot be utilised against future tax liabilities of the company. Therefore, companies pay dividends based on the franking credit available which arises from income tax paid less amounts used to frank dividend previously distributed. As the tax authority does not refund excess imputation credits, companies are subject to pay dividend only from franking credit available. An example of a dividend franking account can be seen in the next Chapter 3, Section 3.2.6. In contrast with the UK dividend imputation system, any access imputation credit can be carried forward to use against taxable income in future years.

Foreign shareholders are treated differently and are taxed outside the imputation system.

2.3.6 Losses

Business losses can be set off against income from all sources in the current year. Any unutilised losses can be carried forward indefinitely to be utilised against income from business sources only.

2.4 Capital Allowances

Depreciation and amortisation of fixed assets for accounting purposes are not allowable for tax purposes. In their place capital allowances are given. A capital allowance can only be set off against the income of the business which incurs the capital expenditure. It follows that where capital allowances cannot be fully absorbed because of an insufficiency of adjusted income, the unabsorbed capital allowances can be carried forward indefinitely to offset against future taxable income from the same business until they have been fully claimed. This set off takes priority before setting off any unabsorbed business losses brought forward from previous years. The available capital allowances are discussed in the following sections.

2.4.1 Industrial Building Allowance (IBA)

The Industrial Building Allowance (IBA) is permitted by the Income Tax Act 1967, and is granted to a person[7] who incurs qualifying capital expenditure on the construction or purchase of an industrial building or structure for use in a qualifying trade. There are two types of allowance given - is the initial allowance and the annual allowance. The rate of the initial allowance is 10 per cent given once when the qualifying capital expenditure (QCE) is incurred (first year). The QCE is the cost of construction of a building or structures which are used as industrial buildings. (Where the industrial building is acquired second hand (purchased), special rules apply in quantifying the amount of IBA available). An annual allowance at a rate of 2 per cent is given each year commencing from the year of assessment relating to the basis period in which the qualifying capital expenditure is incurred. An office building will qualify for allowances where it physically forms part of an industrial building and its cost does not exceed 10 per cent of the total building cost.

With effect from year of assessment 2000, the QCE building definition has been extended to include buildings constructed under an agreement with the government on a "build-lease-transfer" basis which was approved by the Minister of Finance. The QCE was also extended to include airports and motor racing circuits approved by the Ministry of Finance with effect from the year of

[7] According to Section 2, Income Tax Act 1967 (Act 53), the interpretation of 'person' includes a company, a body of persons and a sole corporation.

assessment 2001. This is due to the government's objective of promoting the tourism industry in Malaysia.

With effect from the year of assessment 2002, the initial allowance of 10 per cent is extended to purchased industrial buildings and the period for claiming industrial building allowance has been shortened from 45 to 30 years. Subsequently, the rate of annual allowance has been increased from 2 per cent to 3 per cent. In addition, industrial building status is extended to include hotel buildings. In order to qualify, the hotel must be registered with the Ministry of Culture, Arts and Tourism.

2.4.2 Plant and Machinery

Under Schedule 3 of the Income Tax Act 1967, the initial allowance for plant and machinery is 20 per cent and annual allowance rates for plant and machinery varied depending on the type of assets used in the business. The annual allowance rate varied from 6 per cent to 20 per cent according to the Income Tax (Qualifying Plant Annual Allowances) Rules 1968.

However, with effect from the year of assessment 2000, the annual allowance rates have been re-categorised with three rates only applicable, is 10 per cent, 14 per cent and 20 per cent. The changes in the annual allowance rate can be seen in Table 2.7 below. With this new rule, the annual allowance rates, ranging from 6

per cent to 20 per cent set out in the Income Tax (Qualifying Plant Annual Allowances) Rules, 1968 were revoked.

Table 2.7
Changes in the Annual Allowance Rate

Type of Asset	Before Year of Assessment 2000 Rate (%)	From Year of Assessment 2000 Rate (%)
Heavy Machinery and Motor Vehicles	20	20
General Plant and Machinery	8 – 20	14
Office Equipment, Furniture and Fittings	6 – 12	10

With effect from 28 October 2000, the QCE for a motor vehicle which is not licensed or permitted to be used for the commercial transportation of goods or passengers is restricted to MYR100,000 if the motor vehicle has not been used prior to purchase and the total on-the-road cost does not exceed MYR150,000. Otherwise, the eligible cost is restricted to MYR50,000 (as per year of assessment 1999).

2.5 Tax Incentives

The Pioneer Industries Ordinance was introduced in 1958 to encourage the development of manufacturing industries. As a result, foreign investors were largely involved in developing import-substitution industries in areas such as food, beverages and tobacco. In 1968, the Investment Incentives Act replaced the Pioneer Industries Ordinance and this move encouraged the development of not only import-substitution industries but labour intensive industries that produced goods for export. The Promotion of Investment Act 1986 replaced the Investment Incentive Act and has provided numerous incentives that fully or partially exempt income from tax. Special provisions in the Income Tax Act 1967 also wholly exempt the income of venture capital companies and reduce the taxable income of approved operational headquarters companies.

Tax incentives are found mainly in the Promotion of Investment Act 1986 (PIA) and the Income Tax Act, 1967. The PIA is the more important legislation as it

covers the major incentives available. A number of tax incentives has been introduced by the Malaysian government to promote foreign investments and priority industries, particularly projects which are capital intensive, with high value added content and involving new and emerging technologies. Malaysia offers tax incentives for investments in promoted products and activities (see below) in manufacturing, agriculture, tourism including hotels, research and development (R&D) and training.

2.5.1 Pioneer Status

The incentive of pioneer status is provided in the Promotion of Investment Act 1986 to encourage certain activities or products in Malaysia. Companies participating in 'promoted activities' or engaging in the manufacture of 'promoted products' are eligible to apply for pioneer status. Companies which are granted pioneer status enjoy an exemption from tax on the profits generated by the pioneer business for five years. Only 70 per cent of the statutory income (that is, adjusted income less capital allowances) from the pioneer business for each of the five years will be exempted from tax. The balance of the statutory income will be taxed at the statutory corporate tax rate. Any unutilised losses or capital allowances cannot be carried forward to the post-pioneer period.

Projects which are considered to be of national and strategic importance, as determined by the Minister of Finance, may enjoy full (100 per cent) exemption

from tax. Such projects typically involve heavy capital investment and advanced technology, which can generate extensive 'links' to Malaysian industries (see below) and transfer or develop technological processes in Malaysia. The same treatment is available to a contract research and development company. Furthermore, a company engaged in promoted activity or the manufacture of a promoted product in the areas of new and emerging technologies, such as automation, bio-technology, electronics, building material sciences, information technology, and renewable energy technology qualifies for 100 per cent exemption on statutory income for a period of five years.

It was announced in the 1997 Budget that companies approved by the Multimedia Development Corporation (MDC) would be able to enjoy pioneer status for 10 years. Such companies would be treated as carrying on projects of national and strategic importance.

The types of activities or products deemed to be promoted activities or products in an industrial linkage programme are listed by the Promotion of Investments (Promoted Activities and Promoted Products) (Amendment) (No. 2) Order 1999 and over the years, the list of promoted activities or products has been extended to encourage various types of activities. An example of promoted activities and promoted products is companies which manufacture transports equipment.

2.5.2 Investment Tax Allowance (ITA)

Investment Tax Allowance (ITA) is an alternative that companies can opt for instead of the pioneer status. ITA is designed to cater for projects which have large capital investment over long gestation periods.

A company which applies for and is granted ITA on or after 1 November 1991 may be granted ITA of 60 per cent of the QCE incurred within a period of five years. The maximum amount that can be utilised is restricted to a maximum of 70 per cent of the statutory income (profits after deduction of capital allowances) for each year of assessment. The balance of 30 per cent of the statutory income is subject to tax at the statutory corporate tax rate. Any ITA that cannot be utilised against taxable income may be carried forward indefinitely for set-off against future taxable income derived from the same project.

A national project and strategic importance[8] is eligible to enjoy an allowance of 100 per cent of the capital expenditure, which is fully deductible against statutory income. A contract research and development company may enjoy an allowance of 100 per cent of QCE for a period of 10 years, which is restricted to 70 per cent of the statutory income. A research and development company undertaking research and development projects for group companies can also enjoy the same

[8] As stated by the Malaysian Industrial Development Authority (MIDA), products or activities of national and strategic importance are generally defined as projects or activities which are "involved in heavy capital investments with long gestation periods, have high levels of technology, and are integrated, generate extensive linkages, and have a significant impact on the economy."

incentive. However, companies undertaking in-house research and development projects can only enjoy an allowance of 50 per cent.

2.5.3 Industrial Adjustment Allowance (IAA)

The tax incentive for Industrial Adjustment Allowance (IAA) is provided for in the Promotion of Investment Act (PIA) 1986. The IAA is available to companies in selected manufacturing sectors which are participating in certain industrial adjustment activities, such as reorganisation, reconstruction or amalgamation within the sector. Companies engaged in wood-based, textile, machinery and engineering industries are eligible to apply to the Minister of International Trade and Industry (MITI) for approval to participate in the approved industrial adjustment programmes. 'Industrial adjustment' is defined (by MITI) as any activity proposed to be undertaken by a particular sector in the manufacturing industry to restructure by way of reorganisation, reconstruction or amalgamation within that particular sector, with a view to strengthening the basis for industrial self-sufficiency, improving industrial technology, increasing productivity, enhancing the efficient use of natural resources and the efficient management of manpower. These companies will be granted an allowance of 60 per cent to 100 per cent based on the industrial adjustment activities undertaken. The allowance will be given in respect of QCE incurred, and can be utilised to set off against 100 per cent of adjusted income. The incentive can be enjoyed by the manufacturing company for five years.

2.5.4 Infrastructure Allowance (IA)

Under the Promotion of Investment Act 1986, infrastructure allowance (IA) is available to any company resident in Malaysia engaged in manufacturing, agriculture, hotel, tourist or other industrial or commercial activity in Sabah, Sarawak and the designated eastern corridor of peninsular Malaysia.

A company which has incurred capital expenditure on infrastructural facilities such as construction, reconstruction, extension or improvement of any permanent structure, including a bridge, jetty, port or road for a business located in a promoted area, will be given an allowance equal to 100 per cent of the capital expenditure. The capital expenditure must exclude capital expenditure that qualifies and claims other tax incentives (such as ITA, normal capital allowance under Schedule 3 of the Income Tax Act, 1967) and plant and machinery for storage, treatment or disposal of scheduled wastes. The infrastructure allowance should not exceed 85 per cent of the statutory income and any unutilised allowance can be carried forward to set off against future taxable income.

2.5.5 Double Deduction on Expenses for the Promotion of Export

This incentive is available to any company resident in Malaysia seeking opportunities to export manufactured products and agricultural produce. The Income Tax (Promotion of Exports) Rules 1986 provide for a double deduction for

expenses incurred in the promotion of exports. Certain expenses incurred for the purpose of seeking opportunities to export manufactured products and agricultural produce are eligible for double deductions. The expenses that qualify for the deduction include overseas advertising, supply of free samples abroad, export market research and the cost of maintaining a sales office overseas for the promotion of exports. Local companies are entitled to a double deduction for expenses incurred in participating in an approved international trade fair. The incentive is given to promote export activities by local companies.

With effect from 1 January 2001, professional fees incurred in packaging design are eligible for double deduction, provided that the goods are of export quality and the company employs local professional services.

2.5.6 Companies with Multimedia Super Corridor (MSC) Status

The 1997 Budget allocated tax incentives to companies with Multimedia Super Corridor (MSC) status, which is approved by the Multimedia Development Corporation (MDC). In December 1997, the guidelines for MSC status were issued. The MSC is set to become the centre for state-of-the-art products and services where eight special areas are promoted, including telemedicine, research and development and electronic government. Companies with MSC status will enjoy special incentives, including tax holidays for a period of up to 10 years or ITA of 100 per cent and no duties on the import of multimedia equipment. These

incentives were to encourage the development of the MSC and to ensure that there are sufficient knowledge-workers for the multimedia and information technology sector of the economy. In order to accomplish the Vision 2020 to be a fully developed and industrialized country by the year 2020, the development of technology sectors plays a crucial role, as it is important and under government supervision. The Malaysian government has provided clear specific objectives in accelerating Malaysia's shift to high-technology industries, including accelerated industrial restructuring, technological upgrading and industrial linking.

From the year of assessment 1998, the tax incentives accorded to MSC status companies have been extended to multimedia faculties in the institutions of higher learning. A multimedia faculty is referred to as a centre of learning, which provides courses in multimedia, information technology, engineering, computer science, media arts and science, library science and other related fields. The incentives would, however, only be relevant to private universities which are taxable entities.

2.5.7 Industrial Building Allowance (IBA) for Hotels

Under the 2002 Budget, the IBA has been extended to include companies which have incurred capital expenditure on an approved hotel building or in extending or modernising an existing hotel to the approved standard. The IBA consists of an

initial allowance of 10 per cent and an annual allowance of 3 per cent. The incentive has been given to encourage the tourism sector in Malaysia.

All the tax incentives discussed from point 2.5.1 to 2.5.8 are summarized in Table 2.8 as follows:

Table 2.8
The Summary of Tax Incentives

Tax Incentives	Descriptions	Law
Pioneer Status	A pioneer status company, which is involved in a promoted activity or is producing promoted product will be granted tax exemption for five years. Could be extended by another five years if certain criteria are met. The objective is to encourage certain types of activities or products.	Promotion of Investment Act (PIA) 1986
Investment Tax Allowance (ITA)	ITA is given to a company, which is involved in a promoted activity or is producing a promoted product, and is eligible for an allowance not exceeding 60 per cent of qualifying capital expenditure (QCE). The amount of allowance to be utilized is restricted to a maximum of 70 per cent of statutory income (SI). The balance of 30 per cent of the SI is subject to tax. The objective is to encourage certain types of activities or products.	Promotion of Investment Act (PIA) 1986
Industrial Adjustment Allowance (IAA)	IAA is given to a manufacturing company, which is involved in reorganization, reconstruction or amalgamation which is eligible for an allowance up to 100 per cent from QCE against adjusted income.	Promotion of Investment Act (PIA) 1986
Infrastructure Allowance	Infrastructure allowance is given to certain industries in promoted areas which are involved in construction, reconstruction, extension or improvement of any permanent structure. The allowance given is 100 per cent from capital expenditure, but not exceeding 85 per cent from SI.	Income Tax Act 1967

Table 2.8 (continued)
The Summary of Tax Incentives

Tax Incentives	Descriptions	Law
Double Deduction on Expenses for the Promotion of Export	Local companies are entitled to a double deduction for expenses incurred on the promotion of exports. The incentive is given to local companies to promote export activity.	The Income Tax (Promotion of Exports) Rules 1986
	Effective from the year of assessment 2003, a locally owned manufacturing company will be given the following incentives: 1. Tax exemption on statutory income equivalent to 30 per cent of increased export value, provided that the company achieves a significant increase in exports; 2. Tax exemption on statutory income equivalent to 50 per cent of increased export value, provided that the company succeeds in penetrating new markets; and 3. Full exemption on increased export value, provided that the company achieves the highest increase in exports.	Budget 2003
Companies approved by Multimedia Development Corporation	Companies approved by Multimedia Development Corporation would be able to enjoy pioneer status or investment tax allowance for 10 years. The objective encourages the development of the multimedia super corridor (MSC), and to ensure that there are sufficient knowledge-workers for the multimedia and information technology	Budget 1997 Effective from year of assessment 1997
Industrial Building Allowance (IBA) for Hotels	IBA has been expanded to include hotels which are granted a 10 per cent initial allowance and 3 per cent annual allowance. The objective is to reduce the cost of doing business and increase competitiveness.	Budget 2002 Effective from year of assessment 2002

2.6 Tax Avoidance Provision

In Malaysia, there is general anti-avoidance legislation. There is general law to combat the artificial devices used for tax avoidance schemes. However, there are not many specific anti-avoidance provisions which directly handle tax avoidance schemes in particular circumstances. Price Waterhouse (1990, p.116), refers to the provision which "empowers the Director-General of IRB to make adjustment to taxable income and assets valuation whenever there are reasons to believe that a business transaction has altered the incidence of tax".

2.7 Summary

The need for the development of the country's infrastructure, such as road, rail and port facilities, led to the introduction of the earliest form of taxation in Malaysia in 1910. At that time, tax was mainly in the form of direct taxes on the main economic units. This was followed by a tax on income in 1917 which was then repealed in 1922. During World War II, a tax on profit and income was solely used for the purpose of imperial defence. In 1946, a taxation system was recommended for introduction. The principal objective of the introduced taxation system was to achieve a more equitable distribution of the tax burden in addition to generating revenue for the government. This marked the beginning of a new era in taxation on a permanent basis in Malaysia.

Malaysia is a former British colony and its tax system has its roots in the British tax system. Before the mid-sixties, no clear objective has been cited any where for tax collection other than to raise revenue. In the mid-seventies, however, according to Bardai (1991) the tax structure was increasingly been rationalized to achieve certain objectives. Taxes were therefore used:

- to promote investment and stimulate industrial development;
- to promote national saving and improve the free flow of goods leaving the country through harmonization of tax rates between Peninsular Malaysia, Sabah and Sarawak;
- to promote a more equitable distribution of income and wealth through a more progressive income tax structure and Real Property Gains tax; and
- to alleviate the burden of inflation, especially on the lower income groups.

These measures have brought some sophistication into the tax system, which has resulted in the use of taxation as an important policy instrument with uses other than merely collecting government revenue.

The tax structure in the 1960s and early 1970s was dominated by taxes on foreign trade. The importance of indirect taxes in the total tax structure gradually diminished. In contrast, the importance of direct taxes continued to rise. In 1988, corporate taxes, payroll taxes and import taxes had been the most productive taxes in the economy which, when grouped together, produced nearly 60 per cent of the total tax revenue. Corporate and payroll taxes contributed more than 49 per cent of

the total tax revenue which reflected the significant importance of direct taxes in the economy. In 1986, the Promotion of Investment Act (PIA) was introduced which implemented major tax incentives in Malaysia. Since the introduction of the Promotion of Investment Act 1986, it seems that there has been a need to attract foreign investors, so many changes have been implemented offering tax incentives. These incentives are designed to grant partial or, to an extent, total relief from the payment of income tax. Incentives were granted to promote products and activities in certain local industries. The tax incentives offered were, in the main, to motivate foreign investment.

Although the Malaysian tax structure was designed based on British tax law, Malaysian tax law is set forth to meet government objectives. Malaysia considers offers competitively low tax rates (Table 2.6 showing corporate tax rate in 2005 for ASEAN countries with Table 2.9 showing corporate tax rate in the broader region, Asia Pacific). Currently, Malaysia's corporate tax rate is the fourth lowest in the Asia Pacific region after Hong Kong (17.5 per cent), Singapore (20 per cent) and Taiwan (25 per cent). There are no annual wealth taxes, estate duties, gift taxes, accumulated earnings tax, federal income tax, controlled foreign company legislation, thin capitalization rules and transfer pricing rules. Although there is no transfer pricing legislation, transfer pricing transactions can be caught under Section 140, anti-avoidance provision.[9]

[9] The Director General of the Inland Revenue Board (IRB) may disregard or vary any transaction and make any necessary adjustments as he thinks fit if he has reason to believe that the transfer price is not reflective of the arms' length price and if profits are transferred between companies

within a group through artificial inter-company arrangements in order to minimize the group's income tax liability.

The anti-avoidance legislation in Malaysia is provided in Section 140 of the Income Tax Act 1967. In order to apply the provisions in Section 140, the Director General of Inland Revenue Board must first have reason to believe that a transaction has the effect of altering the incidence of tax. Apart from general anti-avoidance provisions in Section 140, the Income Tax Act 1967 contains other specific anti-avoidance provisions relating to the transfer or sale of stocks on discontinuance of business, settlements and controlled companies.

Literature Review

3.1 Theoretical Background

This thesis presents a principal-agent model in incorporating the possibility that the manager (agent) involved in tax avoiding activity may have two motivations for tax avoiding activity, namely synergy and agency, but which also allows for the possibility of hubris occurring. Prior studies of tax avoidance have stressed more individuals' behavior rather than corporations'. Slemrod (2004) has emphasized the differences between individual and corporate tax compliance, arguing that the latter should be analyzed in a principal-agent model. The basic premise of the model is that decisions about corporate tax avoidance are made by companies' managers.

In synergy-motivated tax planning, the managers act in the interests of their shareholders to increase firm value. If tax planning activity is driven by the synergy motive, then such activity should intend to create wealth for shareholders.

Agency theory suggests that the interests of principals and agents will not necessarily coincide and rests on the assumption that managers have an incentive to maximize their personal utility and may do so even to the detriment of shareholders. Managers may avoid tax because they derive a private benefit, for example, an increase in their prestige or career prospects by making them appear more valuable to the firm, owing to their ability to reduce taxes. In other words, the main characteristics of managers that are addressed in the agency literature are

opportunism and self-interest. According to Alchian and Demsetz (1972), Jensen and Meckling, (1976) and Eisenhardt (1989), in the absence of either appropriate incentives or sufficient monitoring, agents will be able to exercise their discretion to the detriment of principals. The argument is that owners wish to maximize profits, but that their designated agents may have neither the interest nor the incentive to do so.

Hubris results from mistakes by managers in estimating the value of tax planning. Hubris emphasizes the role of managers and their personality traits. Under the hubris theory, tax planning may be initially viewed as deriving from the motivation to raise firm value and maximize shareholders' wealth. The study of hubris which is widely used in the takeover literature has attracted scholars interested in understanding the role of the neurotic and psychological disorders of top executives. The concept of hubris from the personality theory (for example, see Kets de Vries 1990 and 1991), provides a description of hubristic leaders as narcissistic personalities who long for the reassurance and the applause of others. Kets de Vries (1991) notes that, with previous successes and from consistent public acclaim for successful achievements, hubristics leaders end up believing that their achievements exceed those of their counterparts. Kroll, Toombs and Wright (2000) emphasized that hubristic leaders tend to listen only to people whose opinions are compatible with their own. Consequently, being too independent, hubristic leaders tend to make mistakes.

This thesis proposes that in any tax avoidance activity, elements of synergy, agency and hubris simultaneously exist and interact to determine the output of the activity. These theories aim to identify the economic motives that influence managers to make certain choices. These theories could hence be used by accounting regulatory bodies and tax policymakers to predict how corporations would react to proposed changes in accounting rules and to predict the economic effect of these changes.

This thesis will try to adapt and provide additional evidence on the principal-agent model of tax avoidance behaviour. This model, which has been well established in developed countries (for example, see Phillips, 2003; Rego, 2003; Janssen and Buijink, 2000; Holland, 1998; Gupta and Newberry, 1997), may have different consequences and implications in the Malaysian setting, thus new factors may be identified in the Malaysian business environment.

3.2 Development of Hypotheses

This thesis identifies seven hypotheses to measure firm characteristics to explain why managers decide to avoid or not avoid corporate income tax. Those hypotheses are:

3.2.1 Political Cost

Political costs refer to the costs imposed on firms by politicians resulting from taxes and regulations. Alchian and Kessel (1962) and Jensen and Meckling (1976) conceptualized the political cost hypothesis, while Watts and Zimmerman's 1978 study was one of the first studies to test it empirically. Watts and Zimmerman (1978) developed a framework to explain managerial decisions concerning accounting policy choice. One factor they identify which influences accounting policy choice is firm size. This is because firm size may serve as a proxy for a company's success and political costs. Effective tax rates studies have attempted to investigate whether firm size is systematically related to the ETR. Several studies provided evidence that there is an association between firm size and effective tax rates, but the results have been mixed: where some studies found a positive relationship (for example, Rego, 2003; Omer et al., 1993; Zimmerman, 1983), others have found a negative relationship (for example, Janssen and Buinjink, 1998; Holland, 1998; Porcano, 1986; Siegfried, 1972) and still others, no association (for example, Mills et al., 1998; Gupta and Newberry, 1997; Jacob, 1996).

Zimmerman (1983) reveals that there is a positive relation between firm size and effective tax rates and contends that large firms pay more taxes because they experience greater government and public scrutiny. He indicates that larger firms suffer from political costs. Omer et al. (1993) obtained empirical evidence that

supports Zimmerman's findings and political cost hypothesis. Omer et al. (1993) support the political cost hypothesis that firms, because larger and successful are victims of greater regulatory actions. In general, the political cost hypothesis argues that large firms are facing greater government scrutiny and wealth transfer, and in turn would have a higher corporate ETR. Rego (2003) investigates the effect of ETR in a multivariate framework using a large sample of U.S. corporations for a time period between 1990 and 1997. He reveals that after controlling for pre-tax income, foreign operations, industry membership, year and geographic location, larger firms have a higher ETR. His results conclude that larger firms face political costs which increase their ETR.

In contrast, Siegfried (1972) found a negative association between firm size and ETR. He argued that larger firms would have a lower ETR because their greater resources would increase their ability to develop expertise in tax planning and to organize their activities in a tax efficient manner. Salamon and Siegfried (1977) argue that larger firms possess superior economic and political power relative to smaller firms and are therefore able to avoid tax burdens. Porcano (1986) supports this notion by finding a negative relationship between firm size and ETR. In Europe, Janssen and Buinjink (1998), using data from the Netherlands, reported a negative association between size and ETR. Holland (1998) was been the first to investigate the relationship between company size and corporate tax burdens using UK data. He estimates the relationship from UK non-financial firms for a twenty-

six year period. He finds some evidence of a negative relationship between firm size and ETR.

However, on the other hand, Jacob (1996), Gupta and Newberry (1997), and Mills et al. (1998) did not find any relationship between firm size and ETR. Thus evidence concerning a relationship between firm size and ETR is mixed and therefore controversial. The controversial evidence for the impact of firm size on corporate tax liability suggests the need for a further examination of the issue. The differences in results may be because of the difference in sample selection by reference to countries or industries, the time frame under observation, the database employed and the proxy used for firm size. In addition, most of the ETR and firm size studies are in a univariate framework, which might create variation problems. Thus, the relationship between firm size and ETR is, therefore, a matter for empirical investigation. This thesis predicts the direction and strength of the relationship to be positive, which is consistent with the prediction of Omer et al. (1993) that larger companies are likely to pay more income tax than smaller companies, as a result of increased visibility and government scrutiny.

Despite this on-going debate, previous literature has focused more on U.S. and U.K. firms and with little emphasis on emerging economies. However, a univariate study by Kim and Limpaphayom (1998) focused on Hong Kong, Korea, Malaysia, Taiwan and Thailand and reports a positive relationship between firm size and ETR for Hong Kong, a negative relationship for Korea and Thailand and

no significant relationship for Malaysia and Thailand. Derashid's and Zhang's 2003 study is the only study of ETR and firm size which has been carried out in Malaysia and this study covers the period of 1990-1999 inclusively. They, however, find a negative relation between firm size and ETR and suggest that large firms in Malaysia do not suffer from political costs. These two studies reported conflicting results in the relationship between firm size and ETR. The important fundamental limitation may be because both studies do not control for other variables which may influence ETRs.

Based on the political cost hypothesis, it is expected that large companies are less likely to engage in aggressive tax avoidance. In the alternate form, the hypothesis is as follows:

H_1: Tax avoiding corporations are smaller in size than non-avoiding corporations.

Most ETR researchers (for example, Derashid and Zhang, 2003; Rego, 2003) use firm size as a proxy for political cost. Other studies, not examining ETR, also refer to company size as a proxy for political cost (for example, Inoue, 1996). Inoue (1996) investigated factors which potentially influence Japanese managers' choice of accounting policies. He used firm size as a proxy for political costs and found that size is significant for all accounting policy choices tested. Thus, firm size has

been identified in the literature as the most important accounting variable that represents political cost.

This thesis also uses firm size to measure political cost. Measurement of firm size in previous studies has used sales or total assets as a proxy for political cost. To facilitate comparison with previous studies, this thesis measures firm size by the total assets.

3.2.2 Profitability

Manzon and Plesko (2002) suggest that profitable firms can make more efficient use of tax deductions, credits, and exemptions, resulting in greater book-tax differences[10]. Spooner (1986) contends that investment patterns and profitability affect ETR. Siegfried (1972) is one of many from the ETR literature who argues that ETR can be used to measure effective tax planning, and has hypothesized that firms which have greater resources would develop expertise in tax planning.

Rego (2003) investigates whether economies of scale exist for tax planning, that is whether larger, more profitable, multinational corporations avoid more taxes than other firms. He found that after controlling for firm size, corporations with greater pre-tax income have lower ETRs. The negative relation between firm size and ETR suggests that firms with greater pre-tax income avoid more income taxes than other firms.

[10] Book-tax difference is the difference between income reported to shareholders (annual report) and tax authorities (taxable income).

In contrast, even though Wilkie (1988) argues that pre-tax income is an important determinant of variation in the corporate tax burden, Wilkie (1988) and Wilkie and Limberg (1993) report a positive relationship between pre-tax income and ETR, that is, greater pre-tax income is associated with a higher ETR. However, their findings were based on univariate results which did not control for firm size, hence it is possible that their results were due more to the political cost argument as discussed earlier.

Gupta and Newberry (1997) identify possible control variables for ETR. They examine four determinants of ETR which are size, profitability, capital structure and asset mix, and explore whether the relation between these variables and ETR changed before and after the enactment of the U.S. Tax Reform Act of 1986. They find that the relationship between profitability and ETR for both time periods was significantly positive.

This relationship between profitability and ETR has been tested in developed markets, but to the author's knowledge has not been tested in emerging markets, such as Malaysia. Previous findings might be supported or contradicted as they will be influenced in part by characteristics of enforcement, professionalism, flexibility and cultural factors of the companies in emerging countries, hence, the need for further evidence on the relationship in developing countries.

Companies with high profits are likely to employ extensive tax planning to gain tax benefits. Thus a negative relationship between income before income tax and ETR is hypothesized. It is predicted that an increase in the income of the company will decrease company's effective tax rate whilst controlling for size effects. In the alternate form, the hypothesis is as follows:

H_2: Tax avoiding corporations are more profitable than non-avoiding corporations.

Profit is defined as income before income taxes. The tax shield theory would be validated in emerging countries if a negative relation is found between profit and ETRs.

In another study which is not an ETR study, Graham and Tucker (2006) identified a sample of 44 tax shelter companies that have been alleged or proven by the government to be involved in tax shelters for the period 1975 to 2000. They compared and matched the average data before and after the shelter activity across companies, regardless of the length of the sheltering activity, to investigate the characteristics and magnitude of the tax shelter employed. They indicated that tax shelter activity increases with firm size, profitability, research and development expenditure, foreign operations and the market to book ratio of debt. Thus their study supported the idea of a positive relationship between profitability and tax shelters.

3.2.3 Leverage

Companies requiring new finance can fulfill their needs either by borrowing (debt) or by raising equity (shares). It seems likely that when companies make their financial decisions, they consider the costs and benefits associated with each financing method. The optimal level of debt decisions are based on several theories, which are the trade-off theory[11] (Brennan and Schwartz, 1978), the pecking order theory (Myers, 1984; Myers and Majluf, 1984), the agency cost theory (Jensen, 1986; Jensen and Meckling, 1976), and the tax shield theory (Lasfer, 1995; Chatterjee and Scott, 1989; Ross, 1985; DeAngelo and Masulis, 1980). Several authors report that taxation and agency cost are regarded as the main determinants of capital structure (Barclay and Smith, 1995; Harris and Raviv, 1990; Stulz, 1990). In addition, Graham (2000) indicates that tax benefits are one of the factors that affect financial decisions. This thesis employs the debt tax shield theory in explaining the company's leverage decisions. Modigliani and Miller (1963) first hypothesized the tax benefit of debt, which is the tax shield theory. The theory predicts that profitable companies would borrow more so as to reduce taxes since interest on debt is tax deductible.

DeAngelo and Masulis (1980) argue that, in the U.S., companies can take advantage of various tax deductions, allowances and forms of tax relief that are

[11] Trade-off theory is balancing the costs and benefits of debt relative to equity. It is to determine the optimal target capital structure by balancing between tax shield on debt and expected cost of financial distress.

non-debt tax shields[12], which are available for corporations. Only companies with lower income or lower corporate tax rates could fully utilize these deductions and allowances to lower taxable income. They suggest that companies subject to lower corporate tax rates will employ less debt in their capital structure. Ross (1985) indicates that with substantial non-debt tax shields, the expected value of interest tax savings declines and the incentive to finance by debt is diminished. He also assumes that firms subject to low tax rates are expected to employ less debt in their capital structure relative to firms with higher tax rates.

Corporations engaging heavily in debt financing may be considered to be engaging in one form of tax planning. The standard assumption, dating back to Modigliani and Miller (1963), is that as interest payments are tax-deductible and dividend payments are not, debt financing is associated with a high tax advantage. One would then expect firms as fully debt-financed as possible. However, the results are, in general, not confirmed by empirical evidence (for example, see Graham, 2000; Barclay and Smith, 1995). Modigliani and Miller (1963), pursuing the tax shield theory, justify that companies borrow more to save taxes since interest costs are deductible. Miller (1977) suggests that firms issue debt only when they expect to use the interest deduction to offset taxes. Stickney and McGee (1982) provide evidence of a significant negative relationship between leverage and ETR, which indicates that firms with low ETR tend to be highly leveraged.

[12] Non-debt tax shield is a tax deduction and allowance, other than interest on debt deduction.

Porcano (1986) indicates that, when a firm has more debt, it would pay less tax. Managers might not favour more debt as it will reduce cash flow for companies to serve debt payments. However, as there are tax benefits, managers will increase debt if the benefit is sufficient. The increase in the amount of debt in a company's capital structure lowers the expected tax liability and so increases the company's after tax cash flow. The benefits of debt on tax are often modelled as the primary benefit of using debt, but the empirical evidence on the relationship between corporate taxes and capital structure choice is conflicting and inconclusive (for example, Gordon and Lee, 2001; Gupta and Newberry, 1997; and Titman and Wessels, 1988 in the U.S., Lasfer, 1995 in the U.K.; and Pattenden, 2006; Twite, 2001 and Gatward and Sharpe, 1996 in Australia). Graham (1996) suggests that some conflicting results may be because of the proxies used to measure a company's tax status. The tax status of companies has never been explicitly calculated owing to tax return data being confidential. According to Graham (1996), although the proxies used to gauge a company's tax status are the best available, they can still be misleading. As a consequence, most research fails to find that tax considerations are an important factor in corporate financial decisions. For example, Barclay and Smith (1995) fail to provide support for the proposition that taxes have an important impact on corporate leverage decisions. However, they added that this does not prove that tax considerations do not affect financing decisions and suggest that it may be possible to design more effective tests of the tax effects of debt financing.

In Australia, studies by Twite (2001) and Gatward and Sharpe (1996) find conflicting evidence on the association between taxes and capital structure. Gatward and Sharpe (1996) find no support, while Twite (2001) finds strong support, for the use of taxes in explaining financial choices.

In the United Kingdom, Lasfer (1995) examines the impact of corporation tax and agency costs on firms' capital structure decisions. Lasfer (1995, p.265) finds that, "in the short run, firms' capital structure decisions are not affected by taxation". However, "in the long run, companies that are tax exhausted (firms' not paying tax) exhibit significantly lower debt ratios than tax-paying firms". He suggests that, in the short term, firms do not alter their financing to accommodate changes to ETR as they may return to being a tax-paying firm in the long term and changes in debt financing will incur costs. They conclude that, in the short term, the motivation for debt finance is driven by the resolution of the agency conflicts[13] and, in the long term, by tax savings.

In a recent study, Pattenden (2006) investigates the tax incentive to use debt in two different tax regimes in Australian firms. He determines factors that affect corporate capital structure in both of the tax regimes, which are the dividend imputation regime and the classical regime. He reveals a strong relationship

[13] Corporations, typically, are controlled by management teams over business activity without sufficient monitoring by the owner of the corporation. The separation of ownership and control might raise agency conflict due to the manager's conflict of interest. Agency conflict is the conflict between managers and shareholders in evaluating and making financial decisions. The conflicts occur because managers and shareholders have different incentives. The resolutions arise after taking into account the conflict between them.

between marginal tax rates and debt changes under the classical regime, and little or no relationship under the dividend imputation regime.

In the U.S., Gordon and Lee (2001) estimate the effects of changes in corporate tax rates on the debt policies of U.S. firms. The advantage of their study is that the data set used covers a long time series from 1954 to 1995, which includes different tax regimes. Their results suggest that taxes have had a strong and statistically significant effect on debt levels. For example, they report that increasing the corporate tax rate by 5 per cent (from 35 per cent to 40 per cent), resulted in an additional 1.8 per cent of corporate debt financing, whereas cutting the corporate tax rate by 10 per cent (from 46 per cent to 36 per cent), reduced the leverage by around 3.5%. Thus they conclude that corporate tax rates have a significant effect on corporate use of debt.

MacKie-Mason (1990) also provides clear evidence of tax effects on financing decisions, and reports a relationship between tax shields and debt policy. He suggests that tax shields should matter only to the extent that interest deduction would affect the marginal tax rate. He clarified the relationship between tax shields and the incentive to use debt. Furthermore, he suggests that firms with low marginal tax rates are less likely to finance new investments with debt[14]. His results provide strong and robust evidence that the relationship between tax shields and the marginal tax rate is important and that taxes do affect financing decisions.

[14] He found that firms with high tax loss carry forwards and investment tax credit are much less likely to use debt. This is because they are unlikely to be able to use interest deductions.

Graham (1996) supports the finding by Mackie-Mason (1990) that firms with high marginal tax rates are more likely to issue debt than firms with low marginal tax rates.

Different tax codes accord differential treatments to the capital structure and are likely to impact on companies' financing decisions. There is evidence that corporate debt may have great tax benefits that maximize after tax returns. More recently, Graham (2000, p.1901) indicates that the "typical firm could double tax benefits by issuing debt until the marginal tax benefit begins to decline". He predicts how aggressively a firm will use debt by observing its tax benefit function. He added that firms tend to use debt more aggressively now than they did in the 1980s.

Gupta and Newberry (1997) noted that there are competing arguments about the direction of the relationship between leverage and ETR in the U.S. They use a multivariate approach and longitudinal data to measure the effect of the U.S. Tax Reform Act of 1986 (TRA86) on the determinants of ETR. They found that the coefficient of leverage was significant and negative both before and after TRA86, with the ETR based on book-income (accounting income). This result is consistent with the argument that larger interest tax shields lead to lower ETR. However, they also found a positive significant relationship between leverage and ETR before TRA86, with the ETR based on cash-flow. This finding could be explained

by an alternate argument that companies with high marginal tax rates[15] are more likely to use debt financing. Hence, they document support for both significant positive and negative association between leverage and ETR. Their finding indicates that, in the U.S., the differences in marginal tax rates may be factors driving companies' financing decisions, resulting in a positive relationship. Malaysia, however, has a flat corporate tax rate, and thus large differences in marginal tax rates are unlikely.

Interest deductions reduce a company's taxable income, which in turn decreases the company's tax liability. The tax benefit of debt is the tax saving that results from deducting interest from a company's revenue. Given that the advantage of debt financing (resulting from the interest tax-deductibility) could reduce the company's tax liability, it is predicted that a negative relationship will exist between leverage and a company's effective tax rate. The negative association between leverage and ETR is expected because highly leveraged companies have a higher interest tax shield which in turn reduces the ETR. Therefore, it is expected that tax avoiders will have higher levels of leverage, whilst controlling for company profit. This suggests the following hypothesis, stated in alternative form:

H_3: Corporate tax avoiders have a higher level of leverage in the capital structure than non-tax avoiders.

[15] One of the most significant changes in the U.S. Tax Reform Act 1986 was a reduction in the marginal tax rates (MTR), which was from a high bracket of 46 per cent of MTR in 1986 to 34 per cent in 1988.

In addition to the tax shield theory, recent literature also relates debt to agency costs, that is, companies are expected to set their capital structure in a way to minimize the potential conflicts of interest between managers and shareholders. The agency theory posits that there is natural conflict in the interest of managers and shareholders. According to several comprehensive surveys of the literature (for example, Moh'd et al., 1998; Harris and Raviv, 1991), debt can reduce agency conflicts. According to Moh'd et al. (1998), there are several methods that could mitigate the agency problem. These methods fall into two categories, namely motivational mechanism and external control. In the latter (external control), one way to align the interest of managers and shareholders is to increase manager ownership. The motivational mechanism is to use an increase in debt. The increase in debt would also increase the probability of bankruptcy and job losses, and this would add risk and might further motivate managers to increase their efficiency. Thus managers' fear of bankruptcy or financial distress tends to reduce agency costs. The increase in debt, to reduce agency conflict, would in turn lower the corporate effective tax rate.

On the other hand, debt reduces the amount of free cash flow as a company is committed to pay out cash owed to debt. Thus the company will have lower amount of free cash and manager self-interest activities will be limited. Hence according to Wruck (1994) and Maloney et al. (1993), debt finance creates an incentive for managers to work harder and make better investment decisions. Thus, the company issuing debt is committed to distributing free cash flows as

interest payments rather than retaining them as a buffer which may discipline management into working more efficiently.

A large body of prior studies (Bathala et al., 1994; Crutchley and Hansen, 1989; Friend and Hasbrouck, 1988; Friend and Lang, 1988) find evidence consistent with the proposition that debt is a substitute for managerial ownership in reducing agency costs.

This implies that companies are expected to use debt finance not only to benefit from tax shields but also to mitigate agency costs. Thus the joint theoretical prediction between tax shield and agency costs will in turn lower the company's effective tax rate. However, this thesis primarily concentrates on tax shield theory in explaining the company's leverage decisions.

3.2.4 Foreign Activity

The Malaysian economy is dependent on foreign activity. As the operations of Malaysian companies become increasingly global in scope, an important issue is how their foreign activities impact on their effective tax rates. Companies engaging in foreign activity are fundamentally different from domestic-only companies as they operate in different cultural, political, economic environments and different tax legislations and jurisdictions.

There are several means by which companies engaging in foreign activity may lower their effective tax rates. Companies engaging in foreign operations have opportunities to avoid income taxation by:

- locating operations in low-tax foreign jurisdiction;
- shifting income from high-tax jurisdictions to low-tax jurisdictions;
- exploiting differences between the tax rules of different countries; and
- taking advantage of tax benefits agreements with host countries.

These activities may enable companies to lower their effective tax rates. According to Leblang (1998), corporations engaging in foreign operations may have significantly greater opportunities to escape tax with respect to cross-border investments than domestic only corporations.

There is a number of foreign jurisdictions that offer corporate income tax rates which are lower than the Malaysian corporate tax rate of 28 per cent (see Table 2.9), such as Singapore (20 per cent) and Hong Kong (17.5 per cent). The benefit of operating in a low tax foreign jurisdiction is that it will lower the corporate tax expense and in turn, the corporate ETR. In contrast, corporate income tax rates exceed the Malaysian corporate tax rate in a number of foreign jurisdictions, such as Indonesia (30 per cent), Thailand (30 per cent), Brunei (30 per cent) and Philippines (32 per cent) in the ASEAN region. It is common for Malaysian corporations to have operations in both high and low foreign tax jurisdictions, but

one would expect that the corporations would operate more in low tax foreign jurisdictions than high tax foreign jurisdictions.

Despite the advantage offered by cross-border activity, the Malaysian tax code also provides tax benefits for Malaysian companies engage in foreign operation activities. The Promotion of Investment Act 1986 provides a tax incentive for foreign sales corporations:

- for exporting Malaysian manufactured products and agricultural produce;
- by providing a double deduction for expenses incurred in the promotion of exports and expenses of seeking opportunities for the export of manufactured products and agriculture;
- by promoting export activity by local companies as they are eligible for a double deduction for expenses incurred in participating in an approved international trade fair; and
- by providing a double deduction to local companies for local professional fees incurred on packaging design on export quality goods.

Studies, mainly in the U.S. and U.K., have documented that companies engaging in foreign activity report significantly lower taxable income compared with domestic only companies. One might expect that corporate taxes are controllable through planning, and Hines (1999) provides evidence that U.S. corporations with foreign operations employ a wide variety of international tax planning strategies.

According to Rego (2003, p.813), companies with foreign operations "have opportunities to avoid income taxes by locating operations in low-tax countries, by shifting income from high-tax locations to low-tax locations, by exploiting differences in the tax rules of different countries, by engaging in complex property transactions and by taking advantage of tax subsidy agreement with host countries".

Several studies have considered foreign operations as a determinant of tax burden. According to Craig and Todd (1993), companies that are involved in foreign operations have to re-evaluate the structure and location of foreign operations in order to reduce the tax burden.

Another aspect of companies that engage in foreign operations is the foreign-controlled company itself. Collins et al. (1997) found that foreign-controlled domestic firms (FCDC) achieve around zero taxable income as a result of transfer pricing manipulation. They examined the U.S. tax returns of FCDC wholesale traders from 1981 – 1990, a sector where production function, they argue, is relatively simple and where companies can manipulate taxable income by managing the prices between the foreign manufacturer and the U.S. distributor.

Leblang (1998) suggests that companies with foreign operations could avoid or reduce their tax burden, since they have greater opportunities to escape tax with respect to cross-border investments than with respect to strictly domestic investments. However, in contrast with Leblang's assertions, Collins and Shackelford (1999) contend that empirical findings are insufficient and ambiguous

and fail to provide conclusive evidence that companies engaging in foreign activity pay less income tax than domestic-only companies.

Harris and Feeny (2003) investigate the variation of ETR in a multivariate framework of Australian large business and international companies. The data consists of four years for the period 1993/1994 to 1996/1997. The results of their OLS regressions, carried out on each separate year of data, indicate that the foreign income variable has a negative sign for all four years and is significantly negatively related to ETR for the latter two years. They argue that this provides evidence that companies may be using their foreign operations to lower their domestic ETR.

Rego (2003) investigates whether economies of scale exist for tax planning, such that larger, more profitable, multinational corporations avoid more income taxes than other firms. He revealed that multinational U.S. companies, with more extensive foreign operations, reported lower effective tax rates than domestic-only companies. He also indicated that this was a result of several tax avoidance strategies, such as creation of book-tax differences and income shifting from high tax jurisdictions to low tax jurisdictions.

Hence, several studies provide evidence that companies engaging in foreign activity might be tempted to shift taxable income to low tax jurisdictions. As Malaysia is already a relatively low tax jurisdiction, the aggressiveness of tax

avoidance activity between companies engaging in foreign activity and domestic-only companies may be limited. However, it is expected that companies with extensive foreign activity will exploit tax minimization strategies more aggressively than their counterparts with less extensive foreign activity companies. This suggests the following hypothesis, stated in alternative form:

H_4: Corporate tax avoiders have a higher level of foreign activity than non-tax avoiders.

A further study, which focuses on the foreign controlled aspect, by Langli and Saudagaran (2004) investigates whether foreign controlled corporations have lower taxable income compared with domestic controlled corporations. Their sample consists of small and medium size corporations registered in Norway in the manufacturing and retail and wholesale industries. They find that foreign controlled corporations in these two industries report consistently lower taxable income than comparable domestic controlled corporations. However, the finding is with the exception of small size corporations in the manufacturing industry where the taxable income differential is negative but not significant overall.

3.2.5 Capital Intensity

The Malaysian government has been introduced a number of tax incentives to promote local and foreign investments and priority industries, particularly projects

which are capital intensive, with high value added content and involving new and emerging technologies. The tax incentives include investment tax allowance, industrial adjustment allowance, infrastructure allowance, reinvestment allowance, capital allowance and preferential treatment of capital imports.

The tax code typically allows capital allowance for tangible assets to be deducted over periods much shorter than their economic lives. The capital intensity hypothesis is that the companies with higher capital intensity would be expected to gain tax savings which, in turn, lower their corporate ETR. This hypothesis has been generally found applicable in developed markets. For example, it has been tested by Gupta and Newberry (1997) in the U.S. and Harris and Feeny (2003) in Australia. To the author's knowledge, however, this model has not been tested in emerging markets, such as Malaysia.

Harris and Feeny (2003) use data from the Australian Tax Office (ATO) to model the effective tax rates of large Australian corporations. Their data appear to be superior to those previously used in the literature as they were allowed access to the ATO tax return database, while previous studies have had to rely on firm level data only. The ATO tax return data are confidential and remote access was authorized only to Melbourne Institute researchers under a specific research project agreement. They provide evidence that more capital intensive companies are associated with lower ETR. Harris's and Feeney's results indicate that companies utilize depreciation deduction to lower their taxable income.

Gupta and Newberry (1997) and Stickney and McGee (1982), both document a significant negative relationship between capital intensity and ETR. Stickney and McGee (1982) use capital intensity to explain corporate effective tax rates. They suggest that greater investment in depreciable assets should produce higher investment tax credits (ITC), and using accelerated depreciation should thereby result in greater tax savings and lower effective tax rates. They estimate that capital intensive firms should have a lower ETR. Their study, using individual firms, supports their contention. Gupta and Newberry (1997) similarly consider the issue of capital intensity and find strong support for a negative significant association between capital intensity and ETR.

An older study by Siegfried (1974) uses the same rationale as Stickney and McGee (except that instead of an individual firm basis, he uses an industry wide approach), supports the conclusion that the more capital intense an industry is, the lower the taxes. Both the ITC and the more liberal depreciation methods should produce favourable tax treatment for capital intensive firms. The potential tax savings would also increase the expected cash flow of the firms.

Capital intensity is expected to be negatively associated with ETR owing to the tax benefits associated with capital investments. Tax allowance for capital investment can therefore be used to reduce taxable income. This suggests the following hypothesis, stated in alternative form:

H_5: Corporate tax avoiders have a higher degree of capital intensity than non-tax avoiders.

Previous empirical studies found a consistent negative relation between capital intensity and ETR, but have focused mainly on developed countries. This thesis examines the relationship between capital intensity and a company's effective tax liability from within the context of a developing country. Capital intensity is measured by the ratio of tangible fixed assets to total assets.

3.2.6 Dividend

Profitable companies that earn income can use it either to invest in operating assets, acquire securities, retire debt or distribute to shareholders. Income distributed to shareholders is called a dividend. Issues arising in the dividend context are why are dividends distributed and what proportion of income should be distributed to shareholders. Many reasons exist why companies should pay or not pay dividends and how much they should pay. However, discovering why companies pay dividends and how much should be paid is still puzzling.

The study of corporate dividend behaviour is one of the most widely researched issues in finance. Researchers have different views of factors that affect dividend payment. Despite extensive debate and research, the question of why a corporation pays dividends remains a puzzle. Black (1976) refers to this issue as a dividend

puzzle with 'pieces that just do not seem to fit'. Since then, Baker (1999) contends that the amount of theoretical and empirical research on dividend policy has increased dramatically as an effort to develop a clear picture of why dividend is paid. In more recent studies, Bernstein (1996) and Aivazian and Booth (2003) reclaimed the dividend puzzle and noted that some important questions remained unanswered. Brealey and Myers (2003) consider the dividend controversy to be one of the '10 unsolved problems in finance'. Financial economists developed various theories to help to explain this puzzle, that is, signalling, agency theory, bird-in-hand, tax-preference and tax-clientele theory. Most of the research has explained why companies pay dividends by focusing on one of these theories. This thesis will briefly review these major theories before focusing on the relevant tax-effect theory in developing the hypothesis.

The signalling theory developed by Bhattacharya (1979), John and Williams (1985), and Miller and Rock (1985) suggests that managers use dividend payments to signal information to investors. They argue that information asymmetries between companies and outside shareholders may induce a signalling role for dividends. The arguments consider that dividends 'signal' the well-being of the company to investors and so promote confidence. The more recent studies, Baker et al. (2002) and Nissim and Ziv (2001) provide strong support for the signalling explanation of paying dividend. Although managers can use dividend payments to convey information, dividend changes may not be a perfect signal to outside investors. Easterbrook (1984) contends that dividend increases may be

ambiguous signals unless the market can distinguish between growing firms and disinvesting firms. Soter et al. (1996) concluded from their study that dividend reduction was not a result of cash flow problems, but was a strategic management decision to improve the firm's long term financial flexibility and growth prospects. According to Easterbrook (1984), the problem with dividend signals is that it is not clear just what the dividend signal is, and why dividends are considered better signals than other methods. Thus dividends may not directly reveal the prospects of the company, so the message conveyed may be ambiguous.

A second explanation of dividend relevance is agency theory. Some studies (for example, Easterbrook, 1984; Rozeff, 1982; Jensen et al., 1992) argue that dividends should be able to reduce agency costs. This theory derives from the conflict of interests between managers and shareholders, and the dividend mechanism provides an incentive to reduce the agency costs. Distributions of dividends will decrease firms' cash resources and thus managers will be forced to find external financing. According to Slovin et al. (1990), a manager subjects himself to intense scrutiny by accountants, investment bankers, and other market professionals when finding new capital. Thus the effect of intense scrutiny, other than from existing shareholders, will reduce agency costs. Therefore dividend payments may serve as a means of monitoring or bonding management performance. This explains how dividend may be useful in reducing the agency cost of management. Briefly stated, agency theory posits that by distributing resources in the form of dividend, the company cash flow is no longer sufficient to

satisfy the needs of the company, hence managers subject themselves to the scrutiny of capital markets in order to generate new funds. Therefore dividend payments induce managers to take action which reduces agency costs. Another explanation of agency theory argued by Jensen (1986) is that companies pay dividends to reduce the firm's discretionary free cash flow[16] that can be used to fund investments which benefit managers. The latter explanation of the agency theory was supported by empirical evidence in studies by Agrawal and Jayaraman (1994), Jensen et al. (1992) and Rozeff (1982).

Another explanation of why companies pay dividends is based on the bird-in-hand theory (dividend paid to reward existing shareholders). However, Bhattacharya (1979, p.267) argues that the bird-in-hand explanation for dividend relevance is fallacious and asserts that "virtually no empirical support exists for the bird-in-hand explanation" for paying dividends.

In addition to these theories of the effect of taxes on dividend payments made by individual companies, several studies conceptualize that corporate taxes influence the dividend decision (for example, see Bellamy, 1994; Lasfer, 1996).

Another important explanation of dividend payment involves the theory of tax-preference. One of the explanations regarding tax-preference theory is the difference in treatment between capital gains (no capital gain tax) and dividend

[16] Free cash flow is cash available in the company from the operations after taking account of dividend paid to shareholders and expenditures to maintain assets.

whereby shareholders may prefer capital gains over dividend. The favourable tax treatment of capital gains over dividends, for example, may lead investors to prefer a low dividend payout to a high dividend payout, or, may cause investors to prefer non-dividend paying stocks. Black and Scholes (1974) find no evidence of this tax effect, while Kalay and Michaely (1993) and Litzenberger and Ramaswamy (1979) find evidence that pre-tax returns are related to dividend yield.

Another explanation of tax effect on dividend relevance is called the tax-clientele effect. The tax-clientele theory suggests that higher rate tax investors should, ceteris paribus, concentrate their portfolios on companies paying lower levels of dividends. Conversely, lower rate tax investors should, ceteris paribus, concentrate their portfolios on companies paying higher levels of dividends. As the tax effect differs for various investors, they are more attracted to the dividend policies that are appropriate to their particular tax circumstances. Investors with high income tax brackets would prefer shares with low payouts, while investors with low tax brackets would favour high payout shares. Ang (1987) provides a summary of the literature on dividend policy and the role of taxes, and concludes that the explanation of tax-effects on dividends is inconclusive. However, Dhaliwal et al. (1999) support the theory of tax clientele and provide evidence that dividend clientele are substantial enough to influence investor behaviour. Another related study, Lee et al. (2006), found strong evidence of a clientele effect. They exploited a unique dataset from Taiwan, where the capital gains tax rate is zero and found

evidence that highly taxed shareholders tend to hold shares that pay low or zero dividends and trade out of companies that increase dividends. The opposite is true for shareholders and institutions in lower tax brackets.

Dividend relevance to explain the tax effect on dividend policy suggests that companies set their dividend policies to minimize their tax liability. Using UK data, Lasfer (1996) indicates that companies set their dividend policies to minimize their tax liability and to maximize the after-tax return for their shareholders. He found that tax exhausted firms reduced the level of dividends paid, while a lower tax burden on dividends in the hands of shareholders appears to encourage firms to pay higher dividends. He reports that a company, the tax liability of which was too low to make full use of Advance Corporation Tax (ACT), would encourage a lower dividend payout ratio. His findings that taxation affects firms' dividend policy are in line with other previous studies in the UK (for example, Lomax, 1990 and Edwards et al., 1987).

Lintner (1956) developed a model which suggests that companies pay out dividends in accordance with the level of current earnings as well as the dividends of the previous year. Lintner's model has been used in a number of empirical studies in the U.S. and other countries. In the U.S., Baker et al. (1985) and Pruitt and Gitman (1991) support Lintner's work and conclude that the major determinants of dividend payments are future earnings and past dividends. Lintner's model has been tested in several other countries: in Canada by Chateau

(1979); in Australia by Shevlin (1982); in France by McDonald et al. (1975); in West Germany, the U.K., France and Switzerland by Leithner and Zimmerman (1993); and in the U.K. by Lasfer (1996). All found evidence to confirm that his findings are applicable in the developed markets tested.

Recently, several studies have focused on a company's dividend behaviour in the regulated and emerging markets. In India, Pandey and Bhat (1994) support Lintner's model and show that the managers try to maintain an uninterrupted record of dividend payment. In Turkey, Adaoglu (2000) supports Lintner findings and concludes that earnings are the main determinant of dividend payments for Istanbul Stock Exchange (ISE) companies.

In Malaysia, a number of studies on dividend behaviour support Lintner's model, for example, Pandey (2001), Kester and Isa (1996), Gupta and Lok (1995), Annuar and Shamsher (1993) and Isa (1992). Pandey (2001) indicates that large number of companies listed at Bursa Malaysia (Malaysian Stock Exchange) increase payment of dividends as earnings increase. Malaysian companies are also very prompt in ceasing to pay dividends when they suffer losses. He reveals that the dividend actions of Malaysian companies are very sensitive to earning changes. One of the objectives of his study was to examine empirically whether Malaysian companies follow stable dividend payment policies, as is generally the case in developed markets. His study provides evidence that the public listed companies in Malaysia follow less stable dividend policies where dividend

payments are closely related to changes in earnings. This thesis predicts that this phenomenon is due to the intention of maximizing shareholder's wealth. It is expected that companies will maintain a target dividend payout ratio and adjust the dividend payment accordingly with their earnings to maximize their shareholders' after tax returns.

Malaysia's dividend imputation system differs from the classical system which is employed in several countries.[17] Under the classical tax system, corporate dividends are subject to double taxation as shareholders are personally taxed on dividends paid out of income that has previously been taxed at the corporate level.

In contrast, under an imputation tax system, dividends are declared and paid out to shareholders after tax at corporate level. Shareholders, who have received net dividend, that is after tax is deducted at corporate tax rate, will gross up the amount of the dividend to be included in their taxable income and will receive a tax credit (or repayment) for the imputation that has been deducted at corporate level. Thus, the dividend tax credit received for tax paid at the corporate level wholly or partially eliminates the double taxation of dividends.

Shareholders are usually taxed at progressive individual tax rates for corporate profit paid out as dividends. As far as shareholders' tax rates are less than corporate tax rate, they may maximize wealth with maximum dividend payout.

[17] The classical system is currently employed in several countries including Belgium, The Netherlands and the United States.

Thus the imputation system is able to reduce tax liability for shareholders.[18] In Malaysia, it has always been the case that average personal tax rate is lower than the corporate tax rate. One would expect that, in Malaysia, shareholders would demand high dividend payout from a company's profits and managers who are interested in maximizing shareholders' wealth would be expected to declare generous amounts of dividends.

Regarding corporate tax, profits of Malaysian companies are taxed only once at a 28 per cent corporate tax rate. Appendix A shows the computation of tax payable for Malaysian companies. The company's net tax liability is derived after the deduction of Section 110 tax on dividend received from other companies and Section 132/133 double taxation relief. The company can pay dividend from profit after tax.

Unlike the dividend imputation system in UK, a company first pays tax on dividend to the tax authorities when dividend is paid to shareholders and then this is deducted from the company's corporation tax liability. In Malaysia, under Section 108, the Income Tax Act, 1967, companies are entitled to deduct income tax at the current corporate tax rate of 28 per cent from dividends paid to shareholders, but, this amount is not forwarded to the tax authorities and not deducted from the company's tax liability. The company is required to maintain a

[18] Dividend tax credit received by shareholders will reduce their tax liabilities. However, it depends on their marginal tax rates and their ability to utilize imputation credit. Generally, shareholders in low tax brackets may prefer a higher dividend compared to shareholders in higher marginal tax brackets.

special memorandum account known as the Section 108 Franking Account to keep track of the amount of tax franking credits available. This Account shows the ability of a company to pay dividends to a shareholder.

Table 3.1 shows an example of the Section 108 Franking Account for a company for three years. The company's tax paid is credited to this Section 108 account and can be utilized by the company to frank its dividend payment. This account also includes franking credits on dividends received from other companies (Section 110) and double taxation relief (Section 132/133). However, this example assumes no dividend received from other companies and no double taxation relief. In both 2003 and 2004, the amount of dividend paid is lower than the credit available, thus, the balance can be carried forward for franking future dividends. However, in 2005, the dividend is over franked, the Section 108 account shows a shortfall and this amount is a debt due to the tax authority. Thus if the dividend payment exceeds the tax credit available, the deficit will increase the company's tax liability.

Table 3.1
An Example of Section 108 Franking Account

It is assumed that XYZ Ltd resides in Malaysia and has a dividend imputation system. The corporate tax rate in the country is 28 per cent at the present. It has corporate tax paid of MYR10,000, MYR15,000 and MYR16,000 for 2003, 2004 and 2005, respectively. The company pays the after tax income on dividend to its shareholders. The company increases the distribution of dividend over these three years and the amount of tax paid on dividend is MYR8,000, MYR14,000 and MYR23,000 for 2003, 2004 and 2005, respectively. It is assumed that the company has no tax credit under Section 110 and no double taxation relief under Section 132/133, over these years.

Section 108 Franking Account

Year	2003 (MYR)	2004 (MYR)	2005 (MYR)
Balance bf	0	2,000	3,000
Add: Income tax paid	10,000	15,000	16,000
Add: Tax set off under Section 110 less Section 132/133 relief	-	-	-
Compared aggregate	10,000	17,000	19,000
Less: Tax deducted from dividend paid (Gross dividend @ 28 per cent)	8,000	14,000	23,000
Balance cf/ (Debt due to government)	**2,000**	**3,000**	**(4,000)**

Table 3.2 shows an example of Section 108 Franking Account for three different companies in 2005. It is assumed that all these three companies share similar conditions, which are that they have similar profits and tax credit brought forward. They also have no dividend received from other companies and no double taxation relief. However, these three companies paid different amount of dividends. Company A paid dividends less than the franking credit available and company B and C paid more than franking credit available. This is more likely company B and C have more distributable accounting reserves. However, a company's ability to declare dividends is subject to the availability of Section 108[19] tax credit, the tax portion of the dividend payment exceeding the tax credit available is due as debt to government for both company B and C.

[19] Section 108 of the Income Tax Act 1967 is, in fact, a constraining factor. The section requires setting up a notional account to which a credit entry is made in the amount of the current year tax paid. A tax deduction on gross dividend is then debited to the Section 108 account. In the full imputation tax system in Malaysia, companies which declare dividends beyond the amount allowed by the available Section 108 credit balance will be in debt to the government.

Table 3.2
An Example of Franking Account for Different Companies

It is assumed that company A, B and C reside in Malaysia and have equal chargeable income of MYR100,000 for each company in 2005. The corporate tax rate in the country is 28 per cent at the present. All the companies have no tax credit under Section 110 and no double taxation relief under Section 132/133 that year. It is assumed that the corporate tax paid is MYR28,000 for each company. All the companies pay the after tax income on dividend to their shareholders. The amount of gross dividend distributed for company A, B and C is MYR90,000, MYR110,000 and MYR120,000, respectively. It is assumed that all the companies have the balance of MYR2,000 tax credit brought forward.

Corporate Tax Computation

Company	A (MYR)	B (MYR)	C (MYR)
Tax payable: Chargeable income @ tax rate 28 per cent	28,000	28,000	28,000
Less: Section 110 tax on dividend	-	-	-
Less: Section 132/133 double tax relief	-	-	-
Net tax payable	**28,000**	**28,000**	**28,000**

Section 108 Franking Account

Company	A (MYR)	B (MYR)	C (MYR)
Balance bf	2,000	2,000	2,000
Add: Income tax paid	28,000	28,000	28,000
Add: Tax set off under Section 110 less Section 132/133 relief	-	-	-
Compared aggregate	30,000	30,000	30,000
Less: Tax deducted from dividend paid (Gross dividend @ 28 per cent)	25,200	30,800	33,600
Balance cf / (Debt due to government)	**4,800**	**(800)**	**(3,600)**

The impact of taxes on dividend policy is of interest for this thesis as companies which pay excess dividends might pay more tax. Based on this, this thesis seeks evidence of corporate tax avoidance strategies under the tax imputation system implemented in Malaysia. The tax hypothesis predicts that tax and dividend policies cannot generally be separated since changes in payout policies may affect tax liability. Thus the dividend decision is believed to be a factor in influencing corporate tax burden.

To some extent, this topic has largely been ignored in the finance literature, where researchers tend to prefer to concentrate on the relation between dividend policies and stock market value, cash flows, profitability, debt and market-to-book ratio. Previous empirical studies (for example, D'Souza, 1999; Collins et al., 1996; Alli et al., 1993; Jensen et al., 1992; Pruitt and Gitman, 1991; Lloyd et al., 1985; Rozeff, 1982; Higgins, 1981) have identified a number of factors that influence dividend payout ratio, including profitability, risk, cash flow, agency cost and growth.

However, there is a number of studies which examine the relationship between dividend and tax (for example, Hodgkinson, 2002; Bond et al., 1995; Chui et al., 1992). One of Hodgkinson's (2002) suggestions is that companies appear to adjust dividend due to tax influence. The main finding of Bond et al. (1995) is that companies faced with the higher cost of paying dividend due to surplus advance corporation tax would lower the level of dividend payment. Chui et al. (1992)

focusing on the individual taxpayer, find evidence that individual taxes do affect the amount of dividend.

To the author's knowledge, none of the previous studies allows for interaction between dividend and ETRs, hence this thesis is the first attempt to investigate empirically the relationship between dividend policy and company tax liability. The purpose of developing this hypothesis is to contribute to the dividend literature by analyzing the relationship between ETRs and a company's dividend decisions.

The tax hypothesis predicts that companies will decrease dividend payments to avoid an increase in tax liability due to the restrictions on dividend payment in the Section 108 Franking Account. Under the imputation system, the company that reaches a decision to distribute dividends is subject to the credit available in Section 108 and if dividend payments exceed this amount, this would result in an increase in the company's tax liabilities which in turn would increase ETR. Thus, the increase in dividend payout ratio will increase the company's effective tax paid. This suggests the following hypothesis, stated in alternative form:

H_6: Corporate tax avoiders have a lower dividend payout ratio than non-tax avoiders.

However, a company can restrict dividend payment subject to credit available in the Section 108 Franking account to avoid an additional tax burden. If this is the case, there may be no relationship between dividend payout ratio and ETR. One would expect that companies would maximize dividend payout to maximize shareholders' wealth, but restricted to the credit available in the Section 108 account in order to avoid paying more tax. This is so as to avoid penalties for over-franking dividends.

3.2.7 Managerial Ownership

Managers exercise significant control over decisions that affect the output of the company as day-to-day operations are under their control. The problem is that their actions are typically not observable. According to Jensen and Meckling (1976), one approach to reduce the agency costs[20] is to increase managers' ownership. They argued that separation between owners and managers has resulted in divergent interests and to align these divergent interests, contracts are often written to minimize agency costs. Lower managerial ownership level is expected to lead to the creation of contracts to restrict the opportunistic behaviour of the management. According to Jensen (1986), for example, the higher the level of managerial ownership, the lower the degree of divergence of interests and agency costs accordingly, and vice-versa. Jensen and Meckling (1976) argue that

[20] The agency cost exists as a result of the relationship between a corporation's owner (shareholders) and its management, that is, there is a potential that the management may pursue goals other than to maximize shareholder wealth.

as managerial ownership increases, there is greater alignment of interests of managers and outside shareholders. Jensen (1986) and Hanson and Song (2003) found that managerial ownership helps to reduce the agency cost and increases firm value. However, studies also found that high managerial ownership can decrease firm value because of managerial entrenchment[21] (for example, Shivdasani, 1993; Stulz, 1988; and DeAngelo and DeAngelo, 1985).

According to Baumol (1959), managers indulge their needs for power, prestige, and status by making long-run strategic choices designed to maximize corporate size and growth rather than corporate profits. In contrast, Fama (1980) argues that manager-controlled firms bear the full cost of failing to maximize firm value and thus would be reluctant to select accounting methods that did not maximize this value. Dhaliwal et al. (1982) provide evidence that accounting policy decisions are not independent of the ownership/control status of the firm. Their study suggests that, in general, accounting methods chosen by a firm depend on the firm's ownership. They found a significant difference in the depreciation methods adopted by manager-controlled and owner-controlled firms for financial reporting purposes. Watts and Zimmerman (1990) reveal that managers attempt to maximize their utility, which is positively related to their compensation. Previous studies tend to differentiate between owner-controlled (OC) firms and manager-controlled

[21] Managerial entrenchment is related to voting power and control of the board of directors. It is where the position of managers is free from the check of control and the corporate assets can be less valuable. This is in contrast with convergence-of-interest effects.

(MC) firms. MC firms are seen as not to maximize shareholder wealth, but rather maximize their own utility by preferring managers'various self-interests.

The conflicts of interest between managers and shareholders arising mainly from the separation of ownership and control have been well-documented. For example, research shown that OC firms differ from MC firms in term of performance (see McConnel and Servaes 1990), risk-aversion (see Palmer, 1973), executive compensation (see Dyl, 1988), and merger and acquisition activity (see Amihud and Lev, 1981), but none of the empirical studies, to the author's knowledge, focuses on the relationship between ownership and tax planning activity (ETR). Theory does not shed much light on the exact nature of the relationship between managerial ownership and tax planning activity, hence, this thesis carries out a preliminary investigation about the pattern of relationship between the two and attempts to fill this gap in the literature.

Since Jensen and Meckling (1976) suggested that managerial ownership may serve as an internal control mechanism for agency problems, a significant amount of theoretical and empirical work has been conducted. It has been argued that managerial ownership is positively related to firm performance because the alignment of the interests of managers and shareholders reduces agency costs. However, Jensen and Ruback (1983) claimed that small managerial ownership may still force managers toward value maximization due to the market for corporate control and in contrast, high managerial ownership will give them a

substantial fraction of control and enough power to make decision benefiting them. Several previous studies have examined the relationship between managerial ownership and firm performance (for example, see Short and Keasey, 1999; McConnel and Servaes, 1990 and Morck et al., 1988).

McConnel and Servaes (1990) and Morck et al. (1988) all find a significant relationship between managerial ownership and firm value. Morck et al. find a positive relationship between ownership and firm value at low levels of ownership, a negative relationship at intermediate levels and a positive relationship at high levels. One interpretation of Morck et al. (1988, p.311) findings is that, "the increases of Tobin's Q with ownership reflect the convergence of interests[22] between managers and shareholders, while the decline reflects entrenchment of the management team". McConnell and Servaes (1990) find a positive relationship at low levels and a negative relationship at high levels. One major difference between the McConnel and Servaes study and the Morck et al. study is that the latter's sample only included large firms.

Much effort has been expended in examining ownership structure and firm performance. The only study which examines the link between ownership and corporate tax is Newman (1988). Newman (1988) differentiated between owner-controlled firms and manager-controlled firms and suggested that manager-

[22] Convergence-of-interest indicates that the interest of managers and shareholders are convergent. The increase in management ownership will increase the company market value owing to a uniformly positive relationship.

controlled firms were more likely to have bonus plans based on after-tax provisions. The important factor is that, when making a capital investment decision, managers tend to take the investment tax credit into account more if the firm uses an after-tax bonus plan. Manager-controlled firms are seen as not maximizing shareholder wealth, but maximizing self-interest. Newman (1988) found that manager-controlled firms are more likely to have a bonus plan based on after-tax compared with before-tax income measures. It seems that one of the direct vehicles to create the higher wealth transfer is the use of taxes. The lower the tax paid, the higher the wealth to managers who are compensated on an after-tax basis.

The motivation from Newman's (1988) study suggests that manager-controlled firms are more motivated to engage in tax avoidance strategies owing to the incentives of maximizing managers' wealth. Managers are more likely to benefit from tax avoidance strategy. Thus tax avoidance strategies may be more attractive to firms under managerial ownership. The exploratory evidence from Newman (1988) shows the systematic adoption of accounting methods to avoid tax by managerial ownership firms which have the greater propensity to maximize managers' wealth.

Recently Desai and Dharmapala (2006) developed a conceptual framework for understanding managerial decisions towards tax avoidance activities. They provide a simple theoretical framework to help understanding of the interaction

between corporate governance and tax avoidance, which is how changes in incentive compensation can change corporate tax avoidance activity. They find that the increased use of incentive compensation reduces tax sheltering activities.

In this thesis managers are seen as the people responsible for tax avoidance activity. They may be competing with each other in the same industry to lower the company's tax expense to increase their prestige. This constitutes harmful competition that would, in turn, affect a country's revenue. Unlike most prior studies which concentrate on the relationship between firm performance/value and managerial ownership, this thesis examines the relationship between managerial ownership and corporate tax planning (tax avoidance). From the tax perspective, managers are charged with the responsibility of initiating tax planning. There may be competition among managers of companies in the same industry to minimize their tax liabilities as this may be seen as a 'successful' indicator of the manager's ability and may also increase their firm's value. If one manager's company's tax liability increased compared with companies in the same industry, it might affect his/her job security and decrease his/her value to the company. It is suggested that managerial ownership firms may have more incentives for tax planning, while tax avoidance activity may not only be seen as maximizing managerial wealth but may also increase the value of the firm (shareholders' wealth). This thesis investigates a link between managerial ownership and corporate tax avoidance behaviour as firm governance should be an important characteristic of corporate tax savings. This suggests the following hypothesis, stated in an alternative form:

H_7: Corporate tax avoiders have a higher percentage of stock owned by executive directors than non-tax avoiders.

This is the first attempt to look at the link between managerial ownership and ETR. While data limitations prevent the inclusion of the managerial ownership variable in their study, Gupta and Newberry (1997) readily acknowledge the importance of managerial ownership effects on the ETR in their article.

The importance of ownership concentration[23] was recommended by Shleifer and Vishny (1997) as one of the key determinants of the corporate governance aspect, whilst, Gupta and Newberry (1997) acknowledge managerial ownership as carrying the effect of agency cost in the ETR study.

A number of studies (for example, see Short and Keasey, 1999; Kaplan, 1994; and Morck et al., 1988;) define managerial ownership as ownership by members of the board of directors. However, McConnell and Servaes (1990) define managerial ownership as equity owned by corporate officers and members of the board of directors. However, Agrawal and Knoeber (1996) used the Chief Executive Officer (CEO) as a proxy for ownership, which is less widely used in managerial ownership studies.

[23] Ownership explained the type of ownership in several ways, that is by individual, institution, state, foreign and managerial ownership. This thesis focuses on managerial ownership consistent with the theoretical frameworks adopted which are synergy, agency theory and hubris.

Morck et al. (1988) and Short and Keasey (1999) define managerial ownership as ownership by members of the board of directors. It should be noted that Morck et al. figure managerial ownership as ownership stakes by directors who hold at least 0.2 per cent of equity, whereas for Short and Keasey, managerial ownership is not subject to any minimum cut-off level.

However, this definition differs from McConnell and Servaes (1990), who define management (or insider) ownership as equity owned by corporate officers and members of the board of directors. Abdullah et al. (2002) measured managerial ownership by aggregating the percentage of equity interest owned by the firm's executive directors. In addition, Haniffa and Hudaib (2006) defined managerial ownership as the proportion of shares owned by the executive directors of the company as a group to total shares in issue.

Managerial ownership plays an important role in the corporate governance literature as managers are responsible for managing the company. Public listed companies in Malaysia have concentrated managerial ownership[24] (as elsewhere in Asia), hence the responsibilities for company success fall on the board of directors. There are different characteristics of boards of directors pertaining to companies in different nations. With respect to the Malaysian Code of Corporate

[24] La-Porta, Lopez and Shleifer (1999) stated that Malaysian firms were highly concentrated. Cheah and Chu (2004) found that the owners were also usually the directors of the company. Thillainathan (1999) identified ownership concentration for companies in Malaysia, and furthermore he claimed that 85 per cent of the public listed companies in Malaysia had owner-managers in that the post of the CEO, Board Chairman or Vice Chairman was either a member of the controlling family or an employee drawn from the ranks of the controlling shareholders.

Governance (2000),[25] there are no specified numbers recommended for members of the board and no maximum number of directorships prescribed, but the Bursa Malaysia listing requirements released in January 2001 require that at least one third of the board should be comprised of explanatory directors (independent director). The term independence[26] as prescribed by the listing requirements and the Malaysian Governance Code refers to independence from management and significant shareholders.

Non-executive directors are appointed to the board of directors to balance and reduce the agency costs. Weir and Laing (2001) claimed that non-executive directors must be explanatory directors to enable the board of directors to function effectively. Non-executive directors could not be effective in their monitoring role if they were not explanatory.

3.2.8 Effective Tax Rates (ETRs)

Callihan (1994) measured tax burden by using average ETR and highlighted that average ETR are appropriate for measuring cash flows and the distributional tax

[25] The Malaysian Code of Corporate Governance was formally established in March 2002 and was largely derived from the recommendations of the Cadbury Report (1992) and the Hampel Report (1998) in the UK. However, because of the different Malaysian business environment, the mechanisms on corporate governance in Malaysia may be not necessary be the same.

[26] The independence term is defined by the Finance Committee on Corporate Governance (1999, p. 82) under rule 9 of the Listing Requirement as follows: "The composition of the board of directors should reflect the ownership structure of the company. Every listed company should have independent directors, that is, directors that are not officers of the company; who are neither related to its officers nor represent concentrated or family holdings of its shares; who, in the view of the company's board of directors, represent the interest of public shareholders, and are free of any relationship that would interfere with the exercise of explanatory judgment."

burden, while in contrast, marginal ETR are applicable more in analyzing investment incentives. Spooner (1986) measured the corporate tax burden based on the ETR. Wilkie (1988) stated that the average ETR could be used as a proxy to measure the tax burden of a company and might also be useful to interpret the efficiency and equity of a tax system. Iwamoto (1992) stated that the ETR is concerned with the amount of corporate income paid as corporate tax payment.

The average ETR has been widely used to measure the tax burden of a company (for example, see Manzon and Smith, 1994; Porcano, 1986 and Zimmerman, 1983). Rego (2003) interpreted ETR as a measure of the effectiveness of tax planning in which taxes currently payable are compared with what would be apparent from the income figure in the financial statements. Therefore, effective tax rates are often utilized as a measure of effective tax planning among companies. Hence, average ETR are the appropriate measure since they show the impact of on incentives, income shifting and tax avoidance.

In contrast, marginal tax rate (MTR) has been used to measure tax effects on investments. For example, Hulten and Robertson (1985), Auerbach (1983) and Gravelle (1982), have used the MTR to analyze investment incentive. Iwamoto (1992) contends that the primary difference between the ETR and marginal tax rate is that the MTR expresses the tax burden on newly installed capital and the ETR measures the total tax burden on new and existing capital.

Usually, the different definitions of ETR are between average and marginal ETR. Researchers either use average ETR or marginal ETR, and it depends on the research itself. Average ETR is suitable to measure the distribution of tax burdens across companies or industries, whilst marginal ETR is suitable to analyze the incentives for new investments. This thesis uses the term ETR to mean average, not marginal, effective tax rates as to measure the tax burden of companies.

There is a range of alternative formulae which may be used to define and measure ETR. Fullerton (1984) discusses the taxonomy of the differences in ETR definition, and Callihan (1994) surveys a synthesis of the ETR literature. Callihan (1994) and Omer et al. (1991) raise the issue of different measures of the ETR. Generally, ETR is defined as the ratio of observed taxes to profit from existing investments. The issue of measuring ETR is which taxes to include as the numerator and how to measure profit as the denominator. Several groups of ETR studies have measured ETR differently. For example, Zimmerman (1983) measures the effective tax rate as a ratio of income tax to operating income, where income tax represents the total income tax liability adjusted for changes in deferred taxes, and operating income is total sales minus costs of sales.

Porcano (1986) measures effective tax rates as a ratio of current income tax to pre-tax book income adjusted by income or losses associated with minority interests and/or extraordinary items. He contends that his measure is superior as it better reflects a firm's ability to meet its tax obligations. Holland (1998) estimates the

corporate tax burden by using an effective tax rate which is calculated by dividing a firm's current corporation tax provision by its related level of income. In U.S., Hanlon and Shevlin (2001) discuss the calculation of ETR used by the Government Accounting Office (GAO). The GAO uses the current portion of tax expense divided by net income.

ETR is usually measured by dividing tax liability by profit. The difference among ETR studies is which taxes to include as the numerator and how to measure profit as the denominator. With regard to the numerator, that is, which taxes should be considered to represent the overall tax burden of a company, a few studies have used tax expenses and excluded deferred taxes (Omer et al., 1993; Kern and Morris, 1992), while others have chosen not to exclude deferred tax (Rego, 2003; Kim and Limpaphayom, 1998; Gupta and Newberry, 1997; Porcano, 1986). These latter studies chose not to exclude deferred tax because it would control for earning management strategies, since income increasing earnings management increases both the numerator (deferred taxes) and the denominator (pre-tax income). Thus the inclusion of deferred taxes in the numerator does not affect the overall result and the result also is not driven by earnings management. In addition, Clowery et al. (1986) argue that to include the present value of deferred taxes is not easy as it cannot be accurately estimated.

The difference in measuring ETRs depends on the purpose of the study. Previous ETR studies have focused on different objectives within the study, for example,

Buijink et al. (1999) investigated the difference between ETR and the statutory tax rate (STR) across companies; Holland (1998), Callihan (1994), and Manzon and Smith (1994) concentrated on the tax burden of companies; Buijink et al. (2001) focused on corporate tax competition; and Rego (2003) examined corporate tax avoidance. This thesis utilizes the corporate tax avoidance study by Rego (2003) and measures ETRs as a proxy for corporate tax avoidance based on his study. Rego claimed that since ETRs compare the current tax liability generated by taxable income (to the tax authorities) with pre-tax income based on generally accepted accounting principles (GAAP), ETRs measure the proficiency of a corporation to reduce its current tax liability relative to its pre-tax accounting income. Thus they reflect tax planning and measure the tax avoidance of companies.

According to Rego (2003), tax avoidance activities create book-tax differences, which are either temporary or permanent differences between a company's financial accounting and taxable income. Thus the numerator is based on taxable income and the denominator is based on financial accounting income to accommodate book-tax differences.[27] In addition, Rego (2003) employed sensitivity analysis which excluded deferred taxes from the numerator of ETR and found that they do not affect the main results of his paper.

[27] According to Mills (1998), whose study was conducted using U.S. data, firms with greater book-tax differences have larger Internal Revenue Service (IRS) audit adjustment that is consistent with greater tax avoidance activities.

With regard to the denominator of ETR, that is, which income should be considered to represent the company's profit, according to Zimmerman (1983), the use of cash flow (instead of operating income) would eliminate the effects of different accounting treatments of income. A number of studies (Phillips, 2003; Rego, 2003; Porcano, 1986) uses pre-tax income as the denominator. They claim that ETR reflects a company's effective tax planning. Hence this thesis uses pre-tax income as the denominator of ETR.

Rego (2003) measures ETR as the ratio of income taxes currently payable to pre-tax accounting income. Rego (2003) claimed that firms that avoid income taxes by reducing their income tax payable while maintaining their accounting income will have lower ETR, thus making ETR a reasonable measure of tax avoidance.

3.3 Industry Effects

Industry affiliations are also included as potential explanatory variables in this thesis because tax avoidance activity may also depend on the sensitivity of certain industries. By this is meant the notion that different industries may receive different tax treatments and the companies in these different industries might use those incentives differently to engage in tax planning. For example, with studies on U.S. firms, Rosenberg (1969) and Harberger (1959) indicate that the farming, textiles, petroleum, coal products and real estate sectors pay significantly lower income taxes than other sectors. Omer et al. (1993) found evidence of empirical

differences in ETR in the pharmaceutical industry and the petroleum refining industry. Another U.S. study by McIntyre and Nguyen (2000) indicates that ETRs vary widely by industry, with oil companies enjoying the lowest ETR.

To the author's knowledge, prior studies on industry effects, however, focus more on Western data, particularly in the U.S.. Holland (1998) was the only ETR study for U.K. data. Kim and Limpaphayom (1998) examined emerging countries, that is, Hong Kong, Korea, Malaysia, Taiwan and Thailand. Kim and Limpaphayom (1998) suggest that industrial effects might be a potential explanation for differences in ETR, and acknowledge the importance of sector effects in their article, but do not include them as explanatory variables. Derashid and Zhang (2003) examine the issues of industry effects on ETR in Malaysia. They found evidence that, manufacturing firms and hotels had significantly lower ETRs than any other public listed companies in Malaysia between 1990 and 1999. Their study, however, was based on firm size only, whereas this thesis may explain differences in ETR by reference to several other variables. Derashid and Zhang (2003) classified industries into consumer, manufacturing, mining, finance, construction, trading, hotel and plantations, whereas this thesis uses seven categories which are: basic material, industrial, consumer goods, health care, consumer services, utilities and technology. The classification of these categories was based on industry sectors classified in the Thomson Analytic Database.

3.4 Other Companies' Characteristics

Admittedly, the determinants of corporate tax avoidance strategy could be related to other factors besides a company's size, income, leverage, foreign activity, capital intensity, dividend and managerial ownership. A complete corporate tax avoidance model would ideally include other factors, such as bonus plans and R&D activity. Previous accounting choice studies (for example, see Newman, 1988) have tested whether the existence of a bonus plan influences accounting procedures. Bonus plans based on after tax accounting earnings may produce tax avoidance behaviour, while a bonus plan based on before tax accounting earnings would not create such an incentive. Leauby (1990) reported that bonus plans based on after tax earnings encourage corporate income tax avoidance. Firms with such bonus plans appear to avoid tax more than other firms.

Healy (1985) indicates that more than 50 per cent of the bonus plans studied in his research use income before taxes as a factor for bonus payouts. Newman (1988), whose study looks at tax laws and compensation plans, shows that 66 per cent of the firms had bonus payouts based on income before taxes. Newman found that firms using after tax bonus plans are more responsive to changes in tax regulations than firms with before tax bonus plans. Therefore an important element is whether an existing bonus plan is based on accounting earnings before or after income tax considerations. Even though bonus plans may be one of the tax avoidance strategies, this thesis does not include a variable for bonus plans because the

relevant information is not readily available and not all companies' managers disclose the data.

With regard to the company involvement in research and development (R&D) activity, the R&D costs typically would create investment tax shields because such costs can be immediately written off for tax purposes even though the benefits are usually gains over a long period. This thesis does not include R&D as an explanatory variable as there is only a small number of public listed companies in Malaysian which are involved in R&D activities. According to Ismail and Yussof (2003), Malaysian companies are lacking in R&D activities owing to a lack of technological expertise. Fredriksson (2005), however, claimed that developed countries link their technology and innovation network not only outside the home country, but also bring it to selected emerging market economies, particularly noticeably in China, Hong Kong and Malaysia. Owing to low participation in Malaysian companies' involvement in R&D, several efforts have been made by the government to promote this activity. One of the efforts is related to tax incentives. In the 2004 budget, Malaysian industries were given a tax exemption of 50 per cent for five years in respect of income received from R&D.

Company culture may also have an impact on tax avoidance behaviour. It is possible that some companies are simply more aggressive than others in engaging in tax planning strategies to obtain tax savings. However, this thesis does not

include this variable in the model owing to data constraints as corporate culture is largely unobservable.

3.5 Summary

Theoretically, this thesis presents a principal-agent model in explaining all the explanatory variables incorporated in the tax avoidance model. Managers are referred as to the persons responsible for engaging in corporate tax planning activities. These activities are motivated by the three elements of synergy, hubris and agency simultaneously.

This thesis identifies seven firm characteristics that could explain managers' actions towards tax avoidance activities. Five firm characteristics, namely political cost, profitability, leverage, foreign activity and capital intensity, have been previously tested in developed countries such as the U.S., the U.K. and Australia. Most of the prior studies were based on a univariate variable, while this thesis utilizes multivariate variables from applicable hypotheses derived from the literature. The two new variables incorporated in the tax avoidance model are dividend and managerial ownership. This thesis posits other determinants for tax avoidance activity so as to improve on past research and contribute a new dimension to the literature. Managerial ownership is an indicator of the corporate governance perspective, where Malaysian companies are typically family-owned

controlled[28] companies. This characteristic differs from those indents in developed markets and provides a different environment to be studied.

Dividend is a puzzling issue in corporate finance which has never been resolved. One distinctive feature of the Malaysian capital market is the absence of a capital gains tax. This, coupled with the dividend imputation tax system, means that Malaysia offers a good ground to test the relationship between dividend and tax.

In addition, this thesis controlled for industry effects as tax avoidance activity might differ systematically by industry. The focus of this thesis is to investigate the factors which might affect tax avoidance activity in the Malaysian business environment.

The model developed, research design, methodology and data collection are discussed in Chapter 4 in the following chapter.

[28] The vast majority of the companies are controlled by their founders or by family members of the founders.

Research Methodology

4.1 Introduction

To examine the relationship between firm characteristics and corporate tax avoidance strategies, this section starts with an introduction of a research model for tax avoidance. Then the methodology is discussed to set up the regression analysis used to test the model, as well as rationalization of explanatory variables. Finally, the data collection is discussed.

The previous chapter shows the development of seven hypotheses in used in the research model. The hypotheses established are:

- Hypothesis 1: Political Costs

  H_1: Tax avoiding corporations are smaller in size than non-avoiding corporations.

- Hypothesis 2: Profitability

  H_2: Tax avoiding corporations are more profitable than non-avoiding corporations.

- Hypothesis 3: Leverage

  H_3: Corporate tax avoiders have a higher level of leverage in the capital structure than non-tax avoiders.

- Hypothesis 4: Foreign Activity

  H_4: Corporate tax avoiders have a higher level of foreign activity than non-tax avoiders.

- Hypothesis 5: Capital Intensity

  H_5: Corporate tax avoiders have a higher degree of capital intensity than non-tax avoiders.

- Hypothesis 6: Dividend

  H_6: Corporate tax avoiders have a lower dividend payout ratio than non-tax avoiders.

- Hypothesis 7: Managerial Ownership

  H_7: Corporate tax avoiders have a higher percentage of stock owned by executive directors than non-tax avoiders.

With the above in mind, the present chapter will now consider the research model used to test the hypotheses, the methodology for every explanatory variable and the collection of the data.

4.2 Research Model

The panel character of the data allows for the use of panel data methodology. Panel data involves the pooling of observations on a cross-section of units over several time periods and provides results that are simply not detectable in pure cross-sections or pure time series studies. According to Fleischman (1995), such data will increase the explanatory power of the model. In addition, Caroll and Wasylenko (1994) suggested that this type of data will afford the greatest opportunity to disentangle the systematic relationship between explanatory variables and the dependent variables.

The panel regression equation differs from a regular cross-section or time-series regression by the double subscript attached to each variable. The general form of panel data model can be specified as:

$$Y_{it} = \alpha_i + \beta X_{it} + \varepsilon$$

with the subscript *i* denoting the cross-sectional dimension and *t* representing the time-series dimension. In this equation, Y_{it} represents the dependent variable in the model, which is the company's effective tax rate; X_{it} contains the set of explanatory variables in the estimation model; and α_i is taken to be constant over time *t* and specific to the individual cross-sectional unit *i*, whilst, ε account for any unobservable explanatory variables that are not included in the estimation model.

The following panel data regression model is employed to investigate the determinants of corporate tax avoidance strategies:

$$ETR_{it} = \alpha + \beta_1 PC_{it} + \beta_2 IBIT_{it} + \beta_3 STDB_{it} + \beta_4 LTDB_{it} + \beta_5 TDB_{it} + \beta_6 STDM_{it} + \beta_7 LTDM_{it} + \beta_8 TDM_{it} + \beta_9 DFA_{it} + \beta_{10} FA_{it} + \beta_{11} CAPINT_{it} + \beta_{12} DPR_{it} + \beta_{13} MO_{it} + \varepsilon_{it}$$

Where the dependent variable, ETR_{it}, is the effective tax rate for company $_i$ in the year $_t$. The explanatory variables include proxies for political cost (*PC*), income before income tax (*IBIT*), capital structure (leverage), foreign activity (*DFA* and *FA*), capital intensity (*CAPINT*), dividend payout ratio (*DPR*) and managerial ownership (*MO*). The definition and measurement of these variables are explained in Table 4.1.

Table 4.1
The Definition and Measurement of Variables

Variables	Definitions	Measurement
ETR	Effective Tax Rates	Natural log of ETR
PC	Political Cost	Natural log of total assets
IBIT	Income Before Income Tax	Natural log of IBIT
STDB	Short Term Leverage (Book Value)	Ratio of short term debt to equity (Book Value)
LTDB	Long Term Leverage (Book Value)	Ratio of long term debt to equity (Book Value)
TDB	Total Leverage (Book Value)	Ratio of total debt to equity (Book Value)
STDM	Short Term Leverage (Market Value)	Ratio of short term debt to equity (Market Value)
LTDM	Long Term Leverage (Market Value)	Ratio of long term debt to equity (Market Value)
TDM	Total Leverage (Market Value)	Ratio of total debt to equity (Market Value)
DFA	Foreign Activity Dummy Variable	1, if firm reporting foreign assets or foreign income, and 0 otherwise.
FA	Foreign Activity	Ratio of foreign sales to total sales
CAPINT	Capital Intensity	Ratio of tangible fixed assets to total assets
DPR	Dividend Payout Ratio	Ratio of dividend payment to net profit
MO	Managerial Ownership	Natural log of percentage of equity shares owned by executive directors

The model expresses leverage variable in both book and market value terms. Book value of the ratio is derived by dividing the book value of the debt by the book value of equity. The market value based ratio is derived by dividing the book value of debt by the market value of the equity. Leverage is decomposed into three categories that are short term, long term and total debt. Overall, the leverage variable can be categorized into six explanatory variables, namely, short term leverage book value (*STDB*), long term leverage book value (*LTDB*), total leverage book value (*TDB*), short term leverage market value (*STDM*), long term leverage market value (*LTDM*) and total leverage market value (*TDM*).

All explanatory variables, except for dividend and managerial ownership, appear in previous studies and are included based on theoretical arguments to test whether firm characteristics have any significant influence on corporate tax avoidance behaviour. The dividend and managerial ownership variables are, to the author's knowledge, new variables in the analysis of ETR and are included in the thesis's model to capture any dynamic aspects of avoidance behaviour in the Malaysian business environment.

Table 4.2 summarizes the sample selection procedures. All firm-years' observations were obtained from two databases, which are the Bursa Malaysia and the Thomson Analytic Database for 2001 – 2005, resulting in 5,000 observations. Banking and insurance companies were excluded because they are subject to different legislation from the other companies and the regulatory constraints faced

by these companies are likely to affect their ETR differently from other companies (740 firm-years). These companies tend to be highly regulated and relatively 'safe' companies in Malaysia. Previous ETR studies (for example, see Rego, 2003; Gupta and Newberry, 1997; Manzon and Smith, 1994; Wilkie and Limberg, 1993; Shevlin and Porter, 1992; Zimmerman, 1983; Wilkie, 1988 and Stickney and McGee, 1982) omitted companies with losses or zero income. These companies will create negative values for ETR which is not susceptible of economic interpretation in this context. In addition, most of the loss-making companies in the data set were loss-making for the entire period of the study. Thus, to be consistent with prior studies, this thesis also omitted company-year observations with losses or zero income which resulted in 1,970 firm-years. Firm-years with incomplete ETR data were also excluded (645 firm-years). One of the reasons of incomplete data is that the companies that changed their fiscal year-ends during the sample period. The change of fiscal year-ends would create financial reporting gaps or reduced accounting periods. The calculation of ETR is based on data which are available for every single year from 2001 to 2005, inclusive. Thus, the exclusion of these companies is to ensure that the ETR calculation is not misleading. The final sample comprises 1,645 firm-year observations as shown in Table 4.2.

Table 4.2
Sample Selection Procedure

Number of firm-years 2001 – 2005	5,000
Less:	
Banking and insurance companies	(740)
Companies-years with loss or zero income	(1,970)
Companies-years with missing ETR data	(645)
Number of firm-years available for ETR analysis	1,645

The ETR value of the sample companies should be constrained to lie below 100 per cent. With regard to eliminating the effects of extreme value, ETRs greater than one were recorded as one. This is consistent with the approach taken by prior studies, such as Rego (2003), Derashid and Zhang (2003) and Gupta and Newberry (1997). There are several reasons why a company's ETR might be greater than one. One explanation is that, due to a consolidation process which combines subsidiaries companies with net operating losses.

The companies, as per the Thomson Analytic Database classification, are grouped into seven industries or sectors: basic material (165), industrial (600), consumer goods (555), health care (45), consumer services (130), utilities (35), and technology (95). Basic material consists of industries engaged in manufacturing and distribution of mainly local resources, including quarrying, mining, steel, iron, chemical and aluminium production. The industrial sector is based on manufacturing industry which is other than basic material industries. Consumer good activities involve trade and distribution of raw materials for the food industry, processing agricultural products, trading material for textiles and automobile activities. The health care industry is engaged in developing, researching and marketing health care products. Consumer services are based on the operation and management of hotel and resorts, travel and tourism, the development of residential and commercial properties and provision of intra-city transportation. The utilities industry concentrates on basic infrastructure needs which are water supply, waste management, gas power generation, construction,

environmental services and trading. Technology industry main activities are to develop and provide technology, support the telecommunication industry, develop and market software and hardware components, and provide technical support and training services. Table 4.3 shows industry classifications.

Table 4.3
Industry Classifications

Industry	Frequency	Percent
Indcode0 – Oil and Gas	10	.6
Indcode1 – Basic Material	165	10
Indcode2 – Industrial	600	36.5
Indcode3 – Consumer Goods	555	33.7
Indcode4 – Health Care	45	2.7
Indcode5 – Consumer Services	130	7.9
Indcode6 – Telecommunication	10	.6
Indcode7 – Utilities	35	2.1
Indcode9 - Technology	95	5.8
Total	1,645	100

Various tax incentives have been given to the selected companies and sectors in order to promote both economic and social goals. Different tax incentives for different industries should provide possible reasons that may explain how companies could use tax incentives to lower tax liabilities. Various tax incentives which have been provided under the Promotion Investment Act 1986 and the Income Tax Act 1967 have been discussed in depth in Chapter 2, Section 2.5. Different industries which receive different tax treatments would lead to the different effective tax burdens. The regression model developed to explain industry effects on corporate tax liability is as follows:

$$ETR_{it} = \alpha_j + \beta_{1j}PC_{it} + \beta_{2j}IBIT_{it} + \beta_{3j}STDB_{it} + \beta_{4j}LTDB_{it} + \beta_{5j}TDB_{it} + \beta_{6j}STDM_{it} + \beta_{7j}LTDM_{it} + \beta_{8j}TDM_{it} + \beta_{9j}DFA_{it} + \beta_{10j}FA_{it} + \beta_{11j}CAPINT_{it} + \beta_{12j}DPR_{it} + \beta_{13j}MO_{it} + \varepsilon_{it}$$

for j= 1 … 7

OR

$$ETR_{it} = \alpha_j + \beta_1 PC_{it} + \beta_2 IBIT_{it} + \beta_3 STDB_{it} + \beta_4 LTDB_{it} + \beta_5 TDB_{it} + \beta_6 STDM_{it} + \beta_7 LTDM_{it} + \beta_8 TDM_{it} + \beta_9 DFA_{it} + \beta_{10} FA_{it} + \beta_{11} CAPINT_{it} + \beta_{12} DPR_{it} + \beta_{13} MO_{it} + \sum_{j=2}^{7} \alpha_j IND_{jit} + \varepsilon_{it}$$

where:

IND_{jit} = 1, if firm *i* is in industry *j*

IND_{jit} = 0, if firm *i* is not in industry *j*

Companies which engage in foreign activities are fundamentally different from domestic-only companies as they operate in different tax jurisdictions, culture, economic and political environments. *DFA* is a foreign activity dummy variable to test whether companies engage in foreign activity avoids more tax than their domestic counterparts. The equation below, which is the *DFA* interaction, is employed to test whether companies that engage in foreign activity have a systematically different relationship between firm characteristics and ETR from those that of purely domestic companies.

$$ETR_{it} = \alpha_j + (\beta_1 + \gamma_1 DFA)PC_{it} + (\beta_2 + \gamma_2 DFA)IBIT_{it} + (\beta_3 + \gamma_3 DFA)TDB_{it} + (\beta_4 + \gamma_4 DFA)CAPINT_{it} + (\beta_5 + \gamma_5 DFA)DPR_{it} + (\beta_6 + \gamma_6 DFA)MO_{it} + \varepsilon_{it}$$

4.3 Methodology

This section will first discuss the regression analysis used to test the model, followed by the discussion of methodology applicable to all explanatory variables and the measurement of tax avoidance.

4.3.1 Regression Analysis

The analysis of the data has used the STATA programme which was designed specifically for the analysis of panel data (Baltagi, 2005). The use of data with both a cross-sectional and a time series allows the opportunity to increase the size of data set considerably as comparison with a pure cross-sectional and pure time

series data set. The increase in data size availability will reduce collinearity among the explanatory variables, thus improving the efficiency of the econometric estimates. Baltagi (2005) contends that pooling of time series cross-sectional data provides more observations, more variability, less collinearity among variables, more degree of freedom and more efficiency. Baltagi claimed that pooled data are more proficient in identifying and measuring effects that are undetectable in pure cross-sections or pure time series data. Panel data estimations have several advantages over those pure cross-sectional or time series data estimations. One of the benefits of using panel data that they can control for individual heterogeneity, whilst pure time series and pure cross-section studies do not control this heterogeneity cause the risk of obtaining biased results. According to Baltagi (2005) panel data do not suffer from the omitted variable bias and because they can account for individual companies' heterogeneity.[29] Pindyck and Rubinfeld (1998) added that the measurement biases resulting from aggregation of firms or individuals and biases arising from omitted variables are reduced with the approach. Greene (2000) suggests that the merit of panel data over cross-section data is the ease of modelling the differences in behaviour across individual companies.

[29] For example, corporate tax avoidance is modelled as a function of size, profitability and leverage. These variables vary with different companies and time. However, there is a lot of other variables that may be company-invariant or time-invariant that may affect corporate tax avoidance, for example company culture. Some of these variables are difficult to measure or hard to obtain, thus omission of these variables leads to bias in the resulting estimates. However, panel data are able to control for these company-invariant and time-invariant variables whereas a pure time-series or pure cross-section cannot.

The hypotheses were tested in four ways. First, Ordinary Least Squares (OLS) analysis was used with the pooled data set. This pooled regression treats each company in each year as an independent observation. The OLS pooled regression model is used as the base line for comparison with other regression. The OLS is used to test if the relationships are found to be robust in a company fixed-effects and random effects specification.

Second, the regressions of fixed-effects and random-effects models are estimated. Fixed-effects models capture the effects of unobserved or unmeasurable firm characteristics that vary according to the firm, but are relatively stable over time for a given firm. However, the fixed-effects model has a limitation in that estimations are conditional or sample-specific, thus inferences are not generalizable outside the sample. This limitation can be overcome by the random-effects model which views variables as normally-distributed random variables. The daunting question is how to choose between the fixed-effects and the random-effects models. In principle, fixed-effects should be appropriate when the observations have been selected non-randomly, or if they represent an entire population. Random-effects should be appropriate when the observations have been selected randomly from a larger population. However, in practice, several other considerations should take into account. Fixed-effects involve the estimation of a parameter for each individual, and may cause of loss of degree of freedom when companies (n) are large in number and years (t) are few. However, random-effects do not require the estimation of parameters for the individual effects.

Another consideration is that random-effects require a specific standard assumption of the normality distribution, whilst fixed-effects require no such assumption. Hausman (1978) proposed and developed the Hausman specification test to test whether the fixed-effects or random-effects model should be used. In this thesis, the Hausman test favours the fixed-effects model than the random-effects model. However, with the fixed-effects model, two variables have been dropped from the regressions, namely the dummy variable foreign activity and managerial ownership. This is because the fixed-effects model does not allow the inclusion of dummy variables and one year data that are perfectly collinear with the individual effect, that is, data that do not change over time. In contrast, the random-effects model does allow the inclusion of these data which do not vary over time. Thus are random-effects model was estimated to overcome this problem.

Third, the censored regression model uses Tobit estimators to restrict the effect of potential bias. The dependent variable values are filtered by means of truncation at both sides of ETRs. According to Buinjink et al. (2000), this filter is used to ensure that the most extreme observations are excluded from the analysis, without unnecessary loss of useful data. This estimation tends to reduce the influence of outlying observations, thus observations with either an ETR greater than double the statutory tax rate (56 per cent), or a negative/zero ETR are deleted. Therefore only those companies with an ETR in the range between 0 per cent and 56 per cent

are considered. This will censor the data set to include a more representative and reliable range of corporate ETRs.

In all three stages of the analyses, the model includes the determinants of a firm's characteristics towards tax avoidance behaviour for public listed companies in the Bursa Malaysia (formerly known as the Kuala Lumpur Stock Exchange, KLSE[30]) and these differ across industrial sectors. The model examines the influence of industry effects on tax avoiding behaviour across companies. This test helps to assess whether the industry differences have an effect on tax avoiding behaviour.

Finally, the interaction between the dummy variable proxying foreign activities and firm characteristics is presented. The aim of these interactions is to test whether companies which engage in foreign activities have systematically different relations between ETR and other firm characteristics from those that are purely domestic companies.

4.3.2 Explanatory Variables

This thesis used multiple years' data between 2001 and 2005, inclusively, which reflect a different economic environment across years.

[30] Kuala Lumpur Stock Exchange (KLSE) has changed its name to Bursa Malaysia on 26th April 2004. Even though the period of study covers from 2001 to 2005, the name Bursa Malaysia will be used throughout the thesis.

The variable for political cost is *PC*, which is the natural logarithm of total assets. The data were transformed to natural logarithm so as to meet the homoscedascity requirement of equal variances. The profitability variable, that is income before income tax (*IBIT*) is a natural logarithm of income before income tax. Leverage can be defined in different ways depending on the objective of the analysis. For example, leverage may be defined as debt to assets, debt to capitalization or debt to equity. This thesis measures leverage as a ratio of debt to equity[31] to capture companies' financial decisions. Companies appear to make their choice of raising new finance based on whether to raise debt or equity. The focus here is to examine companies making debt or equity issues in an attempt to explain their tax avoidance behaviour. Since the dependent variable may have a different effect for different types of debt, leverage is measured as short term debt, long term debt and total debt. Debt, the numerator, then is divided into three components, short term, long term and total debt, whereas the denominator could be measured in book value and market value terms. In the Malaysian emerging market, companies employ both short term and long term debt to finance their operations. Furthermore, it is common for companies in Malaysia to substitute short term debt for long term debt and roll over short term debt. Thus it is more appropriate to define leverage with different components of debt. Each leverage ratio is measured in book value and market value terms, hence, six measures of the leverage ratio as an independent variable are used. A company's leverage is based on book value which is consistent with the practice of many corporate finance

[31] The equity value represents the common shareholders' interest in the company, and includes share capital and retained earnings (reserves).

researchers as book value is claimed to measure financial planning free of the distortions caused by the volatility of market prices. However, Lasfer (1995) suggests that the use of market value to measure leverage is more appropriated than book value, if it is available. This thesis uses both book and market value to measure leverage to gain insight into the difference between the two. According to Lasfer (1995), book value of leverage represents the long term effect of taxation, whereas market value indicates the short term effect. He did not differentiate between long term and short term leverage, thus uses book value and market value represent long term and short term effect.

Two different proxies for foreign activity are used in the empirical test, which are *DFA* and *FA*. The foreign activity dummy variable (*DFA*) is used to indicate whether companies engage in foreign activity or not. Value 1 was given if a firm reports foreign income or foreign assets, and zero otherwise. This is to determine whether companies which engage in foreign activity have lower or higher ETR than companies which do not engage in foreign activity. In contrast to the foreign activity dummy variable, *DFA*, *FA* is a continuous variable and is the ratio of foreign sales to total sales, which determines whether companies with extensive foreign operations have lower or higher ETR than companies with less extensive foreign operations.

The capital intensity (*CAPINT*) variable is included to capture companies' investment decisions. Capital intensity is measured as the ratio of tangible assets

to total assets. The dividend payout ratio (*DPR*) variable is measured as the ratio of total dividend to net profit that is the dividend paid to the after-tax profit for the company. The dividend variable is used as it is expected that high dividend payments may cause higher tax liability.

The last variable included in the model is managerial ownership, *MO*. Managerial ownership is a natural logarithm of the percentage of shares owned by executive directors. This thesis proxies managerial ownership as the percentage of equity shares owned by executive directors at the accounting year end which is consistent with Haniffa and Hudaib (2006) and Abdullah et al. (2002), who define managerial ownership as the percentage of equity interest owned by the firm's executive directors. The calculation of managerial ownership is the aggregation of shares owned by executives on the board of directors. Thus, the total managerial ownership is dependent on the number of executive directors holding shares.

Interaction variables are also used. The interaction variable is the product of the foreign activity dummy variable and the explanatory variables. For example, $DFA \times PC$ is the interaction of *DFA* and *PC*, to test whether companies which engage in foreign activity have a systematically different relationship between firm size and ETR from those that have purely domestic activity. These interactions will follow for the other explanatory variables.

Hypotheses 1 and 6 predict a significantly positive coefficient on firm size and dividend, and the interaction of both firm size and *DFA,* and dividend and *DFA*. Hypotheses 2, 3, 5 and 7 predict a significantly negative coefficient on *IBIT, LTDM, CAPINT* and *MO,* and the interactions of those terms.

4.3.3 ETRs as a Measure of Tax Avoidance

In modeling the corporate tax avoidance determinants, the dependent variable in the model is the company's effective tax rate (ETR). Tax avoidance is related to the intention of the taxpayer to reduce tax through tax planning methods. Effective tax planning (tax avoidance) will reduce the present value of tax payments and lower the effective tax rates. Previous research considers effective tax rates (ETR) as a measure of effective tax planning (for example, see Mills et al., 1998 and Phillips, 2003). Academic researchers and policymakers have also been using ETR as an important measurement of the corporate tax burden for several decades (for example, see Derashid and Zhang, 2003; Gupta and Newberry, 1997; Zimmerman, 1983 and Stickney and McGee, 1982; U.S Treasury 1978 and Siegfried 1972).

The analysis of this thesis utilizes the concept of effective tax rates (ETR) since it is the most appropriate tool to measure the distribution of a company's tax burden. This measurement was in line with Rego's proxy for tax avoidance that is also

consistent with the studies of Mills et al. (1998) and Phillips (2003). ETR is measured as the ratio of current income tax expense to income before income tax.

ETRs were estimated by using financial statement data, since tax returns data are not publicly available due to company-level tax return data for corporations being confidential. Most researchers develop measures from financial statements to observe tax characteristics (for example, tax burden) due to absent data on companies' tax return information. Hulten (1984) stated that effective tax rates are a convenient device for summarizing the tax burden implied by the many complex provisions of the tax code.

4.4 Data

The data used for the individual variables will now be considered in more detail including a discussion of other sources than financial accounts which were used to collect the data.

This thesis commences with the full population of companies listed on the Bursa Malaysia from 2001 to 2005. The data chosen start from 2001 as the year that the self-assessment system started to be implemented for companies in Malaysia. The observations are all of public listed companies in the main board and second board of the Bursa Malaysia. The data were in the form of panel data. Selected

companies were drawn from seven industries which are basic materials, industrial, consumer goods, health care, consumer services, utilities and technology.

As discussed in the previous chapter, this thesis examines whether political costs, profitability, leverage, foreign activity, capital intensity, dividend and managerial ownership variable can explain effective tax rates (ETRs). The data for most of the variables were collected from the annual report, except for managerial ownership. As managerial ownership data are not available in the financial statements, these data were manually extracted from the Bursa Malaysia Companies' Database.[32] The data obtained was one year data which available at the end of 2005. The database incorporates data for public listed companies for the current year only, thus the data is for 2005 when the data were collected. As discussed in the previous chapter, the inclusion of managerial ownership is necessary to explain the relationship of the corporate governance[33] part of this study, that, is the potential for agency costs. The term 'managerial ownership' in this thesis refers to the managers who are also the owners of the company, hence, the managerial ownership data collected excluded independent non-executive directorship from the shares owned by the board of directors.

Most of the data were gathered from annual report. Vergossen (1993) and Streuly (1994), for example, argue that annual reports are an important and adequate

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[32] The Bursa Malaysia Companies database can be accessed from http://www.bursamalaysia.com

[33] The Malaysian High Level Finance Committee (1999, p. 10) defines corporate governance as: "the process and structure used to direct and manage the business affairs of the company towards enhancing business prosperity and corporate accountability with the ultimate objective of realizing long-term shareholder value, whilst taking into account the interest of other shareholders."

source of information for investment decisions. Financial statement data are used for several reasons. First, financial statements are the only source of publicly-available information that allows the calculation of ETRs and the explanatory variables at the individual company level (Shevlin and Porter, 1992). Secondly, previous studies, such as Rego (2003), measure the tax burden based on ETRs which are obtained from financial statement data. Thirdly, the Bursa Malaysia requires all its listed companies to abide by the Bursa Malaysia listing requirements.[34] Thus data gathered from annual reports are consistent as to in accounting policies and standards adopted. Fourthly, the Bursa Malaysia requires all its listed companies to be audited by qualified auditors. Hence annual report data is consistent in quality. Finally, Zimmerman (1983) found that ETRs produced by either financial statement data or Internal Revenue Service data were similar, and thus concluded that financial statement data produced an unbiased estimation of ETR. The financial accounts data are taken from the Thomson Analytic Database.

4.5 Summary

This section constructs the research model of the study, provides the regression analyses and details out the sample selection. The research model is developed to determine how well the selected explanatory variables predict the dependent

[34] One of the listing requirements requires that all its listed companies should prepare annual audited accounts according to the Malaysian Accounting Standard Board (MASB) and the Companies Act 1965. MASB has developed from the previous standard that is Malaysia Accounting Standards (MAS), as well as adopting the extant of International Accounting Standard (IAS).

variable, ETRs. The statistical tools which will be used to explain the relationship are Ordinary Least Squares (OLS), fixed-effect, random-effect and Tobit estimation.

The next chapter presents the results of statistical analysis performed on the hypothesized variables.

Analyses and Results

5.1 Introduction

This chapter is divided into five parts. First, the results are discussed for all variables, descriptive statistics and the multicollinearity problem (Tables 5.1 and 5.2). Secondly, the OLS regression result, including the industry effect (Tables 5.9 and 5.10), is reported. Thirdly, panel data fixed-and random-effect model regression results, including the industry effect (Tables 5.11 – 5.13), are discussed. Fourthly, a censored regression model using Tobit estimators including the industrial effect (Tables 5.14 and 5.15) is introduced and finally, the regression results of the interaction between the dummy variable and the explanatory variables (Table 5.16) are discussed. In-depth discussion of the results and their relationship to previous research is given in section 5.8 to avoid repetition throughout the chapter.

5.2 The Model

In the empirical model, the analyses regress the company's tax avoidance activity (ETR) against 13 explanatory variables. The general form of the model can be specified into Model 1 and Model 2. The models that posit the determinants of corporate tax avoidance strategy are explained by the following regression (coefficients' sign predictions are in parentheses) and are as follows:

Model 1:

$$ETR_{it} = \alpha + \beta_1 PC_{it}(+) + \beta_2 IBIT_{it}(-) + \beta_3 STDB_{it}(-) + \beta_4 LTDB_{it}(-) + \beta_5 TDB_{it}(-) + \beta_6 STDM_{it}(-) + \beta_7 LTDM_{it}(-) + \beta_8 TDM_{it}(-) + \beta_9 DFA_{it}(-) + \beta_{10} FA_{it}(-) + \beta_{11} CAPINT_{it}(-) + \beta_{12} DPR_{it}(+) + \beta_{13} MO_{it}(-) + \varepsilon_{it}$$

with the subscript $_i$ denoting the cross-sectional dimension and $_t$ representing the time-series dimension. The left-hand variable, ETR_{it}, represents the dependent variable in the model, which is the company's effective tax rate. α is a scalar, followed by 13 explanatory variables in the estimation model, and ε_{it} accounts for any unobservable firm characteristic effects that are not included in the regression model.

Model 2:

$$ETR_{it} = \alpha + \ell_1 PC_{it} + \ell_2 IBIT^*_{it} + \beta_4 LTDB_{it} + \beta_5 TDB_{it} + \beta_8 TDM_{it} + \beta_9 DFA_{it} + \beta_{10} FA_{it} + \beta_{11} CAPINT_{it} + \beta_{12} DPR_{it} + \beta_{13} MO_{it} + \varepsilon_{it}$$

Where $IBIT^* = IBIT\text{-}PC$

Model 2 is included to handle multicollinearity problems (see Table 5.2(a)), which includes transforming the profitability variable and dropping three leverage variables which are short term leverage book value, short term leverage market value and long term leverage market value.

The way the results in this chapter will be presented is to outline key results from the regression analyses first for every model in every table. The results are then

compared with previous studies and their implications are determined at the end of this chapter.

It is worth nothing that there may be many factors which influence tax avoiding activity apart from the 13 explanatory variables which are presented in Table 4.1, such as government policy and company culture. For the purpose of this thesis, the explanatory variables presented in Table 4.1 were used as the relevance for these variables is based on prior analytical and empirical tax avoidance research. The effective tax rate (ETR), as defined by Rego (2003), is the dependent variable. Among the explanatory variables, political cost is proxied by company size and is calculated as the natural logarithm of assets. Income before income tax (IBIT) is the natural logarithm of income before income tax. Leverage is the debt level and is categorized into six categories which are short term leverage (book value), long term leverage (book value), total leverage (book value), short term leverage (market value), long term leverage (market value) and total leverage (market value). Leverage is calculated as the ratio of debt to equity for book value and to market capitalization for market value. There are two different proxies for foreign activities: (1) a dummy variable (DFA) equal to one if companies are reporting foreign assets or foreign income, and zero otherwise; and (2) the ratio of foreign assets to total assets (FA). DFA is to determine whether firms engaging in foreign activities have a lower or higher ETR than others and FA is to determine whether companies with more extensive foreign activities have a lower or higher ETR than other companies. Capital intensity (CAPINT) is the ratio of the net book value of

tangible fixed assets to total assets. Dividend payout ratio (DPR) is defined as a ratio of dividend payment to net profit. Managerial ownership (MO) is the natural logarithm of aggregating the percentage of equity owned by the company's executive directors. Most of the variables are measured in natural logarithm, so the coefficients are interpreted as elasticities.

5.3 Descriptive Statistics

Table 5.1 presents descriptive statistics for every variable. The mean ETR (0.1144) is higher than median (0.0586) ETR with a wider range of ETR percentages between 0 per cent to 100 per cent. Mean (5.8358) and median (5.5310) for political cost is very similar and this pattern is also shown by income before income tax. However, there is a wide variation between the mean and the median for all categories of leverage. Capital intensity and dividend payout ratio have a close mean and median respectively with a range of percentages for dividend payout ratio between 0 per cent to 100 per cent. The natural logarithm of managerial ownership reports mean ownership to be 0.6643 with a median of 3.1629.

Referring back to Table 4.3 in the previous chapter, this shows nine industrial classifications of the sample. However, the industrial classifications of fewer than 10 companies were omitted owing to the loss of degrees of freedom. Thus, the

regression for industrial effects dropped two industries, namely oil and gas, and telecommunication.

Table 5.1
Descriptive Statistics of the Observations

Variables	Mean	Median	Std. Dev.	Min	Max
ETR[a]	0.1144	0.0586	0.1714	0.0000	0.9990
PC[a]	5.8358	5.5310	1.4865	-1.3863	11.0587
IBIT[a]	3.2049	2.9487	1.5337	0.0000	8.4561
STDB	34.0755	13.1048	182.4366	-0.5896	5315.7490
LTDB	20.2820	4.2011	47.4886	-0.9977	1112.5910
TDB	49.7903	20.9346	178.7193	-1.5873	5780.1150
STDM	27.9908	12.1972	45.9864	0.0016	513.8553
LTDM	11.1581	3.8877	15.2905	0.0000	92.4281
TDM	43.3730	17.6786	70.0461	0.0000	1006.1800
DFA	0.3617	0.0000	0.4806	0.0000	1.0000
FA	9.3962	0.0000	21.3585	0.0000	100.0000
CAPINT	42.8875	42.4571	20.3737	0.1443	95.3107
DPR	28.8955	25.1083	23.7697	0.0000	99.0714
MO[a]	0.6643	3.1629	4.6653	-9.2103	4.6052

Notes: The descriptive statistics are based on the final sample of 1,645 company-year observations. The dependent variable is effective tax rate (ETR). The explanatory variables are defined as follows: political cost (PC), income before income tax (IBIT), short term leverage book value (STDB), long term leverage book value (LTDB), total leverage book value (TDB), short term leverage market value (STDM), long term leverage market value (LTDM), total leverage market value (TDM), foreign activity dummy variable (DFA), foreign activity (FA), capital intensity (CAPINT), dividend payout ratio (DPR), and managerial ownership (MO).

[a] Log transformation has been specified for these variables.

Table 5.2(a) determines whether the explanatory variables are strongly correlated. It shows that a strong correlation exists between political cost and income before income tax (0.9093). Beside this high correlation, there are other high correlations between the six leverage variables, that is short term leverage book value and total leverage book value (0.9584), long term leverage book value and long term leverage market value (0.7910) and short term leverage market value and total leverage market value (0.7734).

Size is a proxy for political cost and it is not surprising that there is a high correlation between political cost and income. Assuming the companies in the observations are representative of economic activity, companies in high-growth economies (large companies) are expected to have high income growth rates. These two explanatory variables are hypothesized to be related to ETR with opposite signs, that is political cost is expected to have a positive relationship with ETR whereas the income before income tax variable is expected to have a negative sign. Both explanatory variables are important variables which need to be maintained in the model.

Correlations among variables in leverages varied from -0.2177 to 0.9584. The highest correlation is between short term leverage book value and total leverage book value. It is not surprising that these variables have a high correlation as they are all leverage variables, but this thesis would like to examine more precisely

which type of leverage has a strong effect on ETR, thus all six categories are included initially.

Table 5.2(a)
Correlation of the Variables (Model 1)

	ETR	PC	IBIT	STDB	LTDB	TDB	STDM
ETR	1.0000						
PC	0.0501	1.0000					
IBIT	-0.0481	0.9093	1.0000				
STDB	0.0624	-0.0448	-0.0989	1.0000			
LTDB	0.0684	0.3000	0.1933	0.2909	1.0000		
TDB	0.0784	0.0408	-0.0375	0.9584	0.5197	1.0000	
STDM	0.1460	-0.0465	-0.2177	0.5545	0.1915	0.5583	1.0000
LTDM	0.0374	0.4310	0.2911	0.1848	0.7910	0.3754	0.2293
TDM	0.1249	0.1731	-0.0266	0.3821	0.4719	0.5070	0.7734
DFA	-0.0151	0.1944	0.2254	-0.0590	0.0088	-0.0548	-0.0985
FA	-0.0762	0.1972	0.2254	-0.0320	-0.0058	-0.0328	-0.0572
CAPINT	-0.0944	0.0639	0.0287	-0.0185	-0.0316	-0.0403	0.0010
DPR	-0.1155	0.1120	0.0919	-0.0986	-0.1138	-0.1193	-0.1921
MO	-0.0690	-0.5014	-0.4530	0.0535	-0.1376	0.0093	0.0935

	LTDM	TDM	DFA	FA	CAPINT	DPR	MO
LTDM	1.0000						
TDM	0.5938	1.0000					
DFA	0.0069	-0.0754	1.0000				
FA	-0.0052	-0.0363	0.4658	1.0000			
CAPINT	0.0176	-0.0448	-0.0618	-0.0045	1.0000		
DPR	-0.1356	-0.1961	0.0498	0.0825	-0.0065	1.0000	
MO	-0.1519	-0.0136	-0.0127	-0.0553	-0.0898	-0.0682	1.0000

Model 2 was created to take into account multicollinearity[35] which will be presented as a comparison with Model 1. Table 5.2(a) shows high correlation between political cost and IBIT, short term leverage book value (STDB) and total leverage book value (TDB), long-term leverage book value (LTDB) and long term leverage market value (LTDM), and short term leverage market value (STDM) and total leverage market value (TDM) (as highlighted in Table 5.2(a)).

Model 2 retains the political cost and IBIT variables, but drops three of the leverage variables which have a greater than 70 per cent correlation. Three explanatory variables have been dropped, namely short term leverage book value, short term leverage market value and long term leverage market value in order to handle high correlation between variables in leverage. Thus, Model 1 and Model 2 are as below:

Model 1:

$$ETR_{it} = \alpha + \beta_1 PC_{it} + \beta_2 IBIT_{it} + \beta_3 STDB_{it} + \beta_4 LTDB_{it} + \beta_5 TDB_{it} + \beta_6 STDM_{it} + \beta_7 LTDM_{it} + \beta_8 TDM_{it} + \beta_9 DFA_{it} + \beta_{10} FA_{it} + \beta_{11} CAPINT_{it} + \beta_{12} DPR_{it} + \beta_{13} MO_{it} + \varepsilon_{it}$$

Model 2:

$$ETR_{it} = \alpha + \ell_1 PC_{it} + \ell_2 IBIT^*_{it} + \beta_4 LTDB_{it} + \beta_5 TDB_{it} + \beta_8 TDM_{it} + \beta_9 DFA_{it} + \beta_{10} FA_{it} + \beta_{11} CAPINT_{it} + \beta_{12} DPR_{it} + \beta_{13} MO_{it} + \varepsilon_{it}$$

Where $IBIT^* = IBIT\text{-}PC$

[35] Multicollinearity may be a problem when the correlation exceeded 0.80 (Gujarati, 1995)

Table 5.2(b)
Correlation of the Variables (Model 2)

	ETR	PC	IBIT*	LTDB	TDB	TDC	DFA
ETR	1.0000						
PC	0.0468	1.0000					
IBIT*	-0.2548	-0.0656	1.0000				
LTDB	0.0746	0.3043	-0.2077	1.0000			
TDB	0.0779	0.0514	-0.1791	0.5244	1.0000		
TDM	0.1388	0.1819	-0.4525	0.4817	0.5096	1.0000	
DFA	-0.0046	0.1693	0.0560	0.0293	-0.0361	-0.0303	1.0000
FA	-0.0560	0.1847	0.0598	0.0072	-0.0222	-0.0115	0.4714
CAPINT	-0.0811	0.1032	-0.0841	-0.0224	-0.0338	-0.0436	-0.0679
DPR	-0.1003	0.1075	0.0536	-0.1161	-0.1204	-0.2158	0.0110
MO	-0.0530	-0.4566	-0.0132	-0.1089	0.0210	0.0267	0.0652

	FA	CAPINT	DPR	MO			
FA	1.0000						
CAPINT	-0.0139	1.0000					
DPR	0.0544	0.0182	1.0000				
MO	-0.0160	-0.1064	-0.1255	1.0000			

The Collin test (Ender, 2006) has been used for checking the seriousness of the multicollinearity problems. The seriousness of the multicollinearity problem is measured by the condition number as an output from the Collin test. The greater the correlation among the variables, the higher will be the condition number. Ender (2006) suggests an informal rule of thumb that if the condition number is 15 or more, multicollinearity is a concern, while if it is greater than 30, multicollinearity is a very serious concern. However, Belsley et al. (1980) suggest that only when the condition number is greater than 20, might there be potential problems. In these analyses, Collin tests were employed for several combinations of explanatory variables that may suffer from multicollenearity. Collinearity diagnostics for political cost and income before income tax has condition number 16.3147 which is of concern but is not severe (Table 5.3). However, the Collin tests for all the high correlation leverage variables shows condition numbers ranging between 2.1245 and 7.1078 (Tables 5.4 - 5.7) which are all below 15.

Table 5.3
Collinearity Diagnostics for
Political Cost and Profitability (IBIT)

Variable	VIF	SQRT VIF	Tolerance	R-Squared
PC	3.58	1.89	0.2794	0.7206
IBIT	3.58	1.89	0.2794	0.7206

Mean VIF 3.58

	Eigenval	Condition Index
1	2.8914	1.0000
2	0.0977	5.4399
3	0.0109	16.3147

Condition Number 16.3147

Table 5.4
Collinearity Diagnostics for
Short Term Leverage Book Value and Total Leverage Book Value

Variable	VIF	SQRT VIF	Tolerance	R-Squared
STDB	11.85	3.44	0.0844	0.9156
TDB	11.85	3.44	0.0844	0.9156

Mean VIF 11.85

	Eigenval	Condition Index
1	2.0529	1.0000
2	0.9065	1.5049
3	0.0406	7.1078

Condition Number 7.1078

Table 5.5
Collinearity Diagnostics for
Long Term Leverage Book Value and Total Leverage Book Value

Variable	VIF	SQRT VIF	Tolerance	R-Squared
LTDB	1.39	1.18	0.7201	0.2799
TDB	1.39	1.18	0.7201	0.2799

Mean VIF 1.39

	Eigenval	Condition Index
1	1.8368	1.0000
2	0.7563	1.5585
3	0.4069	2.1245

Condition Number 2.1245

Table 5.6
Collinearity Diagnostics for
Long Term Leverage Book Value and Long Term Leverage Market Value

Variable	VIF	SQRT VIF	Tolerance	R-Squared
LTDM	2.86	1.69	0.3500	0.6500
LTDB	2.86	1.69	0.3500	0.6500

Mean VIF 2.86

	Eigenval	Condition Index
1	2.2260	1.0000
2	0.6378	1.8681
3	0.1361	4.0437

Condition Number 4.0437

Table 5.7
Collinearity Diagnostics for
Short Term Leverage Market Value and Total Leverage Market Value

Variable	VIF	SQRT VIF	Tolerance	R-Squared
STDM	1.40	1.18	0.7131	0.2869
TDM	1.40	1.18	0.7131	0.2869

Mean VIF 1.40

	Eigenval	Condition Index
1	1.9228	1.0000
2	0.7356	1.6168
3	0.3417	2.3722

Condition Number 2.3722

The normality test in STATA (2005) for numerical methods is either Shapiro-Wilk, Shapiro-Francia, or Skewness-Kurtosis tests. This thesis used the Shapiro-Wilk test for testing normality as recommended for sample sizes from 7 to 2,000. The Shapiro-Wilk statistic (1965) is the ratio of the best estimator of the variance to the usual corrected sum of squares estimator of the variance. The Shapiro-Wilk statistic for normality can be seen in Table 5.8 which shows that most of the data set was not normally distributed. The W statistic ($p<0.00$) is highly significant, indicating that the data are not normally distributed. This condition is not a surprise, as was indicated earlier, and was expected as it is very common in financial data sets.

Table 5.8
Shapiro-Wilk Test for Normality

Variable	Obs	W	V	z	Prob>z
ETR	1519	0.9036	89.010	11.301	0.0000
PC	1562	0.9509	46.528	9.678	0.0000
IBIT	1547	0.9638	33.949	8.881	0.0000
STDB	1117	0.0962	630.497	16.036	0.0000
LTDB	1564	0.4476	523.697	15.781	0.0000
TDB	1563	0.1740	782.630	16.793	0.0000
STDM	1089	0.5814	285.363	14.050	0.0000
LTDM	1542	0.8171	171.200	12.956	0.0000
TDM	1262	0.6328	286.290	14.140	0.0000
DFA	1645	0.9992	0.792	-0.588	0.7219
FA	1463	0.7727	202.740	13.355	0.0000
CAPINT	1294	0.7943	164.120	12.762	0.0000
DPR	1365	0.9641	30.059	8.533	0.0000
MO	1645	0.7152	282.682	14.254	0.0000

5.4 The OLS Regressions

To find out the relationship between the dependent variable and explanatory variables and the magnitude of the impact of the explanatory variables on the dependent variable, the OLS regression is estimated. This thesis employs OLS regression to examine the aggregate effect of explanatory variables on tax avoidance activity and to identify the most significant explanatory variables.

Table 5.9 presents the estimated coefficients for the explanatory variables using OLS regression for both Model 1 and Model 2. Both models indicate a positive and significant relationship between political costs and ETR. Both tables also show negative and significant results for income before income tax, capital intensity and the dividend payout ratio for explaining ETR. The direction of three significant explanatory variables, namely, political costs, income before income tax and capital intensity, support prior expectations, except for the dividend payout ratio with an unexpected sign. Another three explanatory variables are significant in Model 1, namely long term leverage book value, long term leverage market value and the foreign activity dummy variable, where long term leverage market value is significant with the expected sign and both long term leverage book value and foreign activity dummy variable with unexpected sign. Model 2 records a significant value for total leverage book value but not with the expected sign.

Table 5.9
OLS Regression Results of Tax Avoidance Activity on Various Firm Characteristics for Companies from 2001 to 2005

Explanatory Variables	Expected Sign	**Model 1** Coefficient (Std Error)	**Model 2** Coefficient (Std Error)
Constant		-3.3713* *(.5158)*	-3.5061* *(.4965)*
PC	+	.5809* *(.1734)*	.2034* *(.0532)*
IBIT	-	-.3414** *(.1672)*	-
IBIT*		-	-.3795** *(.1594)*
STDB	-	.0007 *(.0014)*	-
LTDB	-	.0031*** *(.0017)*	-.0014 *(.0016)*
TDB	-	-.0005 *(.0014)*	.0004** *(.0002)*
STDM	-	.0013 *(.0024)*	-
LTDM	-	-.0199* *(.0073)*	-
TDM	-	.0001 *(.0015)*	-.0003 *(.0011)*
DFA	-	.2805*** *(.1463)*	.1983 *(.1470)*
FA	-	-.0039 *(.0028)*	-.0034 *(.0028)*
CAPINT	-	-.4430* *(.1163)*	-.4155* *(.1100)*
DPR	+	-.0137* *(.0037)*	-.0112* *(.0032)*
MO	-	-.0126 *(.0165)*	-.0208 *(.0148)*
F		8.59 *(p=0.0000)*	7.50 *(p=0.0000)*
R^2		0.0830	0.0707
Number of observations		887	887

Notes: The value of the standard error is given in parenthesis below the coefficient estimates where:
**indicates statistical significance at the 1% level*
***indicates statistical significance at the 5% level*
****indicates statistical significance at the 10% level*

Table 5.10(a) shows the effects of industry on tax avoidance activity based on an OLS regression for Model 1, whilst Table 5.10(b) shows for Model 2. The results suggest the level of tax avoidance activity differs depending on the industry.

Generally, from Table 5.10(a), the OLS regression shows that the tax avoidance activity is highly correlated with several explanatory variables for some industries but shows low correlation for other industries. This analysis revealed that basic material and industrial sectors have a high degree of correlation coefficient with tax avoidance activity. Both categories show that most of the variables (firm characteristics) record a significant coefficient consistent with the expected direction. Only two firm characteristics do not show significant coefficient for both industries, namely total leverage book value and foreign activity.

Companies in the consumer goods category show significant coefficients with the expected direction for total leverage book value, capital intensity and managerial ownership, whilst the health care category indicates a significantly negative direction for capital intensity. Also most of the leverage variables are significant with the expected sign.

Companies in the consumer services category have only one significant explanatory variable, which is the dividend payout ratio, but not in the expected direction.

Each category of companies in the utilities and technology sectors has significant coefficients for different explanatory variables. Utilities report capital intensity and managerial ownership as significant with the coefficients consistent with the expected direction, and also as significant income before income tax, long term leverage market value and dividend payout ratio, though the latter has a sign different from expected. In the technology category, short term and long term leverage book value were also significant with the expected sign of coefficient. However, surprisingly, political cost, income before income tax and total leverage book value were significant with coefficients signs different from the expected direction.

The R-square ranges from a low of 0.1224 for consumer goods to a high of 0.8359 for utilities indicating a substantial contribution to explaining the variance, but note that R^2 is high when these are fewer observations.

Table 5.10(a)
Industry Difference based on OLS Regression Results of Tax Avoidance Activity on Various Firm Characteristics for Companies from 2001 to 2005 (Model 1)

Explanatory Variables	Expected Sign	Basic Material	**Industry** Industrial	Consumer Goods	Health Care
		Coefficient *(std error)*	Coefficient *(std error)*	Coefficient *(std error)*	Coefficient *(std error)*
Constant		1.5600 *(1.9859)*	-4.3309* *(.6903)*	-3.2208* *(1.2142)*	34.5231 *(20.4232)*
PC	+	2.7172* *(.8668)*	.9520* *(.2246)*	.2322 *(.2660)*	-2.1483 *(4.7336)*
IBIT	-	-1.8756* *(.6524)*	-.6251** *(.2598)*	.0490 *(.2268)*	.2513 *(2.9522)*
STDB	-	-.1095** *(.0547)*	-.0454 *(.0304)*	.0042*** *(.0024)*	.0175 *(.0323)*
LTDB	-	-.0728 *(.0750)*	-.0693** *(.0325)*	-.0169 *(.0248)*	-.3048*** *(.1322)*
TDB	-	.0971 *(.0600)*	.0467 *(.0306)*	-.0029*** *(.0016)*	.1236** *(.0447)*
STDM	-	-.0344** *(.0164)*	-.0152*** *(.0081)*	.0073 *(.0066)*	-.5382*** *(.2480)*
LTDM	-	-.1365*** *(.0795)*	-.0228 *(.0145)*	.0517 *(.0445)*	.0234 *(.1305)*
TDM	-	.0296** *(.0119)*	.0162** *(.0062)*	-.0065 *(.0057)*	.2841*** *(.1326)*
DFA	-	-1.0314*** *(.5792)*	.1514 *(.2206)*	.4386 *(.3203)*	4.6156 *(5.1563)*
FA	-	.0001 *(.0067)*	-.0037 *(.0068)*	-.0054 *(.0064)*	.1013 *(.1026)*
CAPINT	-	-3.2654* *(.7369)*	-.5157* *(.1235)*	-.4498*** *(.2611)*	-8.5107*** *(3.8648)*
DPR	+	-.02899*** *(.0152)*	-.0078 *(.0054)*	-.0087 *(.0054)*	.0188 *(.0609)*
MO	-	.0875*** *(.0511)*	.0196 *(.0257)*	-.0598** *(.0273)*	-1.0535 *(1.1143)*
F		7.70 *(p=0.0000)*	12.23 *(p=0.0000)*	4.67 *(p=0.0000)*	8750.05 *(p=0.0000)*
R^2		0.5097	0.1804	0.1224	0.7652
No of Obs.		82	369	266	19

Note:
**indicates statistical significance at the 1% level*
***indicates statistical significance at the 5% level*
****indicates statistical significance at the 10% level*

Table 5.10(a) [continued]
Industry Difference based on OLS Regression Results of Tax Avoidance Activity on Various Firm Characteristics for Companies from 2001 to 2005 (Model 1)

Explanatory Variables	Expected Sign	Industry: Consumer Services	Industry: Utilities	Industry: Technology
		Coefficient *(std error)*	Coefficient *(std error)*	Coefficient *(std error)*
Constant		-2.1209*** *(1.0742)*	9.6011*** *(5.3942)*	4.9183 *(6.3650)*
PC	+	.1177 *(.4928)*	-.1584 *(.6366)*	-4.0548** *(1.8077)*
IBIT	-	-.2548 *(.7121)*	.5280*** *(.2757)*	4.6213* *(1.3497)*
STDB	-	-.0147 *(.0499)*	-.3085 *(.1843)*	-1.0497** *(.4667)*
LTDB	-	-.0072 *(.0088)*	-.3450 *(.2028)*	-1.1509* *(.3241)*
TDB	-	.0075483 *(.0088119)*	.3295 *(.2007)*	.9765*** *(.4597)*
STDM	-	.0167 *(.0355)*	.0057 *(.0328)*	.2745 *(.2227)*
LTDM	-	.0182 *(.0286)*	.1021* *(.0321)*	.5374 *(.3948)*
TDM	-	-.0040 *(.0078)*	.0015 *(.0077)*	-.1428 *(.1312)*
DFA	-	1.0670 *(1.3403)*	.4603 *(.7617)*	-2.9676 *(2.0090)*
FA	-	-.0100 *(.0186)*	.0101 *(.0093)*	-.0537 *(.0697)*
CAPINT	-	.0170 *(.2349)*	-4.4224** *(1.8289)*	-1.1545 *(1.6436)*
DPR	+	-.0239** *(.0103)*	-.0364* *(.0109)*	.0123 *(.0334)*
MO	-	.0366 *(.0704)*	-.3250** *(.1345)*	.7172 *(.4421)*
F		16.25 *(p=0.0000)*	17.78 *(p=0.0000)*	22.06 *(p=0.0000)*
R^2		0.1589	0.8359	0.8336
No of Obs.		80	33	27

Note:
**indicates statistical significance at the 1% level*
***indicates statistical significance at the 5% level*
****indicates statistical significance at the 10% level*

Table 5.10(b) shows the result for industry difference on OLS regression for Model 2. Model 2 seems to follow the pattern of Model 1 in that most of the firm characteristics which are significant in Model 1 are also significant in Model 2, although the results are somewhat less strong. Several variables which are significant in Model 1 are insignificant in Model 2, including total leverage market value, foreign activity dummy variable, dividend payout ratio and managerial ownership in the basic material category.

Table 5.10(b)
Industry Difference based on OLS Regression Results of Tax Avoidance Activity on Various Firm Characteristics for Companies from 2001 to 2005 (Model 2)

Explanatory Variables	Expected Sign	Basic Material	**Industry** Industrial	Consumer Goods	Health Care
		Coefficient *(std error)*	Coefficient *(std error)*	Coefficient *(std error)*	Coefficient *(std error)*
Constant		-1.930 *(2.2849)*	-4.2721* *(.7206)*	-3.3758** *(1.1506)*	21.0952 *(16.8985)*
PC	+	.8053** *(.3013)*	.261246** *(.0980827)*	.2681** *(.1089)*	-1.6692 *(1.4895)*
IBIT*		-1.724* *(.6518)*	-.6453** *(.2699)*	-.0760 *(.2743)*	.2390 *(2.1321)*
LTDB	-	-.0075 *(.0119)*	-.0205* *(.0027)*	.0066 *(.0068)*	.0041 *(.0198)*
TDB	-	-.0123 *(.0086)*	.0001 *(.0004)*	-.0003 *(.0005)*	.0071 *(.0151)*
TDM	-	0.0000 *(.0067)*	.0049** *(.0022)*	.0010 *(.0030)*	-.0232*** *(.0120)*
DFA	-	-.7666 *(.5643)*	.1524 *(.2086)*	.5365*** *(.3216)*	7.4283 *(5.2114)*
FA	-	.0072 *(.0058)*	-.0069 *(.0065)*	-.0059 *(.0074)*	.1195 *(.1042)*
CAPINT	-	-2.4114** *(.7563)*	-.4794* *(.1255)*	-.4610*** *(.2381)*	-5.3758 *(3.6151)*
DPR	+	-.0222 *(.0155)*	-.0039 *(.0049)*	-.0096** *(.0047)*	.0101 *(.0643)*
MO	-	-.0078 *(.0585)*	.0040 *(.0243)*	-.0615** *(.0245)*	-1.4572 *(1.0908)*
F		3.07 *(p=0.0022)*	14.68 *(p=0.0000)*	4.86 *(p=0.0000)*	5.56 *(p=0.0115)*
R^2		0.2733	0.1584	0.1088	0.6475
No. of Obs.		97	406	323	19

Note:
**indicates statistical significance at the 1% level*
***indicates statistical significance at the 5% level*
****indicates statistical significance at the 10% level*

Table 5.10(b) [continued]
Industry Difference based on OLS Regression Results of Tax Avoidance Activity on Various Firm Characteristics for Companies from 2001 to 2005 (Model 2)

Explanatory Variables	Expected Sign	Consumer Services	**Industry** Utilities	Technology
		Coefficient *(std error)*	Coefficient *(std error)*	Coefficient *(std error)*
Constant		-2.2160 *(1.3497)*	7.7844 *(5.3732)*	-2.9981 *(4.4231)*
PC	+	-.1579 *(.2064)*	.5584 *(.3862)*	1.6251*** *(.8724)*
IBIT*	-	-.2432 *(.3997)*	.8116* *(.3049)*	2.5280** *(1.1351)*
LTDB	-	.0002 *(.0049)*	-.0128 *(.0233)*	.0440 *(.0475)*
TDB	-	.0007 *(.0041)*	.0193 *(.0185)*	.0019 *(.0161)*
TDM	-	.0021 *(.0033)*	.0033 *(.0059)*	-.0002 *(.0051)*
DFA	-	1.0392 *(.9310)*	.0034 *(.8648)*	-2.7747*** *(1.4037)*
FA	-	-.0067 *(.0158)*	.0048 *(.0125)*	-.0391 *(.0440)*
CAPINT	-	.1025 *(.1924)*	-3.6080*** *(1.8679*	-1.2218** *(.4613)*
DPR	+	-.0187** *(.0083)*	-.0396* *(.011045)*	-.0394*** *(.0226)*
MO	-	.0194 *(.0687)*	-.2318** *(.1218)*	.9588* *(.2244)*
F		6.61 *(p=0.0000)*	17.65 *(p=0.0000)*	10.18 *(p=0.0000)*
R^2		0.1306	0.7354	0.6501
No. of Obs.		90	33	35

Note:
**indicates statistical significance at the 1% level*
***indicates statistical significance at the 5% level*
****indicates statistical significance at the 10% level*

5.5 Fixed-Effects and Random-Effects Estimations

As discussed in the previous chapter, to overcome issues of non-independence between the observations, fixed-effects and random-effects models were estimated. Table 5.11(a) presents the fixed-effects estimation results and Table 5.11(b) presents the random-effects estimation results. As mentioned earlier, the research design for this thesis includes fixed-effect and as well as random-effect models. The Hausman[36] test is a criterion used for choosing between fixed-effects and random-effects models. The Hausman specification test (Hausman, 1978) compares the fixed-effect[37] and random-effect[38] models and suggests that the more efficient model should be estimated. The results from the Hausman test indicate that the fixed-effect model should be used in the thesis. Although the Hausman test results are in favour of the fixed-effect estimations, the estimation requires two explanatory variables in the model to be dropped, namely foreign activity dummy variable and managerial ownership. Foreign activity was dropped because it is a dummy variable and managerial ownership was dropped because only one year's data were available. As a result the random-effect model was also estimated.

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[36] Hausman's (1978) test tests the null hypothesis where the coefficients estimated by the efficient random effects estimator are the same as the ones estimated by the consistent fixed-effects estimator. The Hausman test checks whether the fixed-effects and random-effects model is more efficient.

[37] Fixed-effect models assume the unobserved variables differ between subjects but are constant across time for the same subject. Fixed effect is the most common type of panel data regression model.

[38] Random-effect models assume that unobserved variables may be either of the fixed effects or between effects type. As the random-effect model takes into account both types of effects, it is sometimes assumed to be more efficient than fixed-effects model.

The results in Tables 5.11(a) and 5.11(b) should be more reliable than those obtained by the estimated OLS models. Compared with pooled OLS regression data analysis, the use of a panel data set provides stronger evidence concerning the determinants of corporate tax avoidance strategies and confirms the earlier OLS analysis. It also heightens the confidence about the relationships and causality among company variables and the avoidance behaviour. The panel results also suffer less from the time-series problems of multicollinearity and the endogeneity effects between variables. The pooled OLS regression does not control for the individual firm effects and may introduce bias in parameter estimates and overstate the t-statistics. Therefore, the analyses utilize the panel data and employ fixed-effects regression to control for the underlying time-variant heterogeneity among companies in the observations. Table 5.11(a) presents results of the fixed-effect model and comparison with OLS pooled regression reveals differences in parameter estimates and enhanced explanatory power of regressions.

The intercept term for the fixed-effect model is significantly positive. This indicates the reluctance of the Malaysian companies not to engage in tax avoiding activity. The results from the fixed-effect estimation for both models indicate that political cost, income before income tax and dividend payout ratio exert a significant influence on ETR. Surprisingly, both models do not provide support for the political cost hypothesis and dividend payout ratio which reports negative significant associations with the ETR measures.

However, as for the random-effect estimation, it does provide support for the political cost hypothesis as it has a positive significant coefficient in Model 1 but not in Model 2. Dividend payout ratio is significant in both models, but with the sign different from expected. Moreover, both models indicate negative and statistically significant, different signs as expected for income before income tax and capital intensity. Generally, by using panel data and controlling for company fixed-effects or random-effects, the analyses found meaningful correlations between the firm's characteristics and tax avoidance behaviour.

Table 5.11(a)
Fixed-Effects Regression Results of Tax Avoidance Activity on Various Firm Characteristics for Panel Data of Companies for 2001 to 2005

Explanatory Variables	Expected Sign	**Model 1** Coefficient (Std Error)	**Model 2** Coefficient (Std Error)
Constant		3.1817 (1.6936)	2.5940*** (1.5607)
PC	+	-.6843* *(.2660)*	-.6695* *(.2526)*
IBIT	-	-.4685* *(.1526)*	-
IBIT*		-	-.4112* *(.1541)*
STDB	-	-.0043** *(.0020)*	-
LTDB	-	-.0053** *(.0027)*	.0012 *(.0017)*
TDB	-	.0050** *(.0020)*	.0005 *(.0003)*
STDM	-	-.0057 *(.0036)*	-
LTDM	-	.0157 *(.0107)*	-
TDM	-	-.0000 *(.0022)*	.0005 *(.0014)*
FA	-	-.0015 *(.0057)*	-.0052 *(.0056)*
CAPINT	-	-.0529697 *(.2371)*	.0121 *(.2314)*
DPR	+	-.0081** *(.0036)*	-.0078* *(.0036)*
F(11,619)		4.63	4.99
Prob > chi2		0.0000	0.0000
R^2	Within	0.0760	0.0521
	Between	0.0183	0.0222
	Overall	0.0094	0.0125
Number of observations		887	887

Note:
**indicates statistical significance at the 1% level*
***indicates statistical significance at the 5% level*
****indicates statistical significance at the 10% level*

Table 5.11(b)
Random-Effects Regression Results of Tax Avoidance Activity on Various Firm Characteristics for Panel Data of Companies for 2001 to 2005

Explanatory Variables	Expected Sign	**Model 1** Coefficient (Std Error)	**Model 2** Coefficient (Std Error)
Constant		-3.2132* *(.7341)*	-3.4061* *(.6609)*
PC	+	.4945* *(.1522)*	.0790 *(.0798)*
IBIT	-	-.4367* *(.1222)*	-
IBIT*		-	-.4849* *(.1140)*
STDB	-	-.0034*** *(.0020)*	-
LTDB	-	-.0032 *(.0026)*	-.0001 *(.0015)*
TDB	-	.0041** *(.0020)*	.0006*** *(.0003)*
STDM	-	-.0026 *(.0030)*	-
LTDM	-	-.0043 *(.0086)*	-
TDM	-	-.0013 *(.0020)*	-.0019 *(.0012)*
DFA	-	.3701 *(.2289)*	.2959 *(.2230)*
FA	-	-.0048 *(.0040)*	-.0055 *(.0040)*
CAPINT	-	-.2783** *(.1324)*	-.3185** *(.1262)*
DPR	+	-.0109* *(.0031)*	-.0094* *(.0030)*
MO	-	-.0262 *(.0261)*	-.0325 *(.0236)*
Wald chi2		37.20	38.32
Prob > chi2		0.0004	0.0000
R^2	Within	0.0272	0.0217
	Between	0.0772	0.0689
	Overall	0.0588	0.0606
Number of observations		887	887

Note:
**indicates statistical significance at the 1% level*
***indicates statistical significance at the 5% level*
****indicates statistical significance at the 10% level*

Tables 5.12(a) and 5.12(b) show the results of individual regressions for every industry in the sample using panel data random-effect tests for Models 1 and 2 respectively, while Tables 5.13(a) and 5.13(b) present the results of the fixed-effect test for Model 1 and Model 2 respectively. These tables show whether or not statistically significant relationships exist between tax avoiding strategy and the explanatory variables in each industry. Given that the random-effect model has superior results, only this model is discussed.

The random-effect estimation for Model 1 can be seen in Table 5.12(a). The political cost variable has the predicted positive sign and was significant in basic material, industrial and technology regression. Surprisingly, the political cost sign in technology was not as predicted. The income before income tax variable has the expected negative sign and was significant in basic material, industrial and consumer services. However, IBIT variable was significant but has different sign from expected in the technology regression. Most of the variables for leverage were significant in utility regression. Long term leverage book value was significant for both utilities and technology regression with the expected negative sign. Short term leverage book value was only significant in the utilities regression with the predicted sign. Total leverage book value and long term leverage market value were both significant in utilities but not with the expected sign. The foreign activity dummy variable was significant in the consumer services and technology regressions but not with the expected sign in consumer services. Capital intensity had a negative expected sign and was significant in basic material, industrial and

utilities. Dividend payout ratio had a negative significant sign in industrial and utilities which was not as predicted. Managerial ownership was barely significant, and only in utilities regression with the expected sign. Short term leverage market value, total leverage market value and foreign activity were not significant in any of the seven regressions.

In comparison, Model 2 (Table 5.12(b)) indicates that the coefficient of income before income tax (IBIT*) is negative and statistically significant in both the basic material and industrial categories, whilst positive and statistically significant in both the utilities and technology categories. The coefficient of capital intensity is negative and statistically significant in the basic material, industrial, utilities and technology categories. The coefficient of dividend payout ratio is negative and statistically significant in consumer goods, utilities and technology with sign different from predicted. From Model 2, the results show that at least one firm characteristic has a relationship with ETR in the basic material, industrial, utilities and technology industries.

Table 5.12(a)
Random-Effects Regression Results of Tax Avoidance Activity on Various Firm Characteristics for Industry Differences based on Panel Data of Companies for 2001 to 2005 (Model 1)

Explanatory Variables	Expected Sign	Basic Material	**Industry** Industrial	Consumer Goods	Health Care
Constant		2.9741 *(4.0700)*	-4.5156* *(.9489)*	-3.6392** *(1.6598)*	34.5231 *(27.3797)*
PC	+	1.9028* *(.6619)*	1.0474* *(.2167)*	.2365 *(.3200)*	-2.1483 *(5.9433)*
IBIT	-	-1.4954* *(.3908)*	-.8292* *(.1869)*	-.0404 *(.2512)*	.2513 *(3.8894)*
STDB	-	-.0085 *(.0704)*	-.0658 *(.0442)*	-.0010 *(.0036)*	.0175 *(.0386)*
LTDB	-	.0241 *(.0922)*	-.0680 *(.0457)*	.0077 *(.0332)*	-.3048 *(.2451)*
TDB	-	-.0016 *(.0709)*	.0655 *(.0442)*	.0010 *(.0028)*	.1236 *(.0883)*
STDM	-	-.0467 *(.0327)*	.0028 *(.0084)*	.0055 *(.0108)*	-.5382 *(.4384)*
LTDM	-	-.1377 *(.0974)*	-.0205 *(.0177)*	-.0047 *(.0554)*	.0234 *(.1309)*
TDM	-	.0412 *(.0280)*	-.0019 *(.0065)*	-.0058 *(.0097)*	.2841 *(.2418)*
DFA	-	-.8312 *(.7893)*	.1760 *(.3212)*	.5140 *(.3993)*	4.6156 *(7.4233)*
FA	-	-.0041 *(.0117)*	-.0038 *(.0069)*	-.0101 *(.0077)*	.1013 *(.1416)*
CAPINT	-	-2.9020* *(.8659)*	-.4195* *(.1569)*	-.2192 *(.3584)*	-8.5107 *(5.4000)*
DPR	+	-.0113 *(.0122)*	-.0092** *(.0045)*	-.0067 *(.0056)*	.0188 *(.0748)*
MO	-	.0744 *(.0954)*	.0042 *(.0321)*	-.0644 *(.0486)*	-1.0535 *(1.6511)*
Wald chi2		35.61	38.20	16.59	16.30
Prob > chi2		0.0007	0.0003	0.2188	0.2334
R^2 Within		0.2518	0.0272	0.0328	0.6749
Between		0.5169	0.2562	0.1146	0.9999
Overall		0.4781	0.1479	0.1007	0.7652
No of Obs		82	369	266	19

Note:
**indicates statistical significance at the 1% level*
***indicates statistical significance at the 5% level*
****indicates statistical significance at the 10% level*

Table 5.12(a) [continued]
Random-Effects Regression Results of Tax Avoidance Activity on Various Firm Characteristics for Industry Differences based on Panel Data of Companies for 2001 to 2005 (Model 1)

		Industry		
Explanatory Variables	Expected Sign	Consumer Services	Utilities	Technology
Constant		-2.6213 *(3.3138)*	9.6011 *(6.0765)*	4.9183 *(5.9884)*
PC	+	.2567 *(.5272)*	-.1584 *(.7870)*	-4.0548* *(1.3591)*
IBIT	-	-.7487*** *(.4376)*	.5280 *(.3619)*	4.6213* *(1.0859)*
STDB	-	-.0487 *(.0398)*	-.3085** *(.1435)*	-1.0497 *(.6593)*
LTDB	-	-.0123 *(.0118)*	-.3450** *(.1609)*	-1.1509*** *(.6162)*
TDB	-	.0156 *(.0113)*	.3295** *(.1565)*	.9765 *(.6630)*
STDM	-	.0259 *(.0398)*	.0057 *(.0410)*	.2745 *(.2117)*
LTDM	-	.0050 *(.0259)*	.1021* *(.0365)*	.5374 *(.4400)*
TDM	-	-.0072 *(.0099)*	.0015 *(.0091)*	-.1428 *(.1291)*
DFA	-	2.3403** *(1.1736)*	.4603 *(1.0091)*	-2.9676*** *(1.6049)*
FA	-	.0022 *(.0125)*	.0101 *(.0132)*	-.0537 *(.0887)*
CAPINT	-	.3489 *(.4011)*	-4.4224** *(1.8454)*	-1.1544 *(1.2265)*
DPR	+	-.0128 *(.0097)*	-.0364* *(.0119)*	.01234 *(.0278)*
MO	-	.0126 *(.1126)*	-.3250*** *(.1725)*	.7172*** *(.3984)*
Wald chi2		15.44	96.78	65.14
Prob > chi2		0.2805	0.0000	0.0000
R^2 Within		0.1949	0.3092	0.7946
Between		0.1984	0.9895	0.7855
Overall		0.0893	0.8359	0.8336
No of Obs		80	33	27

Note:
**indicates statistical significance at the 1% level*
***indicates statistical significance at the 5% level*
****indicates statistical significance at the 10% level*

Table 5.12(b)
Random-Effects Regression Results of Tax Avoidance Activity on Various Firm Characteristics for Industry Differences based on Panel Data of Companies for 2001 to 2005 (Model 2)

Explanatory Variables	Expected Sign	Basic Material	**Industry** Industrial	Consumer Goods	Health Care
Constant		-.4187 *(3.9411)*	-4.3583* *(.9479)*	-3.5905** *(1.4542)*	21.0952 *(23.1024)*
PC	+	.4740 *(.4628)*	.1467 *(.1207)*	.1681 *(.1525)*	-1.6692 *(1.8875)*
IBIT*	-	-1.300* *(.4302)*	-.8629* *(.1775)*	-.2701 *(.2115)*	.2390 *(2.3060)*
LTDB	-	.0015 *(.0158)*	-.0100** *(.0040)*	.0071 *(.0095)*	.0041 *(.0232)*
TDB	-	-.0127 *(.0135)*	.0001 *(.0009)*	.0002 *(.0007)*	.0071 *(.0163)*
TDM	-	.0021 *(.0092)*	-.0010 *(.0027)*	-.0032 *(.0036)*	-.0231 *(.0150)*
DFA	-	-.6503 *(.7995)*	.2292 *(.3251)*	.6100 *(.3891)*	7.4283 *(6.4202)*
FA	-	.0018 *(.0119)*	-.0078 *(.0066)*	-.0078 *(.0073)*	.1195 *(.1270)*
CAPINT	-	-2.1812** *(.8710)*	-.3939** *(.1601)*	-.3486 *(.3355)*	-5.3758 *(4.7251)*
DPR	+	-.0051 *(.0130)*	-.0060 *(.0043)*	-.0097*** *(.0051)*	.0101 *(.0626)*
MO	-	.0066 *(.0959)*	-.0034 *(.0320)*	-.0636 *(.0392)*	-1.4572 *(1.4107)*
Wald chi2		15.67	36.76	19.21	14.70
Prob > chi2		0.1095	0.0001	0.0377	0.1436
R^2 Within		0.1091	0.0370	0.0399	0.5119
Between		0.2632	0.2059	0.0731	0.9999
Overall		0.2514	0.1313	0.0950	0.6475
No of Obs		97	406	323	19

Note:
**indicates statistical significance at the 1% level*
***indicates statistical significance at the 5% level*
****indicates statistical significance at the 10% level*

Table 5.12(b) [continued]
Random-Effects Regression Results of Tax Avoidance Activity on Various Firm Characteristics for Industry Differences based on Panel Data of Companies for 2001 to 2005 (Model 2)

Explanatory Variables	Expected Sign	Industry: Consumer Services	Industry: Utilities	Industry: Technology
Constant		-1.3036 *(2.9621)*	7.7844 *(6.8931)*	-2.9981 *(3.6170)*
PC	+	-.5292 *(.3390)*	.5584 *(.4380)*	1.6251** *(.7237)*
IBIT*	-	-.5523 *(.3931)*	.8116** *(.3874)*	2.5280** *(1.0718)*
LTDB	-	-.0059 *(.0087)*	-.0128 *(.0260)*	.0440 *(.0491)*
TDB	-	.0048 *(.0078)*	.0193 *(.0205)*	.0019 *(.0271)*
TDM	-	-.0000 *(.0052)*	.0033 *(.0082)*	-.0002 *(.0113)*
DFA	-	1.9694*** *(1.0241)*	.0034 *(1.1074)*	-2.7747* *(1.0254)*
FA	-	.0024 *(.0145)*	.0048 *(.0148)*	-.0391 *(.0600)*
CAPINT	-	.1846 *(.3809)*	-3.6080*** *(2.1133)*	-1.2219** *(.5963)*
DPR	+	-.0086 *(.0102)*	-.0396* *(.0120)*	-.0394*** *(.0214)*
MO	-	.0049 *(.1001)*	-.2318 *(.1696)*	.9588* *(.2780)*
Wald chi2		11.26	61.15	44.59
Prob > chi2		0.3379	0.0000	0.0000
R^2 Within		0.1102	0.1491	0.4150
Between		0.2035	0.9264	0.8639
Overall		0.0812	0.7354	0.6501
No of Obs		90	33	35

Note:
**indicates statistical significance at the 1% level*
***indicates statistical significance at the 5% level*
****indicates statistical significance at the 10% level*

Table 5.13(a)
Fixed-Effect Regression Results of Tax Avoidance Activity on Various Firm Characteristics for Industry Differences based on Panel Data of Companies for 2001 to 2005 (Model 1)

		Industry			
Explanatory Variables	Expected Sign	Basic Material	Industrial	Consumer Goods	Health Care
Constant		5.2598 *(11.0456)*	.5426 *(2.1553)*	10.2731*** *(5.4513)*	159.1744 *(74.5042)*
PC	+	1.1220 *(1.5380)*	-.2000 *(.4334)*	-2.1795* *(.7518)*	-2.9230 *(8.0124)*
IBIT	-	-1.3339* *(.4794)*	-.7428* *(.2389)*	-.1419 *(.3483)*	.5492 *(4.5332)*
STDB	-	.0173 *(.0774)*	-.0521 *(.0438)*	-.0030 *(.0043)*	.0731 *(.0564)*
LTDB	-	.0170 *(.1148)*	-.0350 *(.0457)*	.0205 *(.0452)*	-.9354 *(.4112)*
TDB	-	-.0145 *(.0772)*	.0505 *(.0439)*	.0021 *(.0031)*	.3128*** *(.1228)*
STDM	-	-.0632 *(.0454)*	.0134 *(.0092)*	.0117 *(.0212)*	-1.9121 *(.8890)*
LTDM	-	-.1252 *(.1317)*	.0001 *(.0212)*	.0003 *(.0812)*	.2161 *(.1412)*
TDM	-	.0561 *(.0412)*	-.0140*** *(.0072)*	-.0088 *(.0170)*	.9468 *(.4432)*
FA	-	-.0138 *(.0270)*	.0014 *(.0108)*	-.0098 *(.0100)*	-2.6269 *(1.3290)*
CAPINT	-	-2.6660*** *(1.5862)*	.1032 *(.3417)*	-.0169 *(.7923)*	-22.0903*** *(8.7344)*
DPR	+	-.0033 *(.0153)*	-.0079 *(.0054)*	-.0065 *(.0070)*	.0332 *(.0844)*
Wald chi2		1.47	2.67	2.35	1.82
Prob > chi2		0.1767	0.0030	0.0100	0.3408
R^2 Within		0.2690	0.1024	0.1288	0.8698
Between		0.3570	0.0401	0.0883	0.2312
Overall		0.3072	0.0078	0.0535	0.0619
No of Obs		82	369	266	19

Note:
**indicates statistical significance at the 1% level*
***indicates statistical significance at the 5% level*
****indicates statistical significance at the 10% level*

Table 5.13(a) [continued]
Fixed-Effect Regression Results of Tax Avoidance Activity on Various Firm Characteristics for Industry Differences based on Panel Data of Companies for 2001 to 2005 (Model 1)

Explanatory Variables	Expected Sign	Industry Consumer Services	Utilities	Technology
Constant		5.4341 *(9.1155)*	-20.5982 *(17.5278)*	29.0093 *(33.3151)*
PC	+	-.3585 *(.9193)*	.7811 *(2.3251)*	-4.5776 *(3.9322)*
IBIT	-	-.9557*** *(.5400)*	1.1106** *(.4047)*	.6340 *(4.0947)*
STDB	-	-.0460 *(.0442)*	-.2611** *(.1075)*	-.6517 *(.9647)*
LTDB	-	-.0132 *(.0131)*	-.2882** *(.1238)*	-.8174 *(.8645)*
TDB	-	.0161 *(.0123)*	.2645** *(.1221)*	.6329 *(.9142)*
STDM	-	.0252 *(.0455)*	-.0119 *(.0446)*	-.0101 *(.4208)*
LTDM	-	.0063 *(.0299)*	.0700 *(.0412)*	.5087 *(.7429)*
TDM	-	-.0074 *(.0108)*	.0049 *(.0076)*	.0270 *(.2862)*
FA	-	.00276 *(.0134)*	-.0150 *(.0139)*	-.0571 *(.2363)*
CAPINT	-	-.2348 *(.8508)*	.9066 *(2.0305)*	-3.4381 *(2.7984)*
DPR	+	-.01073 *(.0111)*	.0038 *(.0138)*	-.0176 *(.0491)*
Wald chi2		1.08	2.29	3.25
Prob > chi2		0.3962	0.0680	0.0799
R^2 Within		0.2093	0.6273	0.8564
Between		0.0002	0.0673	0.0008
Overall		0.0015	0.0639	0.0947
No of Obs		80	33	27

Note:
**indicates statistical significance at the 1% level*
***indicates statistical significance at the 5% level*
****indicates statistical significance at the 10% level*

Table 5.13(b)
Fixed-Effect Regression Results of Tax Avoidance Activity on Various Firm Characteristics for Industry Differences based on Panel Data of Companies for 2001 to 2005 (Model 2)

		Industry			
Explanatory Variables	Expected Sign	Basic Material	Industrial	Consumer Goods	Health Care
Constant		5.6881 *(12.0406)*	1.2154 *(2.0520)*	4.5940 *(3.5151)*	59.3602 *(71.2891)*
PC	+	.7534 *(1.6645)*	-.4604 *(.4036)*	-1.5854* *(.5807)*	-4.0661 *(5.5805)*
IBIT*	-	-1.1435** *(.5257)*	-.6192*** *(.2275)*	-.1572 *(.3117)*	.8774 *(2.9520)*
LTDB	-	.0007 *(.0218)*	.0079 *(.0051)*	.0034 *(.0154)*	-.0241 *(.0578)*
TDB	-	-.0043 *(.0212)*	-.0007 *(.0010)*	.0006 *(.0011)*	.0285 *(.0395)*
TDM	-	.0036 *(.0121)*	-.0044 *(.0032)*	.0014 *(.0053)*	-.0175 *(.0304)*
FA	-	-.0149 *(.0308)*	-.0047 *(.0087)*	-.0144 *(.0100)*	-.3708 *(1.1734)*
CAPINT	-	-2.5900 *(1.716039)*	.2859 *(.3144)*	.5908 *(.6340)*	-10.1245 *(9.2152)*
DPR	+	.0030 *(.0161)*	-.0071 *(.0050)*	-.0100 *(.0066)*	.0321 *(.0802)*
Wald chi2		1.06	3.63	3.10	0.92
Prob > chi2		0.4015	0.0005	0.0025	0.5588
R^2 Within		0.1240	0.0902	0.1016	0.5498
Between		0.0791	0.0516	0.0841	0.5542
Overall		0.0847	0.0140	0.0546	0.1720
No of Obs		97	405	321	19

Note:
**indicates statistical significance at the 1% level*
***indicates statistical significance at the 5% level*
****indicates statistical significance at the 10% level*

Table 5.13(b) [continued]
Fixed-Effect Regression Results of Tax Avoidance Activity on Various Firm Characteristics for Industry Differences based on Panel Data of Companies for 2001 to 2005 (Model 2)

Explanatory Variables	Expected Sign	Industry: Consumer Services	Industry: Utilities	Industry: Technology
Constant		12.0346 *(10.2463)*	-21.4906 *(18.1288)*	34.5886** *(15.0967)*
PC	+	-1.2093 *(1.0247)*	.8082 *(2.4244)*	-5.2642*** *(2.8896)*
IBIT*	-	-.6844 *(.5776)*	1.1475** *(.4492)*	.4003 *(1.8494)*
LTDB	-	-.0073 *(.0102)*	-.0019 *(.0212)*	.1054 *(.0896)*
TDB	-	.0062 *(.0090)*	-.0086 *(.0203)*	.0426 *(.0557)*
TDM	-	-.0003 *(.0062)*	.0044 *(.0066)*	-.0461 *(.0311)*
FA	-	.0047 *(.0165)*	-.0158 *(.0139)*	.2007*** *(.0987)*
CAPINT	-	-.9693 *(.9454)*	1.310 *(2.2473)*	-3.9886*** *(2.0807)*
DPR	+	-.0029 *(.0124)*	.0076 *(.0150)*	-.0206 *(.0274)*
Wald chi2		0.92	1.82	4.54
Prob > chi2		0.5089	0.1390	0.0057
R^2 Within		0.1159	0.4470	0.7077
Between		0.0014	0.0288	0.3534
Overall		0.0001	0.0245	0.0408
No of Obs		89	33	33

Note:
**indicates statistical significance at the 1% level*
***indicates statistical significance at the 5% level*
****indicates statistical significance at the 10% level*

5.6 Tobit Censored Regressions

Table 5.14 shows the results of the Tobit censored regression model of the dependent variable for Model 1 and 2. As ETRs can be explained as ratios, they are easily affected by outliers. To correct for such outliers, the truncated regression model was employed to left censoring at 0 per cent and right censoring at 56 per cent of ETR, thereby removing the most extreme negative and positive observations. The statutory tax rate (STR) for Malaysian companies is 28 per cent and this model was censored at double value of STR (56 per cent) to eliminate the possibility of unreliable data. This model censored at double value of STR is consistent with model used by Buinjink et al. (2000). The filter only removes a small part of the sample and does not bias the mean upward and downward. In this table, for Model 1, 18 per cent of the observations (158) are censored at zero while 2 per cent (18 observations) are censored at 56 for a total of 20 per cent censored observations (176). The analyses reported below are for the filtered observations.

The result of both models shows that seven of the 13 factors are significantly related to tax avoidance activity. Both models indicate that political cost, income before income tax, foreign activity and capital intensity possess a significant influence on ETR with the expected direction. In addition, both models indicate that the foreign activity dummy variable and dividend payout ratio variable have a significant influence on ETR but it is not in the expected direction. Moreover, the

coefficient for managerial ownership is negative and statistically significant in Model 2, but not in Model 1.

In conclusion, the factors most frequently significantly associated with tax avoiding activity are political cost, income before income tax, capital intensity and dividend payout ratio, which are significant in Tobit regression and also in panel data random effect tests and OLS regression. Moreover, in this Tobit regression, another three explanatory variables are also indicated to be statistically significant, namely long term leverage market value, foreign activity and managerial ownership.

Table 5.14
Tobit Regression Model Censored at 0 per cent and 56 per cent of ETRs

Explanatory Variables	Expected Sign	**Model 1** Coefficient (Std Error)	**Model 2** Coefficient (Std Error)
Constant		-3.2457* *(.4268)*	-3.0239* *(.3880)*
PC	+	.4228* *(.1046)*	.3215* *(.0939)*
IBIT	-	-.2230** *(.0922)*	-
IBIT*		-	-.1695** *(.0838)*
STDB	-	.0006 *(.0020)*	-
LTDB	-	.0033 *(.0025)*	-.0011 *(.0011)*
TDB	-	-.0005 *(.0019)*	.0004 *(.0003)*
STDM	-	.0022 *(.0024)*	-
LTDM	-	-.0189* *(.0066)*	-
TDM	-	.0004 *(.0018)*	.0004 *(.0009)*
DFA	-	.2729** *(.1205)*	.2011*** *(.1160)*
FA	-	-.0052** *(.0025)*	-.0040*** *(.0025)*
CAPINT	-	-.3287* *(.0746)*	-.3193* *(.0720)*
DPR	+	-.0083* *(.0024)*	-.0064* *(.0022)*
MO	-	-.0113 *(.0131)*	-.0194*** *(.0116)*
LR chi2(13)		75.55	65.54
Prob > chi2		0.0000	0.0000
Pseudo R2		0.0246	0.0188
Number of observations		887	1012
Left-Censored Observations		158	187
Right-Censored Observations		18	19
Uncensored Observations		711	806

Note:
**indicates statistical significance at the 1% level*
***indicates statistical significance at the 5% level*
****indicates statistical significance at the 10% level*

Tables 5.15(a) and 5.15(b) estimate the result of Tobit regression for seven industries classifications in the observations for Model 1 and 2 respectively. The sample was limited to those companies which have an ETR between 0 per cent and 56 per cent as discussed in section 4.3.1 of the previous chapter.

The results are similar to results from the OLS, fixed-effect or random-effect models. The results where firm characteristics hardly had an influence on ETR in the three previous regressions (OLS, fixed-effect and random effect) for consumer goods, health care and technology, however, largely track the relationship between firm characteristics and ETR for these industries in the Tobit model.

In Model 1 (Table 5.15(a)), two industries, basic material and industrial have results almost identical to the random-effect model and both industries in term of political cost, income before income tax and capital intensity are significantly related to ETR with signs as expected. However, the other industries have different significant levels in every variable and every model. Interestingly, the health care industry which is hardly significant in the previous model, indicates a negative and statistically significant relation for long term leverage book value, short term leverage market value and capital intensity. Moreover, managerial ownership which is hardly significant in any industry is recorded as statistically significant with the expected direction in the consumer goods industry.

Surprisingly, in the technology industry, both political cost and income before income tax have a significant coefficient but not with the expected signs. In conclusion, the analyses show that the industry does seem to have an impact on the relationship between firm characteristics and tax avoidance activity and this is shown most strongly in the Tobit regression model.

Model 2 indicates an almost identical pattern with model 1 for the basic material, industrial, consumer goods and consumer services sectors. Both utilities and technology industries indicate positive statistically significance for income before income tax but not with the sign expected. However, the health care industry indicates statistical significance for total leverage market value but with a different sign than in Model 1, although, this industry indicates statistical significance with the expected sign in Model 2.

Table 5.15(a)
Tobit Results Censored at 0 per cent and 56 per cent of ETR for Industry Differences (Model 1)

Explanatory Variables	Expected Sign	Basic Material	**Industry** Industrial	Consumer Goods	Health Care
Constant		1.2462 *(2.1515)*	-4.0808* *(.6159)*	-2.6930* *(1.0376)*	33.7708** *(13.4912)*
PC	+	1.6083* *(.4744)*	.7177* *(.1584)*	.1258 *(.2180)*	-2.0634 *(2.9272)*
IBIT	-	-1.0726* *(.3473)*	-.3943* *(.1459)*	.0067 *(.1809)*	.1901 *(1.9162)*
STDB	-	-.1501 *(.1006)*	-.0297 *(.0402)*	.0047 *(.0029)*	.0121 *(.0236)*
LTDB	-	-.0995 *(.1118)*	-.0564 *(.0417)*	-.0199 *(.0232)*	-.3079** *(.1216)*
TDB	-	.13874 *(.1015)*	.0307 *(.0403)*	-.0032 *(.0025)*	.1282** *(.0460)*
STDM	-	-.0150 *(.0241)*	-.0138*** *(.0073)*	.0070 *(.0067)*	-.5333** *(.2159)*
LTDM	-	-.1443*** *(.0770)*	-.0156 *(.0159)*	.0546 *(.0381)*	.0221 *(.0644)*
TDM	-	.0179 *(.0201)*	.0166* *(.0056)*	-.0063 *(.0061)*	.2814*** *(.1190)*
DFA	-	-.4286 *(.3675)*	.1214 *(.2028)*	.4865** *(.2307)*	4.410 *(3.6564)*
FA	-	-.0040 *(.0060)*	-.00470 *(.0046)*	-.0046 *(.0053)*	.0967 *(.0699)*
CAPINT	-	-2.4287* *(.5091)*	-.4157* *(.0997)*	-.3475 *(.2225)*	-8.3020** *(2.6620)*
DPR	+	-.0103 *(.0098)*	-.0042 *(.0035)*	-.0052 *(.0043)*	.0159 *(.0368)*
MO	-	.0511 *(.0476)*	.0290 *(.0192)*	-.0642** *(.0269)*	-1.0157 *(.8132)*
LR chi2(13)		52.18	79.13	33.92	30.06
Prob > chi2		0.0000	0.0000	0.0012	0.0046
Pseudo R2		0.1798	0.0612	0.0379	0.4804
No. of Observations		82	369	266	19
Left-Censored		18	61	57	1
Right-Censored		5	7	2	1
Uncensored Observations		59	301	207	17

Note:
**indicates statistical significance at the 1% level*
***indicates statistical significance at the 5% level*
****indicates statistical significance at the 10% level*

Table 5.15(a)[continued]
Tobit Results Censored at 0 per cent and 56 per cent of ETR for Industry Differences (Model 1)

Explanatory Variables	Expected Sign	Industry: Consumer Services	Utilities	Technology
Constant		-2.3207*** *(1.265)*	2.6180 *(4.7951)*	5.3674 *(3.2470)*
PC	+	.1285 *(.3469)*	-.2169 *(.6082)*	-3.8315* *(.9097)*
IBIT	-	-.2207 *(.3259)*	.5185 *(.4021)*	4.6391* *(.7918)*
STDB	-	-.0019 *(.0291)*	-.2942* *(.0839)*	-.4770 *(.2989)*
LTDB	-	-.0072 *(.0083)*	-.3137* *(.0936)*	-.7241** *(.2759)*
TDB	-	.0063 *(.0084)*	.3027* *(.0910)*	.4246 *(.2990)*
STDM	-	.0015 *(.0269)*	.0018 *(.0234)*	.1444 *(.0928)*
LTDM	-	.0201 *(.0160)*	.0799* *(.0234)*	.6215* *(.2044)*
TDM	-	-.0031 *(.0071)*	-.0001 *(.0051)*	-.0505 *(.0570)*
DFA	-	.3695 *(.4417)*	.7484 *(.5890)*	-1.7725** *(.7230)*
FA	-	.0007 *(.0100)*	.0039 *(.0073)*	-.1075** *(.0423)*
CAPINT	-	.0259 *(.1793)*	-2.1926*** *(1.2018)*	-1.7400** *(.6348)*
DPR	+	-.0177* *(.0066)*	-.0422* *(.0088)*	.0201 *(.0133)*
MO	-	-.0001 *(.0390)*	-.2211 *(.1330)*	.7390* *(.2279)*
LR chi2(13)		17.70	60.04	57.04
Prob > chi2		0.1694	0.0000	0.0000
Pseudo R2		0.0669	0.5710	0.5879
No. of Observations		80	33	27
Left-Censored		6	8	6
Right-Censored		2	-	1
Uncensored Observations		72	25	20

Note:
**indicates statistical significance at the 1% level*
***indicates statistical significance at the 5% level*
****indicates statistical significance at the 10% level*

Table 5.15(b)
Tobit Results Censored at 0 per cent and 56 per cent of ETR for Industry Differences (Model 2)

Explanatory Variables	Expected Sign	Basic Material	**Industry** Industrial	Consumer Goods	Health Care
Constant		-1.7041 *(2.1356)*	-3.8077* *(.5716)*	-2.4309* *(.9038)*	19.7734 *(15.1476)*
PC	+	1.6154* *(.4785)*	.5961* *(.1443)*	.0822 *(.1807)*	-1.5031 *(2.5757)*
IBIT*	-	-1.0508* *(.3570)*	-.3143** *(.1346)*	.0571 *(.1550)*	-.0665 *(1.5429)*
LTDB	-	-.0137 *(.0128)*	-.0217* *(.0032)*	.0019 *(.0064)*	.0031 *(.0152)*
TDB	-	-.0091 *(.0092)*	-.0001 *(.0007)*	.0000 *(.0005)*	.0075 *(.0107)*
TDM	-	.0025 *(.0068)*	.0067* *(.0021)*	.0012 *(.0025)*	-.0248** *(.0100)*
DFA		-.2508 *(.4099)*	.1220 *(.1906)*	.4288*** *(.2212)*	7.1097 *(4.2050)*
FA	-	.0021 *(.0062)*	-.0070 *(.0044)*	-.0022 *(.0030)*	.1113 *(.0833)*
CAPINT	-	-1.8348* *(.5142)*	-.3898* *(.0944)*	-.3830*** *(.2061)*	-5.2208 *(3.0915)*
DPR	+	-.0072 *(.0102)*	-.0025 *(.0032)*	-.0053 *(.0037)*	.0037 *(.0413)*
MO		-.0272 *(.0490)*	.0125 *(.0173)*	-.0565* *(.0209)*	-1.3749 *(.9249)*
LR chi2(13)		24.88	75.35	32.41	20.73
Prob > chi2		0.0056	0.0000	0.0003	0.0231
Pseudo R2		0.0730	0.0535	0.0301	0.3313
No. of Observations		97	405	321	19
Left-Censored		22	65	72	1
Right-Censored		5	7	3	1
Uncensored Observations		70	333	246	17

Note:
**indicates statistical significance at the 1% level*
***indicates statistical significance at the 5% level*
****indicates statistical significance at the 10% level*

Table 5.15(b)[continued]
Tobit Results Censored at 0 per cent and 56 per cent of ETR for Industry Differences (Model 2)

Explanatory Variables	Expected Sign	Industry: Consumer Services	Utilities	Technology
Constant		-2.2479*** *(1.2256)*	4.7908 *(6.4768)*	-3.9734 *(3.3553)*
PC	+	-.0295 *(.3285)*	-.4853 *(.6917)*	-1.064 *(.8843)*
IBIT*	-	-.0584 *(.2910)*	1.0163*** *(.5509)*	2.3904* *(.7994)*
LTDB	-	-.0003 *(.0053)*	-.0049 *(.0173)*	.0464 *(.0345)*
TDB	-	.0015 *(.0047)*	.0109 *(.0141)*	-.0066 *(.0228)*
TDM	-	.0010 *(.0032)*	.0021 *(.0052)*	.0003 *(.0170)*
DFA		.3260 *(.3981)*	.2924 *(.7156)*	-1.1635 *(.7852)*
FA	-	.0027 *(.0100)*	.0016319 *(.0100)*	-.0571962 *(.0529)*
CAPINT	-	.1099 *(.1690)*	-2.5555 *(1.6740)*	-.5405 *(.7312)*
DPR	+	-.0120*** *(.0062)*	-.0409* *(.0099)*	-.0149 *(.0146)*
MO		-.0159 *(.0389)*	-.2224 *(.1639)*	.7160* *(.2281)*
LR chi2(13)		13.01	43.55	38.96
Prob > chi2		0.2231	0.0000	0.0000
Pseudo R2		0.0443	0.4141	0.3331
No. of Observations		89	33	33
Left-Censored		7	8	9
Right-Censored		2	-	1
Uncensored Observations		80	25	23

Note:
**indicates statistical significance at the 1% level*
***indicates statistical significance at the 5% level*
****indicates statistical significance at the 10% level*

5.7 Interaction

Table 5.16 presents the result of the OLS regression to estimate the coefficient where, in addition to dummy variables, interaction variables are included for the dummy variable of foreign activity. The interaction term, for example *DFA*×*PC*, tests whether companies that engage in foreign operation have a different relationship between ETR and political cost from those that do not engage in foreign operations.

The political cost hypothesis predicts that larger companies suffering political costs will have a higher ETR, thus resulting in the estimated coefficient for political cost being positive. Consistent with the political cost hypothesis, holding the other explanatory variables constant, a one per cent increase in size is associated with a 0.008917 increase in ETR in Model 1, and a one per cent increase in size is associated with a 0.006098 increase in ETR in Model 2. Consistent with hypothesis 2, the estimated coefficient on income before income tax is significantly negative. Holding the other variables constant, a one per cent increase in income before income tax is associated with a 0.005145 decrease in ETR in Model 1, and a one per cent increase in income before income tax is associated with a 0.002821 decrease in ETR in Model 2. Consistent with predictions, both models indicate a negative coefficient and are statistically significant for capital intensity. Moreover, Model 1 supports hypothesis 3 in that highly leveraged companies have a higher interest tax shield, which in turn

reduces the ETR. The expected results envisaged a negative correlation between the foreign activity dummy variable and ETR and a positive correlation between dividend payout ratio and ETR. However, the results from this table surprisingly show that the foreign activity dummy variable has a significant positive correlation with the ETR and dividend payout ratio has a significant negative correlation to ETR, for both models.

The results on the interaction shows that *DFAxPC* (-0.5243) is significantly negative in Model 1. This indicates that larger companies which engage in foreign activity report a lower ETR. This is not consistent with the political cost hypothesis and suggests that larger companies that engage in foreign activity do not suffer from political scrutiny. Both Models 1 and 2 indicate negative statistical significance in *DFAxCAPINT*. This indicates that companies with higher levels of capital intensity which engage in foreign activity report a lower ETR. The interaction of *DFAxMO* is significantly negative in Model 1, showing that companies with a higher levels of managerial ownership which engage in foreign operation report a lower ETR. Inconsistent with hypothesis 3, however, both models indicate the estimated coefficient in *DFAxTDB* to be significantly positive, which suggests that more highly leveraged companies which engage in foreign operations report a higher ETR. Hypothesis 3 predicts that companies with a higher level of leverage will have a lower ETR.

Table 5.16
OLS Regression including the Interaction of Foreign Activity Dummy Variable with the other Explanatory Variables

Explanatory Variables	Expected Sign	**Model 1**	**Model 2**
Constant		-5.2119* *(.7762)*	-4.4780* *(.6780)*
PC	+	.8917* *(.1753)*	.6098* *(.1505)*
IBIT	-	-.5145* *(.1531)*	-
IBIT*		-	-.2821** *(.1327)*
STDB	-	.0009 *(.0025)*	-
LTDB	-	-.0026 *(.0040)*	-.0059* *(.0021)*
TDB	-	-.0001 *(.0025)*	.0007** *(.0004)*
STDM	-	-.0015 *(.0032*	-
LTDM	-	-.0163*** *(.0086)*	-
TDM	-	.0013 *(.0023)*	-.0000 *(.0012)*
DFA	-	3.8035* *(1.0587)*	2.6214* *(.9733)*
FA	-	-.0048 *(.0032)*	-.0031 *(.0031)*
CAPINT	-	-.2757** *(.1162)*	-.2937* *(.1105)*
DPR	+	-.0130* *(.0038)*	-.0082** *(.0034)*
MO	-	.0197 *(.0215)*	.0011 *(.0179)*

Note:
**indicates statistical significance at the 1% level*
***indicates statistical significance at the 5% level*
****indicates statistical significance at the 10% level*

Table 5.16 [continued]
OLS Regression including the Interaction of Foreign Activity Dummy Variable with the other Explanatory Variables

Explanatory Variables	Expected Sign	Model 1	Model 2
DFA×PC	+	-.5243** *(.2502)*	-.1620 *(.2312)*
DFA×IBIT	-	.3169 *(.2158)*	.0173 *(.2014)*
DFA×TDB	-	.0053** *(.0023)*	.0054* *(.0020)*
DFA×CAPINT	-	-.4336** *(.2133)*	-.4120** *(.2085)*
DFA×DPR	+	-.0018 *(.0062)*	-.0084 *(.0059)*
DFA×MO	-	-.0647** *(.0345)*	-.0436 *(.0325)*
F		5.02 *(p=0.0000)*	5.68 *(p=0.0000)*
R^2		0.0990	0.0837
Adjusted R^2		0.0793	0.0690
No. of Observations		887	1012

Note:
**indicates statistical significance at the 1% level*
***indicates statistical significance at the 5% level*
****indicates statistical significance at the 10% level*

5.8 Summary

In conclusion, all of the estimation models indicate that four firm characteristics out of eight are associated with tax avoidance activity in public listed companies in Malaysia. Three of the four characteristics, namely political cost, profitability and leverage support the hypotheses developed in the model, while dividend payout ratio does not support the hypothesis. The evidence shows that these firm characteristics are important determinants of corporate tax avoidance as they are significant in every estimation (OLS, fixed-effects, random-effects and Tobit).

In addition, the Tobit regression estimations found all firm characteristics to be statistically significant and provided evidence that all variables developed in this thesis have a significant influence on ETR. The results confirm that all explanatory variables, namely political cost, profitability, leverage, foreign activity, capital intensity, dividend payout ratio and managerial ownership, are important determinants of tax avoidance activity in Malaysia. Managerial ownership, which is hardly significant in any of the regression estimations, was found to have a significantly negative effect in relation to the ETR in Model 2, the Tobit estimation. Except for the coefficient for the foreign activity dummy variable and dividend payout ratio, all the significant regressors have signs which are consistent with the priori expectations.

The results indicate that the type of industry reveals significant difference in tax burden and some signs were different from those expected. The summary of the regression results, which indicate significant difference in estimations, is shown in Table 5.17.

5.8.1 Political Cost

Political cost appears with a significant positive sign in every estimation except the fixed-effect model. This result holds true under all regression specifications and is consistent with some prior research (see Rego, 2003; Omer et al., 1993; and Zimmerman 1983), which concludes that larger companies have a higher ETR. This finding gives support to the political cost hypothesis advanced by Watts and Zimmerman (1978) that larger companies suffer from political cost that increases their ETR. Larger companies pay higher income taxes than smaller companies, as a result of increased visibility and government scrutiny.

5.8.2 Profitability

The estimated coefficient of profitability appears with a significant negative sign for every regression. The negative relation between income before income tax and ETR indicates that companies with greater resources have more incentives and ability to engage in tax planning. This finding is consistent with those reported by Rego (2003) and Manzon and Plesko (2002). Rego (2003) documented that

corporations with greater pre-tax income have a lower ETR and claimed that firms with greater pre-tax income avoid more income tax than companies with lower pre-tax income. Manzon and Plesko (2002) stated that profitable companies have a lower ETR as they are able to use tax deduction, credits, and exemptions with greater efficiency than less profitable companies.

5.8.3 Leverage

Almost all six variables in leverage, in Model 1, show a negative sign, as predicted, in every estimation, and at least one variable is significant from six leverage variables in every regression. The fixed-effect model is superior in explaining the relationship between leverage and ETR where three variables, namely, short term leverage book value, long term leverage book value and total leverage book value, are significant. It seems that leverage measures based on book value perform better than leverage measures based on market value. This suggests that the increases in leverage (book value) will decrease the ETR, hence 'higher' tax avoider will have higher leverage than 'lower' tax avoider. This finding is consistent with those documented by Gupta and Newberry (1997), Mills et al. (1998) and Stickney and McGee (1982).

5.8.4 Foreign Activity

There are two different variables proxied for foreign activity, namely, DFA and FA. The foreign activity dummy variable (DFA) differentiates between companies engaging in foreign activity and domestic-only companies. The foreign activity variable (FA) consists of companies engaging in foreign activity only, differentiated between extensive foreign activity and less extensive foreign activity. Both variables for foreign activity (DFA and FA) are significant in tobit regression with a positive coefficient for DFA and a negative coefficient for FA.

a) DFA

A significant positive sign for the foreign activity dummy variable, which is not as expected, suggests that companies that engage in foreign activity have a higher ETR than companies which do not engage in foreign activity. The finding contradicts Leblang (1998), who claimed that companies that engage in foreign operation may have significantly greater opportunities to escape tax because of opportunities offered by cross-border transactions. The finding might offer support for the contention that the costs of avoidance should be lower for companies that operate in a low-tax jurisdiction, such as Malaysia which may be considered a low-tax country when compared with European countries or others in the ASEAN region. For example, in Thailand, the company tax rate is 30 per cent for all corporations listed on the Stock Exchange of Thailand. In Indonesia, the corporate

tax rate is 30 per cent, Malaysia has the next lowest tax rate in South-East Asia after Singapore (20 per cent). However, companies engaging in foreign operations might be subject to foreign statutory tax rates that are higher in companion with the Malaysian tax rate. Thus, this factor may produce a positive relationship between companies engaging in foreign operation and ETR.

Another explanation may be because of certain restrictions in Malaysian legislation towards foreign operations. Malaysia has developed a more open economy in an attempt to strengthen its global trading position. Even though most products can be freely exported, however, certain products are controlled in terms of export by government regulation for several reasons, for example, when some products are in short supply, goods are deemed 'sensitive',[39] hazardous items or are prohibited by international agreement.[40] At one time, the Malaysian national automotive industry was protected to help it prepare for competition with foreign manufacturers. In March 2006, however, the Malaysian government outlined several new objectives for the National Automotive Policy, including a reduction of import duties for foreign cars. Cars from Asian countries can be imported at the Asian Common Effective Preferential Tariff (CEPT)[41] rate of 5 per cent, which is a reduction of between 20 per cent and 40 per cent (depending on engine capacity), while for non-Asian cars the rates of reduction are between 5 per cent and 30 per cent.

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[39] Sensitive products include poultry and swine products, coffee, tea, copra, manioc and rice.
[40] Prohibited by international agreement is typically to prevent endangered wild life species being exported.
[41] Common Effective Preferential Tariff (CEPT) is related to the importer that should only levied on and paid import duty at the CEPT rate of duty which has been specified.

With regard to the Asian foreign business activity, the original six countries (Malaysia, Brunei, Singapore, Indonesia, Philippines and Thailand) have agreed to eliminate duties on all products by 2010 and for new members (Cambodia, Lao PDR, Myanmar and Vietnam) by 2015. Malaysia eliminated tariffs for 60.3 per cent of her products by 2003, followed by Indonesia 54.7 per cent and Philippines and Thailand for less than five per cent.

However, the regression result of the DFA variable, which shows that companies that engage in foreign activity have higher corporate ETR, might be a result of this tariff reduction. It is still at the early stage of implementation and is due to be fully implemented in 2010.

b) FA

A significant negative coefficient for the FA variable indicates that companies which engage in foreign operations with more extensive foreign activity have a lower ETR than companies with less extensive foreign activity. This finding supports the contention that companies with more extensive foreign operations have more opportunity to engage in tax planning by taking advantages of tax loopholes, such exploiting other differences in the tax rules of different countries and by being eligible to accept opportunities from tax subsidy agreements with host countries. This finding supports Rego's (2003) work that corporations with more extensive foreign operations engage in tax planning and report a lower ETR.

5.8.5 Capital Intensity

Capital intensity is significant for all the regression models with a significantly negative coefficient except in the fixed-effect model. This result provides findings consistent with previous studies and supports the idea that investment in tangible assets would lead to greater tax savings, as shown by lower ETR. Harris and Feeney (2003), Gupta and Newberry (1997), and Stickney and McGee (1982) also report a negative association between capital intensity and ETR.

5.8.6 Dividend

The variable which has not been examined previously in any ETR studies, to the author's knowledge, is dividend payout ratio (DPR) which appears to have a significantly negative relationship with ETR for every regression. Even though DPR reveals a different sign from expected, nonetheless, it shows the strongest results among all the other variables. The results suggest that increases in DPR will decrease the ETR, that is, companies which have a higher DPR will tend to have a lower ETR. This finding does not support hypothesis 6 developed in this thesis, namely that corporate tax avoiders will have a lower dividend payout ratio than non-tax avoiders. However, the result could be explained in that the company is likely to set dividend policies to maximizing dividend payment but restricted only to franking credit available to avoid pay more tax. The finding suggests that the tax imputation system encourages companies to pay higher dividends, but is

subject to credit dividend availability, to avoid an increase in companies' tax liability.

5.8.7 Managerial Ownership

Managerial ownership is also a new variable included in the model to explain tax-avoider activity and appears to have a negative statistical significance towards ETR in the Tobit regression for Model 2. The regression in other estimations indicates a negative but statistically insignificant correlation. Most of the estimations suggest that the executive composition in the board of directors' ownership of public listed companies in Malaysia is explanatory of tax planning activity. However, the Tobit regression model provides evidence that executive composition is significantly correlated with tax avoidance activity. The results indicate that the managerial ownership exerts a significant influence on ETR thus supporting hypothesis 7 developed in the thesis.

Table 5.17
The Summary of Significant Regression for all Estimations

	OLS	FIXED-EFFECT	RANDOM-EFFECT	TOBIT
MODEL 1	Political Cost Profitability (LTDB) LTDM (DFA) Capital Intensity (Dividend)	(Political Cost) Profitability STDB LTDB (TDB) (Dividend)	Political Cost Profitability STDB (TDB) Capital Intensity (Dividend)	Political Cost Profitability LTDM (DFA) Foreign Activity Capital Intensity (Dividend)
MODEL 2	Political Cost Profitability (TDB) Capital Intensity (Dividend)	(Political Cost) Profitability (Dividend)	Profitability (TDB) Capital Intensity (Dividend)	Political Cost Profitability (DFA) Foreign Activity Capital Intensity (Dividend) MO

Notes:
The explanatory variables in acronyms are defined as follows:
STDB: Short term leverage book value
LTDB: Long term leverage book value
TDB: Total leverage book value
LTDM: Long term leverage market value
DFA: Foreign activity dummy variable
MO: Managerial ownership
(Significant variables, but not in expected directions are in parentheses)

5.8.8 Industry Effects

Table 5.18 summarizes the significant regression for every explanatory variable across industry. Based on industry effects, almost all regressions present similar results, which indicate significant results for the similar explanatory variables with the same direction.

In general, the four industries showing the strongest correlation between firm characteristics and tax avoidance activity are basic materials, industrial, utilities and technology, whereas the other industries, consumer goods, health care and consumer services, show weaker correlation. The results confirm the importance of the industry effect in the relationship between firm characteristics and tax avoiding activity.

Both the basic material sector and the industrial sector consistently show lower ETRs compared with other industries. Particularly, companies with higher profitability, leverage and capital intensity pay significantly less tax than any other industry. It is not surprising as it is likely that the industrial sector[42] enjoys various tax benefits in order to promote both economic and social goals, including enhancing efficiency or competitiveness, fostering high-technology, protecting domestic products, increasing exports and widening job opportunities. Alavi

[42] Both basic material sector and industrial sector are considered as manufacturing or industrial sector. Basic material mainly focus on manufacturing local resources such as quarrying and mining, while the industrial sector engages in manufacturing activities other than basic material sector.

(1996) indicates that there is in Malaysia a long standing industrial policy to promote companies in the manufacturing sectors. The Malaysian government provided various tax incentives to stimulate and support such companies. Several incentives have been provided, including incentives to strategic industries, incentives to strengthen industrial links, incentives for industrialised building systems and incentives for outsourcing manufacturing activities. The incentives given include pioneer status, investment tax allowance, reinvestment allowance and accelerated capital allowances (up to 100 per cent tax exemptions). These incentives are discussed in more detail in Chapter 2.

Both basic material and industrial sectors recorded that higher profitable companies pay less tax which is confirmed from all the regressions (OLS, fixed-effects, random-effect and Tobit) for both Models 1 and 2. These results support hypothesis 2 in that, more profitable companies have more resources and are thus better able to engage in effective tax planning. These findings are consistent with those reported by Rego (2003) and Manzon and Plesko (2002), normally that more profitable companies pay lower tax than less profitable companies. Both basic material and industrial sectors indicated that the higher capital intensity companies have paid significantly less tax in OLS, random-effects and Tobit regressions. This result suggests that the tax incentive for the industrial sector in Malaysia (which provides higher capital intensity companies with an advantage from accelerated capital allowances under the Promotion of Investment Act (1986)), have resulted in lower ETRs.

The results suggest that both the basic material and industrial sectors suffer from the political cost hypothesis, thus supporting hypothesis 1. This finding contradicts Derashid and Zhang (2003) who do not find evidence that larger companies pay more tax than smaller companies, but find strong evidence that small companies pay more tax than large companies in Malaysia. However, the result from this thesis supports the finding reported by Rego (2003) and Omer et al. (1993). Thus, the evidence is strong that companies in the basic material and industrial sectors pay less tax than companies from other sectors, particularly for profitable and higher capital intensity companies. The evidence supports the notion that increases in leverage or foreign activity lead to a lower ETR, as indicated by the statistically significant coefficients shown in the OLS regression.

Results from the technology sector indicate that the industry effects exert a significant influence on tax avoiding activity. Firm characteristics, namely leverage, foreign activity and capital intensity, are found to be statistically significant with a negative relationship with ETR. Thus there is some evidence to support the intuitive notion that debt financing, foreign operation and capital intensity can be used by Malaysian companies to lower the effective tax payment. These results are predictable as the Malaysian government focuses on national science and technology to sustain economic development and to improve quality of life and national security in the 21st century. One of the policy goals of Vision 2020 is that science and technology are central in building a more innovative and vibrant economy. Besides developing policy and activities to maximize and utilize

the advancement of science and technology, the Malaysian government also offers several incentives to stimulate this sector. A number of tax incentives has been introduced, including those for software development, use of Information and Communication Technology (ICT), increased exports and the multimedia super corridor. Those incentives enable companies to enjoy tax benefits such as pioneer status, investment tax allowance, accelerated capital allowances, special deduction and duty-free. Thus, these tax incentives are likely to have implications for the results in this category which suggest that leverage, foreign activity and capital intensity have a negative and statistically significant relationship with ETR. These results can be explained by the fact that companies in the ICT industry engage in heavy capital investment and thus have high capital intensity and debt finance. Moreover, these companies enjoy special tax treatment from the government which might motivate local companies to find new technology from abroad, as well as attract investors from abroad to do business in Malaysia. Interestingly, foreign activity is only found to be statistically significant in this technology sector and not in other sector. This might be explained by the Multimedia Super Corridor (MSC) project which offers several tax benefits, including a tax holiday for a maximum of 10 years. The MSC has been used as the most important activity to attract foreign technology into the country.

The coefficient for foreign activity is negative and statistically significant with ETR only for the technology category. This may be explained through the incentives designed for this category. Malaysia offers one of the most attractive

incentive packages in the ASEAN region. The incentives have been formulated to attract foreign investment in order to gain access to new technology as well as earn export income. One of the incentives for the use of ICT is a tax exemption on the value of increased exports. Companies in the ICT sector are eligible for tax exemptions equivalent to 50 per cent of the value of increased exports.

The results for the technology sector, however, show that larger companies have a significantly lower ETR compared with basic material and industrial sector which shows a different result. This finding contradicts hypothesis 1 developed in this thesis that larger companies suffer from political costs and thus pay higher tax. The reason why this industry may not suffer from political costs may be because the industry is supporting government goals and is in a good position to lobby and exert influence for favourable tax treatment from the government. The Malaysian government offers new incentives to high technology companies in the hope of drawing more of them into the country and boosting the competitiveness of the high technology companies.

Surprisingly, both the technology sector and the utility sectors show the more profitable companies have a positive influence on ETR. The result is contrary to hypothesis 2 developed in this thesis. It appears that companies with higher income would have a higher ETR than other companies. Thus, from the industry effect, not all companies with higher income would pay less tax.

Results from both the consumer goods and utility sectors reveal that capital intensity and managerial ownership have a negative significant relationship with ETR. The basic principle of business activities for both consumer goods and utility sectors is to meet the basic needs of the nation. The results confirm that these characteristics are important determinants of tax avoidance activity in most industries.

The results in the health care category indicate that leverage and capital intensity have a negative significant influence on ETR. The result is predictable as this sector is concerned with heavy and high technology machinery which might involve high capital intensity and high leverage. The result is consistent with the work by Omer et al. (1993) who found evidence that the pharmaceutical sector paid significantly lower income taxes than firms in other sector.

Overall, almost all sectors except, for the health care sector, found evidence that companies with high dividend payout ratio have a significantly lower ETR. This contradicts the hypothesis developed in this thesis. One explanation may be that companies tend to pay dividend not only subject to profitability but also subject to franking credit available so as to avoid paying more tax.

Table 5.18
The Summary of Significant Regression Estimations by Industry

	Industry							
Variables	Basic Material		Industrial		Consumer Goods		Health Care	
Model	1	2	1	2	1	2	1	2
PC	OLS RE TOBIT	OLS TOBIT	OLS RE TOBIT	OLS TOBIT	(FE)	OLS (FE)		
IBIT	OLS RE FE TOBIT	OLS RE FE TOBIT	OLS RE FE TOBIT	OLS RE FE TOBIT				
STDB	OLS				(OLS)			
LTDB			OLS	OLS RE TOBIT			OLS TOBIT	
TDB					OLS		OLS (FE) (TOBIT)	
STDM	OLS		OLS TOBIT				OLS TOBIT	
LTDM	OLS TOBIT							
TDM	(OLS)		(OLS) FE (TOBIT)	OLS (TOBIT)			(OLS) (TOBIT)	OLS TOBIT
DFA	OLS				(TOBIT)	(OLS) (TOBIT)		
FA								
CAPINT	OLS RE FE TOBIT	OLS RE TOBIT	OLS RE TOBIT	OLS RE TOBIT	OLS	OLS TOBIT	OLS FE TOBIT	
DPR	(OLS)		(RE)			(OLS) (RE)		
MO	(OLS)				OLS TOBIT	OLS TOBIT		

Notes:
Explanatory variables are defined as follows:
Political cost (PC), income before income tax (IBIT), short term leverage book value (STDB), long term leverage book value (LTDB), total leverage book value (TDB), short term leverage market value (STDM), long term leverage market value (LTDM), total leverage market value (TDM), foreign activity dummy variable (DFA), foreign activity (FA), capital intensity (CAPINT), dividend payout ratio (DPR), and managerial ownership (MO).
The regression estimations are defined as follows:
Ordinary Least Squares estimation (OLS), fixed-effect estimation (FE), random-effect estimation (RE) and tobit estimation (TOBIT).
(Significant estimations, but not in expected directions, are in parentheses)

Table 5.18 [continued]
The Summary of Significant Regression Estimations by Industry

	Industry					
Variables	Consumer Services		Utilities		Technology	
Model	1	2	1	2	1	2
PC					(OLS) (RE) (TOBIT)	OLS RE (FE)
IBIT	RE FE		(OLS) (FE)	(OLS) (RE) (FE) (TOBIT)	(OLS) (RE) (TOBIT)	(OLS) (RE) (TOBIT)
STDB			RE FE TOBIT		OLS	
LTDB			RE FE TOBIT		OLS RE TOBIT	
TDB			(RE) (FE) (TOBIT)		(OLS)	
STDM						
LTDM			(OLS) (RE) (TOBIT)		(TOBIT)	
TDM						
DFA	(RE)	(RE)			RE TOBIT	OLS RE
FA					TOBIT	(FE)
CAPINT			OLS RE TOBIT	OLS RE	TOBIT	OLS RE FE
DPR	(OLS) (TOBIT)	(OLS) (TOBIT)	(OLS) (RE) (TOBIT)	(OLS) (RE) (TOBIT)		(OLS) (RE)
MO			OLS RE	OLS	(TOBIT) (RE)	(OLS) (RE) (TOBIT)

Notes:
Explanatory variables are defined as follows:
Political cost (PC), income before income tax (IBIT), short term leverage book value (STDB), long term leverage book value (LTDB), total leverage book value (TDB), short term leverage market value (STDM), long term leverage market value (LTDM), total leverage market value (TDM), foreign activity dummy variable (DFA), foreign activity (FA), capital intensity (CAPINT), dividend payout ratio (DPR), and managerial ownership (MO).
The regression estimations are defined as follows:
Ordinary Least Squares estimation (OLS), fixed-effect estimation (FE), random-effect estimation (RE) and tobit estimation (TOBIT).
(Significant estimations, but not in expected directions, are in parentheses)

5.9 Conclusion

The empirical evidence presented here considers all of the firm characteristics employed in the research model which can affect a company's ETR. Using panel data and appropriate statistical methodology which exploits the cross-sectional and time series variations in the observations, it is found that all of the explanatory variables have a statistically significant coefficient with the predicted sign except for the foreign activity dummy variable and the dividend payout ratio which are significant with a different sign from that expected.

With regard to industry effect, the results confirm the importance of industry differences in explaining the corporate tax burden. Four sectors, namely basic material, industrial, utilities and technology demonstrate a high correlation between firm characteristics and tax avoidance activity. The evidence, however, is not always consistent with predicted direction across industries, particularly for the technology sector.

The next chapter, Chapter 6 provides the discussion and conclusions of the empirical findings, and builds upon the estimations from this chapter.

Discussion and Conclusions

6.1 Introduction

Tax collection generates large amounts of revenue and is a vital source of income for government to promote overall economic stability and growth. Since Malaysia implemented a self-assessment system for companies in 2001, it is important to ensure compliance by taxpayers. The aim of this thesis is to determine in part the characteristics of companies that systematically avoid taxes, resulting in lower effective tax rate (ETRs).

This thesis determines whether political cost, profitability, leverage, foreign activity, capital intensity, dividend and managerial ownership are factors affecting corporate tax avoidance strategies. The first five explanatory variables are based on previous research and another two variables, namely dividend and managerial ownership which proxy for capital structure and corporate governance, are included in the model predicting tax avoidance behaviour. The ability of variables such as political cost, profitability, leverage, and capital intensity to explain corporate tax avoidance for developed markets has been extensively tested and generally confirmed, although the findings for political costs produced mixed evidence. Most previous research applies univariate analysis to examine firm characteristics with regard to ETR. Foreign activity has been conceptualized as a determinant of ETR for several studies, but only a few studies (for example, Rego, 2003; Jacob, 1996) have tested it empirically. Even though the foreign activity variable has rarely been analyzed, it is readily acknowledged, according to Rego

(2003), that it should have an important impact on tax avoidance. The remaining two variables, which are dividend and managerial ownership, are chosen because of their particular applicability to Malaysia.

Corporate tax avoidance issues have been addressed for a number of years within the developed market context, whereas corporate tax avoidance research for companies in developing countries is largely non-existent. The determinants of the tax avoidance strategy used in previous research are carried over into the Malaysian context, with additional new factors identified in the Malaysian business environment.

There are only two ETR studies which provide evidence about the emerging markets of South-east Asia (Derashid and Zhang, 2003; and Kim and Limpaphayom, 1998). However, these studies have not comprehensively tested all factors. Derashid and Zhang (2003) focused on the relationship between political cost, leverage and capital intensity in relation to ETR, whereas Kim and Limpaphayom (1998) concentrated on firm size aspects in relation to ETR. The objective of their studies was to examine the relationship between tax rates and firm characteristics, and not focus on tax avoidance. The focus of this thesis is to determine the influence of all variables established in developed countries on tax avoidance activity in Malaysian companies. These variables are used together with the new variables that have been identified as potentially relevant.

The analyses also consider the industry effects to examine the relationship between different sectors and tax avoidance activity. The Malaysian case is interesting because according to Alavi (1996), Malaysia has followed an aggressive industrial policy, implementing various tax incentives to promote both economic and social goals. The 'Industrialization Strategy' has been a long-standing Malaysian government policy to diversify and industrialize the economy. To implement the strategy, various benefits including tax benefits have been offered to strategic companies and selected sectors to promote economic and social goals. Hence Malaysia provides an appropriate environment to test the theories linking industry effects and tax avoiding activity. The consequences of the industrialization strategy could enable Malaysian companies to utilize tax incentives to maximize after-tax return and to influence and lobby the government for favourable tax treatment. On the other hand, the findings also serve as a good guide for the tax authority to measure the aggressiveness of tax avoidance activity in Malaysian companies.

This thesis contributes to the corporate tax avoidance literature in several ways. First, the major contribution of this thesis has been the identification of key factors which influence the corporate tax avoidance strategies of public listed companies in an emerging country, namely Malaysia. The results have important implications as tax avoiding activity is growing and is a great concern for the government, particularly the tax authorities, as reported by Potas (1993).

Secondly, this thesis is the first to document the link between corporate tax avoidance and firm characteristics in an emerging market. It extends the evidence outside the developed countries to include emerging market experience in the Malaysian market.

Thirdly, the thesis suggests that the hypotheses established and tested in developed countries can also be generalized to developing countries. As well as adding updated results to the earlier work done by Kim and Limpaphayom (1998) and Derashid and Zhang (2003), the analyses in this thesis are more comprehensive.

Fourthly, as a result of the above, the thesis also contributes new evidence to the corporate tax avoidance literature. Finally, the thesis includes the analyses of industry effects on the tax planning patterns of companies. It shows that firm characteristics and the industry effects have a significant impact on companies' tax planning activity.

The analyses are performed using data derived from the financial statements of companies listed on the Bursa Malaysia during a five year period from 2001 to 2005 inclusively. The data were collected from two sources, the Thomson Analytic Database and Bursa Malaysia Companies Database. To be included in the observations, a company had to meet several screening criteria which are designed to minimize measurement errors. For inclusion in the sample, a company must report a positive income, hence companies that had losses or zero income

were excluded as they would have introduced confounding effects and the results would be difficult to interpret. The exclusion of these companies is consistent with previous studies such as Rego (2003), Gupta and Newberry (1997) and Manzon and Smith (1994). Companies classified as financial institutions (including banks, finance and insurance companies) are excluded, because governments impose specific regulations and controls upon them, which may affect their tax burden. Companies for which a full data set was not available were also excluded. Based on the selection criteria, the number of firm-years available for observation totalled 1,645.

The hypotheses were tested using Ordinary Least Squares, Fixed-Effects, Random-Effects and Tobit models to estimate the regression equations. This differs from most previous research where linear relationships are assumed by applying the OLS regression model only. The results are presented with a comparison between two models. Model 2 is a transformation of Model 1 to handle the multicollinearity problems. From the analyses, there are almost identical results for both models, thus illustrating that multicollinearity does not seriously bias the results.

Previous research examining factors that affected ETR has found a wide variety of relationships between firm characteristics and ETR. This thesis attempts to reconcile the contradictory evidence in the literature by combining all the firm characteristics in the literature and adding the characteristics which are proposed

to have an impact in the Malaysian environment. In particular, this thesis investigates the determinants of firm characteristics that engage in tax avoiding activity. Generally, tax avoiding activity, represented by tax planning, increases the after-tax return by reducing the present value of tax payments. The measurement of tax planning is based on the ETRs which has been widely used in previous studies (for example, Philips, 2003; Rego, 2003; and Mills et al., 1998). Consistent with these studies, this thesis defines ETR as the ratio of income tax currently payable to pre-tax accounting income. The ETR, which is the dependent variable in the models, is a proxy for corporate tax avoidance. The explanatory variables include political cost, income before income tax, leverage, foreign activity dummy variable, foreign activity, capital intensity, dividend payout ratio and managerial ownership. The choice of explanatory variables is motivated by previous studies and also by consideration of the Malaysian business environment. Substantial amounts of previous research have investigated the relationship between ETR and firm size (Kim and Limpaphayom, 1998), pre-tax income (Wilkie, 1988), leverage and capital intensity (Stickney and McGee, 1982) and foreign activity (Rego, 2003). Dividend payout ratios are included to see whether the implication of the dividend imputation system implemented in Malaysia,[43] is different from U.K. and U.S. counterparts. In addition, no capital gains are imposed in Malaysia. Managerial ownership is included due to a wide range of companies in Malaysia being family owned businesses. This thesis extends the range of factors that contribute to explaining tax avoidance activity by testing two

[43] The full dividend imputation system is also present in Australia, New Zealand and Singapore. It is different from the U.K. dividend imputation system (as it enables carry forward of advance corporation tax) and the U.S. counterpart which is subjected to double taxation.

developed hypotheses that have not, as yet, been tested empirically as business conditions elsewhere did not permit this.

The relationships between ETR and certain firm characteristics are consistent across the ETR literature. For example, Mills et al. (1998), Gupta and Newberry (1997) and Stickney and McGee (1982) each reported a negative association between ETR and leverage and ETR and capital intensity. However, the relationship between ETR and the other firm characteristics, which are firm size, profitability and foreign activity, is inconsistent across studies. The most controversial variable in the previous literature is firm size.

As regards the determinants of corporate tax avoidance activity of Malaysian public listed companies, the results of fixed-effect and random-effect models confirm the results of the pooled OLS regressions, showing that the coefficients of most variables are significant and in the predicted directions. The use of the Tobit effect model improves estimation further. There are, however, some differences in the results across the models used. The difference is that the managerial ownership variable is insignificant in the pooled OLS regression, and becomes significant in the Tobit regression. This is may be due to Tobit regression limit the data set for a more reliable range of corporate effective tax rates. As compared with the fixed-effects and random-effects regressions, two variables, managerial ownership and foreign activity, are insignificant, but turn out to be negative statistically significant in the Tobit regression. Thus, the results provide some evidence that all

firm characteristics developed in this thesis have an influence on corporate tax avoidance strategy. Most of the findings reported here confirm the findings reported in earlier studies in developed countries. There is at least some evidence across the models that almost all of the explanatory variables are statistically significant with the predicted sign. The results also reveal that the new explanatory variable, namely managerial ownership, supports the hypotheses established in the thesis. Each of the individual explanatory variables will now be discussed in turn.

6.2 Political Cost

With regard to the political cost hypothesis, large companies are predicted to suffer from political scrutiny and they will attempt to reduce the extent of that political scrutiny by resisting aggressive tax avoidance and thus will have a higher corporate ETR. The results indicate that larger companies face political cost, and this is consistent with political cost hypothesis. The estimated coefficients on political cost in all regression specifications in this thesis are significantly positive. The finding supports some of the previous literature, namely Rego (2003), Omer et al. (1993) and Zimmerman (1983). However, Derashid and Zhang (2003) report a negative relationship between company size and ETR. The differences in results may be partly attributed to sample selection (industry composition), ETR definition (inclusion/exclusion of deferred taxes) and the time period under investigation. For example, the difference in findings between Zimmerman (1983) and Porcano (1986) has been identified by latter study as being due to a difference

in the ETR definition. Derashid and Zhang (2003), for example, do not control for company's income as proposed by several other studies such as Shevlin and Porter, 1992 and Wilkie, 1988, who argue that it is important to control for changes in firms' operations (profitability) when examining factors associated with variability in ETR. Thus a positive relationship between company size and ETR which was not found in Derashid and Zhang (2003), may be a result of not controlling for company income. Stickney and McGee (1982), and later Gupta and Newberry (1997), argue for the need to include several firm characteristics in their multiple regression models to explain the variability of ETR. It is therefore possible that the previous contradictory findings regarding the relationship between firm size and ETR are due to model misspecification.

Despite the differences between the developed countries and the Malaysian business environment, the results indicate that the political cost hypothesis remains valid for public listed companies in Malaysia.

6.3 Profitability

The analyses reveal a significant negative relationship between income and ETR throughout all regressions. Holding the other firm characteristics constant, it is found that companies with greater income have lower ETR. The negative relationship between income and ETR is consistent with the prediction that companies with higher level of income have more incentive and resources to

engage in tax planning. The finding is in line with results reported in several studies such as Rego (2003), Manzon and Plesko (2002) and Mackie (1999). Rego (2003) contends that companies with greater pre-tax income would have greater incentives and resources to engage in tax planning. Manzon and Plesko (2002) claim that profitable companies can make more efficient use of tax deductions, credits and exemptions compared with less profitable companies, resulting in greater book-tax differences. Mackie (1999) suggests that more profitable companies would be able to take advantage of net operating losses carried forward from previous years. The thesis concludes that after controlling for firm size, leverage, foreign activity, capital intensity, dividend and managerial ownership, more profitable companies have lower ETRs. The result holds under all the regression estimations and is consistent with previous research, which concludes that more profitable companies have greater resources to engage in tax planning which lowers their ETR.

6.4 Leverage

It is reasonable to suggest that taxes are important in relation to financing decisions, and several empirical studies have found evidence to support this. In addition, this thesis also provides clear evidence of the tax effects of financial decisions. The tax shield theory predicts that a company with relatively high levels of debt would have higher interest deductions and which would in turn lower ETR. The analyses clarify the relationship between tax shields and the incentive to

use debt. The debt tax shield affects corporate finance decisions by reducing the corporate ETR, hence lowering the cost of capital. The hypothesis is supported strongly by the results. The results from the analyses confirm a negative relationship between leverage and companies' ETR. The findings are consistent with a growing body of research, such as that by Gupta and Newberry (1997), Graham (1996) and MacKie-Mason (1990), who find that tax status is affected by corporate finance decisions. The results confirm the tax shield hypothesis that increases in debt lower the company's ETR. The extent to which a company benefits from interest tax shields will in part depend on whether it has other tax shields such as investment tax allowances. However, despite various tax incentives, allowances and reliefs offered to companies by the Malaysian system, it appears that leverage is still an important determinant in lowering the corporate tax liability. The analyses allow the inference that companies quite aggressively use debt to benefit from interest deductions. The findings agree with the notion that Malaysia's tax structure favours debt financing. It demonstrates that the tax benefits of both short term and long term debt are found to be important in determining a company's capital structure. Part of the answer may be that Malaysia's existing tax structure favours both types of debt financing. Consistent with the tax shield theory, the results reveal that companies with more debt in their capital structure have a lower corporate ETR. The results also reveal that book value leverage appears to be a better explanatory variable than market value leverage. Leverage based on book value is consistent with the practice of many corporate finance researchers (for example, Pandey, 2004; Lasfer, 1995) as book

value is claimed to measure financial planning free of the distortions caused by the volatility of market prices. In summary, this thesis provides evidence that there is a statistically significant relationship between leverage decisions and ETRs in the emerging Malaysian market. The finding supports the intuitive notion that debt financing can be used as a tax shield for public listed companies in Malaysia.

6.5 Foreign Activity

With regard to foreign activity, there are two different proxies under consideration. First, empirical tests were performed on the entire sample of companies, namely companies engaged in foreign activity and domestic-only companies. This was to determine whether companies which engage in foreign activity have lower or higher ETRs than domestic-only companies. Secondly, empirical tests were performed on the companies engaged in foreign activity only, to distinguish between companies with more extensive foreign activity and less extensive foreign activity. This is to determine whether companies with more extensive foreign activity have lower or higher ETRs than companies with less extensive foreign activity.

6.5.1 Foreign Activity Companies and Domestic Only Companies

The results suggest that companies engaging in foreign activities have higher ETRs than domestic only companies. The significant positive relationship, as

discussed in Chapter Five, is perhaps a result of Malaysian companies already operating in a low tax jurisdiction. Thus it is found that companies engaging in foreign activities have higher ETRs compared with companies with purely domestic activity. The distinct feature of the Malaysian capital market is that it has among the lowest corporate income tax rates among ASEAN countries in particular, and generally worldwide. However, the interdependence of operations, finances and technology may encourage companies to engage in operations in high-tax countries. Thus companies engaging in foreign operations are subject to higher foreign tax rates compared with the Malaysian corporate tax rates. Even though foreign activities more typically may provide opportunities for companies to avoid tax, however, in the case of Malaysian companies, they are exposed to higher foreign tax rates. Furthermore, the results of comparing the ETR of companies engaging in foreign activity and domestic only companies, supports Collins and Shackelford's (1999) assertion, which was confirmed by Rego (2003), that empirical research does not provide conclusive evidence that companies engaging in foreign activity pay less income tax than domestic-only companies.

6.5.2 Extent of Foreign Activities

This thesis develops the hypothesis, supported by the results, that companies with more extensive foreign activities have a lower ETR than companies with less extensive foreign activities. This finding is in line with the results documented in several studies, for example Harris and Feeny (2003), Rego (2003) and Leblang

(1998). This is as a result of tax benefits being available for foreign activities. For example, companies with more extensive foreign activities are able to engage in more effective tax planning than companies with less extensive foreign activities. Even though Malaysia has among the lowest corporate income tax rates worldwide, several other tax benefits exist that could be of advantage to companies which extensively engage in foreign activities. Companies which frequently engage in foreign activities could use their foreign operations to avoid income taxation. According to Rego (2003), companies engaging in foreign activities have opportunities to avoid income taxation by exploiting differences between the tax rules of different countries and the tax subsidy agreements with host countries. Despite the ability to take advantage of the tax rules of different countries or tax benefit agreements with host countries, Malaysian tax law also provides several tax incentives for companies engaging in foreign operations that could lower taxable income. Thus the results suggest that companies reporting higher levels of foreign activities are likely to engage in international tax planning, which reduces the corporate effective tax rate.

6.6 Capital Intensity

This thesis documents a significant negative relationship between capital intensity and ETR, resulting from tax preferences associated with investments in fixed assets. The result is consistent with the 2003 Harris and Feeny study on companies in Australia. Previous U.S. studies (Gupta and Newberry, 1997; Stickney and

McGee, 1982) note the same finding as a result of accelerated depreciation provisions. In Malaysia, various tax benefits are associated with capital investments. Malaysian companies have been offered a number of tax incentives, particularly for activities which are capital intensive, with high value added content and involving new and emerging technologies. The tax incentives include investment tax allowances, industrial adjustment allowances, infrastructure allowances, reinvestment allowances, accelerated depreciation and preferential treatment of capital imports. The Malaysian tax code typically allows tangible assets to be depreciated over a period much shorter than their economic life. It demonstrates that companies are influenced by tax benefits in investing in fixed assets. Thus the evidence supports the notion that higher capital intensity resulting in higher depreciable costs and tax treatments leads to a lower ETR.

6.7 Dividend

The theoretical principles underlying the formulation of a company's dividend policy include signalling, agency theory, bird-in-hand and tax-preferences. The U.S. survey report by Baker et al. (1985) indicates that the most important determinants of dividend policy are the company's future earnings, the pattern of past dividends, the availability of cash, and concern about maintaining or increasing share price. In addition, in Malaysia, the availability of the dividend imputation system may be considered an important factor. This thesis rationalized the dividend payout ratio decision by appealing to tax effect preferences in order

to try to contribute to the solution of the dividend puzzle. This thesis has analyzed the dividend decision in the presence of a dividend tax imputation system. Under Malaysia's imputation tax system, imputation credits are stored at the company level and provide a tax benefit to shareholders once they are distributed as a dividend. The existence of this system not only provides benefits to shareholders but also to the company as it is no longer burdened with double taxation. Dividend payout ratios vary widely among companies. This thesis finds evidence that dividend payout ratios are not randomly distributed among companies. In the developed market, profits have long been regarded as the primary indicator of a company's capacity to pay dividend. Pruitt and Gitman (1991) indicate that current and past year profits are an important factor in influencing dividend payment. In another related study, Baker et al. (1985) reveal that future expected earnings are a major determinant of dividend payment. In Malaysia, Pandey (2001) confirms that companies increase their payment of dividends as earnings increase. This thesis focuses on the overall impact of taxation on dividend while taking into account the issue of the dividend imputation system.

The company is hypothesized to have a positive relationship between dividend payments and corporate tax liability, owing to the franking account feature of the dividend imputation system. The dividend results are consistent and significant throughout all estimations, although, with a direction different from expected. The results suggest that the companies maximize dividend payment to lower their

ETR. One explanation may be that companies only pay dividend to the credit available in the franking account to avoid further tax burden.

Even though the results are most consistent and significant in all estimations, they do not significantly contribute to solving the dividend puzzle. There is a matter left to future research and should be of interest to corporate finance researchers.

6.8 Managerial Ownership

The managerial ownership pattern in Malaysia is more family oriented (domination by family members). According to La-Porta et al. (1998), Malaysia has a high family ownership concentration and is reported to have an average of 54 percent of shares family-owned in public companies. Haniffa and Cooke (2002) reveal that there is a number of listed companies in Malaysia with substantial family shareholdings which elect family members to sit on the boards both as executive and non-executive directors. According to Nicholls and Ahmed (1995), in countries where families have substantial equity holdings, there is generally little physical separation between those who own and those who manage capital. Thus their dominance could provide them with more power to force management into making decisions. The analyses from this thesis reveal that, consistent with the agency theory, companies with high levels of managerial ownership engage in tax avoiding activity more than companies with lower levels of managerial ownership. The results provide the evidence in support of

hypothesis 7 developed in this thesis. Substantial evidence has been found which supports the expectation that tax avoiding activity will be more prevalent in companies with high levels of managerial ownership.

The motivation of tax avoidance strategies in companies under managerial ownership are influenced by elements of synergy or agency theory. Malaysia has an Anglo-American rather than the Continental European financial system. The Anglo-American capital markets model is characterized by the objective to maximize shareholder wealth, while the Continental European model is driven to maximize wealth of all stakeholders including management, labour, the local community, suppliers, creditors and even the government. Based on synergy-motivated tax planning, managerial decisions are expected to be made with the intention of increasing shareholders' wealth, partly by lowering a company's tax burden and increasing firm value. Based on agency-motivated tax planning, the management incentive is to maximize personal wealth or utility. Managers engage in tax planning to increase their prestige or career prospects, making them more valuable because of their ability to lower taxes. The results confirm the importance of this new explanatory variable in ETR studies. The finding in this thesis helps to establish a starting point for exploring empirically the importance of managerial ownership in tax avoidance studies. Several studies (for example, Derashid and Zhang, 2003; Gupta and Newberry, 1997) have acknowledged that agency theory might be relevant to managerial ownership and tax avoidance. This thesis has answered the call by Derashid and Zhang (2003) and Gupta and Newberry (1997)

for an empirical specification that a greater degree of managerial ownership leads to more aggressive tax planning, resulting in lower tax burdens.

6.9 Industry Effects

This thesis has also examined whether there is an industry effect in corporate tax avoidance activity. The observed companies are grouped into seven industries: basic material, industrial, consumer goods, health care, consumer services, utilities and technology. This industry classification is different from Derashid's and Zhang's (2003) study which is based on the Bursa Malaysia classification whereas this thesis based on the Thomson Analytic Database. The Thomson Analytic Database includes two important sectors which are frequently given tax incentives, namely the industrial and technology sectors. The results reported that companies across different industries do have significantly different characteristics and levels of tax avoiding activity.

It appears that the strongest correlation between firm characteristics and tax avoidance activities are found in four sectors, namely basic material, industrial, utilities and technology. Even for the industries where the weakest correlations are found (consumer goods, health care and consumer services), the estimations are found to influence substantially tax avoidance activities.

This thesis documents mixed results for the political cost hypothesis in different industries. There is evidence that large Malaysian companies have higher ETR than small Malaysian companies in the basic material and industrial sectors. However, a significant negative relationship was found in the technology sector, indicating that larger Malaysian companies have a lower ETR than smaller companies. This anomaly can be explained by the fact that the Malaysian government is now promoting science and technology as a tool to sustain and build economic development. Thus the technology sector may not suffer from so much political scrutiny as it is supporting the government's mission and is in a good position to lobby and influence for favourable tax treatment by the government. Furthermore, the technology sector enjoys various tax incentives that can benefit this sector by lowering its tax burden.

With regard to the profitability hypothesis, not all industries show that more profitable companies have a lower tax burden. There is strong evidence that more profitable companies pay significantly less tax in both the basic material and industrial sectors. However, in the utilities and technology sectors, more profitable companies pay more tax than less profitable companies. The utilities sector is based on basic needs including water supply, waste management, gas power generation, construction, environmental services and trading, whereas the technology sector develops and provides technology and technical support. Both sectors are important as the utilities sector supplies basic needs to the nation and the technology sector carries out the challenges to fulfil Vision 2020. Thus one

explanation of the significant positive relation between profitability and ETR in these sectors may be that these sectors are important and under the supervision of the government and are thus unable to engage in more aggressive tax planning.

The coefficient for leverage is negative and statistically significant with tax avoidance in most sectors except for the consumer services sector. Strong evidence for the role of interest tax shields is found in the basic material, industrial and health care sectors. Both the basic material and industrial sectors are manufacturing types of industries. According to Derashid and Zhang (2003), the manufacturing segment has been one of the fastest growing sectors in Malaysia, whereas, the health care sector engages in more research and development activities. Thus, all these sectors require a high level of funding to finance their activities. Companies which favour debt finance would be able to take advantage of the interest tax shields, thus lowering the company's effective tax rate.

One of the most striking results is that foreign activity is found to be strongly statistically significant in technology sector. Malaysia offers a wide range of incentives for companies to engage in foreign activities, particularly in the technology industry. For example, various incentives have been introduced not only to bolster domestic economic development, but also to spur export activities by offering a variety of tax exemptions and deductions. The development of technology plays a crucial role in the government's plans. One of the government's aims is to attract multinational corporations through the

development of the Multimedia Super Corridor (MSC). The government is also keen to promote exporters by offering them a variety of tax benefits. Malaysia also has three Science and Technology (S&T) parks for which typical activities are high-tech manufacturing, R&D, and software and IT services. S&T parks' strategies include ensuring a rapid transfer of R&D results to high-tech industries. The parks are able to attract many world class high-tech companies from the developed countries to shift their activities into these parks. Various tax incentives are offered as foreign technology transfer is important to upgrading Malaysia into a developed country. As documented by the Global Competitiveness Report (2002), Singapore recorded the highest technology transfer index (1.95), followed by Malaysia (1.08), Taiwan Province of China (0.90) and the Republic of Korea (0.82). Thus, Malaysia's science and technology environment provides incentives for companies to carry out foreign activities.

There is evidence that all industries except for the consumer services sector utilize capital intensity to reduce corporate tax. The negative association between capital intensity and ETR appears to be significant in almost all industries, implying that companies are moving from labour intensive to capital intensive systems through the industrialization policy implemented by the Malaysian government. The only sector which seems not to employ capital intensity tax provisions to lower the company's tax burdens is consumer services. This sector's activity is associated with hotels and resorts, travel and tours, and transportation activities which do not really involve high investment in machinery and equipment like the other sectors.

This would suggest a reason why this sector is unable to exploit capital intensity to lower its tax liability.

The results show that dividend has a significant negative coefficient towards ETR in all sectors except for the health care sector. This indicates that almost all sectors show evidence of maximizing dividend payment, but not in the health care sector. One explanation may be that this sector engages in higher risk activities due to research and development (R&D), and companies may choose to limit their dividend payouts. Rozeff (1982) suggests that high risk companies in general tend to have low dividend payouts.

Managerial ownership indicates a strong relationship with ETR in the consumer goods and utilities sectors. Consumer goods are based on activities such as trading and distributing raw material for the food industry, processing agricultural products and trading textile material. This kind of industry is purported to have a high percentage of shares owned by family member. Consistent with agency-motivated tax planning, managers undertake tax planning activity with the intention of maximizing their wealth. The utilities sector is based on basic infrastructure needs, which are water supply, waste management and gas power generation. The evidence supporting managerial ownership characteristic as significant factor in this industry for lowering its tax burden is consistent with synergy-motivated tax planning, that is, tax planning activity is to maximize shareholders' wealth.

6.10 Summary, Limitations and Future Studies

6.10.1 Summary

In conclusion, the evidence presented in this thesis confirms the importance of all explanatory variables to explain corporate tax avoidance strategies. Even though all of the explanatory variables, namely political cost, profitability, leverage, foreign activity dummy variable, foreign activity, capital intensity, dividend and managerial ownership, have significant coefficient in relation to ETR, nonetheless, two explanatory variables, namely foreign activity dummy variable and dividend, are significant with a direction different from that expected.

It is hoped that the findings of this thesis will be able to explain to tax authorities the factors affecting corporate tax avoidance strategies for public listed companies in Malaysia. Thus this thesis may partly assist tax authorities, policy makers and financial analysts to understand the economic consequences of their regulations on the tax paying entities. In brief, larger companies have higher ETRs than smaller companies due to the fact that larger companies suffer from political costs. More profitable companies avoid more taxes than less profitable companies as they have greater resources to engage in tax planning. Despite the other non-debt tax shields, it appears that debt is still an important determinant in lowering the corporate tax burden. Companies engaging in foreign activity have a higher tax burden than companies which do not engage in foreign activity. The explanations for this

finding may be because Malaysia is already a low tax jurisdiction area, hence companies engaging in foreign activities face higher foreign statutory tax rates which might force them to declare or shift foreign income into Malaysia and experience higher ETRs. However, companies with more extensive foreign activity have lower tax burdens than companies with less extensive foreign activity. This finding supports the contention that companies with more extensive foreign activity have more opportunity to engage in tax planning compared with companies with less extensive foreign activity. The result also reveals that investment in tangible assets would lead to greater tax savings as a result of various tax incentives such as investment tax allowances, industrial adjustment allowances, infrastructure allowances, reinvestment allowances and accelerated depreciation. The findings show a significant negative relationship between dividend and ETR, indicating that companies which maximize dividend payment will lower their tax burden. Even though the findings are significant throughout all the estimations, however, the direction is different from expected. Therefore the dividend result should be interpreted as showing correlation, not causality. The result provides substantial evidence that companies with high levels of managerial ownership avoid more tax than low levels of managerial ownership, thus supporting the synergy and agency theories developed in this thesis.

In addition, the findings confirm the importance of industry effects in the relationship between firm characteristics and tax avoiding activity. The evidence shows that companies across different industries do have significantly different

firm characteristics and levels of tax avoiding activity. It is found that industrial and technology sectors pay significantly less tax than any other sectors. The results can be explained by the various tax benefits offered for both sectors. The industrial sector has been provided with various tax incentives based on a long standing industry policy to promote and support companies in this sector. The Malaysian government also offers various tax incentives for the technology sector as science and technology has become part of achieving the Malaysian government's Vision 2020 aspiration, which is to be a fully developed and industrialized country by the year 2020.

6.10.2 Limitations and Future Studies

It remains to conclude this thesis by highlighting the limitations of this study, as well as to suggest some recommendations for future research. One limitation of this thesis is that the data is based on public listed companies only and does not include non-listed companies. Because of Malaysian financial accounting law, only public listed companies have to disclose their financial statements. Thus this thesis does not examine the association between corporate tax avoidance and firm characteristics for non-listed companies in Malaysia.

Another limitation is the tax avoidance model might not be complete. Corporate tax avoidance may take many different forms and utilize many different structures, hence it is difficult to formulate a single model. This thesis, however, identifies a

number of firm characteristics which may explain tax avoidance. There may be other factors influencing tax avoidance, including merger and acquisitions which have not been included in this study.

This thesis builds an analytical model of the hypotheses and provides strong empirical evidence in its support. It contributes to a further understanding of the factors which might affect corporate tax avoidance strategies. This thesis, thus, provides a basis for future studies to examine factors other than those included here. Additional variables, which either have been neglected or have been the subject of only limited investigation, could be more fully explored. Two additional variables have been considered in this thesis which is dividend and managerial ownership. Further research might include the other characteristics that have not been included in the model, such as compensation plans, research and development (R&D), merger and acquisitions, net operating losses, tax advisers and company culture. In the future, as more data becomes available, one could explore and identify additional variables that may have an influence on the tax avoidance activity of public listed companies in Malaysia.

This thesis has concentrated on the impact of corporate tax on the dividend imputation system. Under the dividend imputation system, however, researchers could investigate both corporate and personal taxes. Future research is suggested to determine the shareholder aspect of the dividend imputation system as this thesis focuses on corporate tax and not individual tax, hence preventing the

inclusion of shareholder implications. This system is expected to benefit shareholders as long as company tax rates are the same or lower than the shareholder's highest marginal tax rates. Thus it is predicted that shareholders with lower marginal tax rates would prefer dividends more than shareholders with high marginal tax rates. Future work is suggested to examine the shareholder perspective, particularly in countries with a large difference between company tax rates and the individual highest marginal tax rates.[44]

A particular problem in corporate tax avoidance studies, including in this thesis, is the issue of how to define ETR. There are many ways to measure ETR and this may lead to the different findings between studies. As discussed earlier in Chapter Three, this thesis defined ETR in line with Rego (2003), as it reflects a company's effective tax planning, and hence makes it a reasonable proxy for tax avoidance activity. Future research could also include the effect of different definitions of ETRs on corporate tax avoidance studies.

[44] Malaysia has a 28 per cent flat corporate tax rates and a 29 per cent highest marginal tax rate for individuals.

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Model Colonial Territories Income Tax Ordinance 1922 (United Kingdom)
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Appendix A
Tax Computation of Malaysian Companies

Profit before taxation as per audited accounts	**X**
Add:	
Depreciation and amortisation of capital expense	x
Non-allowable items charged in profit and loss (P&L) account	x
Less:	
Allowable expenditure not reflected in P&L account	(x)
Non-taxable items in P&L	(x)
Non-business income to be taxed as a separate source	(x)
Special deduction (e.g., double deduction)	(x)
Adjusted business income	**X**
Add:	
Balancing charge	x
Less:	
Capital allowance:	
Unabsorbed allowances carried forward	(x)
Current year allowances	(x)
Balancing allowances	(x)
Statutory business income	**X**
Less:	
Tax incentives (e.g., investment tax allowances, etc.)	(x)
Business loss b/f (if applicable)	(x)
Add:	
Other statutory income:	
Share of partnership income	x
Dividend (gross), interest, and discounts	x
Rent, royalties and premiums	x
Other gains or profits	x
Aggregate income	**X**
Less:	
Current year business losses from other sources	(x)
Adjusted loss from partnership	(x)
Prospecting expenditure (for mining companies)	(x)
Non-business deduction (e.g., gifts and donations)	(x)
Chargeable income	**X**
Tax Payable:	
Chargeable income @ tax rate (28%)	X
Less:	
Section 110: Tax on dividend (gross dividend @ 28%)	(x)
Section 132/133: Double taxation relief	(x)
Net tax payable	X