CHAPTER 2. LITERATURE REVIEW

As mentioned before, the purpose of this study is to understand if the degree of fiscal decentralization influences the tax effort. Hence, this chapter will first discuss the fiscal decentralization theory. After the fiscal decentralization theory is discussed, the tax effort of previous empirical work is reviewed.

2.1 Fiscal Decentralization Theory

If this study attempt to understand the impact of fiscal decentralization to tax effort, it is necessary to briefly cover the fiscal decentralization theory. The fiscal decentralization theory is the foundation for empirical analysis. Moreover, it explains the incentive of the provincial government to raise their tax efforts.

Initially, Hayek (1945) indicated that the local government is more effective than the central government in drawing up public policy because the local government can spend less cost to collect more information about local residents. Substantially, fiscal decentralization is the local government's own relative advantage information. Subsequently, Stigler (1957) interpreted that the rationality of the local government existence could improve the resource allocation to achieve an efficient level.[8] However, they didn't consider what kind of public goods should be provided by the local or central government. Musgrave (1959) complemented this concept. He pointed out that different kinds of public goods should be provided by different levels of government. In other words, the central government should provide national public goods, such as national defense. In addition, the local government is efficient to treat

[8] Stigler (1957) used two principles to interpret the rationality. The principles are separated as follows. First, local governments are closer to their residents than the central government. Second, the residents have a right to choose by voting different kinds and quantities of public services.

regional public service. Finally, Oates (1972) used a model of fiscal decentralization to prove that the local government are more efficient than the central government and achieves the Pareto-efficient. From this moment on, the fiscal decentralization theory has a model basis. However, Oates' decentralization theorem is based on the findings from Tiebout (1956). He indicated the voting-with feet theory, which means that people could choose a local government which satisfies the local residents' preference of public series and tax ratio by flowing between areas.[9]

If a fiscal system could connect the interest of the officials and local residents' welfare, an outstanding local performance will be generated. In other words, decentralization must provide incentives for the officials in order to make the residents' life better.[10] On the contrary, if a system puts most resources obtained from a native to local area, the responsibility could easily belong to the local officials. Furthermore, the system motivates the official to provide more suitable public services and to raise their tax efforts. Under the pressure of a raising tax ratio, the local government would increase its revenue by raising its tax effort. Therefore, Fiscal decentralization will influence tax effort by fiscal mechanisms. A responsive government (including the level of central and local) may cause an increase in the willingness to achieve higher levels of tax effort.

2.2 The Determinants of Tax Effort

As mentioned before, the purpose of this study is to understand the role of the fiscal decentralization in the local government's tax effort. Before analyzing this issue, this study reviews the literature associated with the tax effort. According to the types

9 If the local governments provide high quality and quantity public services and impose a high tax ratio, local residents who need basic public services will move to another area.

10 For example, if a fiscal system stipulates that to spend less tax revenue generated from the local area the local officials would become lazy. Because the officials must pay most tax revenue to the central government and that causes insufficient tax revenue to be spent in improving local economic development, the officials have no motivations and no responsibilitiesto make good policies.

of empirical models referenced in the literature, this study divides the previous literature into two parts according to whether the studies are based on the ordinary least squares (OLS) method or the fixed/random effects model.

As for the studies that have adopted an OLS, Lotz and Morgs (1967) used a data set for 72 developed and developing countries and found that per capita GNP and the trade share representing the degree of openness are significant and positive determinants of the tax effort.[11] However, both Shin (1969) and Bahl (1971) concluded that per capita income and the export ratio are not significant factors affecting the tax effort.[12]

The type of business might also affect the tax efforts of the local government. As pointed out by Alm, Martinez-Vazquez and Schneider (2004), if the type of business is underground, the government will find it difficult to control the real tax subject. In their study, Alm, et al. adopted a data set for 41 countries and used the degree of hard-to-tax (HTT) to represent the shadow economy before finding that the HTT has a significant influence on the tax effort, especially in the case of the developing countries. However, the shadow economy was found to exhibit a negative relationship with a degree of tax effort.

[11] The trade share is not significant in the lower income model, although per capita income is also statistically significant and positive.

[12] Furthermore, Shin (1969) referred to the reasons for the different results. He indicated that different periods, countries and independent variables would lead to different conclusions.

Table 1 : Tax Effort (OLS) Literature

Author	Sample Period	Methodology	Conclusions
Lotz and Morgs (1967)	1963-1965	Ordinary least square	Per capita GNP and trade share are significant and positive. But the trade share is not significant in the lower income model, although per capita income is also statistically significant and positive.
Shin (1969)	1963-1965	Ordinary least square	The per capita GNP and the degree of openness were not significant factors. This results are different from the results of the previous studies which show that openness is a significant factor.
Bahl (1971)	1966-1968,	Ordinary least square	The agricultural share and mining share separately are significantly negative and positive, but per capita income and export ratio are not always significant. The study shows that the geography factor will affect the tax ratio.
Alm, Martinez-Vazquez, and Schneider (2003)	2000	Ordinary least square	The study shows that shadow economics are in a negative relation with tax effort, especially for developing countries.
Bird, Martinez-Vazquez and Torgler (2004)	1990-1999	Ordinary least square and 2SLS	To add some institutional variables like Regulation of Entry, Tax Morale, the Shadow Economy, Income Inequality and Fiscal Decentralization. It shows that not only economic factors, but also societal institutions or demand factors matter significantly to determinate tax effort.

Source: this study arrange

Note: the list of the literatures order according to the publish year.

Moreover, Bird, Martinez-Vazquez and Torgler (2004) used the ratio of tax revenue to GRP as tax effort for analysjs. They added some institutional variables like Quality of Governance Index, International Country Risk Guide, Regulation of Entry, Tax Morale, the Shadow Economy, Income Inequality and Fiscal Decentralization to be explanatory variables. It shows that not only economic factors, but also societal institutions or demand factors matter significantly to determinate the tax effort. The coefficient of the impact of fiscal decentralization is not statistically significant. However, the purpose of this study is to explore the issue of how the impact of fiscal decentralization affects the tax effort in China. Therefore, this study will attempt to understand the real influence of fiscal decentralization to the tax effort in China.

As a way of improving the econometric methodology, the empirical work could be more complete. As for studies that used the fixed or random effects models to probe into the tax effort, Stotsky and Wo1deMariam (1997) employed a panel data set of 43 sub-Saharan African countries from 1990 to 1995 to indicate that the share of agriculture in GDP and the share of mining in GDP were both negative and significant,[13] but that the export share and per capita income were positive and significant in relation to the tax effort. Their conclusions are similar to those of Lotz and Morgs (1967).[14]

However, Eltony (2002) used panel data for 16 Arab countries from 1994 to 2000 and a fixed effects model to show that the crucial determinants of tax effort in the Arab countries were the per capita income, the share of agriculture in GDP and the

[13] Since the data is not complete, Stotsky and Wo1deMariam (1997) operated two different samples. For about one-third of the countries it was hard to obtain data on either the mining or manufacturing shares and so the sample size was reduced to 30 countries that had complete data for some shares like those of mining and manufacturing.

[14] In addition, Stotsky and Wo1deMariam (1997) also indicated that countries with low indices of tax effort may wish to place greater emphasis on increasing revenues than on reducing expenditures in proportion to countries with higher indices of tax effort.

share of mining in GDP. The per capita income and the share of agriculture exhibited the same signs in all three areas,[15] but the signs for the mining output share in GDP were different in the non-oil Arab countries. Furthermore, the share of exports and imports and the outstanding foreign debt were found to be significant and positively related to the tax effort in only the non-oil Arab countries. Eltony (2002) also indicated that country-specific factors appear to be important determinants of the tax share, such as the attitudes toward government, the quality of tax administration, and other institutions of the government.

A more comprehensive analysis by adding the tax evasion factor into the empirical framework has been conducted by Teera (2002). It was found that tax evasion is a major determinant of tax shares, except for the high-income OECD countries. In addition, the upper middle-income and high-income OECD groups are generally making use of their tax bases to increase revenue. Furthermore, both Abdul and Baig (2005) used a panel dataset of 34 emerging market countries for the period ranging from 1990 to 2002 to support the view that the institutional variable is an important component of the tax effort. Moreover, Bird, Martinez-Vazquez and Torgler (2004) used the ratio of tax revenue to GRP as a measure for tax effort to analyze the impact of fiscal decentralization, but the coefficient was not statistically significant. They also used the ratio of fiscal revenue to GRP as a measure for tax effort to analyze the impact of fiscal decentralization. Similarly, the coefficient was not significant. Therefore, they concluded that the coefficient of fiscal decentralization was never significant.

Nevertheless, according to Oates (1972), the degree of fiscal decentralization

[15] Eltony (2002) separated the whole sample into three parts to analyze the following: the Gulf Cooperation Council consists of six countries that earn most of theie profit from the oil fields, ten non-oil Arab countries that earn less profit from the oil fields, and a sample of all Arab countries which totaled sixteen Arab countries.

should influence the provincial tax effort. Therefore, the primary purpose of this study is to investigate whether or not the impact of fiscal decentralization on the tax effort exists in China. In the following section, how the degree of fiscal decentralization influences the tax effort of China's local government after 1994 will be discussed.

Table 2 : Tax Effort (FEM/REM) Literature

Author	Sample Period	Methodology	Conclusions
Eltony (2002)	1994 -2000	Fixed effects model	The crucial determinants of tax effort in the Arab countries are the per capita income, the share of agriculture in GDP and the share of mining in GDP. Per capita income is statistically significant and positive.
Stotsky and WoldeMariam (1997)	1990-1995	Fixed and random effects models.	The share of agriculture in GDP and the share of mining in GDP are negative and significant. The export share and per capita income are positive and significant related to the tax effort.
Piancastelli (2001)	1985-1995	Fixed and random effects, models.	The analysis suggests that the countries with a relatively high tax share tend to have a relatively high index of tax effort in many sub-Saharan African countries
Teera (2004)	1975-1998	Fixed and random effects models.	Tax evasion is a major determinant of tax shares, except for the high-income OECD countries. In addition, he indicates that the upper middle-income and high-income OECD groups are generally making use of their tax bases to increase revenue.
Abiad and Baig (2005)	1990-2002	Fixed effects, models with GLS	Fiscal effort rises with positive shocks to oil prices (for oil exporters), while the economy grows above its potential. On the contrary, high democratic accountability and strong and impartial bureaucracies help to lower market risk and hence lower the relative need for fiscal adjustment.

Source: this study arrange

Note: the list of the literature order according to the year it was published.

FEM and REM respectively represent the fixed and random effects model.