Regional Tax Transfer and Horizontal Tax Assignment in China

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Abstract

This study investigates the interregional tax mobility in China. Taxes are transferred among provinces mainly through five sources, such as the consolidation of corporate income tax, the regional flow of value-added tax, the pricing of natural resources by central government, the taxes on cross border business, and the harmful tax competition among local governments. We evaluate the scale of tax transfers at province level and calculate the mismatch between regions' tax revenue and tax base. The finding is that tax transfer may be one of the most reasons of local governments' horizontal fiscal imbalance in China.

Keywords: Tax Transfer, Tax Assignment, Tax Law, Local Government, China

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1. Introduction

China is now going through a period of high-speed economic growth and sufficient tax revenue at national level. However, there still exists an obvious fiscal disparity or inequality between local governments in China. The Tax-Sharing System (TSS), founded in 1994, settled the vertical fiscal relationship of central government and local governments, while it left the horizontal fiscal relationship of local governments unsolved. In reality, the gap of fiscal capacity between local governments in China is huge, especially at the county level. In recent years, many studies, including Jia and Bai (2002), Tsui (2005), and et al., addressed the issue of fiscal disparities at county-level fiscal systems in China.

One of the main reasons resulting in horizontal fiscal disparity in China is the so-called regional tax transfer. Regional tax transfer means the mismatch between tax revenue and tax base in local public finance. Theoretically, income, consumption or property in locality should be levied by local governments, i.e., tax revenue should be consistent with its tax base in one jurisdiction. This is the Principle of Territory in tax laws. However, there is really a deviation between actual tax revenue and theoretical tax base for a local government, because some local tax base is levied by other local governments. This deviation may also cause horizontal fiscal gap of local governments and even the regional economic disparity. There are many cases why tax bases are levied by non-local governments in China. For example, income of subsidiaries or branches may be consolidated to the headquarters and levied by the local governments which manage the tax of headquarters. In addition, the incidence of turnover tax, such as VAT and business tax can be shifted forward or backward to different tax agents in different regions. This makes the fiscal imbalance of local governments in different regions become bigger and bigger.

As far as we know, there are few researches, whether are theoretical or empirical works, focusing the regional tax transfer. Most literatures discuss fiscal federalism and vertical transfer system between central government and local government (Oates, 1999; et al.). There are also studies laying emphasis on some topics of horizontal relationship among local governments, such as fiscal coordination or tax competition (e.g. Shen and Fu, 2006). A Program on the Survey of Regional Tax Transfer (2007) describes the institutional background and patterns of regional tax transfer in China. Jin and Fu (2008, 2009, and 2010) discussed the regional tax transfer caused by corporation groups and the efficiency by the tax re-assignment mechanism among local governments. These studies also provide many cases and much international experience in regional tax transfer and the corresponding regional tax agreements.

Based on several dataset (including statistics on local government revenue, on large firms' income tax, and on firms' VAT from CTAIS), this study describes several kinds of regional

tax transfers and discusses the mechanism of horizontal tax assignment between local governments in China. These transfers include the consolidation of corporate income tax, regional inflow or outflow of value-added tax, pricing of natural resources by central government, taxes on cross-border business, and the regional tax preferences and tax competition. This study will also calculate the deviation of tax revenue and tax base during the last decade, and explain several factors resulting in regional tax transfer in China.

The significant tax transfer from undeveloped regions to developed regions can tell us some very important policy implications. Thus, the central government should design the agreement among local governments to assign the reasonable tax to undeveloped and developed regions. The structure of this paper is as follows. Section 2 describes the tax law and institutional background, and discusses the main sources of regional tax transfer in China. Section 3 provides the methodology and measure to calculate the degree of regional tax transfer, and obtain the preliminary results. Section 4 discusses the policy implications of horizontal tax assignments designed by central government.

2. The Main Sources of Regional Tax Transfer

There are several main sources of regional tax transfer in China. First, corporation groups and their subsidiaries or head-quarters and their branches may pay corporate income tax on the consolidation basis. Second, VAT levied from firms may also be shifted forward or backward. Third, the price difference of natural resources between local mining and downstream markets means that tax on these goods is mainly levied by the local governments in downstream markets. Four, because there are various sources of locality, taxing across border business and income (business tax and individual income tax) is uncertainty. At last, local governments will use tax preferences to attract other regions' inputs, such as capital and labor, to invest in its jurisdiction. This is the harmful tax competition, which usually does not have any benefit to undeveloped regions.

2.1 Consolidation of Corporate Income Tax

According to the principle of territory, corporate group does business across regions will pay tax to its relative local governments. However, it becomes popular that in many developed countries, corporate tax is consolidated for conglomerate or enterprise groups. One of the advantages of consolidated tax is neutral and low incidence for firms. Firms can distribute their inputs and resources to different regions to maximize their after-tax profits. So it is benefit to firms that the net operating losses (NOLs) of some subsidiaries can be deducted from other subsidiaries' profits. One of the main disadvantages is the tax transfer between local governments where the head and its subsidiaries are located. Although the consolidated tax has been assigned to the relative local governments, according to some apportionment formula, this phenomenon results in regional tax redistribution, i.e., the issue of horizontal tax assignment.

In reality, for some big firms, such as railway, reservoir, and pipeline transportation, enterprise income tax on subsidiaries or branches are consolidated to the heads. The local government in the region where the head is located will get the consolidated revenue and share it with central government with given proportions. Thus, this is an obvious regional tax transfer from the regions where subsidiaries and branches are located (usually undeveloped regions) to regions where the heads are located (usually developed regions).

Since 1995, China began a pilot reform that some large enterprise groups in industries of railway, telecommunication, petroleum, etc., have the access to pay corporate income tax on consolidation basis. Since 2001, China began her normative tax consolidation reform for cross-border corporate. 120 groups could adopt this tax priciple after examination and approval by SAT. In this period, the provisions of tax consolidation included *Guoshui Fa [1994] No. 27, Guoshui Fa [1995] No. 62, Guoshui Fa [1995] No. 198, Guoshui Fa [1996] No. 172, Guoshui Fa [1998] No. 127, Guoshui Fa [2000] No. 185, Guoshui Fa [2001] No. 13, and Guoshui Fa [2002] No. 226*, … In 2003, the Ministry of Finance issued the *Interim Provisions of Regional Revenue Attribution of Corporate Income Tax of Cross-regional Operation*.

In 2008, the *Law of PRC on Enterprise Income Tax* was issued and the tentative tax consolidation policy was over after this new tax law and its detail regulations were implemented. The Article 50 of this tax law is about tax consolidation. The new law is based on juristic person principle, so corporate income tax is naturally consolidated to the head of groups. Two more important regulations, *Cai Yu [2008] No. 10, and Guoshui Fa [2008] No. 28*, was implemented. Under the tax-sharing system established in 1994, local governments can share its corporate income tax with central government in most cases. And the sharing proportion is 40:60 for local and central government. While beside this vertical tax sharing, the new tax law also uses a method of horizontal tax assignment. In the part of local share, corporate income tax is assigned to regions according to three factors: the operation income, wage, and asset of branches, weighted by 0.35, 0.35, and 0.30. However, there may be a local protectionism to hinder this reasonable tax assignment, because local governments may help corporate adjust these three factors and transfer profits.

In recent years, many countries have realized this tax transfer issue and establish institutions to solve this problem. In the U.S., the Multi-state Tax Commission (MTC) can tackle with tax relations between states in income tax and sales tax by designing a apportionment formula of interstate income, weighted by sales, assets and payments. At present, there is about 180 enterprise groups can adopt tax consolidation in China, whose main business is iron and steel, electric power, bank, insurance or securities business, etc. Unfortunately, there are few open data about the size of tax consolidation in China. Before we find a reasonable and acceptable apportionment formula for most local governments, the consolidated-induced tax transfer will still play an important role in fiscal system and inter-government relations.

2.2 Regional Inflow or Outflow of VAT

In theory, the consumers who consume goods and service finally should pay indirect tax to local governments where consumers are located, according to the benefit principle. While in China, the management of VAT is complied with the principle of production territory. VAT is based on value added in goods turnover process. The firm which sells goods and some special services should pay VAT to local government where it is registered. VAT equals to the tax of sales in the input invoice minus the tax of receipts in the sale invoice. Thus, if goods produced in one region are sold to another region, it will yield a kind of tax transfer. The consumers in the place of consumption bear VAT actually, while the local government in the place of production obtain the tax revenue. VAT can flow in or flow out among regions.

If one region has more goods outflow than goods inflow, then its VAT flows in; on the contrary, its VAT flows out. As an indirect tax, VAT can shift forward or backward, depending on the demand and supply price elasticities of the goods. In the developed areas, there exist often agglomeration of manufacturing firms to produce goods and related service; while in the undeveloped areas, there are just consumers. So, the value added occurs seldom in undeveloped regions. The corresponding VAT is levied by local governments in developed regions naturally.

Table 1 shows a phenomenon that VAT can be inflowed or outflowed between regions. The VAT data come from CTAIS (the statistics of SAT), covering from 2003 to 2009. We can calculate the net flow of inter-provincial tax transfer. The provinces of VAT outflow include Zhejiang, Guangdong, Fujian, Sichuan, Chongqing, and Guangxi. In other provinces, VAT flowed out. For the moment, we could not get any conclusion about VAT transferring from undeveloped regions to developed regions. For VAT, there are no assignment methods like corporate tax consolidation.

Table 1. Regional Inflow and Outflow of VAT

Province	2004	2005	Province	2004	2005
Beijing	188102	188060	Henan	569659	763350
Tianjin	932355	1176131	Hubei	296560	441949
Hebei	1472032	1890657	Hunan	-5585	29147
Shanxi	1505247	2073372	Guangdong	-2018865	-3510172
InnerMogolia	683431	1064375	Guangxi	-112501	-97323
Liaoning	760388	440579	Hainan	74774	95487
Jilin	783529	833677	Sichuan	-207334	-326922
Heilongjiang	1640097	2235906	Chongqing	-235296	-234795
Shanghai	3564452	3408401	Guizhou	221181	258153
Jiangsu	1114908	2073367	Yunnan	590560	659172
Zhejiang	-3171116	-3534022	Shaanxi	141337	403648
Anhui	357774	448863	Gansu	113870	172189

Fujian	-812787	-1055284	Qinghai	38260	125882
Jiangxi	20256	109996	Ningxia	-31823	41439
Shandong	709424	1061778	Xinjiang	705803	1067536

Notes: The unit is ten thousand Yuan. This data is from CTAIS of SAT.

2.3 Pricing of Natural Resources by Central Government

Natural resources, such as oil, coal, and gas, are priced by central government in China. These primary resources are low-priced based on production costs. The local governments in the producing areas just obtain very low resource tax because most of this tax is specific. However, when the natural resources are processed and enter into downstream markets as a new product, the market price of the sales will go up obviously. The VAT based on new price all belong to the local governments in which have a huge demand and trade.

Thus, the local governments in downstream markets can levy much more turnover tax (VAT and consumption tax) on the new product than resource tax paid to the local governments where natural resources are located. This is also an important means of tax transfer. In resource-exporting regions, there exists the theoretical tax base, while the actual tax revenue is non-existent. Unfortunately, the mine areas are usually in undeveloped regions while the downstream markets are located in developed regions. This means the turnover taxes in the downstream markets are transferred from undeveloped regions to developed regions. Table 2 shows the resource tax at provincial level. According to the natural tax, we can find that the undeveloped regions (such as Shanxi and Liaoning) usually have rich resources while developed regions (such as Shanghai and Beijing) have poor natural resources.

Table 2. Resource Tax

Province/Year	1999	2001	2003	2005	2007	2009
Beijing	1571	2432	2846	2857	3145	4172
Tianjin	4044	3851	3756	4679	5764	6877
Hebei	44500	49871	58092	110340	240883	236133
Shanxi	46244	59426	80306	181697	258855	300528
InnerMogolia	26062	20246	20141	66387	166766	275458
Liaoning	82729	86999	59408	120537	241439	326272
Jilin	8990	10196	14776	18132	34796	44980
Heilongjiang	133179	129350	144485	111355	153694	153138
Shanghai	0	0	0	0	0	0
Jiangsu	8797	9649	17731	28339	43203	82216
Zhejiang	1625	2769	6342	33668	61096	66748
Anhui	22671	19328	26468	45685	74301	115568
Fujian	6494	7136	14501	21438	43128	58752
Jiangxi	6468	8676	12667	22880	53693	108661
Shandong	59696	64399	104766	182436	289856	328078

Henan	26071	24339	35881	87134	213052	242306
Hubei	12839	15012	18992	32890	45549	68894
Hunan	6215	6660	9090	12252	28290	38527
Guangdong	8500	9601	15282	24269	59390	78434
Guangxi	5051	8042	11296	19686	31742	53443
Hainan	6725	4174	5494	5731	7704	10340
Sichuan	35472	31183	29742	39006	42711	51567
Chongqing	9532	10945	20172	29945	78322	99982
Guizhou	6803	7295	9732	19757	43197	84859
Yunnan	9028	9393	14586	31905	63041	104908
Shaanxi	10856	13595	26337	68212	145312	178972
Gansu	8977	8450	12330	21101	41971	51269
Qinghai	3179	4272	6254	14209	27034	68229
Ningxia	602	739	1301	2290	12554	15077
Xinjiang	24191	41143	46364	60811	94741	122793

Notes: Unit is one thousand Yuan.

2.4 Taxes on Cross Border Business

Business tax in China should be paid to the government where the service occurs. The cross-border business in China usually includes the dam, rail transport, pipeline transport, etc. Moreover, with regional economies grow up rapidly, the individual tax of one person have various sources and locations, which results in multiple places of tax payment. These cross-border business and incomes gives us a big challenge to assign tax reasonably between local governments, in accordance with the benefit principle and the territory principle.
In general, the collection and management of business tax is based on the principle of taxable activity location. At present, the method of cross-border revenue attribution is settled case by case.

2.5 Tax Preference and Harmful Tax Competition

Since 1978, many regions have the right to announce and enforce their preference policies to attract labor and capital from domestic and international markets. These preference policies include low-price local public goods, easy and fast examination and approval of investment projects, and regional tax preferences. These tax preferences include low tax rate, tax holiday, high tax deduction and credit. Usually, coasting areas have issued much more tax preferences than inland areas. This is the tax competition between local governments. The economic resources and tax base both flow from inland areas (usually undeveloped regions) to coasting areas (usually developed regions). This may be one of the most main patterns of regional tax transfers in China.

Many local governments in the undeveloped regions have realized this negative tendency. They also use substantial tax preferences to attack inside and outside resources. So the

harmful tax competition between local government appearances. Although the central government tries to prevent this bad competition, such as prohibit arbitrary regional tax preferences and construct transfer system, there also exists harmful tax competition among local governments (Feng, 2010).

3. Methodology and Results

As described in the last section, there is a serious mismatch between regional tax revenue and regional tax base in China. In theory, the proportion of one region's tax revenue in national revenue should be in accordance with the proportion of its economic output in national output. The deviation between revenue and tax base of regions (at province or county level) can explain regional tax transfer to some extent. Based on local public finance dataset, we construct the following variable to represent the mismatch between tax revenue and tax base (output) at province level,

$$S = \frac{Tax_i}{\sum_i Tax_i} - \frac{GDP_i}{\sum_i GDP_i}$$

while Taxi is region i's regional tax revenue, GDP is region i's output. S measures the degree of the mismatch. If S>0, then region i is the so-called net inflow region of tax; if S<0, then region i is the net outflow region; if S=0, then region i is the balanced tax-flow region.

We calculate this indicator at provincial level. This dataset covers from 1994 to 2010. The primary results are listed in table 3. We find that Shanghai, Beijing, Zhejiang, Jiangsu, and Liaoning are net inflow regions. Shandong, Henan, Hunan, Hebei, and Jiangxi are net outflow regions. Guangdong transferred from a net inflow region to a net outflow region in this period. In general, these results show that some of the tax revenue does transfer from undeveloped regions to developed regions.

Table 3. Deviation Between Revenue and Tax Base

Province/Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Beijing	3.38%	2.81%	4.37%	4.37%	4.48%	4.29%	3.89%	3.41%	3.03%	3.28%	3.05%
Tianjin	0.38%	1.10%	0.22%	0.64%	0.63%	0.63%	0.51%	0.17%	0.07%	-0.04%	0.04%
Hebei	-0.90%	-1.59%	-1.45%	-1.37%	-1.58%	-1.94%	-1.92%	-1.43%	-1.37%	-1.24%	-1.25%
Shanxi	0.82%	0.34%	0.48%	0.34%	0.23%	0.12%	-0.14%	-0.24%	-0.30%	-0.20%	0.01%
Mongolia	0.08%	0.04%	0.44%	-0.09%	-0.15%	0.04%	-0.34%	0.08%	0.06%	0.15%	0.18%
Liaoning	1.73%	1.28%	1.35%	0.77%	0.47%	0.24%	0.22%	1.47%	1.26%	1.41%	1.16%
Jilin	0.07%	0.02%	-0.16%	-0.19%	-0.23%	-0.32%	-0.46%	-0.49%	-0.49%	-0.61%	-0.70%

Heilongjiang	-0.19%	0.10%	-0.70%	-0.42%	-0.45%	-0.55%	-0.58%	-0.81%	-0.88%	-0.79%	-1.00%
Shanghai	4.56%	6.37%	4.98%	5.32%	4.86%	4.43%	4.13%	3.70%	4.16%	4.33%	4.48%
Jiangsu	-3.81%	-2.76%	-3.25%	-2.49%	-2.37%	-1.70%	-1.40%	0.16%	0.78%	1.35%	1.52%
Zhejiang	-1.48%	-1.59%	-0.83%	-0.71%	-0.48%	0.41%	1.32%	2.39%	2.65%	2.40%	2.84%
Anhui	-0.95%	-0.92%	-0.53%	-0.67%	-0.72%	-0.99%	-0.97%	-0.46%	-0.32%	-0.26%	-0.05%
Fujian	-0.34%	-1.19%	-0.53%	-0.70%	-0.71%	-0.63%	-0.40%	-0.32%	-0.36%	-0.51%	-0.19%
Jiangxi	-0.39%	-0.73%	-0.46%	-0.63%	-0.59%	-0.68%	-0.64%	-0.93%	-0.88%	-0.87%	-0.92%
Shandong	-2.87%	-2.34%	-2.21%	-1.89%	-1.82%	-1.98%	-1.60%	-2.87%	-3.19%	-3.69%	-3.82%
Henan	-1.60%	-1.69%	-1.73%	-1.80%	-1.82%	-1.98%	-1.94%	-2.44%	-2.45%	-2.53%	-2.82%
Hubei	-1.12%	-1.40%	-1.52%	-1.62%	-1.51%	-1.41%	-0.50%	-0.21%	-0.07%	0.04%	0.11%
Hunan	-0.86%	-0.96%	-1.52%	-1.40%	-1.52%	-1.70%	-1.52%	-1.65%	-1.60%	-1.53%	-1.50%
Guangdong	2.94%	1.70%	3.50%	3.56%	4.31%	4.64%	3.82%	1.55%	0.54%	-0.44%	-0.55%
Guangxi	-0.84%	-0.73%	-0.60%	-0.52%	-0.43%	-0.39%	-0.17%	-0.59%	-0.62%	-0.64%	-0.75%
Hainan	0.56%	-0.09%	0.17%	0.04%	0.01%	-0.03%	0.02%	-0.11%	-0.10%	0.13%	0.13%
Sichuan	0.76%	-0.96%	-0.18%	-1.28%	-1.18%	-0.70%	-0.93%	-1.27%	-0.79%	-0.76%	-0.74%
Guizhou	-0.21%	0.17%	0.01%	0.07%	0.09%	0.08%	0.01%	-0.08%	-0.10%	-0.04%	-0.05%
Yunnan	0.41%	3.09%	0.46%	0.68%	0.63%	0.54%	0.24%	0.96%	0.96%	0.99%	0.88%
Shaanxi	-0.02%	-0.14%	-0.06%	0.00%	0.00%	-0.10%	-0.28%	0.17%	0.24%	0.26%	0.25%
Gansu	0.12%	0.13%	0.01%	-0.04%	-0.09%	-0.13%	-0.19%	0.08%	0.07%	0.04%	-0.01%
Qinghai	-0.03%	-0.03%	-0.04%	-0.02%	-0.03%	-0.03%	-0.04%	0.04%	0.03%	0.03%	0.05%
Ningxia	-0.02%	0.03%	0.01%	0.05%	0.05%	0.06%	0.04%	-0.04%	-0.04%	-0.03%	-0.02%
Xinjiang	-0.07%	-0.03%	-0.11%	-0.01%	-0.05%	-0.17%	-0.17%	-0.18%	-0.22%	-0.18%	-0.27%

Notes: Data is from China Statistics Yearbook and Tax Statistics Yearbook each year.

4. Policy Implications

This paper describes five main sources of regional tax transfer and calculates the deviation of tax revenue and tax base at provincial level. We find that there is a regional tax transfer in China, which is induced by consolidated corporate income, turnover of VAT, etc. And in most cases, taxes transfer from developed regions to undeveloped regions in China. This may be one of the most reasons of horizontal fiscal imbalance of local government.

These results have important policy implications. Although the central government has established transfer payment mechanism and issued laws and regulations to ease this issue, there are still much more should be done in reforming tax system. The most important thing is that tax design should be based on the contribution of tax base. The first step should restructure the system of central tax and local tax, and adjust the tax transferred belonging more to central government (e.g. VAT). Then, the central government should use fiscal transfer mechanism to attribute tax revenue to local governments. Surely, this is based on a re-estimate of the reasonable revenue of the government at all fiscal levels. In addition, China should try to establish an institution to encourage local governments discussing the horizontal tax assignments and cooperating in the tax management. While in the U.S., the Multistate Tax Commission has issued the Multi-state Tax Compact and coordinated the tax competition issue of U.S. local government.

Especially, there should be a reasonable and constantly adjusted horizontal assignment method of all the provinces under the new enterprise tax law. In the U.S., the assignment method of states is differential, although all the formula of these states is usually based on three factor, total wage, asset value, and sales of tax payers. Since 1996, 22 states use this three factor formula to decompose the taxable income between jurisdictions where the headquarter and branches are located (Duncan and Mclure, 1997).

Other reforms include adjusting resource tax, business tax and repealing or reducing regional tax preference policies. The resource tax should be transformed from specific tax to ad valorem tax, or to a mixture of specific and ad valorem tax. This proposal has been a trial in Xinjiang, and can be used to adjust price of natural resource. It can increase the tax revenue of local government where the natural resources are located. The central government should also formulate the method of horizontal assignment of business tax, based on the share of production, operation, premise of corporate, and make sure the tax jurisdictions. For any projects, there should be a consistent regulation across nationwide, and not negotiations between local governments one by one. At last, China should reduce regional tax preferences customized by jurisdictions to prevent harmful tax competition, especially adjusting the policy of tax return in China. These preference policies maybe result in fiscal imbalance more and more. In general, tax assignment mechanism should be designed according to the principle of consistency between tax base and tax revenue.

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