DETERMINANTS OF EFFECTIVE TAX RATES OF CHINA PUBLICLY LISTED COMPANIES

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ABSTRACT

This research studied cash effective income tax rate (cash ETR), GAAP effective income tax rate (GAAP ETR), and sales tax and addition effective tax rate (STA ETR) for China publicly listed companies. The data is from 2007-2011. The mean for cash ETR, GAAP ETR, and STA ETR are 23.07%, 19.98%, and 5.29%, respectively. We do not document any influence of the big four auditors on ETRs in all categories. We also do not document any influence of international ownership on ETRs in all categories. Industry, asset mix, leverage, size, and state ownership are factors that affect ETRs.

INTRODUCTION

The effective tax rate (ETR) on companies is a subject of considerable interest and discussion in the US and around the world. There has seemed to be some competition among countries to lower their ETRs in order to attract companies, and thus to improve their economies. According to Controller’s Report [18], Forbes Global 2000 companies headquartered in the US had an average corporate ETR of 27.7 percent for tax years 2006-2009. Similar companies headquartered in other countries had an average ETR of only 19.5 percent. According to the Wall Street Journal [9], more US companies are changing their official incorporation location to other countries, largely due to the lower effective tax rates offered abroad. One company estimates that their ETR will go down from 28% to 23%, which will increase profits by $100 million per year.

The purpose of this paper is to identify the basic types of taxes levied on Chinese companies and to analyze the factors that influence the sales tax and addition and corporate income tax ETR of Chinese companies, with and without, foreign investment. This paper uses data from China publicly listed companies. All financial information for this period was prepared based on International Financial Reporting Standards (IFRS), which were adopted in China as of January 1, 2007. These data include information from over 1000 publicly listed companies, and over 4000 company years. We included all industries in our data collection.

China Tax System

China imposes three major taxes: sales tax and addition, value added tax, and income tax. The tax system has gone through major reform. The new tax system that went into effect in 2011 eliminated many favorable tax treatments for international companies. Even before that, in 2007, China streamlined
the corporate income tax for domestic and international funded companies to level out the playing field [10]. Thus, theoretically, our research time period (2007-2011) should show little or no evidence of favorable tax treatment to companies with international ownership.

The basic corporate tax rate currently is 25%. Eligible small business has a lower tax rate of 20%. Eligible high-tech companies enjoy a tax rate of 15%. The tax rate preference for international companies was reduced starting in 2007 and has been eliminated as of 2011. Currently, corporate income tax revenue is shared by local and federal government with local government retaining 40%.

The sales tax rate varies from 3% to 20% depending on the industry. Sales tax in China is included in the sales price and is remitted to the government by the seller. The current sales tax rate is 3% for transportation, construction, post and telecommunications, culture and sports. It is 5% for other industries except entertainment. The entertainment industry sales tax rate can be as high as 20%, though the local government has the authority to lower it. For example, starting 7/1/2012, Tianjin province has lowered its sales tax rate for the entertainment industry from 20% to 5%.

Sales tax addition also includes consumption tax, resource tax, education tax, land appreciation tax, city development tax, etc. Currently, sales tax and addition is a local tax revenue.

The basic value added tax rate is 13% for domestic products, 17% for imported products, and 0% for exported products. There are exceptions to the basic value added tax rate. This paper only analyzes the sales tax and addition and income tax obligation of publicly listed companies.

This paper is the first to analyze sales tax and addition of China publicly listed companies.

The above is only a summary of the China tax laws. Please refer to China State Administration of Taxation publications for details.

**LITERATURE REVIEW**

There have been a great many studies on the impact of various factors on ETR. Most studies address the factors used in this paper.

**Studies on US Firms**

Dyreng, Hanlon, Maydew [3] tracked the movement of 908 executives across 1,138 US firms during the years 1992 to 2006. They found that individual executives play a significant role in determining ETR.

Dyreng, Hanlon, Maydew [4] used the long-run cash ETR to examine (1) the extent to which some firms are able to avoid taxes over periods as long as ten years, and (2) how predictive one-year tax rates are for long-run tax avoidance. In their sample of 2,077 US firms, they find there is considerable variation in tax avoidance.

McGuire, Omer and Wang [8] found that tax-specific industry expertise of the external audit firm results in greater tax avoidance, and that an audit firm’s overall expertise also results in greater tax avoidance.

Olhoft [12] examines which variables effect firms that avoid more income taxation, resulting in lower effective tax rates. Higher income is associated with income tax avoidance, larger firm size is not. Multinational firms have a much stronger negative relationship between income and ETRs, suggesting multinational companies avoid more tax per dollar of income than U.S. domestic-only companies do.

Stickney and McGee [17] concluded capital intensity, leverage, and natural resources involvement indicates lower ETR. Whereas foreign operations and size are a less important indicator of lower ETR.
Stanfield [16] found greater tax avoidance or lower ETR (cash taxes paid divided by its pretax income) for firms with insufficient cash. Also, an increase in tax avoidance for firms which meet or just beat the consensus cash flow forecast.

Studies on Chinese Firms

Liu and Cao [7] studied determinants of ETR for 425 listed companies in China’s stock market for the seven-year period 1998–2004. They considered firm size, leverage, asset mix, profitability, ownership structure, and overemployment. They found that firm size and capital intensity have no significant effect on ETR, leverage has a negative impact and ETR tends to be smaller for firms with overemployment of labor. This last finding seems to be caused by government to promote employment. They define ETR as \((\text{Tax expense} - \text{deferred tax provision})/\text{EBIT}\). They also found that the larger the share of ownership by the largest shareholder, the larger the ETR.

Wu, Wang, Luo and Gillis [19] examined all non-financial public companies listed in China’s A-share market between 1998 and 2006 to determine how state ownership, tax status and firm size affect ETR. They found that privately controlled firms have a higher ETR than state-controlled firms.

Other Studies

Heshmati, Johansson, and Bjuggren [5] analyzed the effects of ETRs on the size distribution of Swedish firms from 1973 – 2002. Time and industry effects were considered. They found that ETRs differ by firm size, industry and over time. Smaller firms had a higher ETR than larger firms and there was inequality in mean and variance of ETRs between industrial sectors. They conclude that ETRs affect the size distribution of firms as well as the composition of industries and that the Swedish tax system favors capital-intensive sectors and firms.

Sebastian [14] wanted to determine whether the ETR that Romanian companies actually experienced agreed with the statutory tax rate cuts that took place. They found that ETR was consistently less than the statutory rate and that, by industry, general commerce had the lowest ETR and the energy sector had the highest ETR.

Noor, Mastuki, and Bardai [11] studied a sample of 294 large Malaysian companies (1470 firm-years) for the years 2000 to 2004. They found that real estate, trading and services and construction companies had higher ETRs and that lower ETRs were associated with highly leveraged companies and those with greater investments in fixed assets and extensive foreign operations.

Hsieh [6] data were from the Taiwan Economic Journal data base, which includes listed companies in the two largest stock markets in China, the Shanghai Security Exchange, and the Shenzhen Security Exchange. Results are that firm size is not an indicator of lower ETR and that ETR is sensitive to return on assets, capital intensity, inventory intensity, and leverage.

**METHODOLOGY**

**Effective Income Tax Rate**
We use two standard measures to define effective tax rate, which have been adopted by many other studies [3] [4]. First, the effective corporate income tax rate is as defined under GAAP, total tax expense divided by pre-tax accounting income. Second, the effective corporate income tax rate is defined on a cash basis as cash taxes paid divided by pre-tax accounting income. The first measure will capture tax expense for financial reporting purposes (hereafter GAAP ETR). The second measure will capture cash basis tax expense (hereafter cash ETR). The two measures of effective tax rate are then separately regressed against the variables explained in the following paragraphs.

The relationship of effective tax rate and size (proxied by log of sales) were extensively researched [5] [20] [13] [7]. Industry and effective tax rate also have been well studied [15] [5] [11]. The specific year we are researching could have some effect on the effective tax rates [3]. We thus included year as a variable.

Firm leverage (proxied by total liability/total asset) could have an effect on effective tax rate since interest is tax deductible [7] [11]. Asset mix (proxied by long term assets/total assets; long term assets include fixed and intangible assets) could influence effective tax rate since the more capital intense the company is, the more depreciable assets the company will have [7] [11].

Ownership structure could affect effective tax rate. Derashid and Zhang [2] studied the effect of state ownership on effective tax rate in Malaysia with no significant findings. Liu and Cao [7] documented that the higher the largest shareholder’s ownership percentage, the higher the effective tax rate. Dyreng, Hanlon, and Mayde [3] documented that individual executives have significant influence on effective tax rate. We suspect the unique ownership structure of a company could influence effective tax rate of a company for the same reason. In this study, we identify state-ownership (defined as more than 50% state owned), and international-ownership (any international ownership).

State owned shares could not be transferred freely in the stock market before 2005. China started major reform in 2005 to make state ownership transferable [1]. After the reform, separate state ownership percentage information is no longer available. Therefore, we decided to look at the historical ownership structure of a company. If historical state ownership has been more than 50% in a company, we will consider it under control of the state.

For international ownership, we divide the companies into two groups: companies with international ownership and companies without international ownership. We have tried to plot the international ownership against Cash ETR, GAAP ETR, and sales tax and addition and did not find a natural break point. Thus, we do not believe the percentage of international ownership significantly affects the tax benefits companies might be receiving.

Auditors of the company could potentially affect the tax rate of the company. McGuire, Omer and Wang [8] concluded that companies engage in greater tax avoidance when their external audit firm is a tax expert. Reviewing the auditor information of the publicly listed companies reveals that the big four accounting firms are the auditors for about 9% of all the observations. The remaining observations are for companies that are audited by domestic auditing firms. Although there is no previous research on this subject, we believe the big four auditing firms might have different corporate cultures from the
domestic auditing firms, and thus might provide different tax strategies to their customers compared with domestic auditing firms.

**Effective Sales Tax And Addition Rate**

The unique thing about China sales tax and addition is that it is included in the sales price and reported as an expense by the seller companies on their income statements. We thus are able to analyze the sales tax and addition information the same way as we do with effective corporate income tax rate.

**CONCLUSIONS**

The real estate industry has significantly higher STA ETR, cash ETR and GAAP ETR. The agriculture industry has significantly lower STA ETR and GAAP ETR. Although the tax code does not specify different tax rates for these two industries, we suspect some different treatments in the application phase. The higher ETRs in all categories for real estate industry reminded us about the China real estate bubble rumor. Further research about the application phase of the tax code will provide more insight.

Leverage is positively related to both cash ETR and GAAP ETR. The more companies rely on debt financing, the higher their ETRs. However, in a follow up study which investigates the relationship on a long-term basis, no significant findings were documented between leverage and long run ETR.

Asset mix is also positively related to both cash ETR and GAAP ETR. Companies with heavier capital concentrations have higher ETRs. The follow up study on the long term effect confirms that asset mix is significantly positively related with long run ETR.

The findings about leverage and asset mix are contra-intuitive. Interest and depreciation expenses are tax deductible and should reduce tax. Further studies should be done to investigate why the opposite is true. We do not find any significant influence of international ownership on ETR, which is expected because of the elimination of favorable tax treatment for international ownership.

We do document significantly higher cash ETRs, although not GAAP ETRs, for state controlled firms. In a follow-up study, we found that in the long run state controlled firms do not pay higher ETRs. Thus, we believe that GAAP ETR will predict the long run ETR.

As to size of the firm, bigger companies do not have a higher Cash ETRs but have a significantly higher GAAP ETRs. In a follow up study, we found that bigger firms have significantly higher ETRs in the long run. This indicates that firms take advantage of the tax code to delay tax payments, but the benefit is only short term and eventually they will have to pay.

The results of asset mix, state controlled firms and size indicate that GAAP ETR is a better indicator of ETR in the long run.

We do not document any influence of big four auditors on ETRs in all categories. This is somewhat surprising. Given the world-wide reputation of the big four auditing firms, we were expecting them to have influence on their clients in many areas, including tax rates.

This paper is the first to document STA ETR for China publicly listed firms. The rate is very low and is inconsistent with the tax code. So for companies planned on investing in China, they should not rely on the nominal sales tax and addition rate showing in the tax code. Negotiating with the local government will be very beneficial. For companies who planned on investing in real estate industry in China, they should be aware of the higher than average ETRs across all categories.
REFERENCES


