

DETERMINANTS OF LONG-RUN EFFECTIVE TAX RATES OF CHINA PUBLICLY LISTED COMPANIES

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ABSTRACT

This paper investigates the determinants of long-run effective income tax and sales tax and addition rates of China publicly listed companies. The data is from 2007-2011. The mean of long-run effective sales tax and addition rate is only 2.72% and the mean of long-run effective income tax rate is 18.66%. We do not document any influence of the big four auditors on ETR for both. We also do not document any influence of international ownership on ETRs. Size, industry, state ownership, and asset mix 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 The Controller's Report [17], Forbes Global 2000 companies headquartered in the US had an average corporate ETR of 27.7% for tax years 2006-2009. Similar companies headquartered in other countries had an average ETR of only 19.5%. 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 analyze the factors that influence the long-run effective 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, and the new tax system in effect in 2011 eliminated many favorable tax treatments to international companies. Even before that, in 2007, China streamlined the corporate income tax for domestic and international funded companies to level out the playground [10]. Thus, theoretically, our research time period (2007-2011) should show little 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.

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.

Size and Industry

The relationship of effective tax rate and firm size has been extensively researched. Heshmati, Johansson, and Bjuggren [6] 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 rates cuts that took place. He 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.

Olhoft [12] examined which variables affect firms that avoid more income taxation, resulting in lower effective tax rates (ETR, defined as the ratio of current income tax expense to pre-tax accounting income). 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 that multinational companies avoid more tax per dollar of income than U.S. domestic-only companies do.

Other studies that have considered size or industry or both includes Stickney and McGee [16]; Liu and Cao [7]; Noor, Mastuki, and Bardai [11]; Wu, Wang, Luo and Gillis [18].

Ownership Structure

Wu, Wang, Luo and Gillis [18] examined all non-financial public companies listed in China's A-share market between 198 and 2006 to determine how state ownership, tax status, firm size affect ETR. They found that privately controlled firms have a higher ETR than state-controlled firms.

Liu and Cao [7] also studies ownership structure.

Capital Intensity/Asset Mix

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 $\text{ETR} = (\text{Tax expense} - \text{deferred tax provision}) / \text{EBIT}$. They also found that the larger the share of ownership by the largest shareholder, the larger the ETR.

Stickney and McGee [16] concluded capital intensity, leverage, and natural resources involvement indicates lower ETR. Whereas foreign operations and size are a less important indicator of lower ETR.

Hsieh [5] data were from the Taiwan Economic Journal data base, which lists 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.

Auditor and Company Management

McGuire, Omer and Wang [8] found that tax-specific industry expertise of the external audit firm plays a significant role in its clients' tax avoidance, or lowering its ETR.

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. The difference between the top and bottom quartiles showed an 11 percent difference GAAP ETR.

Liquidity and Leverage

Stanfield [15] found greater tax avoidance or lower ETR for firms with insufficient cash, that is, an inverse relationship with liquidity and tax avoidance.

Noor, Mastuki, and Bardai [11] 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.

Long-Run 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 found considerable variation in tax avoidance. They also reported that annual cash ETRs were not good predictors of long-run cash effective tax rates and, thus, not accurate proxies for long-run tax avoidance. To overcome the limitations of *GAAP ETRs*, they make two key modifications. They calculated long run ETR over periods as long as ten years by summing the total cash taxes paid over a ten-year period and dividing by

the sum of the firm's total pretax income over the same ten-year period. This produces an effective tax rate that more closely tracks the firm's tax costs over the long run. They found that companies use many methods to achieve low long-run cash ETRs. Some are firm-specific, while others are related to firm industry or other factors.

METHODOLOGY

Long-Run ETR

We manually collected data from sina.com.cn. This is a website that provides financial information for China publicly listed companies. We are aware of various databases available. But for the purpose of this study, we needed some specific information that the current databases cannot provide.

We use the long-run effective tax rates defined by Dyreng, Hanlon, and Maydew [4]. We sum a firm's total cash taxes paid over 5-year period (2007-2011) and divide that by the sum of its total pretax income.

Long-Run ETR and Determinants

Since long-run ETR is more representative of a firm's cash tax expense over time, we investigate the relationship of long-run ETR to the variables explained in the following paragraphs.

The relationship of effective tax rate and size (proxied by log of sales) were extensively researched [6] [19] [13] [7].

Industry and effective tax rate also have been well studied [14] [6] [11].

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 asset, 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]. Asset mix can be viewed as one of the various measures of capital intensity.

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 biggest shareholder's ownership percentage, the higher the effective tax rates. Dyreng, Hanlon, and Maydew ([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 three ownership structures: we compare 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. We have decided to look at the historical ownership structure of a company. If historical state ownership has been over 50% in a company, we will consider it under control of the state and code the state ownership variable as 1.

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 long-run 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 they might be receiving.

Please note that, in this study, firm size, leverage, and asset mix are all average numbers over a 5 year period (2007-2011). We used weighted average, just as we did for long-run ETRs.

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.

Long-Run Sales Tax and Addition

Long-run sales tax and addition is calculated following the same method as long-run ETR. And we use the same factors we identified for long-run ETR to analyze long-run sales tax and addition.

CONCLUSIONS

Size is significantly positively related to both long-run ETR and long-run STA ETR. Real estate sector has significantly higher rates for both long-run ETR and long-run STA ETR.

State controlled companies enjoy significantly lower long-run STA ETR. State ownership does not play a role in long-run ETRs. International ownership does not have impact on long-run ETRs or long-run STA ETR.

Firms with heavy capital concentration in the long-run pay higher ETRs; although long-run STA ETR is not affected by capital concentration.

We do not document any influences of big four auditors on long-run ETR or long-run STA ETR. This is somewhat surprising. Given the world-wide reputation of the big four auditing firms, we were expecting them to have a lot influences on their clients in all kinds of aspects. But as far as tax goes, we are unable to find any evidence of influence at this point.

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