

ABSTRACT

Title of Document: BRIDGING FISCAL DIVERGENCE IN CHINA

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This dissertation asks, from the fiscal perspective, whether the Chinese government has been effective in moving towards a more equitable development strategy. It seeks to answer this question through an in-depth examination of China's intergovernmental fiscal system with respect to the following three aspects: public expenditure policies, fiscal inequality, and the intergovernmental fiscal transfer system. Chapter 1 aims to provide a comprehensive review of China's experience in fiscal decentralization. It examines the system of central control in the pre-reform period of 1949 to 1978; the fiscal contracting system, which resulted from a series of ad hoc decentralization reforms between 1979 and 1993; and the single most important intergovernmental fiscal reform, that of 1994. Following a thorough history and background knowledge of China's fiscal system in Chapter 1, Chapter 2 provides an institutional analysis of China's public expenditure policies by looking into the following three areas, expenditure assignment, expenditure composition and local accountability. This chapter tries to answer the question of whether China's public expenditure management serves the objective of adequate and equitable public services provision. Chapter 3 examines fiscal inequality at the provincial, prefectural,

and county levels of government. Where data are available, the spending inequality on core public services is also explored. There is also a comparison of fiscal inequality at the provincial, prefectural, and county levels. With Chinese leaders and citizens expressing increasing concern at the regional inequalities that have accompanied China's rapid growth, the question of the redistributive effectiveness of the intergovernmental transfer system has become more and more important. The distribution of fiscal resources is taking the center stage in policy debates because the poorest regions may not be financially equipped to provide the most basic public services, such as education and health care, at the national average levels. The intergovernmental transfer system could ease fiscal disparities by equalizing fiscal capacity across regions. Chapter 4 conducts a comprehensive evaluation of the redistributive effects of the intergovernmental transfer system, at both the provincial and the county levels.

BRIDGING FISCAL DIVERGENCE IN CHINA

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Introduction

Is China moving from growth to a more equitable development strategy?

As China has risen in three short decades to become the world's fourth-largest economy, its national wealth has increased rapidly, with GDP growing at an average rate of about 10 percent a year. Poverty has also fallen by all definitions, in an extraordinary reduction from 65 percent of the population in 1981 to 7 percent in 2005 (World Bank 2008). But not all of China's people have had their share of this wealth. By international standards, income inequality in China has risen sharply. In the 1980s, China's level of income inequality was comparable to that of the most egalitarian countries in the Northern Europe in the 1980s. In 2004, its inequality was higher than in the least egalitarian developed country (the United States) and reached a level similar to that of the world's most unequal countries, in Latin America and Africa (Bourguignon 2008).

China's retreat from equity stands in sharp contrast to the Communist Party's ideology of social equity and inclusiveness. Yet it was Deng Xiaoping who called for "letting some people [regions] get rich first". That call initiated a series of policies in favor of the richer, coastal regions. The logic was that if market reform led to rising inequality, it was a necessary sacrifice to pay for the rapid economic growth that was required to lift the country out of abject poverty (Wong 2007).

Given the miracle of two decades' worth of sustained economic growth and in poverty reduction, Deng's call remained the overriding development strategy until mounting

social imbalances took the center stage in political debate in the late 1990s. Then the issue of widening regional inequality attracted more attention from both policy makers and researchers, shifting the discussion on fiscal decentralization from economic performance to fiscal disparities that are essentially reflected in marked inequality in access to basic public services.

Chinese authorities recognize the need to promote more balanced regional development and to improve basic public services. As early as 1998-99, the central government initiated the Western Development program by pouring more fiscal resources into poor western provinces. Starting in 2003 under the administration of Hu Jintao and Wen Jiabao, government policies began assigning priority to rebalancing the economic structure, as well as to environment and social objectives. The Eleventh Five Year Plan, developed during 2003-05, presented a turning point in China's development strategy. It was a major shift from the dominant objective of quantitative growth targets to a sustained, people-centered development strategy (World Bank 2007a).

This dissertation asks, from the fiscal perspective, whether the Chinese government has been effective in moving towards a more equitable development strategy. It seeks to answer this question through an in-depth examination of China's intergovernmental fiscal system with respect to the following three aspects: public expenditure policies, fiscal inequality, and the intergovernmental fiscal transfer system.

Chapter 1, “A Historical Review of Fiscal Decentralization in China”, aims to provide a comprehensive review of China’s experience in fiscal decentralization. It examines the system of central control in the pre-reform period of 1949 to 1978; the fiscal contracting system, which resulted from a series of ad hoc decentralization reforms between 1979 and 1993; and the single most important intergovernmental fiscal reform, that of 1994.

Following a thorough history and background knowledge of China’s fiscal system in Chapter 1, Chapter 2 provides an institutional analysis of China’s public expenditure policies by looking into the following three areas, expenditure assignment, expenditure composition and local accountability. This chapter tries to answer the question of whether China’s public expenditure management serves the objective of adequate and equitable public services provision.

Chapter 3 examines fiscal inequality at the provincial, prefectural, and county levels of government by seeking to answer the following three questions. Firstly, what is the current degree of fiscal inequality at each level of government? Secondly, in addition to static measurements, what is the trend of fiscal inequality for the provincial, prefectural, and county levels of government? Thirdly, which contributes more to overall fiscal inequality: within-region or between-region fiscal inequality? Where data are available, the spending inequality on core public services is also explored. There is also a comparison of fiscal inequality at the provincial, prefectural, and county levels.

With Chinese leaders and citizens expressing increasing concern at the regional inequalities that have accompanied China's rapid growth, the question of the redistributive effectiveness of the intergovernmental transfer system has become more and more important. The distribution of fiscal resources is taking the center stage in policy debates because the poorest regions may not be financially equipped to provide the most basic public services, such as education and health care, at the national average levels. The intergovernmental transfer system could ease fiscal disparities by equalizing fiscal capacity across regions. Chapter 4 conducts a comprehensive evaluation of the redistributive effects of the intergovernmental transfer system, at both the provincial and the county levels.

Chapter 1:

A Historical Review of Fiscal Decentralization in China¹

The last two decades has witnessed a world trend of fiscal decentralization in the developing countries as an escape from inadequate growth and inefficient governance. Fiscal decentralization is widely recognized as an essential component in China's transition to a market economy, and advocated by many for its contribution to the country's remarkable economic performance over the last 30 years. The country has made substantial efforts to break down its highly centralized fiscal management system with various forms of fiscal contracting systems and later a tax sharing system.

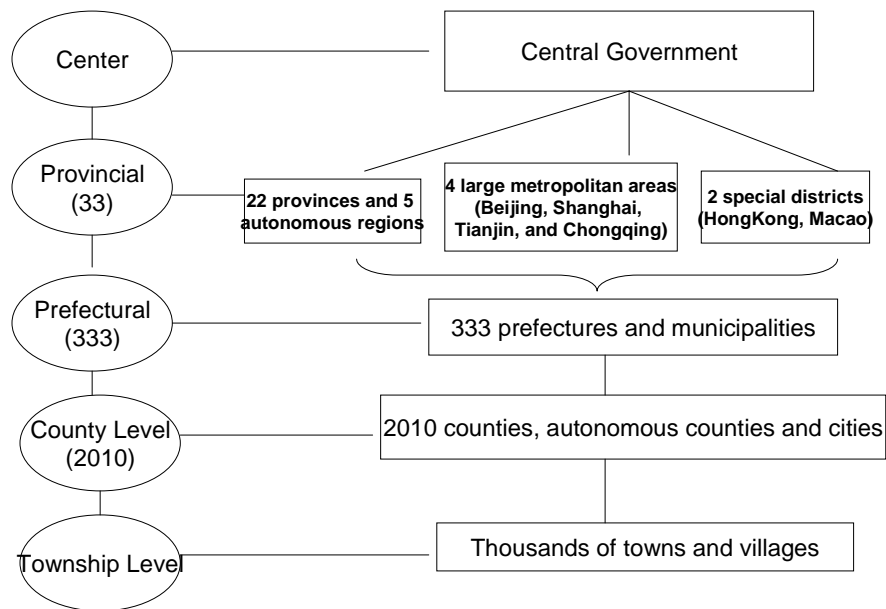
Although China remains a unitary, single party, political system, the current structure of governance has prominent features of fiscal decentralization. Sub-national governments in China are organized in a four-level hierarchy, with each level of government reporting to the next highest level (see Figure I.1). According to the China Statistical Yearbook, as the end of year 2005, there are 33 provincial units, 333 prefectural level units, 2010 county level units, and numerous townships.

A good knowledge of the history and process of China's fiscal decentralization is indispensable to understanding the challenges facing the country's intergovernmental fiscal system today. This dissertation therefore opens with a thorough review of the major

¹ Throughout the dissertation, 'sub-national government' refers to the combined levels of provincial, prefectural, county, and township governments, 'provincial government' refers to an individual province including its subordinate levels of government in that province, and 'local government' or 'sub-provincial government' refers to prefectural, county, and township governments as a whole.

changes in China's fiscal system since the inception of the People's Republic in 1949. This survey is divided into three periods: the pre-reform fiscal system of 1949-1978; the ad-hoc decentralization of 1979-1993; and the tax assignment system, in operation from 1994 to the present. For each period, the fiscal system is reviewed under three themes – tax assignment, expenditure assignment, and the intergovernmental transfer system.

Figure 1.1 China: Structure of Government (End of 2005)



Source: China Statistical Yearbook 2006.

1.1 1949-1978 Pre-Reform Fiscal System: Central Control

The centralization of planning, finance, and administration dominated the first 30 years of the People's Republic (1949-78). It was a system in which all decisions about what people needed were decided from the top. Revenues were collected by local governments and accrued to the center. The consolidated budget system forbade discretionary spending power for local governments. And in the context of the pre-industrial, agrarian, and under-developed conditions then prevailing in China, the central planning system worked (Lardy 1978; Oksenberg and Tong 1991; Riskin 2000; Wong 2000; Wong, et al. 1995).

Tax System

The tax system was crude, with no personal or corporate income taxes. Revenues were largely raised from the profit remittances of state-owned enterprises (SOEs), whose profitability was ensured by state-fixed prices. At the end of the 1970s, profits from SOEs accounted for nearly half of total government revenues. Although the provinces participated in raising revenues, their expenditures were budgeted by the center.

Tax administration was simple since there were relatively few taxpayers, and those few were mainly SOEs. Tax collection was delegated to local governments. Given fixed prices and planned output and sales, the accounts of SOEs were easy to monitor and their revenues were easy to determine (Wong 2000).

Expenditure and Budget

Expenditures were essentially determined at the center. Under the consolidated budget system, the central government set spending priorities, approved local budgets according to local spending needs, and determined civil service salary scales, pension and unemployment benefits, educational and health care standards, etc. In the absence of independent budgets, sub-national governments lacked discretionary spending power. They were budgetary units identical to SOEs – merely agents of the central government.

With respect to expenditure assignment, the central government was responsible for national defense, economic development (capital spending, R&D, universities and research institutes), industrial policy, and administration of national institutions. Sub-national governments were in charge of delivering day-to-day public administration and social services such as primary and secondary education, public safety, health care, social security, housing, and other local/urban services.

The Intergovernmental Transfer System: Fiscal Gap Transfers

Since local finance came from the central budget, intergovernmental transfers were set to finance the gap between locally collected revenues and permitted local expenditures. In other words, local income in excess of expenses was submitted to the central government, and shortfalls were automatically covered. This revenue-sharing system was highly redistributive: for example, while Shanghai gave up 80-90 percent of its collected revenues, Guizhou was able to finance more than two-thirds of its expenditures from central subsidies (Wong 2000).

The pre-reform fiscal system was simple and effective in the particular context, but it was completely lacking in fiscal incentives for local governments or enterprises. As China's leaders set their sights on a market economy from 1979 onward, the mechanisms of the planned economy – including monopoly state ownership of industry, administrative prices, and central economic planning – were dismantled, and accordingly the fiscal system quickly broke down. For example, the foundation of the pre-reform fiscal system – profits from state-owned enterprises – collapsed in the face of the burgeoning non-state sector, growing competition imposed on SOEs, and rising wages and resource prices. Furthermore, tax administration was enormously challenged by the proliferation of enterprises with various forms of ownership. The fiscal system was on the verge of a crash, and during the 1980s a number of different revenue-sharing systems were tried out to overcome the rigidities of the central planning system. The next section will elaborate on these major fiscal reforms from 1979 to 1993.

1.2 1979 – 1993 Ad Hoc Decentralization: The Fiscal Contracting System

The series of fiscal reforms over the period 1979-1993 were mostly driven by the significant reduction in fiscal revenue collection as a percentage of GDP and the precipitous decline in the central government's share of revenues. The central government grappled with the considerable fiscal pressure it was facing by devolving expenditure responsibilities to sub-national governments – a move that led to complex bargaining over sharing schemes between different levels of government. Fiscal reforms in this period were aimed at promoting local economic development through increasing

the responsibilities of local governments and increasing their autonomy in carrying out fiscal functions, while also preserving an adequate degree of fiscal control for the central government. Three different revenue-sharing systems were introduced in 1980, 1985, and 1988. These reforms have been described as an example of ‘market-preserving’ federalism, which refers to a special type of federalism that limits the degree to which a country’s political system can encroach upon its markets (Montinola, et al. 1995; Qian and Weingast 1997).²

1980: The Contract Responsibility System

In 1980, the highly centralized system was replaced by a fiscal revenue-sharing system. From then on, the central and provincial governments each began to ‘eat in separate kitchens’, which provided sub-national governments with an incentive to collect revenues. Under this system, central-provincial sharing rules were established by the central government; provincial-prefectural relations were governed by the province; and this principle extended to prefectural-county relations. There were three basic types of revenues under the reformed system: central-fixed revenues, local-fixed revenues, and shared revenues. During the period 1980-84, about 80 percent of shared revenues were remitted to the central government and 20 percent were retained by local governments.

² Montinola, Qian, and Weingast identify a set of five conditions that represent an ideal type of institutional arrangement for market-preserving federalism (italics in original). (1) There exists a hierarchy of governments with a delineated scope of authority (for example, between the national and sub-national governments) so that each government is autonomous in its own sphere of authority. (2) The sub-national governments have primary authority over the economy within their jurisdictions. (3) The national government has the authority to police the common market and to ensure the mobility of goods and factors across sub-government jurisdictions. (4) Revenue sharing among governments is limited and borrowing by governments is constrained so that all governments face hard budget constraints. (5) The allocation of authority and responsibility has an institutionalized degree of durability so that it cannot be altered by the national government either unilaterally or under pressure from sub-national governments. While condition (1) is the defining feature of federalism, conditions two through five are required to ensure federalism’s market-preserving qualities.

The bases and rates of all taxes, whether shared or fixed, were determined by the central government. Enterprises were supposed to pay taxes to the level of government to which they were subordinate. Most revenues were collected by local finance bureaus.

1985: The Modified Contract Responsibility System

The uniform-sharing formula reform during the period 1980-1984 boosted revenue collection in many areas, creating large surpluses in affluent provinces – but also deficits in poor provinces. In 1985, the State Council redesigned revenue-sharing arrangements by varying schedules based on localities' budget balances in previous years. The financially weak provinces were allowed to retain more revenues, but the wealthier regions, like Shanghai, Beijing, Tianjin, Liaoning, Jiangsu, and Zhejiang, were penalized by a requirement to remit more revenues to the center. As a consequence, the revenues from these regions generally grew more slowly than the national average, since the high level of remittance curbed local enthusiasm for expanding their tax bases.

1988 Fiscal Contracting System

In the period 1988-1993, the 'fiscal contracting system' was implemented. This system required each level of government to contract with its subordinate level to meet certain revenue and expenditure targets. Six types of central-provincial revenue-sharing methods were adopted and applied to a range of provinces (see Table 1.1). Sub-national governments were required to finance their own expenditures through self-generated and shared revenues (Agarwala 1992; Lou 2008).

The Intergovernmental Transfer System: Mixed Gap-Filling Transfers

During this period, the transfer system was still predominantly a matter of transfers to fill gaps. When the base amount for expenditures was larger than the fixed local revenues, the province was allowed to keep all of the fixed revenue, and in addition was entitled to shared revenues, which filled the fiscal gap. When the base amount of expenditure in a province was less than its base amount of local fixed revenue, the province had to remit the surplus to the central government. And when the base amount for expenditure in the province was greater than both the base amounts for its fixed revenue and the shared revenues, then the province was permitted to keep both, filling the fiscal gap with ‘fixed subsidy’ grants from the central government (Zhang and Martinez-Vazquez 2003).

The system of intergovernmental transfers in China consisted of four kinds of central-local grants. First, ‘Fixed Subsidies’ were a transfer program aimed at redistributing revenues and expenditures to maintain local fiscal balance. Subsidies were given to provinces with base-year expenditures larger than base-year revenues. Second, ‘Special-Purpose Grants’ were initially used for disaster relief, poverty reduction, and other specific purposes, and were later expanded in both the range of programs and the size of the financial resources. Third, ‘Annual Accounting Closing Transfers’, determined at the end of each fiscal year, acted as an adjustment to net revenues and expenditures, taking into account transfers between central and local governments. And fourth, ‘Capital Grants’ were conditional grants disbursed by the central government mainly for local capital construction and other investment activities. Under the fiscal

contract system, some provinces had to remit to the central government a part of their revenues, set according to a predetermined lump-sum amount or to a progressively increasing ratio of revenues. The central government depended a great deal on receiving transfers from the better-off provinces during this period.

Table 1.1 1988 Fiscal Contracting Methods

1. contracted sharing rate with fixed yearly growth rate of revenue

The central-local revenue sharing rate and the yearly growth rate of local revenues were based on the revenue performance of the province over recent years and negotiated by the central and provincial governments. If the real growth rate was greater than the contracted rate, the province could keep all the surpluses. If the real growth rate was lower than the contracted rate, then the province had to make up the gap.

Central gov't shared revenue in the province = revenue in the province in previous year * (1 + contracted yearly growth rate of the province) * contracted central shared ratio

2. fixed local shared rate in total revenue

The sharing rate was determined on the basis of a base amount for total expenditure and a base amount for total revenue. In other words, the province shares the revenue growth according to the same ratio.

Local gov't shared ratio of total revenue in the province = base amount for expenditure in province / base amount for total revenue in province

3. fixed local shared rate in total revenue + incremental fixed shared rate

Besides sharing total revenue on the basis of a fixed shared ratio, the province could share the revenue growth at a different sharing ratio.

4. contracted remittance with fixed annual growth rate

The province remits to the central gov't a fixed amount per year plus a variable amount determined by a fixed yearly growth rate contracted by the center and the province.

5. fixed contracted remittance

The province remitted to the central gov't a fixed amount every year which equal to the revenue surplus in the base year:

Fixed contracted remittance in province = base amount for revenue – base amount for expenditure

6. fixed contracted grants

For all provinces whose base amount for expenditure was larger than the base amount for revenue, they keep all the base revenue and in addition get a fixed contracted grant from the central gov't every year which was theoretically equal to the fiscal gap in the base year.

Despite the persistent efforts to revamp the malfunctioning fiscal system, the late 80s and early 90s were marked by a series of challenges, including the continuing decline of the ‘two ratios’ (budgetary revenue to GDP, and central to total budgetary revenue); interference of local governments in the private sector;³ increasing regional fiscal disparities; devolution of expenditure responsibilities (accompanied by diversion of resources away from formal budgets into extra-budgetary channels); and ongoing distrust between the center and localities (Lou 2008). The following section will address these issues in detail, one by one.

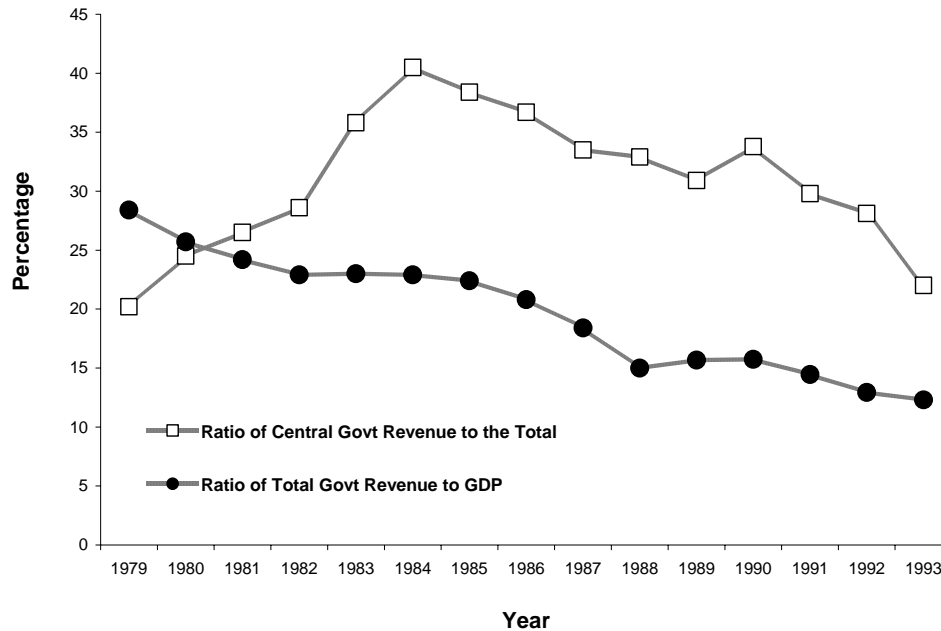
Fiscal Decline

The 1988 fiscal contracting system further dampened fiscal power at the center. Since the assignment of revenue was not clear, sub-national governments continued to appropriate central revenues. The center relied on local tax collection, which was highly subject to local authorities who frequently granted tax exemptions without proper central authorization. The local abuse of tax power instigated a vicious cycle of jurisdictional competition. The central government’s share of revenue fell from 33 percent in 1988 to only 22 percent in percent in 1993 (see Figure 1.1). On the other side, local governments increased their revenue share, particularly those that were major contributors to the central government’s revenue. The fiscal contracts were not strictly adhered to and were revised repeatedly for some regions. The resulting phenomenon of a ‘weak trunk with strong branches’ compelled the central government to borrow continuously from local governments. The role of the central government in bridging regional fiscal disparities

³ For example, duplication of industries to capture revenues that formerly flowed to the national treasury; granting of generous tax concessions to local SOEs; and expanded lending to these SOEs by local banks.

was dramatically weakened, and central support for basic public services was also constrained.

Figure 1.1 The Two Ratios, 1979 – 1993



Source: Author's calculation based on data from China Statistical Yearbook 2004.

Distortion in the Private Sector

The fiscal contracting system of the 1980s, aligning tax revenues in accordance with the ownership of SOEs, induced a number of problems. First, the system aligned the interests of the government with those of enterprises, which not only encouraged sub-national governments to interfere in the operation of the enterprises and hence hindered the process of separating governments from enterprises (*Zhengqi Fenli*), but was also detrimental to the market economy by rendering special treatment to SOEs and destroying fair competition. Second, the system provided local governments with incentives to pursue their own fiscal interests in enlarging tax bases by the expansion of

local enterprises such as distilleries and cigarette factories, which generated overlapping construction and development, and meanwhile stirred local protectionism.

Increasing Fiscal Disparities

The fiscal contracting system also contributed to greater regional disparities. With a variety of fiscal contracts in use (see Table 1.1), the system was primarily the result of political negotiation between the central government and individual provinces, and it worked in a way detrimental to the poor regions. Rich provinces in the coastal region, like Canton, Shanghai, and Shandong, were able to have more advantageous contracts due to their development strategies and their political leverage. These provinces accumulated a substantial and growing revenue base by retaining most of the incremental revenues within the province. In the meantime, the central government was financially incapable of narrowing regional imbalances.

Devolution of Fiscal Responsibilities and Growing Distrust between Center and Local

Fiscal stress at the center forced the central government to cut intergovernmental transfers and shed more spending responsibilities to the lower levels of government. Meanwhile, local expenditures grew much faster than central expenditures, especially in unemployment insurance, pension funds, and housing subsidies. The share of local expenditure rose from 45 percent of the total in 1981 to about 72 percent in 1993. The role of local governments shifted from simply providing services to acting as both financier and provider.

A climate of distrust featured in intergovernmental fiscal relations in the early 1990s. The central government recognized that the continuing fiscal decline was partly due to local government unwillingness to collect taxes, while local government was also diverting funds from budgetary to extra-budgetary channels. From the local perspective, the repeated changes in revenue-sharing rules were viewed as a sign of a lack of firm commitment at the center to building solid local finances. Moreover, on several occasions during the 1980s, the central government revised the ownership of key sectors and introduced new levies – for example, the Energy and Transport Key Construction Fund and the Budget Adjustment Fund – in order to increase its share of revenues. The central government also ‘borrowed’ revenue from local governments as a way of absorbing excessive local revenues. The manipulative actions by the center convinced local governments that surplus revenues were not safe from the center’s predatory behavior, and thus significant revenues were subtly switched into myriad extra-budgetary funds (Ahmad, et al. 2002; Wong, et al. 1995).

While the fiscal reforms of the 1980s all failed to reverse the trend of falling fiscal revenues, on the positive side, fiscal reforms during this period provided a device to mobilize local revenue collection in an effort to promote local economic development. When the 1988-90 system was supposed to expire in 1991, the central government failed to pursue alternative approaches, and the contracting system was extended until the end of 1993. A radical reform of the fiscal system was finally cooked up in 1994, at the climax of the fiscal struggle in China. The Tax Sharing Reform of 1994 was initiated with fixing the intergovernmental fiscal system as its main objective.

1.3 The 1994 Tax Sharing Reform

The 1994 reform, which created a framework of fiscal relations between the central and local governments, is considered the most intensive and far-reaching institutional restructuring for intergovernmental fiscal relations since 1949. The reform was essentially an attempt to deal with basic revenue problems by curbing the fiscal decline and providing sufficient resources, especially to the central government; simplifying the tax structure by reducing tax types and rates; and unifying the tax burden on taxpayers. It also put central-local revenue-sharing on a more transparent, objective basis by replacing negotiated contracts with a rule-based system of tax assignment.

The centerpiece of the reform was the introduction of the tax assignment system (*fenshuizhi*), which specifies the way revenues are shared between the central and provincial governments. A detailed analysis of the tax assignment system is provided in the next section. The tax structure was greatly simplified. Value Added Tax (VAT) replaced the turnover-based product tax and was implemented at a uniform rate of 17 percent. Corporate income tax was unified to include all domestic enterprises, and the top rate was reduced from 55 percent to 33 percent. Excise taxes on tobacco, liquor, and other luxuries were introduced. The previous system of profit and tax contracts, under which SOEs negotiated annual transfers to the government budget, was largely eliminated (Ahmad, et al. 2002; Wong 2000).

Along with the changes in the division of revenue sources, a major effort was made by the central government to establish its own revenue-collection bodies which in effect centralized the revenue system for the first time since the economic reform started

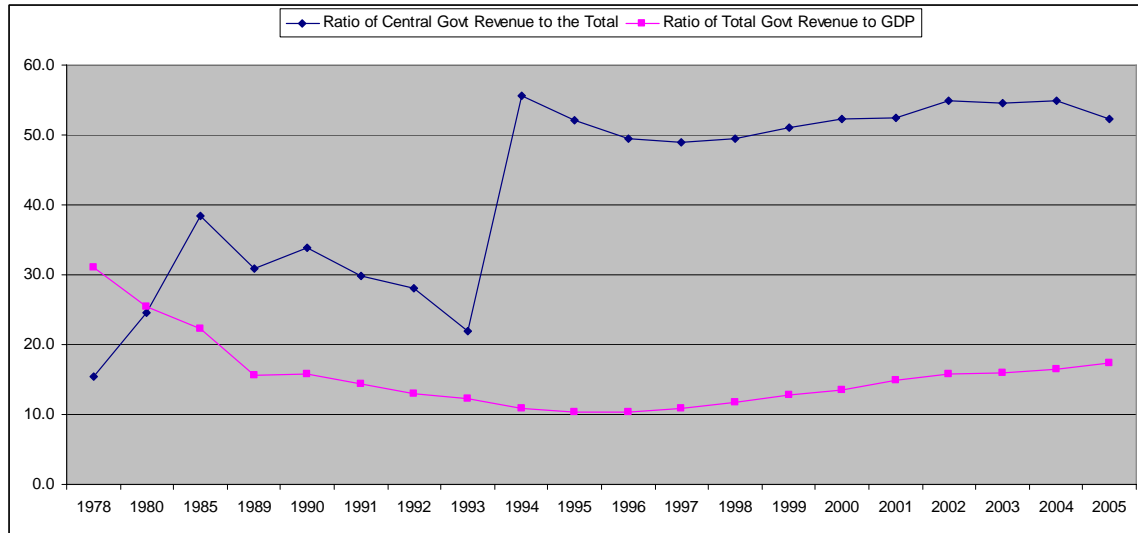
in 1978. In 1994 and 1995, National Tax Services (NTS) were established in all provinces to collect central-fixed revenues and shared revenues. These NTSs were organized on the basis of the divisions in charge of central-fixed and shared taxes within previous tax bureaus. The former divisions in charge of local taxes became Local Tax Services. The State Bureau of General Taxation, the central headquarters of the NTSs, was empowered to supervise local NTSs, appoint their directors and provide funding for their operations.

The 1994 reform achieved the following successes.

Improving the “two ratios”: The immediate impact of the tax assignment system on the division of revenue sources between the central and sub-national governments was significant, and finally ended the situation of the central government relying on local remittances to finance its outlays. As shown in Figure 1.4, the ratio of the central government’s revenue to the total jumped from 22 percent in 1993 to about 56 percent in 1994. Although the ratio came down slightly after 1994, the average was above 50 percent and 52.3 percent in 2005, compared to no more than 40 percent for the 15 years after 1978. One of the prominent changes in the tax system that can be credited with increasing the central government’s share of revenue was the central collection of VAT. In 1994, VAT alone accounted for about 42 percent of total government revenue. The creation of the NTSs has also certainly made a difference. Owing to the unified taxation system, in which local governments are forbidden to introduce tax reductions or exemptions without central approval, the fall in the ratio of revenue to GDP was halted in 1996, after a 17-year decline. The national fiscal revenue increased from 521.8 billion yuan in 1994 to 3,161.8 billion yuan in 2005, an average annual increase of 17.8 percent.

Total government revenues as a percentage of GDP increased from 12.3 percent in 1993 to 17.3 percent in 2005. It is important to mention that GDP was increasing remarkably during the same period.

Figure 1.4 The Two Ratios, 1978-2005



Source: Author's calculation based on data from China Statistical Yearbook 2006.

Simplifying the Intergovernmental Fiscal System: The 1994 tax assignment system replaced the previous system of six types of fiscal contracts. The clearer and more appropriate assignment of taxes not only put a stop to the enduring misappropriation of revenues between the central and local governments, but also provided the right incentives for sub-national governments. For instance, since excise taxes were assigned to the central government and business taxes to local governments, the incentives for localities to over-develop enterprises with higher tax returns, such as distilleries and tobacco companies, were corrected (Zhang and Martinez-Vazquez 2003).

Tightening Fiscal Control: The establishment of National Tax Services offered tighter control over general tax collection and local tax exemption policies. The interference of local authorities in tax administration and collection of central and shared revenues was substantially restrained. The 1994 reform abolished all the tax reductions and exemptions that provincial governments had granted for turnover tax in the past. Any new tax exemptions must be approved by the center and must be reported in a separate schedule of the tax return.

1.4 The Current Intergovernmental System

Revenue Assignment

The tax-sharing reform of 1994 explicitly defined taxes as central taxes, shared taxes and local taxes. Table 1.2 summarizes the current tax assignment system in theory and Table 1.3 illustrates central and local revenues as distributed in 2005. Taxes that can be used in the pursuit of maintaining national objectives are assigned as central taxes, such as tariffs; taxes that can be interpreted as more relevant to economic development are assigned as shared taxes, including value added tax, business tax, stamp tax on sales of securities, personal income tax, and company income tax; and taxes more suitable to be collected and administered by local governments, such as the Urban Maintenance and Development Tax and the taxes on Use of Arable Land and Urban Land Use, are assigned as local taxes. The central government slightly amended the revenue-sharing arrangement between the central and sub-national governments after the 1994 reform.

First, from May 1997, the sharing ratio of stamp taxes on sales of securities between the central and local governments was adjusted from 50-50 to 88-12; from 1 October 2000, it was changed to 97-3. Second, the business tax rate on the financial and insurance industry increased from five percent to eight percent, with all the extra revenues going to the central government. Third, from 1 January 2002, the central and sub-national governments shared company income tax and personal income tax in a ratio of 50-50. From 2003, the ratio was altered to 60-40, central-provincial (Su 2003;Zhang and Martinez-Vazquez 2003).

As shown in Table 1.3, the revenue-sharing practiced by the central and provincial governments in 2005 was consistent with the 1994 tax assignment policy, except for some minor deviations – for instance, provincial governments accounted for 27 percent of VAT collection, instead of the 25 percent assigned to them in principle. The present tax-assignment arrangement has two outstanding features. First, the central government gets a grip on major profitable taxes, collecting 73 percent of VAT (793.41 billion yuan), 60 percent of company income tax (320.40 billion yuan) and 60 percent of personal income tax (125.69 billion yuan). In 2005, the fiscal revenue of the central government accounted for 56 percent of the total tax revenues. Second, sub-national governments are highly dependent on shared taxes. Figure 1.2 highlights this observation by looking at the composition of sub-national revenue by major tax categories in 2005. Business tax accounts for 32 percent of the total sub-national tax revenue, VAT 22 percent, company income tax 17 percent, and personal income tax 7 percent. Further, local own-source tax revenue is only about one-fifth of the total local tax revenue (see Figure 1.2). The taxation power in China mostly resides at the center. The two major

means of controlling tax revenues are to determine the tax rate and to define the base, and in China the centralization of both of these is remarkable. Sub-national governments have latitude only in determining the rates of minor taxes, and even for these they are only allowed to set tax rates within a limited range (Ahmad 2008). The most important local tax is the Urban Maintenance and Development Tax, which made up six percent of total sub-national revenues in 2005.

Table 1. 2 Tax Assignment

Taxes	Central (percent)	Local (percent)
Central Tax		
Tariffs	100	0
Consumption Tax	100	0
Shared Tax		
VAT	75	25
Business Tax	3	97
Stamp Tax on Security Exchange	97	3
Personal Income Tax	60	40
Company Income Tax	60	40
Local Tax		
Resource Tax	0	100
Urban Maintenance and Development Tax	0	100
Urban Land Using Tax	0	100
Agriculture and Related Tax	0	100
Tax on Contracts	0	100
Tax on the Use of Arable Land	0	100
Vehicle Purchasing Tax	0	100
Other Local Taxes	0	100

Source: China Statistical Yearbook (2006)

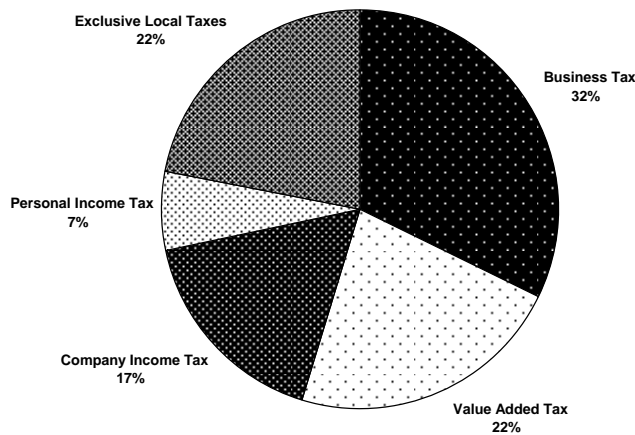
Table 1. 3 Central and Sub-national Revenues, 2005

(Unit: billion yuan)

Items	Total Government Revenue (billion yuan)	Central Government (billion yuan)	Sub-national Government (billion yuan)	Sub-national Sharing Ratio (percent)
Central Tax				
Tariffs	106.62	106.62	0	0
Consumption Tax	163.38	163.38	0	0
Consumption Tax and Value Added Tax on Imports	421.18	421.18	0	0
Vehicle Purchase Tax	58.33	58.33	0	0
Cargo Tax	1.38	1.38	0	0
Shared Tax				
Value Added Tax	1,079.21	793.14	286.08	27
Business Tax	423.25	12.96	410.28	97
Stamp Tax on Security Exchange	6.73	6.53	0.2	3
Personal Income Tax	209.49	125.69	83.8	40
Company Income Tax	534.39	320.4	213.99	40
Local Tax				
Urban Maintenance and Development Tax	79.57	0.47	79.1	99
Tax on Contracts	73.51	0	73.51	100
Resource Tax	14.22	0	14.22	100
Tax on the Use of Arable Land	14.19	0	14.19	100
Urban Land Using Tax	13.73	0	13.73	100
Agriculture and Related Taxes	5.94	0	5.94	100

Source: China Statistical Yearbook (2006).

Figure 1.2 Sub-National Revenue Composition, 2005



Source: Author calculation based on data from China Statistical Yearbook 2006.

Do the above observations, based on the aggregate sub-national data, hold true in individual provinces? Table 1.4 breaks down sub-national tax revenue by 31 provinces in 2005. The provinces are ranked by their revenue capacity, from the highest (Guangdong) to the lowest (Tibet). The picture is very clear: provincial finance is highly dependent on shared taxes – business tax, VAT, company income tax, and personal income tax. For instance, in 2005 Beijing obtained almost 80 percent of revenue from the four shared taxes, or 73 billion yuan out of the total 92 billion. Business tax is the foremost important local revenue source. The only exceptions are Shanxi, Heilongjiang, and Tibet, where revenue from VAT surpasses business tax. Thanks to their remarkable economic performance, wealthy regions, including Guangdong, Shanghai, Jiangsu, Zhejiang, and Beijing, are also able to reap the benefits of company and personal income tax. Revenue from purely local taxes is relatively large in affluent provinces. In Guangdong, for example, local tax accounts for about 31 percent, compared to 22 percent at the sub-national level as a whole.

Table 1. 4 Government Revenue by Province, 2005

Unit: million yuan

Province	Total	VAT	BT	CIT	PIT	TUMC
Total	1,488,422.0	264,422.1	410,281.6	174,590.2	83,796.9	79,101.9
Guangdong	180,720.40	32,358.50	55,576.70	23,644.80	13,242.50	6,433.70
Shanghai	141,739.80	22,612.40	51,292.70	24,914.90	11,192.40	4,979.10
Jiangsu	132,267.50	26,557.10	34,281.80	17,769.60	6,619.50	7,065.70
Shandong	107,312.50	19,300.40	21,779.30	11,082.80	3,889.40	6,595.10
Zhejiang	106,659.60	20,423.40	32,433.50	16,791.90	6,611.90	6,163.60
Beijing	91,921.00	9,759.80	38,376.20	16,476.20	8,452.30	3,883.40
Liaoning	67,527.70	11,305.70	16,468.50	7,219.90	3,280.50	3,992.00
Henan	53,765.10	8,796.90	11,159.60	5,156.40	2,204.50	2,917.70
Hebei	51,570.20	12,103.50	10,527.90	5,336.80	2,824.00	2,925.10
Sichuan	47,966.40	7,107.40	13,476.40	3,994.10	2,208.40	2,808.60
Fujian	43,260.00	7,312.70	12,460.80	5,426.50	2,741.40	1,855.40
Hunan	39,526.50	5,893.30	9,424.50	2,183.40	1,675.70	2,502.20
Hubei	37,552.20	6,591.00	9,133.50	3,906.40	1,746.20	2,402.80
Shanxi	36,834.40	10,269.50	6,070.00	3,699.50	1,368.10	2,131.00
Anhui	33,401.70	5,772.40	7,810.40	3,008.10	1,249.60	2,048.60
Tianjin	33,185.10	6,423.80	9,645.50	4,141.60	1,882.20	1,587.60
Heilongjiang	31,820.60	8,501.60	5,956.00	1,857.60	1,556.20	2,760.40
Yunnan	31,264.90	5,601.90	6,764.30	3,334.80	1,194.40	2,957.30
Guangxi	28,303.60	3,932.70	6,838.10	1,854.10	1,457.60	1,291.60
Inner Mongolia	27,745.50	4,844.70	7,827.10	1,935.50	1,006.80	1,424.50
Shaanxi	27,531.80	5,534.40	6,927.20	2,059.40	1,022.40	2,076.60
Chongqing	25,680.70	3,365.50	7,020.20	1,398.20	1,066.60	1,315.90
Jiangxi	25,292.40	3,387.40	6,284.00	1,741.20	1,126.50	1,127.20
Jilin	20,715.20	3,953.30	4,759.00	1,391.60	1,112.20	1,315.70
Guizhou	18,249.60	3,137.00	4,630.60	1,608.10	889.7	1,291.30
Xinjiang	18,031.80	4,293.60	4,766.50	757.6	931.2	1,367.00
Gansu	12,350.30	2,533.40	3,158.90	843.2	517.9	935.8
Hainan	6,868.00	974	2,367.90	452.7	356.9	370.1
Ningxia	4,772.20	873.2	1,575.80	260.8	222	303.9
Qinghai	3,382.20	783.8	1,001.80	254	102.9	232
Tibet	1,203.10	118.2	487.2	88.8	44.8	41.1

Notes: 1. VAT – Value-Added Tax; BT – Business Tax; CIT – Company Income Tax; PIT - Personal Income Tax; TUMC – Tax on Urban Maintenance and Construction.

Source: Statistical Yearbook of China (2006).

In the absence of specific central government guidelines, the actual division of expenditure responsibilities among sub-provincial governments is left to the discretion of each level of government. The higher-level government has discretion to determine the

expenditure assignment of the level immediately below it. In other words, provinces determine the assignments of cities/prefectures, prefectures determine the assignments of counties, and the latter determine the revenues and expenditures of townships. Table 1.5 illustrates the in-principle assignment of responsibilities in China today. The exclusive central responsibilities include national defense, foreign affairs, geological prospecting expenses, and public debt. The exclusive sub-national responsibilities are urban maintenance and construction, environmental protection, water supply, and community services. All other government spending is shared by the center and sub-national governments. Sub-national governments at each level are responsible for delivering public services, including education, health care, social welfare, public safety, and other local and urban services; government administration; and local economic development.

Table 1. 5 Expenditure Assignment by Administrative Levels

Functions	Central	Provincial	Prefecture	County	Township
National Defense	*				
Foreign Affairs	*				
Geological Prospecting Expenses	*				
Public Debt	*				
Education	*	*	*	*	*
Health Care	*	*	*	*	*
Social Welfare	*	*	*	*	*
Agriculture	*	*	*	*	*
Government Administration	*	*	*	*	*
Capital Construction	*	*	*	*	*
Research and Development	*	*	*	*	*
Culture Development	*	*	*	*	*
Policy Subsidies	*	*	*	*	*
Armed Police Troops	*	*	*	*	*
Urban Maintenance and Construction		*	*	*	*
Environmental Protection		*	*	*	*
Water Supply			*	*	*
Community Services				*	*

Source: Finance Yearbook of China (2006).

How is public expenditure distributed in practice? Table 1.6 compares budgetary expenditure for the top ten items between the central and sub-national governments in 2005. The total central expenditure was 1,125.55 billion yuan, only 24 percent of overall government spending. The central government allocated most of its financial resources to national defense (21.74 percent of the total central expenditure), servicing the interest on public debt (14.17 percent), and capital construction (12.13 percent). Sub-national government spending was 3,527.30 billion yuan, accounting for 76 percent of total government budgetary expenditure. The most important spending items at the sub-national level included operating expenses for culture, education, science, and health care (15.64 percent of total sub-national spending), operating expenses for education (10.57 percent), and capital construction (7.59 percent). For specific sectors, sub-national governments accounted for 94 percent of the operating expenses for education, 98 percent of the operating expenses for health, and 87 percent of social security subsidiary expenses. The hierarchical assignment of responsibility has two prominent features. First, sub-national governments, particularly at the county and township levels, are excessively burdened (see Table 1.5). In practice, education and health care are concentrated mostly at the county and lower levels, although these public services would be more appropriately assigned to the central and provincial levels in respect to the spillover effects for the society as a whole. The redistributive government function for social security is mainly administered at the provincial and prefecture levels, whereas it commonly relies more on the central government in order to reap the benefits of risk pooling and equalization. Second, the assignment of responsibility is ambiguous, given the fact of wide concurrent expenditure assignments. The vague definition has created a

loophole for each level of government to push its own responsibilities downward while retaining as much revenue as possible. Ultimately, the bottom level of government is taking a disproportionately large share of the responsibilities with only a limited revenue base.

Table 1.6 Budgetary Expenditure by Function, 2005

Top 10 Central Spending Items

item	Billion yuan	percent
Total	1,125.55	
Expenditure for National Defense	244.7	21.74 percent
Interest Payment for Domestic and Foreign Debts	159.47	14.17 percent
Expenditure for Capital Construction	136.56	12.13 percent
Expenditure for Price Subsidies	59.14	5.25 percent
Operating Expenses for Culture, Education, Science and Health Care	58.77	5.22 percent
Other Expenditures	47.46	4.22 percent
Expenditure for Government Administration	46.43	4.13 percent
Expenditure by Using the Vehicle Purchase Tax	40.39	3.59 percent
Other Price Subsidies	35.46	3.15 percent
Innovation Funds and Science & Technology Promotion Funds	33.79	3.00 percent

Top 10 Sub-national Spending Items

Item	Billion Yuan	percent
Total	3,527.30	
Operating Expenses for Culture, Education, Science and Health Care	551.65	15.64 percent
Operating Expenses for Education	373	10.57 percent
Expenditure for Capital Construction	267.58	7.59 percent
Other Expenditures	246.8	7.00 percent
Expenditure for Government Administration	241.92	6.86 percent
Expenditure for Public Security Agency, Procuratorial Agency and Court of Justice	176.41	5.00 percent
Expenditure for Supporting Rural Production	164.49	4.66 percent
Social Security Subsidiary Expenses	158.09	4.48 percent
Expenses of Agriculture, Forest, Irrigation and Meteorology	148.57	4.21 percent
Urban Maintenance and Construction Expenditure	139.36	3.95 percent

Source: China Statistical Yearbook 2006.

The Intergovernmental Transfer System

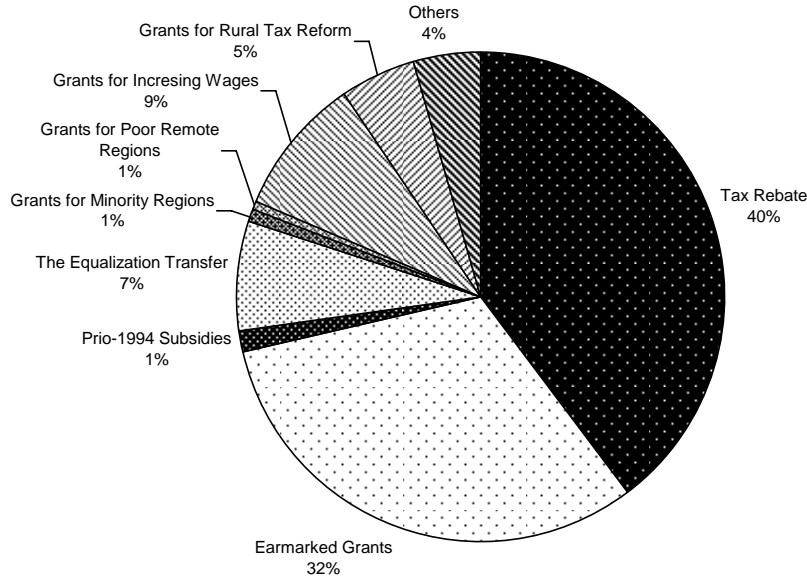
Central-provincial and provincial-local fiscal transfers are the dominant source of revenues of provincial and local governments in China, accounting for 67 percent of provincial, accounting for more than half of local fiscal resources. Central transfers⁴ in China can be classified into two broad categories: general purpose and specific purpose transfers. The general purpose transfers consists of (a) the tax rebate designed to return a fraction of revenues by origin (province of collection), and (b) the equalization transfer established in 1995 as effort to ease the widening regional disparities. The equalization transfer was called “transitory period grant” until 2001 and then renamed “the general-purpose grant” since 2002. The equalization grant has grown rapidly in size from only 2.07 billion yuan in its initial year to 74.5 billion yuan in 2004. Specific purpose transfers include (a) grants for increasing wages (b) grants for rural tax reform (c) grants for minority regions (d) prio-1994 subsidies (e) other ad hoc transfers. About 200 plus ad hoc grants, termed as “earmarked grants” (*Zhuanxiang Zhuanyi Zhifu*) by the Ministry of Finance, China, are used to subsidize a wide variety of spending projects such as capital constructions and social relief for calamities.

Figure 1.3 illustrates the structure of the central-local transfers in 2004. The largest central-provincial fiscal transfer was the tax rebate (404.97 billion yuan), followed by earmarked grants (322.33 billion). These two transfers accounted for more than 70 percent of the total central-provincial transfers. The 2004 equalization transfer was 74.50 billion yuan, amounting to 7 percent of the total central-provincial transfers.

⁴ The sub-provincial transfer design is quite similar to that of central transfers to provincial governments, though the grant composition varies significantly across provinces due to the diversity of regional fiscal resources.

The major transfer programs will be introduced briefly in the following.

Figure 1.3 Center-Local Transfers (2004)



Source: Author's calculation based on transfer data from Ministry of Finance, China

(a) Tax Rebate

With the 1994 tax reform, VAT and excise taxes were brought under central tax administration and a program of tax rebates were instituted for VAT and excise taxes in 1994 which returned a fraction of these revenues to the province of origin. The provinces were assured that under centralized collection, each province would receive at the minimum the VAT and excise tax revenues it retained in 1993. For VAT and excise taxes, they have also been assured that their current rebates would total last year's rebate plus

30 percent of the growth in VAT and excise tax revenues (Budget Committee 2002).

Algebraically,

$$TR_t = TR_{t-1} \left[1 + 0.3 \left(\frac{VAT_t - VAT_{t-1} + ET_t - ET_{t-1}}{VAT_{t-1} + ET_{t-1}} \right) \right]$$

Where:

TR_t - tax rebate to a province at year t

VAT – value-added tax

ET – Excise taxes (*Xiaofei Shui*)

In 2002, Personal Income Tax and Company Income Tax were also brought under the central tax administration and a program of tax rebate similar to VAT tax rebate was instituted. Effective on January 1, 2002, all income taxes from enterprises⁵ and personal income were shared by the central government and provincial governments at the ratio of 50 to 50. Since 2003, the central share has been raised to 60 percent. To assure stability in provincial revenues, income tax rebate program to institute to ensure that all provinces received income tax revenues no less than what they received in 2001.

(b) The Equalization Grant

In 1995, the equalization grant, the first formula based transfer (the so-called transitory period grant until 2001) was established with a view to reducing regional fiscal

⁵ The income tax from the following enterprises is excluded from the sharing policy: rail transportation, state post office, Industrial and Commercial Bank of China, Agricultural Bank of China, Bank of China, Construction Bank of China, State Development Bank, China Bank of Agricultural Development, Import and Export Bank of China, enterprises of offshore oil and national gas, China Petroleum and Natural Gas Co. Limited, and China Petroleum Chemical Co. Limited.

disparities. The amount of the equalization transfer for a province i is determined by three factors: standard revenue of the province, standard expenditure of the province, and the share of the provincial standard fiscal gap of the total fiscal gap. Algebraically,

$$ET_i = TET * \frac{SE_i - SR_i}{SE - SR}$$

Where

ET_i -- the equalization transfer for province i

TET – total equalization grant available in the budget year

SE_i – standard expenditure of province i

SR_i – standard revenue of province i

SE – total standard expenditure of the country

SR – total standard revenue of the country

The size of the pool for the equalization transfer (TET) is determined by the central government on an ad-hoc basis, subject to annual funding availability.

The standard revenues are equal to standard local own and shared taxes plus tax rebate plus various grants subtracted by remittances to the central government. In the formula, tax rebate, various grants, and remittances to the central government are actual amounts paid by the central government. For each type of tax, standard tax revenue is determined by multiplying the standard tax base with the standard tax rate. For personal income tax, the standard tax base includes salaries and income of private industrial and commercial enterprises. The actual income tax collection from other bases is regarded as the standard revenue. The income tax base of salaries is estimated using per capita

taxable salaries net of exemptions and number of employees. The tax rate of salaries is local average effective tax rate, adjusted with a regional coefficient. The standard expenditures are measured as the total spending of seven sectors and for each sector the standard spending cover personal expenditure (salaries and bonus) and office expenditures (vehicles, heating, and others).

Although the equalization grant has been growing rapidly (2.07 billion yuan in 1995 to 74.5 billion yuan in 2004), but growth in specific purpose transfers has outpaced the growth of equalization transfers (Shah and Shen 2006).

(c) Earmarked Grants

The ad hoc transfers are categorized as “earmarked grants” by the Ministry of Finance. Various ad hoc transfers to finance various programs have grown over time in number and size. Currently there are about 200 programs accounting for more than 20 percent of total central transfers. These transfers are program-based and allocated for specific purposes such as subsidizing agricultural development, supporting infrastructure construction, assisting backward regions, and providing emergency funding for natural catastrophes. This transfer has risen to 322.3 billion yuan in 2004 (Shah and Shen 2006).

(d) Grants for Increasing Wages of Civil Servants

When the center raised the wage rate for public sector employees in 1999 and 2001, a special grant was established in 1999 to support the implementation of this policy in western and central regions. Thus the purpose of this transfer is to fill the fiscal gap caused by the central policy mandate. The wage rate was first increased by an amount of

monthly 120 yuan per capita on July 1, 1999, then further raised at a rate of monthly 100 yuan per capita on January 1, 2001, and on October 1, 2001, additional 80 yuan per capita per month was added. The wage increase was also accompanied by the construction of a bonus system for civil servants from 2001 (equivalent to an approximate increase of one month of wages) and by the establishment of a subsidy system for remote areas. More than 700 counties were eligible to receive this grant. Besides, provinces faced with difficulties of paying teachers' wages in rural elementary and middle schools are also compensated by this transfer (Zhang 2003).

The grant allocation can be characterized as:

$$WageGrant_i = ExpIncrease_i * BasicExpenditureRatio_i$$

Where

WageGrant – the grant for increasing wages received by province i

ExpIncrease – the increase of provincial budgetary expenditure due to central policy of increasing wages

BasicExpenditureRatio – the ratio of the personal and office expenses to the total disposable revenue of the province i

According to the formula, the volume of the grant received by province i is dependent upon the provincial expenditure increase due to the wage policy and the share of basic expenditure (including personnel and office expenses) in the total disposable revenue of the province. The increased expenditure is determined by the number of civil servants in province i and the standard of wage increase by the central government. The total transfer in 2004 amounted to 91.94 billion yuan (Shah and Shen 2006).

(e) Grants for Rural Tax Reform

The transfer was created in 2000 to foster the implementation of the central policy to rescind “three village deductions and five township charges” (*xiangtongchou he cun tiliu*) and gradually abolish agricultural taxes. The “three deductions” collected by villages are: collective investment, public welfare funds, and cadre compensation. The “five charges” include charges for rural education, family planning, militia training, rural road construction and maintenance, and subsidies to entitled groups levied by townships. This transfer is aimed at filling the fiscal gap caused by the rural tax reform. In 2004, the total of 52.33 billion yuan was transferred to provincial governments.

(f) Grants for Minority Regions

The grant for minority regions was established in 2000 in order to support economic development in minority regions which are usually backward in their economic performance. The total grant equals a base amount of 1 billion yuan in 2000 with a yearly growth rate equal to that of central VAT revenue, and the rebate of the 80 percent of the central increased VAT collection in minority areas. This transfer has risen to 7.69 billion yuan in 2004 (Shah and Shen 2006).

(g) Prio-1994 Subsidies

Prio-1994 subsidies are the contracted fixed grants under the “Fiscal Contracting System” during the period 1988-1993. The total of the grant was both 12.6 billion yuan in 2003 and 2004. Since 1994, local governments have continued to remit revenues to or receive transfers from the centre according to their fiscal contracts in effect in 1993. The amount

of transfers is approximately equal to the estimated deficit (gap between revenue and expenditure) measured in the base year. Sixteen provinces, including Inner Mongolia, Jilin, Fujian, Jiangxi, Shandong, Guangxi, Hainan, Sichuan, Guizhou, Yunnan, Tibet, Shannxi, Gansu, Qinghai, Ningxia, and Xinjiang, still receive this type of grant.

Chapter 2:

An Institutional Analysis of Public Expenditures in China

As reviewed in Chapter 1, China's fiscal system has been extensively decentralized in a comparative perspective. Fiscal decentralization has had an important impact on China's public expenditures. As China is in transition from the extensive government intervention characteristic of the previous centrally planned economy to the much more limited and focused intervention appropriate to a market-based economy, public expenditure policies have increasingly become the key instrument to achieve certain economic and social goals.⁶

China's transition towards a more equitable development strategy has increased the need for better institutions and mechanisms for implementation of its expenditure policies. Premier Wen Jiabao, in his report to the Tenth National People's Congress in March 2006, stressed the importance of *hexie shehui* (harmonious⁷ society), reflecting an essential shift in China's development strategy from the dominant pursuit of economic growth to greater attention to fairness and equity among the poor and economically marginalized. The report emphasized that deepening reform of the fiscal system was regarded as one of the key policy areas in achieving this objective.

⁶ In this regard, China has undertaken a series of reforms to develop its public expenditure system, such as improvement of budget coverage, experiment on mid-term expenditure framework, and a new budget classification system since 2004.

⁷ The concept of "harmonious society" in Chinese originally comes from Confucius. The traditional meaning of a harmonious society refers to a state in which perfect order prevails, and virtuous men are rewarded.

This chapter provides an institutional analysis of whether public expenditures serve the country's more equitable development strategy, or more precisely, whether government expenditure policies serve adequate and equitable public services. The first section, an in-depth analysis of expenditure assignment between multi levels of government, examines whether sub-national governments have sufficient resources for basic public services provision. The next section examines expenditure composition at different levels of government to find out whether allocation of fiscal resources has shifted the emphasis from physical capital to human development. The critical issue of the accountability of local officials for performance in public service provision is analyzed in the third section.

2.1 Expenditure Assignments

Decentralization is in fashion worldwide -- see, for example, (World Bank 2005) -- based on the belief that assigning more responsibilities to local governments is a means of achieving a more efficient allocation of resources and of stimulating economic growth. It is recognized that fiscal decentralization can contribute to more efficient provision of public services by a better matching of expenditures with local priorities and preferences (Shah, et al. 1994). The subsidiary principle argues for the provision of public services to be devolved to the lowest-level jurisdiction in accordance with the benefit area (Oates 1972; Tiebout 1956). However, the trade-off is the possibility of weakening the government's capacity to ensure equitable provision of services to citizens in different jurisdictions, or to maintain macroeconomic stability (Bahl and Martinez-Vazquez 2006). In some scenarios in which administrative capacities are concentrated at the central

government level, devolution of responsibilities is likely to result in inefficiency and deterioration of public services (Prud'homme 1995).

In theory, therefore, there is no one-size-fits-all template for the assignment of responsibility across different levels of government. Which level of government should be responsible for the provision of which public service depends on the overall design of the intergovernmental fiscal system. Due to the trade-offs between efficiency and equality, between effectiveness and stability, countries decide on different degrees of fiscal decentralization in congruence with their priorities, as well as with their own unique historical/social circumstances. Furthermore, at a given level of fiscal decentralization (often as measured by sub-national expenditure share), countries also vary in terms of the configuration of their intergovernmental fiscal arrangements, with some granting local governments greater revenue autonomy and others putting more emphasis on the use of intergovernmental transfers (World Bank 2007a). But no matter how decentralized a country is, or how much of its own source revenue local governments have, or how important a role is fiscal transfers play, the ultimate goal is to develop an intergovernmental fiscal system that provides adequate public services efficiently and also equitably as well as satisfying local preferences and needs.

With the current intergovernmental fiscal arrangements in place since 1994, China has become one of the most fiscally decentralized countries in the world, even compared with those with explicit federal structures. From a comparative perspective, China is much more decentralized than most developing and transitional countries, especially on the

spending side (see Table 2.1). In 2005, more than 70 percent of all public expenditure was made at the sub-national levels, in contrast to the average 19.6 percent in developing countries, 22.3 percent in transitional economies, and 32 percent in OECD countries.

Table 2. 1 Fiscal Decentralization Indicators: China vs. Other Countries

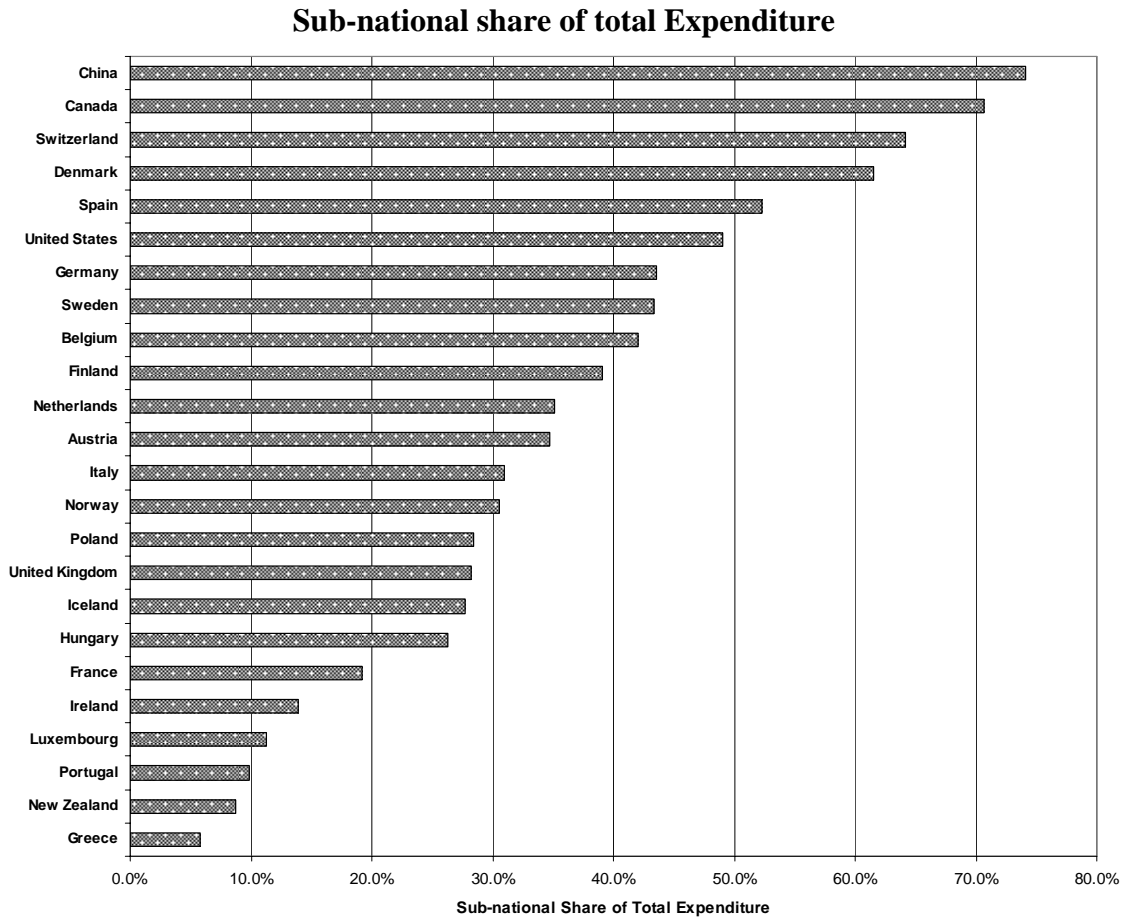
Indicator	China	Developing Countries	Transitional Economies	OECD countries
Subnational share of government revenue	48	16.6	18.4	19
Subnational share of government expenditure	74	19.6	22.3	32

Source: Data for China are from China Statistical Yearbook 2006; data for other countries are for various years and adapted from Shah (2004).

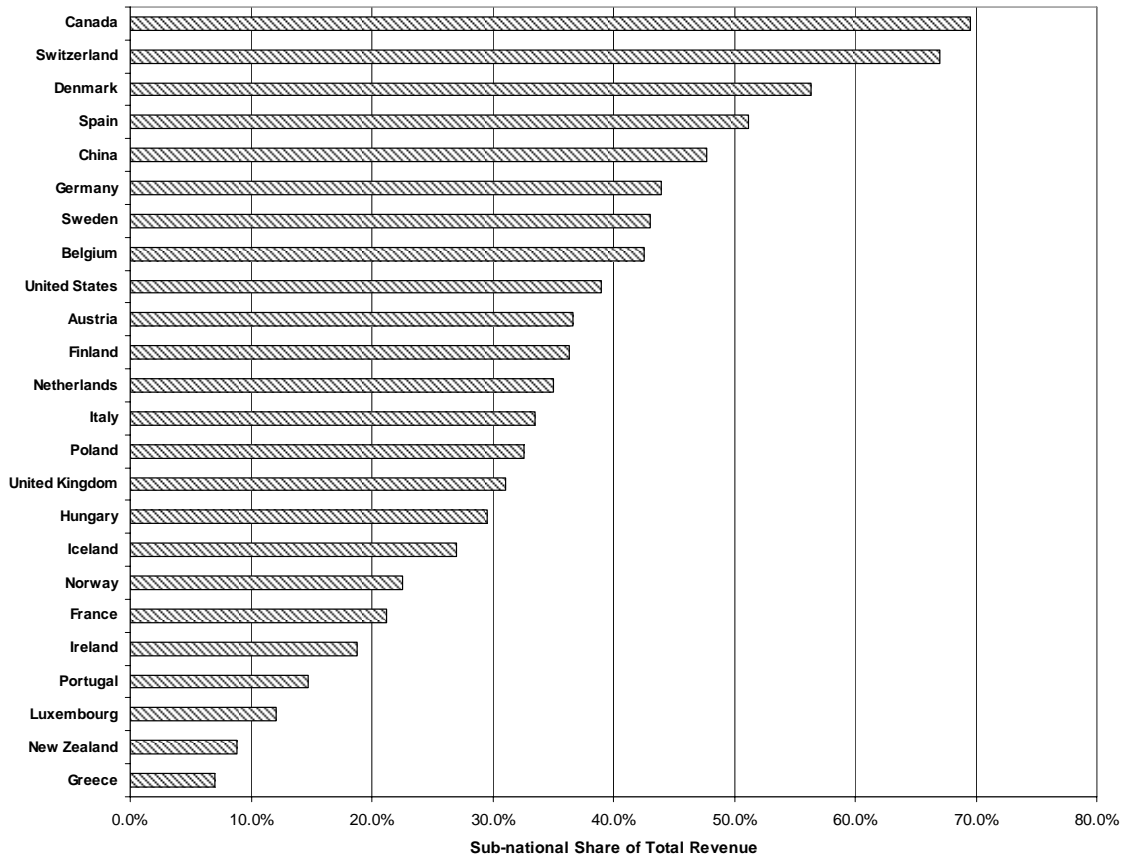
Figure 2.1 maps out the degree of fiscal decentralization in major OECD countries and China. As shown, China is more decentralized on the expenditure side than any other country included in the comparison – Spain 52.2 percent, Denmark 61.5 percent, Switzerland 64.1 percent, and even Canada 70.7 percent. On the revenue side, China also ranks high in terms of local revenue share (around 45 percent), behind Spain at 51.2 percent, Denmark 56.3 percent, Switzerland 67 percent, and Canada with 69.5 percent. An apparent pattern is observed that in the most decentralized countries indicated – Spain, Denmark, Switzerland, and Canada – the level of decentralization on the expenditure side

is roughly comparable with the level of devolution on the revenue side. China, however, is an exception.

Figure 2.1 Comparative View: Degree of Fiscal Decentralization in China (2005)



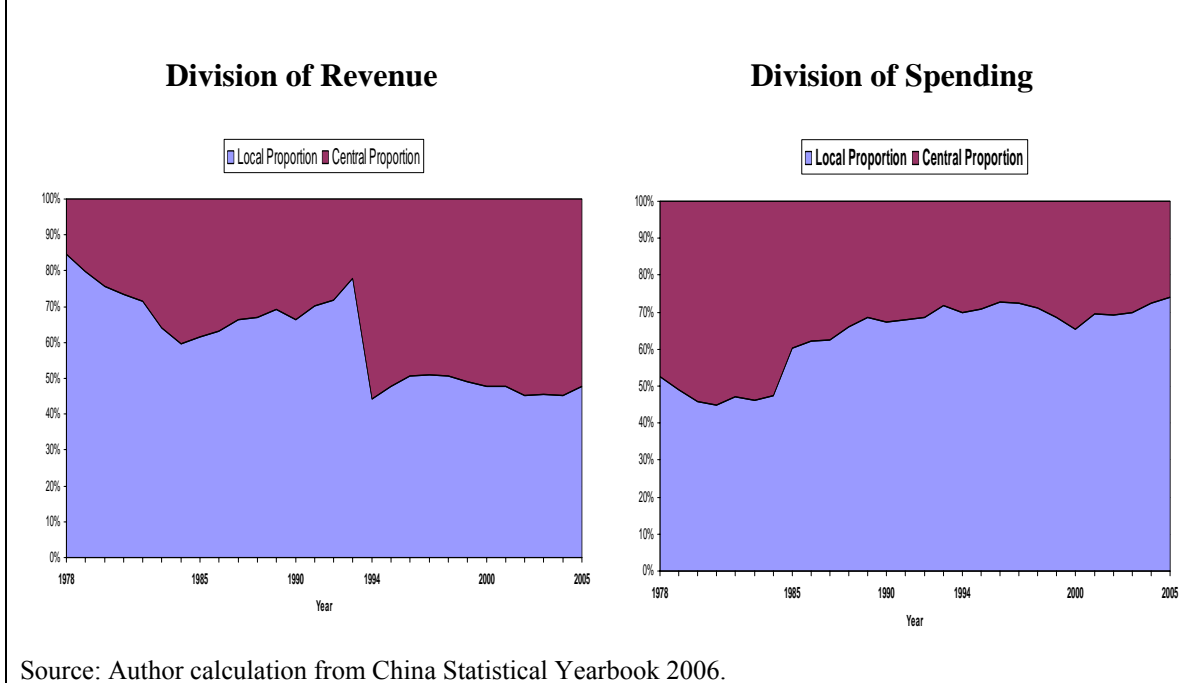
Sub-national share of total revenue



Source: author’s calculation based on data from Government Finance Statistics (IMF).

China’s sub-national revenue, however, is much less decentralized than its expenditure. A close examination of China’s sub-national share of revenue and expenditure is provided in Figure 2.2, which tracks the changes from 1978 until 2005. From 1994, the sub-national share of revenue is considerably below the corresponding ratio for sub-national expenditure. The revenue ratio is noticeably lower than in the early 1990s, largely due to the increase in the central government share. Sub-national governments account for 47.7 percent of total revenue, compared with 74.1 percent of total expenditure in 2005.

Figure 2.2 Division of Revenue and Expenditure between Central and Sub-national Governments, 1978 – 2005

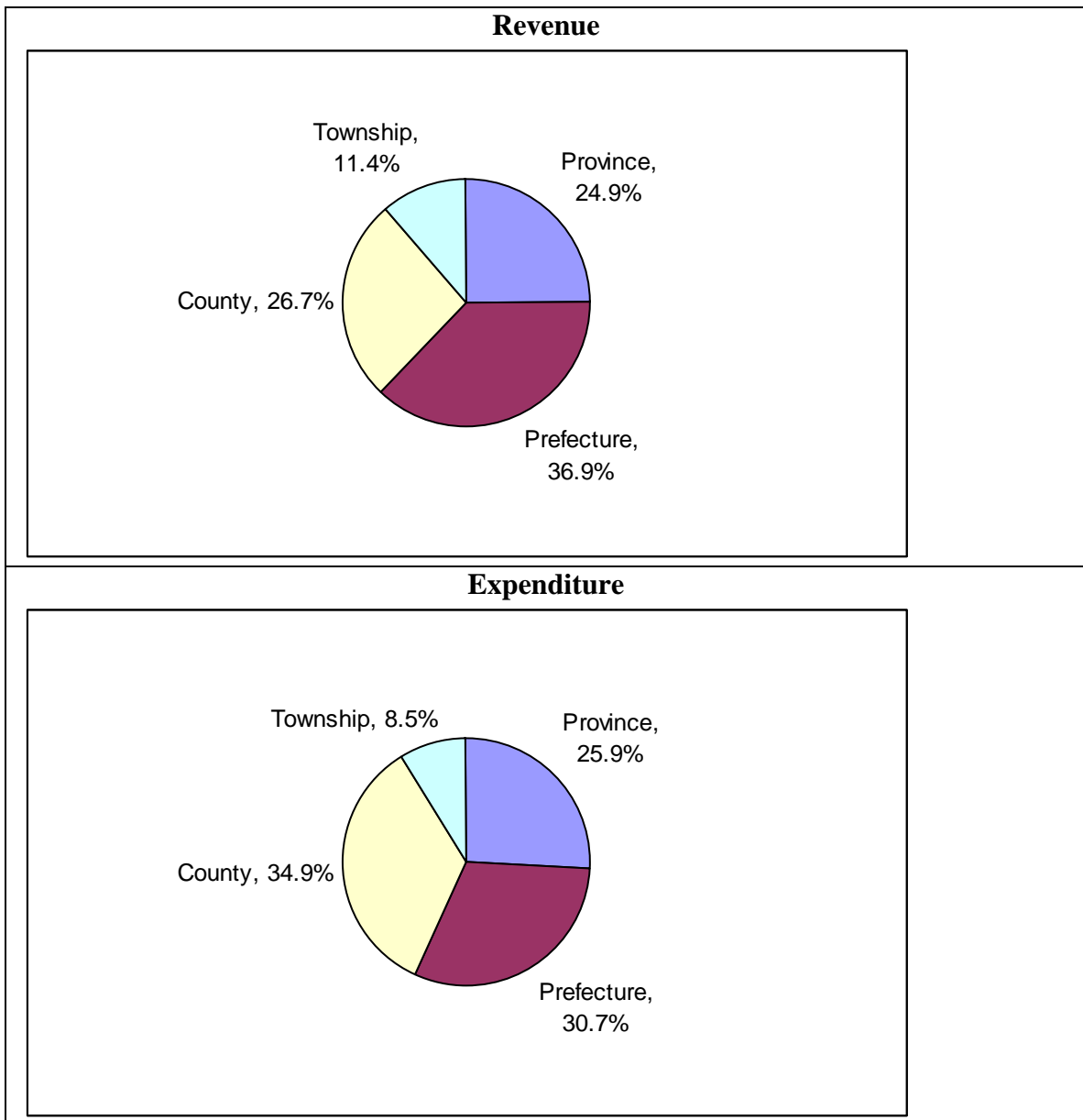


The mismatch of expenditure and revenue assignments in the current fiscal system has much to do with the piecemeal reforms by the Center to deal with the emergence of various issues resulting from the transition from a planned to a market system. Largely because of the erosion of state-owned enterprises (SOEs), policy attention in the 1980s was geared to stimulating local efforts in revenue collection as a way of moderating sharp fiscal decline. This continued into the 1990s, when a ten-year decline in the central share of fiscal revenues (by 1993, it had fallen to 22 percent) seized top priority on the political agenda. The 1994 Tax Sharing Reform was devised to put an end to the continuous weakening of the central fiscal position. But during all these years, virtually no attention was paid to the expenditure side, and the 1994 reform only restructured revenue assignment, without taking into account its parallel component of expenditure assignment.

As described in Chapter 1, sub-national governments take the major responsibility for public spending on education, health, and social welfare. The burden inherent in the devolution of expenditure responsibilities to these governments has been aggravated by central government-imposed requirements to support workers laid off from SOEs and other unfunded mandates.

The gaps between expenditure responsibilities and the resources assigned to finance these spending needs exist at every level of the sub-national governments, and are particularly severe at the county and township levels. Figure 2.3 further breaks the division of revenue and expenditure down to county levels. Since China's fiscal system is based upon a "layer cake" model in which there is a strict vertical hierarchical relationship among different orders of government, each level of government decides what fiscal resources to allocate to its subordinate level, according to the criteria that are largely unregulated and vary widely across the country. There is a general lack of objective principles to ensure that revenues are assigned with expenditure needs. This process tends to reserve resources upward while pushing spending responsibilities downward, leaving substantial fiscal gaps at the lowest levels of government – counties, townships and villages (Figure 2.3). The disaggregated data show that the provincial level manages to achieve a balance between its share of revenue and its share of expenditure, and the prefectural level also has sufficient funds to handle its spending requirements. It is the county level that struggles most, with a 26.7 percent of revenue share financing 34.9 percent of total sub-national spending responsibilities.

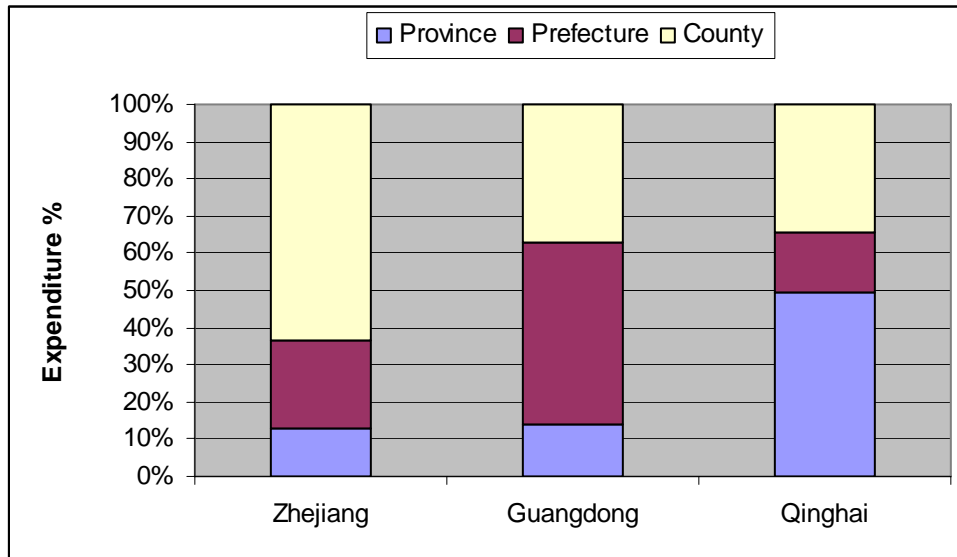
Figure 2.3 **Sub-national Government: shares of revenue and expenditure (2004)**



Source: Author's calculation, based on the provincial data from China Statistical Yearbook (2006), and the data for prefectural, county, and township levels from World Bank (2007a).

The gaps vary widely across provinces. As mentioned earlier, neither the Constitution nor the Budget Law (1994) assigns authority to the intermediate levels. Authority is delegated – implicitly – by the Central government to the intermediate levels to oversee their subordinate levels of government. Since counties and townships reside at the bottom of the hierarchy, they are dealing with a variety of fiscal arrangements from provinces and prefectures that interpret central policies differently and design revenue/expenditure assignments in their own way. This decentralized approach to revenue/expenditure assignment has been noted in several earlier studies (Qiao and Shah 2006; Shah and Shen 2008; World Bank 2002). For example, some provinces such as Jiangsu and Henan are devolving revenues to lower levels, while others such as Liaoning and Heilongjiang are centralizing revenues to the provincial level (World Bank 2006a). Even within a single province, fiscal arrangements can vary across prefectures. As shown in Figure 2.4, the three provinces -- Zhejiang, Guangdong and Qinghai -- differ remarkably in their sub-national shares of expenditure across levels of government. In Zhejiang, county governments shoulder the heaviest spending responsibilities -- 63.2 percent of the total sub-national expenditures. In contrast, Qinghai's county governments account for only 34.6 percent, but provincial government takes nearly half of the total. Another scenario is represented by Guangdong, where prefectural governments are spending almost half of the total sub-national budget while the provincial government takes only 13.8 percent.

Figure 2.4 Sub-national Shares of Expenditure: Provincial Variety (2003)



Source: Adapted from World Bank (2007a).

Not only is the vertical fiscal gap large at the county level, but also it has been widening over the years. The trend is presented in Table 2.2. In the 1980s, both revenue and expenditure shares were increasing at the county level, and the two ratios were relatively balanced. After the 1994 reform, however, the share of revenue and the share of expenditure were growing apart. While expenditures rose around 30 percent, the county governments' share of revenues fell swiftly, from 30.1 percent in 1992 to only 17.2 percent in 2004. The divergence between the two ratios resulted in the enlarging fiscal gap at the county level, from about 8 percentage points in 1998 to more than 14 percentage points in 2004. If measured in terms of GDP, it went from nearly zero to 2.5 percent.

Table 2.2 Vertical Fiscal Gap at the County level, 1986-2004

	Share of Total Revenues	Share of Total Expenditures	Fiscal Gap	percent GDP
			-3.0	
1986	21.7 percent	24.7 percent	percent	-0.7
1988	28.6 percent	28.3 percent	0.3 percent	0.1
			-1.3	
1990	28.4 percent	29.7 percent	percent	-0.3
			-0.8	
1992	30.1 percent	30.9 percent	percent	-0.1
			-7.9	
1998	20.3 percent	28.2 percent	percent	-1.0
			-6.5	
2000	19.7 percent	26.2 percent	percent	-1.1
			-11.5	
2002	17.1 percent	28.6 percent	percent	-2.1
			-14.1	
2004	17.2 percent	31.3 percent	percent	-2.5

The provision of public services in rural areas poses a challenge in countries around the world. Governments in rural areas tend to have large a fiscal gap with low revenue resources, weak administrative capacities and high expenditure needs, and therefore have greater dependence on fiscal transfers. Services provision is costly, particularly in remote communities. Factors such as geographic conditions and low population density lead to smaller class sizes in school, public facilities being used at lower capacities, or higher

compensation to attract qualified teachers/doctors. In developed countries in the OECD, rural governments rely on a mix of local taxes, user charges, and importantly fiscal transfers to meet national standards of minimum services provision for basic education, health care, sanitation, etc. (World Bank 2007a).

However, what is of concern in China is that the issue with financing rural local governments (counties, townships, and villages) is not observed in just remote locations, but applies generally. While low revenue capacity and high spending needs are common to localities in remote regions, large fiscal gaps are prevalent in virtually all the rural counties in China's current fiscal system.

As the current system decentralizes spending decisions much more than tax revenues, a large-scale system of intergovernmental fiscal transfers is required to fill the gap between expenditure responsibilities and financial resources at each level of sub-national government. In 2003, these transfers financed 67 percent of provincial expenditures, 57 percent of prefectural expenditures, and 66 percent of county and lower level expenditures (Shah and Shen 2006). Chapters 4 and 5 will provide in-depth analysis of the redistribution effects of the fiscal transfer system at the provincial and county levels, respectively.

Fiscal decentralization, along with the stark gap between sub-national expenditures and revenues, has had an important influence on China's government expenditures. The next section elaborates on this point.

2.2 Expenditure Composition

Effective resource allocation to health, education, and other social services is crucial for achieving equitable and sustainable development in a competitive environment (World Bank 2003). It is therefore important to take a close look at China's expenditure composition in recent years in order to test whether current public spending policies are in line with the nation's new strategy of growth with equity.

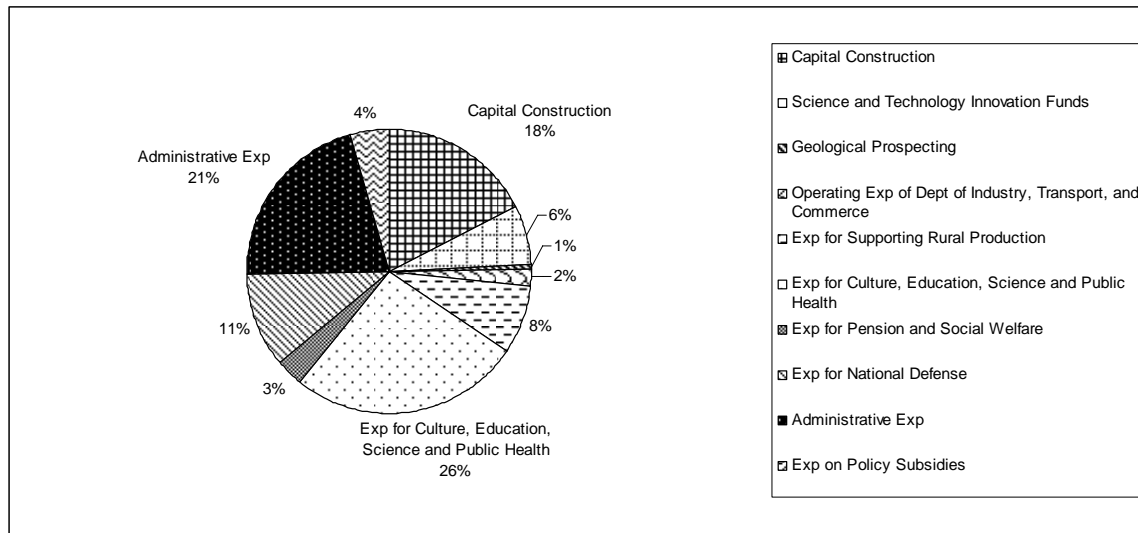
Figure 2.5 provides information about public expenditure allocation in 2005. Expenditure on physical capital is high. The accelerated growth of spending on capital construction in the late 1990s is mainly attributed to an expansionary fiscal policy that was adopted to boost staggering domestic demand after the 1997 Asian crisis, and the heavy infrastructure spending under the agencies of the Western Development program established in 1998. In 2002, China's capital spending as a share of GDP was about three times the OECD average and almost double that of Korea, the OECD country with the highest capital spending (OECD 2006). A more detailed breakdown of capital expenditure, given in Figure 2.6, suggests that fully half of capital spending was channeled to transport (26 percent) and water & environment (25 percent). The share devoted to education and health infrastructure was remarkably low (only 9 percent in 2004).

The other notable spending item is administration. Capital construction and administration together take the largest share of public expenditure (40 percent of total

government expenditures in 2005) and have been growing the most rapidly. Spending on administration made up 21 percent of total expenditure in 2005. Behind the high share of spending on administration are not only generous salary increases, but also overstaffing and other inefficiencies. Capital spending⁸ accounted for 16 percent of total government spending in 2005.

In contrast, the share of China's government spending devoted to human development is low. In spite of repeated pledges by the State Council to increase the level of investment, budgetary expenditure on education remained stagnant at about 2 – 2.5 percent of GDP during 1978-2005, half the level aimed for in the 1985 Education Law (Wong 2007). Similarly public spending on health care was also low, at less than 2 percent of GDP.

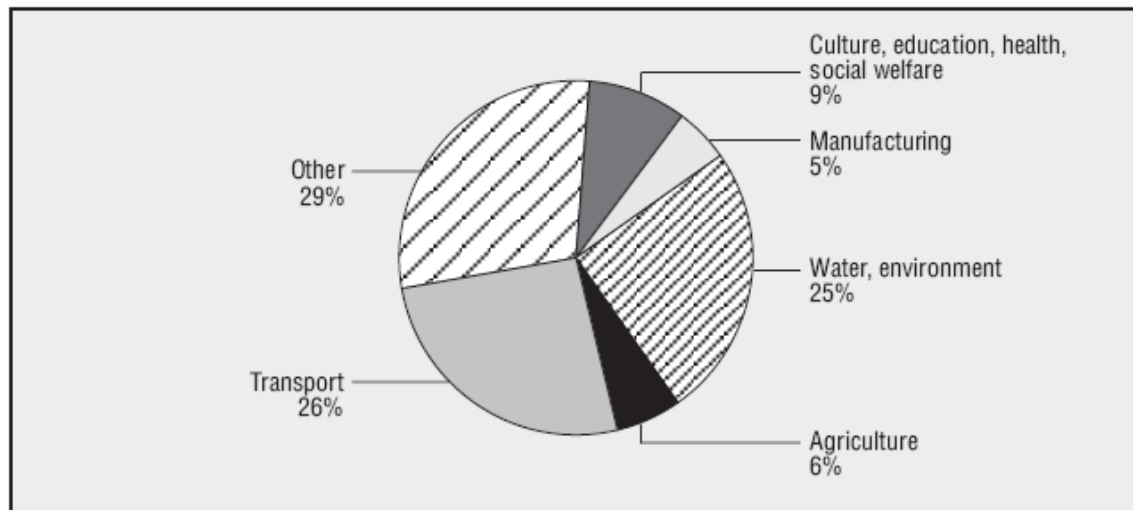
Figure 2.5 Expenditure Composition (2005)



Source: Author calculation from data in China Statistical Yearbook 2006.

⁸ China's capital expenditure is determined by the National Development and Reform Commission (NDRC), which is constrained only by the availability of total budget resources. An exception is agriculture-related capital expenditure, which is budgeted by MOF.

Figure 2.6 Government Capital Spending (2003)



Source: OECD (2006).

Education

A relatively large share of spending is allocated to the operating expenses of culture, education, science and public health. Spending on this broad category made up 26 percent of total government expenditure and 3.3 percent of GDP in 2005. Spending on this category is highly decentralized: it was shared in a 9.6 percent to 90.3 percent proportion between central and local governments as of 2005. The largest item in the broad category of current operating expenditure on culture, education, science and public health is education⁹, with a share of 11.7 percent of total expenditure and 2.2 percent of GDP in 2005.

⁹ It should be noted that total education expenditure includes not only operating expenses, but also education-related infrastructure spending, education subsidies for less developed regions, education-related surcharges, and others. As operating expenses account for the majority and due to the difficulty of aggregating the total education expenditure, the author only uses the operating expenses as common practice in the literature.

Table 2.3 The Division of Budgetary Expenditures on Major Public Services (2005)

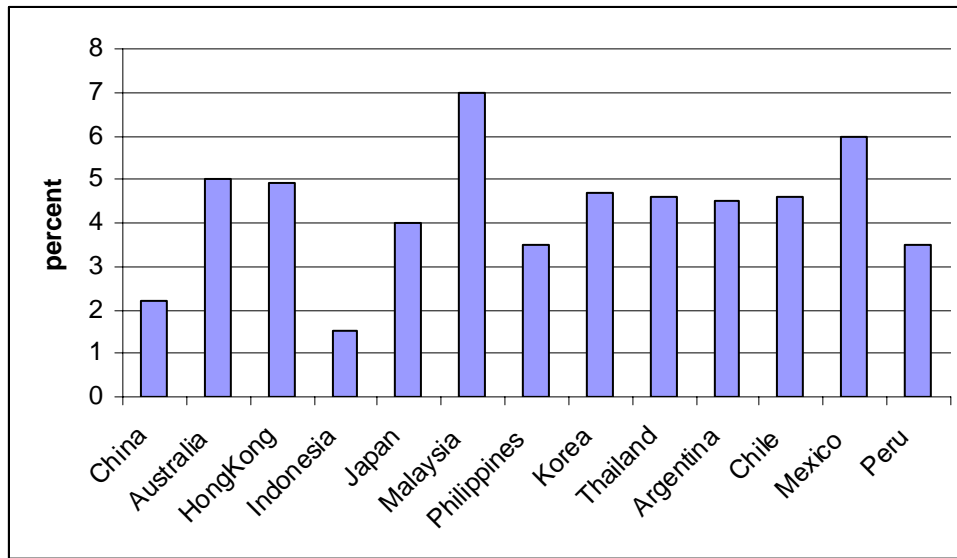
	Proportion of Total Budget			Central/Sub-national Share	
	National Budget	Central	Sub-national	Central Share	Sub-national
Operating Expenses for Education	11.7	2.8	14.8	6.2	93.8
Operating Expenses for Health	3.1	0.2	4.0	2.1	97.9
Social Welfare and Relief	2.1	0.1	2.8	0.7	99.3

Source: Author calculation from China Statistical Yearbook 2006.

To assess how China compares with other countries, Figure 2.7 depicts, the ratio of public education expenditure as a percentage of GDP in 13 Asian and Latin American countries in 2004. China's ratio of 2.2 percent ranks poorly in the countries shown. It is just ahead of Indonesia and is lower than the ratio in several other Asian developing countries with a similar younger age structure of the population, such as Thailand and the Philippines.

The lack of government spending on education has led to the proliferation of various fees to meet the cost of education services. For example, with only about two thirds of expenditure on education covered by budgetary outlays in 2000, the rest financing came from tuition and miscellaneous fees (24 percent), school funds and citizens (2.2 percent), donations and other fund-raising activities (3 percent), and other revenues (3.9 percent) (OECD 2006).

Figure 2.7 Public Education Expenditure as Percentage of GDP (2004)



Source: China Statistical Yearbook 2006 and World Bank (2011).

Note: China's data is for 2005; other countries for 2004.

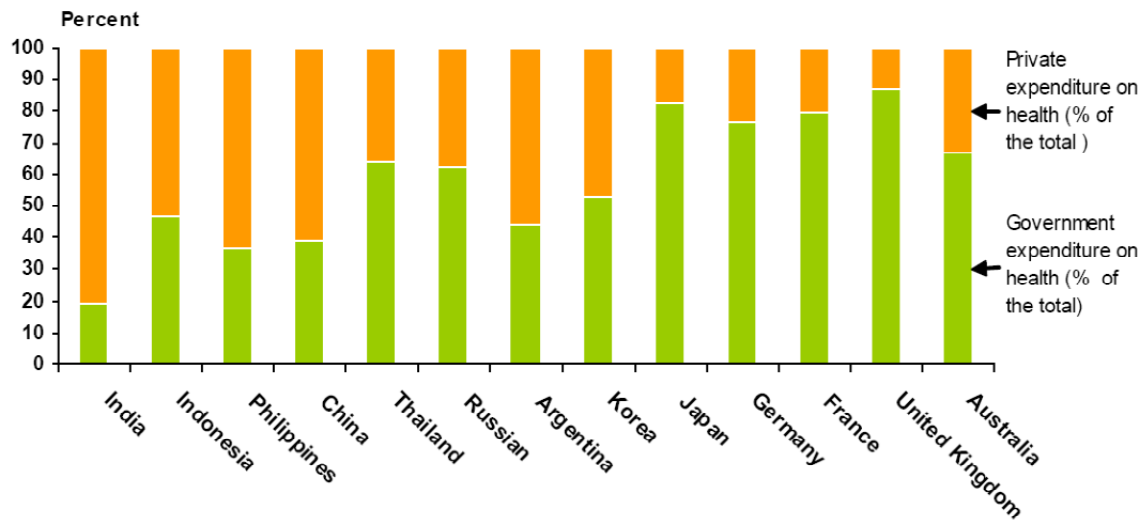
In addition to under-resourcing, government funds are often used inefficiently. A large proportion of China's education spending goes on personnel expenses, and half of these expenses are actually for non-teaching staff (Jia et al. 2002; OECD 2000). In addition, the share of spending on infrastructure and equipment is low compared to that in other countries (Jia et al. 2002).

Health

The public health share in the total government spending fell from 3.7 percent in 1995 (and 3.4 percent in 2003) to 3.1 percent in 2005 (Table 2.3). Public spending accounts for

a comparatively low fraction of the total spending on health in China. China's government health expenditure in 2006 accounted for only 40.7 percent of total national health expenditure, which is among the lowest of the countries in Figure 2.8. Only two countries, India and the Philippines, are behind China (World Bank 2008). The decline in government financing of health expenditure is partly attributable to the 1996 health sector reform, which aimed at establishing a market-based system.

Figure 2.8 Government Health Expenditure (2006)

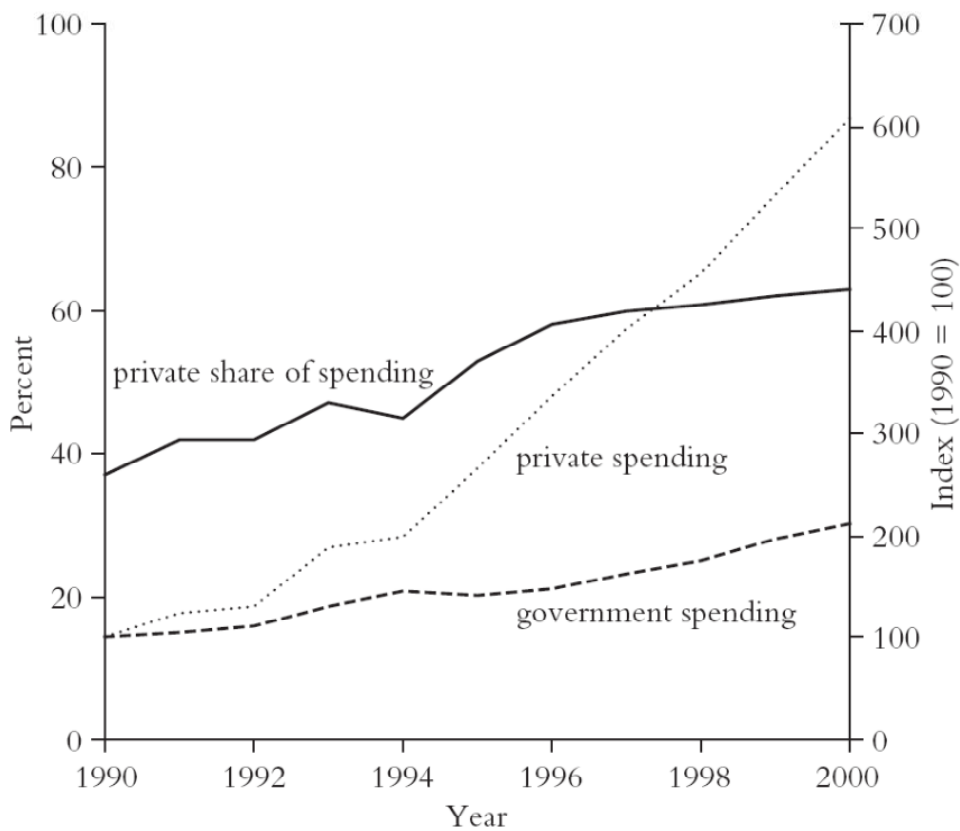


Source: World Bank (2008).

Between 1978 and 2003, out-of-pocket health spending grew in real terms at an annual rate of 15.7 percent, making government spending as a share of the total health spending fall from about 80 percent to only about 40 percent (see Figure 2.9). The National Health Survey (NHS) in 2003 revealed a worrisome picture of high health care costs having become a barrier to obtaining care. The survey found out that 50 percent of respondents who had been ill in the past two weeks reported not seeking care (up from 36 percent in

1993); 30 percent reported choosing not to be hospitalized despite being told to; and among those who did go to hospital, almost half discharged themselves against the doctor's advice. Even in public health for immunizations, out-of-pocket payments financed as much as half of expenses, even though most of them were supposed to be free. In some cases of serious illness, people who received medical treatment in China were often faced with financial difficulties and even impoverishment. The 2003 NHS indicated that 30 percent of poor households reported that health care costs were the reason why they fell into poverty (Ministry of Health 2004).

Figure 2.9 Government and Private Health Spending in China (1990 – 2000)

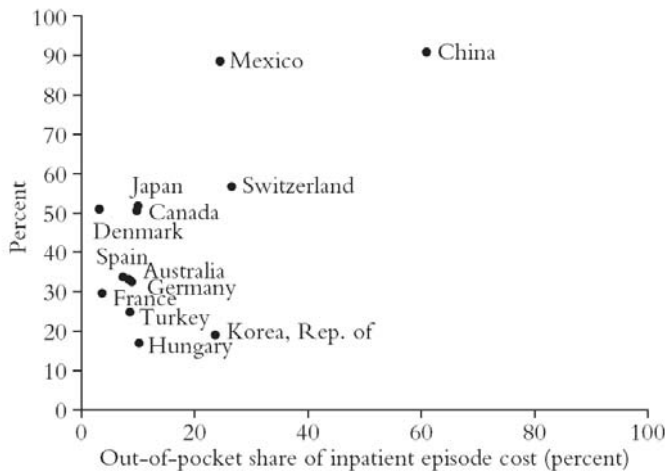


Source: Wagstaff and Lindelow(2008).

Note: Government and private spending are measured on the right-hand axis. Private spending as a percentage of total spending is measured on the left-hand axis.

Compared with the selected Asian countries, household spending on health care as a share of total household expenditure is highest among the poor in China. In the case of catastrophic health expenses – defined as expenses accounting for more than 40 percent of nonfood consumption -- China’s percentage is higher than elsewhere in Asia, and it is also higher among the poor (Gao, et al. 2002; Wagstaff and Lindelow 2008). Relative to per capita income, out-of-pocket spending in China is high, measured by out-of-pocket spending for a single inpatient as a percentage of annual per capita consumption (as high as about 60 percent in 2003). In comparison, in Switzerland, Mexico, and the Republic of Korea, the figure is just over 20 percent, and most other countries selected in Figure 2.10 have a much lower share.

Figure 2.10 Out-of-Pocket Expenses Share of Inpatient Care in Selected Countries



Source: Wagstaff and Lindelow (2008)

Note: 1. Data for OECD countries are for the latest year available, which varies across countries (ranging from 1999 to 2002). Data for China are from the 2003 National Health Survey and the Ministry of Health Statistical Digest and refer to 2003. 2. The y axis represents the cost of a single inpatient episode as a percentage of annual per capita household consumption.

In addition, financing of health services is largely reliant on financial input from the local government, with 2.1 percent from central government and 97.9 percent from sub-national governments in 2005 (Table 2.3). China's substantially decentralized system of public services provision poses a challenge for local governments in less developed areas, where health issues are usually serious.

A typical county level expenditure is provided here to illustrate the real-life financial struggles that have led to significantly low spending on human capital development. Hua county (*Huaxian*), a nationally designated poor county, is located in the central province of Henan. Hua County's budget in 2003 is presented in Table 2.4. The largest budgetary spending went to education (39 percent) and administration (22 percent). When translated into actual money, Hua County managed to spend only RMB 120 (less than 20 dollars) per year per student enrolled in basic education, that is, 62 percent of the national average. Spending for social assistance was only RMB 15, or 5 percent of budget. Health spending was only 3 percent of budget, RMB 10 per capita, which meant almost nothing in the context of skyrocketing health costs (World Bank 2007a).

Table 2.4 Budgetary Expenditures in Hua County (2003)

Expenditure Category	Per Capital (RMB)	Share of Total Budget (percent)
Administration	68	22
Capital Construction	17	6
Agriculture	23	7
Education	120	39
Health	10	3
Social assistance/relief	15	5
Other	56	18
Total	309	100

Source: Adapted from World Bank (2007a).

China's authorities have recognized the need to give more emphasis to human capital development and social welfare. But because of the vertical fiscal gap analyzed in the first section, good policy intentions are not translated into actual spending increases on human capital development and social welfare. China's highly decentralized fiscal and administrative systems delegate the vast majority of public services to be financed and provided by sub-national governments. As shown in Table 2.3, sub-national governments accounted for more than 90 percent of budgetary expenditures on all major social services, including education (94 percent), health (98 percent), and social welfare (99 percent). However, the financing shortfalls of sub-national governments, particularly at the lowest levels (counties, townships, and villages) are simply unable to find sufficient resources to meet all of their responsibilities.

The low spending on social services also has something to do with the failure of the central government to provide matching financing sources. When national development targets, such as the nine-year compulsory education¹⁰ or a minimum level of expenditure per head on birth control, are passed down to local governments, under-resourced local authorities will not fulfill those mandates without being given sufficient funds to implement the policies.

¹⁰ National Compulsory Education Programme, promulgated in 1995, is aimed at targeting central education transfers to 592 poor counties (about one-fifth of all counties) and some other counties in the central and western region, mandating compulsory education of 9 years in cities and 6 years in rural areas, guaranteeing teachers' salaries (by shifting the level of government responsible for payment of teachers' salaries to the county level in 2000 and to the central level in 2002) and providing freetextbooks in many counties from 2002.

In addition, underlying the low level of public outlays on education, health, and other critical human development needs is the important factor of local accountability issues. Compliance with central policies is not assured at local levels, even when the central government provides resources to support local services. In the context of almost no formal institutions holding local governments accountable for their performance, central transfers are often not used as intended, with local officials being apt to use public funds in favor of capital construction instead of the less visible expenditure on education and health.

2.3 Local Accountability

China does not have the formal institutions that govern intergovernmental relations. The assignment of responsibilities to sub-provincial governments (prefecture, county, and township) is not formalized. With the absence of a formal system of responsibilities, sub-provincial governments do not have clear roles and functions against which they should be held accountable. This system of hierarchy is managed by a central bureaucracy with only about 50,000 civil servants in the core departments. This bureaucracy delegates responsibilities through the hierarchical pyramid that employs more than 32 million public servants. The central authority delegates responsibilities to the provinces, relying on them to deliver the national policy targets such as achieving universal basic education and promoting the New Rural Cooperative Medical Scheme. The provinces then assign responsibilities to the prefectures and depend on them to implement policies. Further

down, the prefectures turn to the countries, and so on. This system of decentralization is implicitly carried on without any form of official institutions. In contrast, according to international practices, the assignment of responsibilities to local governments is mostly governed by some sort of formal institutions. For example, the Philippines have established the “Local Government Code” in law; Japan supervises the intergovernmental relationship through a formal body -- the Ministry of Internal Affairs and Communications; Australia governs decentralization by the Council of Australian Governments; and Germany, under the system of “cooperative federalism”, makes decisions through an extensive net of multilevel committees (World Bank 2007b).

Also contributing to the low effectiveness of public expenditures are the adverse incentives for sub-national officials and their limited accountability for expenditure decisions. The previous analysis has shown that China’s fiscal system is extensively decentralized compared with other countries in the World. However, China is much less decentralized than it may appear on the surface. The Center, in addition to its authoritarian political arrangement, exerts substantial control over localities through the intergovernmental fiscal system, through several binding expenditure laws, and through numerous expenditure mandates. The degree of autonomy local governments have over expenditure decisions, or their discretion to raise revenues, also indicates a highly centralized hierarchy in which local governments are virtually agents acting on behalf of the central government. This contrast between the nominal decentralization of responsibilities and the high degree of centralization of actual authority, plus with the

absence of elections¹¹, creates distorted incentives in the local allocation of public spending. First, as agents of the central government, together with China's top down system of evaluation and promotion of government officials, sub-national governments spend as much as they have in revenue without considering the social trade-off between the benefits of their expenditures and the costs of financing (OECD 2006). Also, greater priority is given to capital spending, which encourages local governments to undertake all sorts of investment projects. Second, to enhance their career prospects, local cadres pay great attention to the target responsibility system, which ultimately provides the incentives to allocate resources in line with the preferences of the higher level of government. In addition, unfunded mandates also distort local allocation of spending in favor of easily measurable outputs.

The weakness in holding local officials accountable for their performance in service delivery can be also attributed to the distorted incentives created by the current system of budgeting. Local governments are apt to overstaffing and also prioritizing administrative expenses because staff numbers are used in the budgeting process as the basis for calculating local expenditure needs and also for the determination of certain central transfers. The program of nationally unified wage-setting for civil servants has created a new wave of expansion in government employment, particularly in poorer regions,

¹¹ It is called "predatory federalism" by (Shih, et al. 2004) In China, however, the absence of national elections combined with a hierarchical party structure gives central and provincial governments enormous leverage over grassroots governments. The top levels of government in China can devolve fiscal responsibilities down to the grassroots while concentrating lucrative revenue sources without fear of electoral retribution.

because compensation of public employees becomes a critical factor in determining local revenues.

In the current intergovernmental system, the central government pays little attention to the voice of sub-national governments, and policy implementation lacks coordination between the multi levels of government. As the central and local interests are not always consistent, local governments may assign lower weight to some programs that are national priorities set by the central government. For example, reductions in out-of-pocket expenses for medical care have been small – much less than expected -- under the New Rural Cooperative Medical Scheme (NCMS). The main reason is that county governments, being concerned about the financial burden to carry on this program, have tended to choose insurance schemes with conservative designs. Another grand undertaking by the central government to lessen farmers' financial burden through the Rural-Fee-Reform and the subsequent elimination of agriculture taxes has actually reduced local governments' own revenues for services delivery (World Bank 2007b). Such a negative impact on rural services delivery happens due to the inadequate central transfers for subsidizing the financial losses of local governments. Not only owing to insufficient funding, but also these resources leak as they pass through the provinces and prefectures before reaching counties.

The local inefficiency in providing essential public services is also related to the limited involvement of citizens in public services planning, provision, and monitoring. According to the field visits documented in World Bank (2007a), the low quality of

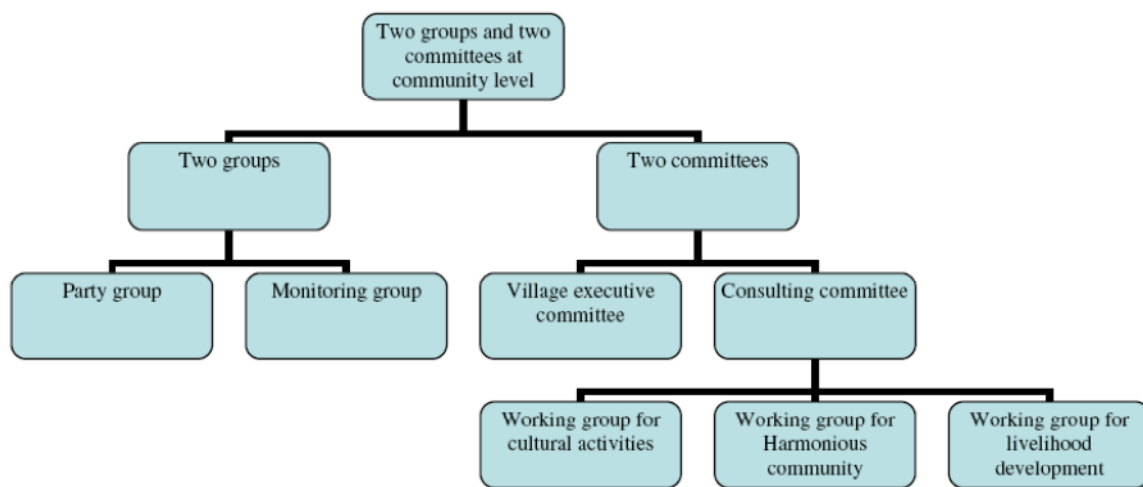
services observed in Henan and Yunnan is partly owing to local governments' allocative decisions that are not in line with their residents' interests. For instance, some rural schools had no funding for heating or electric lighting, but employed so many teachers that each teacher only taught on average twelve hours per week. Similarly, agricultural extension services, police stations, and even emergency medical services often allocated nearly all of their budgets for staff expenditures, leaving little or no funding for the vehicles or fuel needed to take them to the field. The central government has taken some steps in the direction of participatory monitoring & evaluating¹², such as the community driven development (CDD) pilot program and the New Socialist Countryside campaign in Ganzhou, as shown in Figure 2.11. People are mobilized at the community level, with a monitoring group established in Longshijian village. The main responsibilities of the monitoring group include reviewing fiscal income and expenditures, ensuring to publicize the financial information in the village, auditing the use of community resources in line with the needs and preferences set by the local people, and evaluating the performance of the members in other community organizations.

Nevertheless, the significance of community organizations in China is still in a stage of infancy (Plummer and Taylor 2004). They are new and mostly in the process of being established, such as water user associations. This absence of diverse community organizations in China hinders efficient participation by public services users/citizens. It is partly caused by the central government's regulatory framework as well as by the lack of understanding, capacity, and incentives of local governments to promote such

¹² Chapter V (1) of the 2004 State Council Decision on Reform of the Investment System states that “[a] social supervision mechanism for government invested projects shall be established and the public and press shall be encouraged to supervise government-invested projects.”

organizations. Citizens’ grassroots-level organizations are likely to increase the participation of beneficiaries in the management, monitoring, and evaluation of public services, and thereby to improve local governments’ performance and hold them accountable (World Bank 2007b)

Figure 2.11 Ganzhou’s Participatory Monitoring & Evaluation



Source: World Bank (2007b)

Conclusion

Since China’s authorities initiated the development strategy of building a socialist “harmonious society” in 2003, major programs to improve public services delivery have been implemented. Central transfers to support rural public services are increasing; improvements are being made to ensure salary payments at the county and township levels; administrative reforms are being undertaken at the grassroots levels; reforms to

public service units (PSUs) are being piloted in many parts of the country; the free Rural Compulsory Education program is taking place; the New Rural Cooperative Medical Scheme and the Rural Medical Assistance Scheme are under way; and the Rural Minimum Living Stipend (*dibao*) is being implemented (World Bank 2007b).

However, although many reforms and new programs have been introduced to build a harmonious society or to promote a new socialist countryside, their effects are mixed and some are even contradictory. China's highly decentralized systems of fiscal management and administration can be an asset for cost-effective service delivery if the configuration of the intergovernmental fiscal system works in line with China's development priorities. At present, though, there exists a stark vertical fiscal gap at sub-national levels of government, particularly at the county level that bears the main responsibilities for the provision of public services, and the gap has been widening over the years. Secondly, as the analysis of public expenditure composition reveals, the allocation of public spending appears out of line with China's development objectives, with a relatively low share of spending on education, health, and other social needs, relative to GDP, according to international standards. Such a low level of public spending on important human development needs is partly attributable to the large fiscal gaps prevalent across sub-national governments. The financing stress of local governments is aggravated by the lack of accountability of local officials who may be keener on accumulating political equity than on taking responsibility for ensuring a sufficient level of basic public services. This explains why, despite a sharp increase in central transfers for spending on rural development, these government funds leak as they processed through the hierarchy

before reaching the targeted regions; and why in some cases, they are not always used as initially intended. The accountability of local governments to citizens is also weak, with most services provided without any participation by citizens or communities – for example, through their taking part in decision-making on projects and in subsequent monitoring.

Thus, to improve the effectiveness of reforms and new programs, China's more equitable development strategy necessitates a reevaluation of the intergovernmental fiscal arrangements. The existing fiscal system, established after the 1994 tax assignment reform and later fine-tuned by piecemeal reforms as certain issues arose, may not serve the country's new objectives of providing adequate basic public services and promoting balanced regional development. That being said, the picture is not complete without addressing the other side of coin: the worsening inequality resulting from a highly decentralized fiscal system. Recent years have seen increasing concern among policymakers and researchers over the inequality of public services provision across the country. Does the substantial fiscal gap result in large fiscal disparities and shortfalls in critical public services provision? Chapter 3 will address the former question, and Chapter 4 will examine the intergovernmental transfer system.

**Appendix 1 Revenue and Expenditure Shares by Administrative Levels in Province
(2003)**

Shares (%)	Revenues			Expenditures		
	Province	Prefecture	County	Province	Prefecture	County
Total Subnational	25.2%	36.3%	38.5%	26.4%	30.8%	42.7%
Beijing	52.4%	45.8%	1.9%	48.4%	47.7%	3.9%
Tianjin	49.0%	48.6%	2.4%	48.0%	48.5%	3.5%
Hebei	26.0%	29.2%	44.8%	23.6%	21.9%	54.5%
Shanxi	29.0%	31.9%	39.1%	32.7%	19.8%	47.5%
Inner Mongolia	14.0%	20.8%	65.2%	21.9%	25.7%	52.4%
Liaoning	21.7%	41.0%	37.3%	20.4%	41.7%	37.9%
Jilin	29.2%	36.4%	34.3%	33.2%	26.5%	40.3%
Heilongjiang	32.7%	33.4%	33.9%	25.7%	36.7%	37.6%
Shanghai	49.7%	49.4%	1.0%	36.9%	61.5%	1.5%
Jiangsu	11.4%	28.8%	59.8%	16.4%	27.4%	56.2%
Zhejiang	12.0%	24.6%	63.4%	12.8%	23.9%	63.2%
Anhui	14.1%	38.3%	47.6%	31.0%	24.2%	44.9%
Fujian	13.1%	35.9%	51.0%	23.8%	27.9%	48.3%
Jiangxi	17.4%	25.4%	57.2%	25.3%	17.4%	57.2%
Shandong	13.6%	30.2%	56.2%	17.7%	24.8%	57.5%
Henan	16.5%	32.2%	51.3%	21.0%	24.9%	54.2%
Hubei	22.1%	30.8%	47.1%	27.5%	22.4%	50.1%
Hunan	18.3%	29.8%	52.0%	25.8%	22.8%	51.4%
Guangdong	24.8%	50.9%	24.4%	13.8%	48.9%	37.3%
Guangxi	13.8%	33.2%	53.0%	26.5%	24.2%	49.3%
Hainan	34.4%	26.8%	38.8%	36.7%	17.5%	45.8%
Chongqing	42.4%	35.4%	22.1%	36.5%	33.3%	30.3%
Sichuan	30.8%	25.3%	43.9%	19.4%	23.7%	56.9%
Guizhou	22.9%	20.4%	56.8%	28.3%	16.3%	55.4%
Yunnan	21.0%	29.3%	49.7%	31.7%	17.5%	50.8%
Tibet	14.1%	44.2%	41.7%	67.0%	13.6%	19.4%
Shaanxi	18.6%	30.8%	50.6%	41.6%	18.4%	40.0%
Gansu	31.6%	29.7%	38.8%	30.7%	20.7%	48.6%
Qinghai	29.4%	19.0%	51.6%	49.4%	15.9%	34.6%
Ningxia	22.3%	37.2%	40.5%	43.9%	15.0%	41.1%
Xinjiang	13.6%	35.2%	51.2%	37.6%	18.7%	43.7%

Chapter 3:

Fiscal Inequality in China: how large, why, and does it matter?

3.1 Introduction

Most national governments are concerned about the level and distribution of fiscal resources among the various levels of government. China is no exception, and this chapter aims to provide an in-depth examination of fiscal inequality in China. There are several grounds for the concern over fiscal inequality. Politically, equity and fairness are essential for social stability. In some countries, they are even critical for the maintenance of national unity – for example, from 1989 an aggressive fiscal equalization program was considered necessary to support the unification of the western and eastern halves of Germany. Economically, in the long run, vast inequalities impair the sustainability of a country's development. Studies show that countries with comparative lower inequality tend to achieve better economic performance. And normatively, people care and should care about social equity and fairness as goods in themselves. It is not socially acceptable for some jurisdictions to be seen spending a lot on their citizens while other jurisdictions can barely finance the basic functions of government. In the field of public policy and administration, fiscal disparity is a concern because it is directly associated with inequality in the provision of public services. Nations are turning to decentralization to improve the performance of the public sector. The hope is that state and local governments, being closer to the people, will be more responsive to their constituents and

will be able to find new and better ways to provide public services. However, while it is not possible for all jurisdictions to provide a similar level of public services across an entire country, poor jurisdictions – ones that cannot expect to be self-sufficient – will benefit from some form of financial support to maintain the quality of their public services at standards acceptable to their people.

Recent concern about increasing inequality in China has intensified interest in research on fiscal disparities. This study extends previous literature of fiscal inequality in the following ways. First, this chapter draws upon two panel datasets, for provinces during period 1998-2005 as well as for prefectures and counties spanning an eleven-year period 1994-2004, which ensures that the inequality measurement in this research is more broad-based and precise. The inequality calculation at prefecture and county levels takes into account intra-province dispersion, which helps to correct for underestimation of overall inequalities. In doing so, this research extends the study of sub-provincial disparities into the most recent period. For example, among the few pioneers who examine distributional pattern at the county level, Tsui (2005) carried out his analysis up to 2000, and Yin (2008) updated the research up to 2003. The second contribution of this research is to provide a comparative analysis of fiscal inequality at the three levels of sub-national government¹³ – the provincial, prefectural, and county¹⁴ levels. By doing so, it clarifies at which level of government the most severe fiscal inequality resides, which is essential to prioritize

¹³ Township is also an administrative level of sub-national government in China. But it does not manage fiscal affairs independently. Therefore, in terms of fiscal system, China only has three levels of sub-national government.

¹⁴ County-level jurisdictions officially include counties (*xian*), county-level cities (*xianjishi*), and districts in cities (*qu*). In this research, ‘county-level jurisdictions’ only refers to rural areas, i.e., counties and county-level cities. Unless otherwise stated, all budgetary figures for each county-level jurisdiction are the consolidated figures for both the county-level and township jurisdictions.

future fiscal reform. To my knowledge, no studies up to now have addressed the fiscal inequality issue of the three hierarchical levels of government at the same time. It is worth noting that this study fills the blank left in other studies by expanding the inequality assessment to the prefecture levels of government. There are no studies in the previous literature that have examined fiscal disparities by using a widespread dataset with prefecture units. Although Park et al. (1996) shed some light on the distributional pattern among prefectures, but this study was restricted to only one province of Shaanxi. Lastly, this chapter also applies spatial inequality analysis to evaluate the distributional pattern of public spending on education, health, social security, and capital construction at the provincial level. Such an attempt appears to have been worthwhile, for the inequality of financing for specific service area can be revealed.

When examining fiscal inequality at each level of sub-national governments, the chapter focuses on the following three questions: first, what is current level of fiscal inequality at each level of government; second, in addition to static measures, what is the trend of fiscal inequality; and third, which contributes more to overall fiscal inequality, within-region or between-region fiscal inequality? This third dimension involves decomposition of inequality indicators.

This chapter is organized as follows. The second section provides a review of existing literature on fiscal disparities in China. The next section discusses measures of fiscal inequality and decomposition methodology. Fiscal inequality at the provincial,

prefectural, and county levels is examined separately in Section 3.4. The final section offers conclusions and discusses policy implications.

3.2 Fiscal Disparities in China: what do we know?

While a considerable literature exists on *income* disparities in China, much less is known about the *fiscal* dimension of inequality at different levels of government, and about the inequality in public spending for core public services. The issue of fiscal disparities in China has, however, captured more attention in recent years¹⁵. Most studies focused on the analysis of policy intents or anecdotal observations in selected regions. Some studies reported ratio of the maximum to the minimum for per capita revenue and expenditure at different periods (Ahmad 2004; Bahl and Linn 1994; Wong 2000). However, the max-min ratio is not precise measure of inequality owing to its single consideration for extreme values. Other studies employ inequality indices such as Coefficient of Variation, the Gini index, or Theil index¹⁶ (Martinez-Vazquez, et al. 2008; Qiao and Shah 2006; Tsui 2005; Yin 2008; Zhao and Ou 2008). This section will review the literature of fiscal disparities in China according to different levels of aggregation.

At the national level, provinces are usually taken as the unit of analysis. This is the basis of most publications on fiscal inequality in China. For instance, Bahl (1999) studied fiscal inequality over the period 1990-1995, and found that per capita expenditures in

¹⁵ Many studies on China's fiscal decentralization has examined its impact on economic growth or revenue stability (Davoodi and Zou 1998; Jin, et al. 2005; Jin and Zou 2005; Qian 1999; Young 2000; Zhang and Zou 1998)¹⁵. Recent years have seen a shift of research focus from growth to fiscal disparities.

¹⁶ Detailed explanation of these inequality indices is included in the next section of methodology and data.

1990 ranged as high as 633 yuan—about six times the lowest figure, which was 106 yuan in Henan. Five years later, in 1995, per capita expenditures varied from a high of 1,837 yuan in Shanghai to only 226 yuan in Anhui, roughly 8.1 times less. Bahl (1999) is one of the few studies addressing the issue of fiscal disparities in 1990s, but his measurement of max-min ratio is not accurate calculation of inequality and the data are now dated. Dollar and Hofman (2008) and Martinez-Vazquez et al. (2008) updated the measurement of max-min ratio up to 2003. They found that public per capita expenditures in the best-off province were 8.5 times those of the worst-off province, and the coefficient of variation across provinces was 0.77. The most inclusive study on provincial fiscal disparities is provided by Zhao and Ou (2008). Using a dataset over the period 1978-2006, they measured Gini coefficient and found the dispersion of per capita public expenditure was reduced from early 1980s to 1994 and then stayed about the same level afterwards. The key problem of only focusing on provincial fiscal disparities is that it tends to underestimate overall inequality without taking intra-province dispersion into consideration. As we know, most government revenues and expenditures in China are collected and spent by prefectural and county governments, and therefore the pattern of fiscal distribution of sub-provincial finance requires even more attention.

Sub-provincial analysis of fiscal inequality facilitates understanding of how reforms have affected the availability and distribution of public financial resources at the level of government that takes primary responsibility for basic public service provision. Most studies of China's fiscal reforms have focused exclusively on the central-provincial division of fiscal responsibilities. Only a few existing studies focus on sub-provincial

fiscal inequality in terms of public expenditure distribution (Park, et al. 1996; Tsui 2005; World Bank 2002; Yin 2008). Park, et al. (1996) found declining redistribution of financial resources from richer to poorer counties in the province of Shaanxi. The coefficient of variation for county expenditures per capita in Shaanxi rose monotonically to reach 49.3 by 1992. The coefficient of variation for revenues per capita has also risen over time, reaching 86.4 in 1992. This study is revealing but it examined only one comparatively poor province, and its data are dated from before the 1994 fiscal reform. The World Bank (2002) studied the province of Gansu and found that among its 14 prefectural level units in 1995, the ratio of maximum to minimum was 6.6 for per capita expenditures, with coefficients of variation of 0.66. These numbers are much larger compared to the existing findings of fiscal inequality across provinces. The disparities shrank moderately through 1999, to 4.3 in expenditures, with coefficients of variation of 0.51. At the county level, the differences among the 76 county-level units were even greater: 1999 expenditures varied 37-fold from the highest to the lowest, with the disparities growing between 1995 and 1999 (World Bank 2002). However, Gansu is also one of the poor provinces, and the pattern of fiscal inequality in this particular province may not be universal across the country. Tsui (2005) gauged county-level fiscal disparities for the period 1994-2000 and found that fiscal inequality tended to ratchet upwards except for oscillations in the initial years.

While it is meaningful to gauge fiscal inequality at the level of aggregate public expenditure, it is illuminating to look at regional disparities in such core public services spending as education expenditure, health care expenditure, and expenditure for social

protection. Only a couple of studies shed light on the inequality of government spending for specific public services. Martinez-Vazquez, et al. (2008) found that regional disparities in per capita expenditures exist for almost all major expenditure items. The disparities are particularly pronounced for some expenditures: in 2003, for example, the differences between public health expenditures in the highest and lowest provinces differed by a factor of 13, and the coefficient of variation was 0.8. In contrast, expenditures on 'public administration' in the highest and lowest provinces differed by a factor of just 3, and the coefficient of variation was 0.4. Martinez-Vazquez's research was limited to static measurement of major spending categories for the year 2003. Observation of the trend is missing from the literature. Liu and Shih (2004) focused on the comparison of per capita spending on health and education at the county level between the year 1993 and the year 2000. They found that in 1993, the average county in Beijing spent 155 yuan per capita on health and education, which is almost 5 times the average spending in Henan Province, the province with the lowest per capita county health and education spending. In 2000, however, the average county in Beijing—still number one in per capita health and education spending—was spending 7.4 times as much on health and education as Henan, which remained last in per capita health and education expenditure at the county level. The standard deviation of per capita county expenses on health and education increased from 37 yuan in 1993 to 53.5 yuan in 2000 (Liu and Shih 2004).

The literature review on fiscal inequality in China in the above finds that until now, there have been few efforts to analyze fiscal inequality systematically at all three levels of sub-

national government in similar time periods. Most research focuses only on provincial-level inequality, while a few studies examine the county level exclusively. However, in order to reveal how fiscal inequality compares at different levels of government, it is critical to investigate provincial, prefectural, and county-level fiscal inequality in one comprehensive study. Given data availability, this research will fulfill this need by examining fiscal inequality at the provincial level over the period 1998-2005, the prefecture and the county level from 1994 to 2004. It is hoped that findings from this study will provide insightful guidance to prioritize future fiscal reforms in China. Missing from the literature is evidence on prefectural (usually called sub-provincial) fiscal inequality, despite the popular allegation that prefectural inequality is much larger than provincial inequality. My research fills this gap by using a series of measures of inequality to shed light on the trend in prefectural fiscal disparity. This study will also extend existing knowledge on county-level fiscal inequality through thorough examination of more than 2000 county units across the country from 1994 to 2004. Another important missing element derives from the fact that current literature focuses primarily on aggregate fiscal inequality. My research intends to enhance the understanding of fiscal inequality at the provincial level by looking into the inequality in spending on basic public services.

3.3 Measures of Fiscal Inequality and Decomposition Methodology

In the literature about China's fiscal disparities, the magnitude of fiscal inequality is often measured by the dispersion of per capita revenue or per capita expenditure. In the ideal

scenario, it is best to measure quantity and quality of public services provision and consideration of their impact on people's lives (achievements and capabilities). But this is not achievable due to difficulty and complexity of designing appropriate indicators as well as data availability particularly from local governments in developing countries like China. But our goal is not to strive for perfectly equal per capita expenditure. It is not possible or desirable as local revenue potential and cost of delivering services are different. For instance, cost of service provision is dependent on such factors as location, population density, and infrastructure. But a certain level of fiscal inequality is not acceptable. In most developing countries, it is considered horizontal equitable if a coefficient of variation is about 0.3-0.4 across regions (Martinez-Vazquez, et al. 2008).

Fiscal inequality in terms of per capita public expenditure is used in this research (rather than per capita fiscal revenue) because the core concern of my research is the distributional effects of public resources.¹⁷ Actual public expenditure reflects the ultimate effort by government to improve people's lives, while measurement of fiscal capacity by revenues does not incorporate fiscal transfers from upper levels of government. As fiscal transfers are a major source of local finance, particularly in China with its revenue-centralized fiscal system, gauging fiscal disparities by revenue tends to exaggerate inequality across jurisdictions.

One way of assessing the extent of fiscal inequality is to use several inequality measures. This research uses four types of inequality measure, each having its own advantages and disadvantages.

¹⁷ Further research might examine impacts on people's lives, different ways in which expenditures are converted into quality of living.

Maximum to Minimum Ratio [MMR]

A comparison of the highest government expenditure per capita in a region with the lowest expenditure per capita provides one measure of the range of disparities. If this measure is small across regions, then it means different regions have relatively equal public expenditure. If this measure is large, the immediate impression indicates high inequality. The MMR provides a quick and straightforward quantification of regional fiscal inequality. However, the interpretation may be misleading as it is not clear whether the high ratio is due to substantial variation in the distribution of per capita government expenditure or the presence of outliers. Therefore, other methods of inequality measurement are required to supplement MMR.

Coefficient of Variation [CV]

The coefficient of variation is one of the most widely used measures of inequality in the literature. The CV is a measure of dispersion around the mean. In this study, the CV as defined below, ‘weighted coefficient of variation’, attempts to capture the dispersion of public expenditure per capita, and the deviation is weighted by its share in the total population.

$$CV = \frac{\sqrt{\sum_{i=1}^N (E_i - \bar{E})^2 \frac{P_i}{P}}}{\bar{E}} \quad (1)$$

where E is public expenditure per capita, \bar{E} is the overall mean, N is the number of observation, P is the total population, and P_i is the population of the i th jurisdiction.

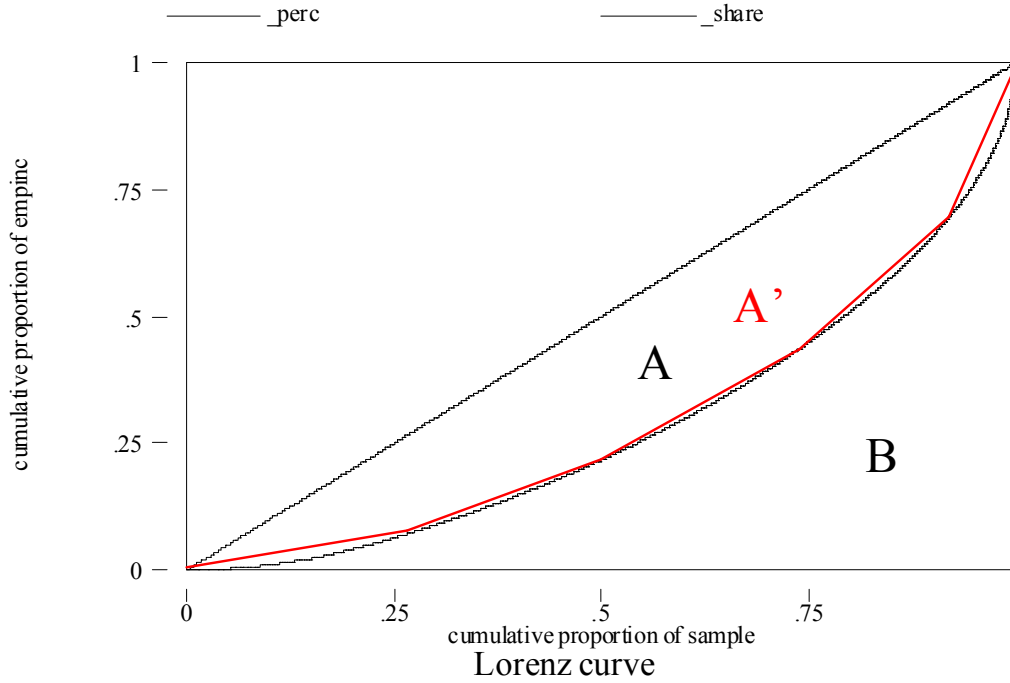
Although widely used, CV depends on the mean of the distribution, and this property of mean dependence is not a desirable property of an inequality measure.

Therefore, the Gini coefficient is also used in this study.

The Gini Coefficient [G]

In the literature, the most widely used measure of inequality is the Gini coefficient. It is derived from the Lorenz curve (see Figure 3.1), a cumulative frequency curve that compares the distribution of a specific variable (e.g. income or per capita expenditure) with the uniform distribution that represents equality. As shown in the Figure 3.1 with cumulative percentage of households on the horizontal axis and the cumulative percentage of expenditure on the vertical axis, the diagonal line represents perfect equality, and the Gini coefficient is defined as $A/(A+B)$. A and B are the areas shown on the graph. If $A=0$, the Gini coefficient becomes 0, meaning perfect equality; whereas if $B=0$, the Gini coefficient becomes 1, meaning complete inequality.

Figure 3.1 Lorenz Curve



This study defines G as follows:

$$G(E) = (2\bar{E}P^2)^{-1} \sum_{k=1}^N \sum_{d=1}^N P_k P_d |E_k - E_d| \quad (2)$$

where P is the total population and N is the number of observations. P_k and P_d are the population of the k th jurisdiction and d th jurisdiction.

The Gini coefficient is not entirely satisfactory. For analysis of inequality, it is always useful to decompose inequality by regions or by subgroups of the population in order to prioritize policies for inequality reduction. For example, total inequality is composed by two segments – “between region” (average per capita expenditure varying from region to region) and “within region” (per capita expenditure varying inside each

region). For policy purposes it is helpful to discern these sources of inequality. If “between- region” inequality is the culprit, then the focus of policy may need to be on balanced regional economic development with special emphasis on the poorer regions. However, the Gini coefficient is indecomposable. That is, the total Gini of society is not equal to the sum of the Gini coefficients of its subgroups. Therefore, the Theil index is introduced below to help decompose total inequality.

The Theil Index [T]

When it comes to decomposable inequality measures, the best known is the Theil index. The Theil index belongs to the family of generalized entropy inequality measures that are characterized by a single parameter, c . The formula, developed by Shorrocks (1980, 1984), is given by:

$$\begin{aligned}
 I_c &= \frac{1}{c(c-1)} \sum_{j=1}^J \sum_{i=1}^{I_j} \frac{P_{ji}}{P} [(E_{ji} / \bar{E})^c - 1], c \neq 0, 1 \\
 I_1 &= \sum_{j=1}^J \sum_{i=1}^{I_j} (E_{ji} / \bar{E}) \ln(E_{ji} / \bar{E}), \quad c = 1 \\
 I_0 &= \sum_{j=1}^J \sum_{i=1}^{I_j} \frac{P_{ji}}{P} \ln(\bar{E} / E_{ji}), \quad c = 0
 \end{aligned} \tag{3}$$

where \bar{E} is the overall mean, and E_{ji} is the public expenditure per capita of the i th jurisdiction in region j . In my analysis, I measure fiscal inequality for I_0 . I_0 is in fact the mean logarithmic deviation proposed by Theil (1963).

Compared to other measures of inequality such as CV and Gini Coefficient, Theil indexes satisfy many desirable properties, such as mean independence, the principle of population replication (or population-size independence), and the Pigou-Dalton principle of transfers (Bourguignon 1979;Reardon and Firebaugh 2002;Shorrocks 1980). Mean independence implies that if all per capita expenditure were changed by the same proportion, the measure of inequality would not change. Population-size independence means that if the population were to change, the measure of inequality should not change. The Pigou-Dalton principle of transfers implies that any expenditure transfer from a richer to a poorer jurisdiction, which does not reverse their relative ranks in expenditures, reduces the value of the index.

The popularity of the generalized entropy measures also lies in their property of additive decomposability – the overall inequality value can be calculated as a weighted average of the inequality values of subgroups plus a between-group contribution to the overall inequality. This property enables researchers to figure out the contribution of each subgroup to total inequality, which allows policymakers to identify the specific subgroups that are major contributors in the overall inequality value.

Partitioning \mathbf{E} into J sub-vectors $E_j, j = 1, 2, \dots, J$, the Theil index (T) may be broken down into within-group and between-group contributions as follows:

$$T(E) = WT(E) + BT(E)$$

$$WT(E) = \sum_{j=1}^J \frac{P_j}{P} I(E_j)$$

$$BT(E) = \sum_{j=1}^J \frac{P_j}{P} \ln\left(\frac{\bar{E}}{E_j}\right) \quad (4)$$

This research groups provinces by eastern, middle, and western regions, and groups prefectures/countries by province. $WT(E)$ captures only variation within region/province and ignores variations between region/province. $BT(E)$ purges within region/province variations by focusing exclusively on variations of regional/provincial means.

For a typical decomposition of inequality in expenditure per capita, consider the following simple example of expenditure inequality in Vietnam in 1993 (World Bank 2005). Using the Theil index, the total inequality is decomposed to “between urban-rural” and “within urban-rural”, with the former contributing 22 percent of the total inequality and the latter 78 percent. This analysis clarifies that policy focus should be targeted on the divergence within urban/rural region.

Table 3.1 Decomposition of Expenditure Inequality by Area, Vietnam (1993)

	Theil T	percent
All Vietnam	0.200	
Between Urban – Rural	0.044	22 percent of total inequality
Within Urban – Rural	0.156	78 percent of total inequality

Source: World Bank (2005)

In this study, prefecture and county level data are from *Statistical Material for Prefectures, Cities, and Counties Nationwide (Quanguo Dishixian Caizheng Tongji Ziliao)*, released by China's Ministry of Finance. This survey has detailed figures on budgetary revenues, expenditures and fiscal transfers for all sub-provincial jurisdictions from 1994 to 2004. Owing to data limitations, my measure of fiscal disparities refers only to inequalities in budgetary expenditure per capita.¹⁸

3.4 Fiscal Inequality at Major Levels of Sub-national Government

This section discusses the measurement and results of fiscal inequality at the provincial, prefectural, and county levels of government.

3.4.1 Provincial¹⁹ Fiscal Inequality

A snapshot of provincial per capita expenditure in 2005 is provided in Figure 3.2. The fiscal inequality across provinces is high. Shanghai, with the highest per capita expenditure, spent about eight times as much as Anhui, which ranks at the bottom (per capita GDP varies almost sixfold between the two provinces). Compared to the historical data from 1995 (Bahl 1999), the difference is almost identical – Shanghai spent about

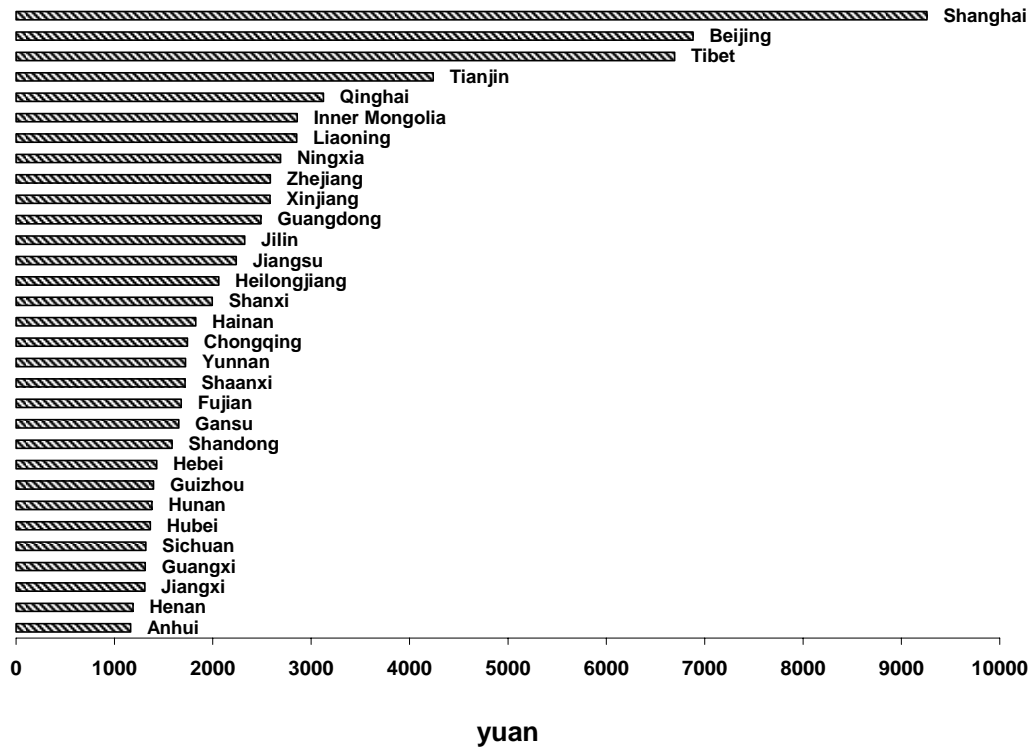
¹⁸ Extra-budgetary data are not complete across all jurisdictions and are only available for a few recent years.

¹⁹ Provincial fiscal inequality is also commonly called 'sub-national fiscal inequality' in the literature.

eight times as much as Anhui at that time as well.²⁰ The snapshot also reveals another interesting finding. The five top-spending provinces besides Shanghai are Beijing, Tibet, Tianjin, Qinghai, and Inner Mongolia. Surprisingly, in per capita terms the relatively poor provinces like Tibet (ranked 25th by per capita GDP) and Qinghai (ranked 19th by per capita GDP) are able to rank higher than affluent provinces like Zhejiang (ranked 4th by per capita GDP) and Guangdong (ranked 6th by per capita GDP). The same pattern is reflected in Ningxia, which is ranked 23rd by per capita GDP while per capita expenditure is ranked at 8th in the nation. These findings raise challenges on the common practice of measuring fiscal disparities based on per capita public expenditure. One possible explanation is that these three provinces belong to regions with high concentrations of ethnic minorities and so get more attention and financial assistance from the Center. It is also possible that higher per capita expenditure in these remote and rural provinces is associated with higher per capita cost of public services delivery due to low population densities. Another factor is that the measurement only takes into account government budgetary figures without considering other revenue sources. For instance, it is highly likely that the schools in affluent regions get more financial resources from school fees, donation, and other non-governmental investment. Therefore, relatively lower public expenditure per capita in the Eastern provinces could not be simply interpreted as lower quantity or quality of public services, and vice versa for those Western provinces.

²⁰ See details in the Literature Review chapter.

Figure 3.2 Provincial Per Capita Government Expenditure (2005)



Source: Author's calculation based on data from China Statistical Yearbook 2006.

Looking at Table 3.2, which compares the shares of GDP and fiscal resources in the five richest and the five poorest provinces in 1990, 1998, and 2004, a trend of polarization between the richest provinces and the poorest may be observed. During this 15-year period, the rich 'club' produces more, collects more revenue, and spends more, while the poor group produces less, collects less revenue, and spends less. From the revenue side, the five richest provinces (12.7 percent of total population) collected 33.2 percent of total sub-national revenue in 2004, compared to 26 percent in 1990. The five poorest provinces (17-19 percent of total population) only collected 8.8 percent of sub-national revenue, less than their 12.3 percent in 1990. On the expenditure side, the story is slightly

less dramatic. The five rich provinces spent 24.4 percent of sub-national expenditure in 2004, in contrast to 19.8 percent in 1990, while the five poor provinces spent 12.4 percent in 2004, less than their 1990s 14 percent.

Table 3. 2 Fiscal and Economic Concentration in Rich and Poor Provinces

Table 3. 2 Fiscal and Economic Concentration in Rich and Poor Provinces			
Five richest provinces*			
	1990	1998	2004
Percentage of population	12.7	12.2	12.7
Percentage of GDP	22.8	25.1	25.3
Percentage of revenue collection	26	23	33.2
Percentage of government expenditure	19.8	18.5	24.4
Five poorest provinces*			
	1990	1998	2004
Percentage of population	18.9	18.7	17.2
Percentage of GDP	12.7	11.7	8.7
Percentage of revenue collection	12.3	9.8	8.8
Percentage of government expenditure	14	8.6	12.4

Notes: (1) The five richest provinces in 2004 include Shanghai, Beijing, Tianjin, Zhejiang, and Jiangsu;
 (2) The five poorest provinces in 2004 include Guizhou, Gansu, Yunnan, Guangxi, and Anhui;
 (3) The five richest provinces in 1998 and 1990 include Shanghai, Beijing, Tianjin, Guangdong, and Zhejiang;
 (4) The five poorest provinces in 1998 and 1990 include Guizhou, Gansu, Shaanxi, Jiangxi, and Henan.

Source: 2004 data are from author's own calculation; 1998 and 1990 data are from World Bank (2002).

The above statistical analysis suggests that provincial fiscal inequality remained high up to 2005, with apparent polarization between the richest and poorest provinces. The next question that arises is, 'What is the trend of fiscal inequality at the provincial level? Is it getting worse, as most scholars expect?' Additional data, from 1998 to 2005, casts light on the trend of provincial fiscal inequality in this period (see Table 3.3). Opposite to our expectation, the trend of provincial fiscal inequality for this eight-year period is relatively stable. Although the mean of per capita expenditure more than tripled (1960 yuan in 2005, compared to 622 yuan in 1998), the MMR remains about eight times and the CV fluctuates between 0.65 and 0.60. The Gini coefficient confirms this trend of stability,

with a slight falling tendency. My observations on provincial fiscal disparity are therefore not congruent with the past literature, which all suggests increasing fiscal inequality at the provincial level in China. For example, Martinez-Vazquez et al (2008) looked at the period from 1990 to 2003 and concluded that the significant horizontal fiscal disparities across provinces were growing.

Table 3. 3 Provincial Disparity of Per Capita Expenditure (1998-2005)

Unit: yuan

Year	Mean	Maximum	Minimum	MMR	CV	G
1998	622	3211	347	9.24	0.65	0.26
1999	724	3620	409	8.84	0.65	0.26
2000	828	3635	225	16.14	0.62	0.27
2001	1036	4387	532	8.24	0.60	0.25
2002	1198	5307	655	8.11	0.61	0.25
2003	1342	6361	741	8.58	0.64	0.26
2004	1591	7936	906	8.76	0.65	0.25
2005	1960	9259	1165	7.95	0.61	0.23

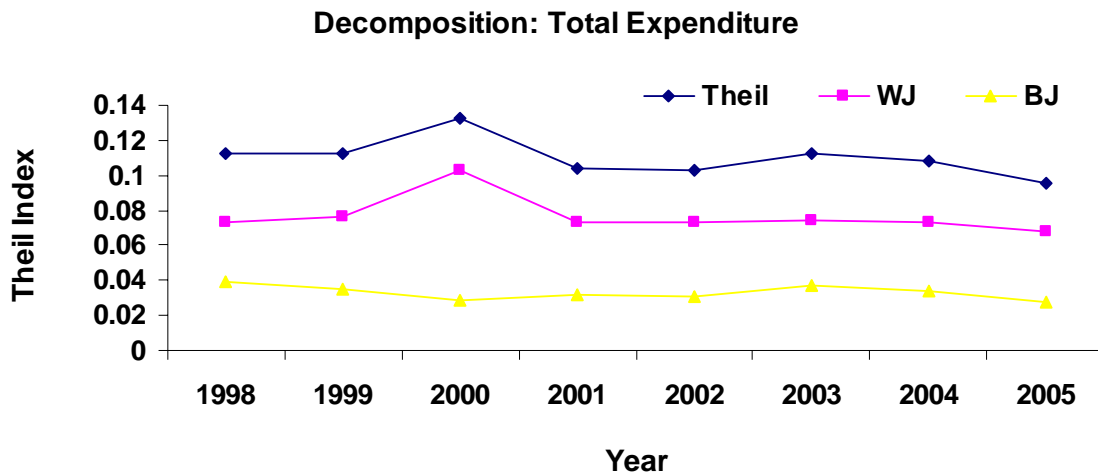
Source: Author's calculation, based on data from China Statistical Yearbooks 1999-2006.

It is conventional in China to group the provinces into three regions – the eastern, middle and western. Policymakers at the center are used to making region-targeted policies.

Therefore, a further question occurs, ‘Should the central government give more attention to within-regional or to inter-regional fiscal inequality?’ The decomposition of inequality indicator – the Theil index – could reveal the contribution of between-region and within-region inequality (see Figure 3.3). As shown in the figure, within-region inequality is about twice between-region inequality; in other words, more than two-thirds of inequality

comes from within a region. This finding suggests that in future the central government should not only put effort into the regional development strategy, but should also pay more attention to the inequality arising from within regions. For example, Anhui and Henan both belong to the affluent eastern region, but ranked as the bottom two in the whole nation in terms of per capita expenditure in 2005 (see Figure 3.2).

Figure 3.3 Provincial Fiscal Inequality Decomposition, 1998 - 2005



Source: Author's calculation, based on data from China Statistical Yearbooks (1999-2006).

In short, at the provincial level, there are three major findings. First, provincial fiscal disparities remain large. The coefficient of variation across provinces was 0.61 in 2005. For developing countries, a coefficient of variation between 0.3 and 0.4 is generally considered equitable comparably (Martinez-Vazquez, et al. 2008)²¹. Second, opposite to the mainstream belief that provincial fiscal inequality is growing, my analysis shows that it has been stabilizing during the period 1998-2005. Such finding is consistent with Zhao

²¹ See Appendix 3 for comparison of provincial level fiscal inequality in four East Asian countries, China, the Philippines, Indonesia, and Vietnam.

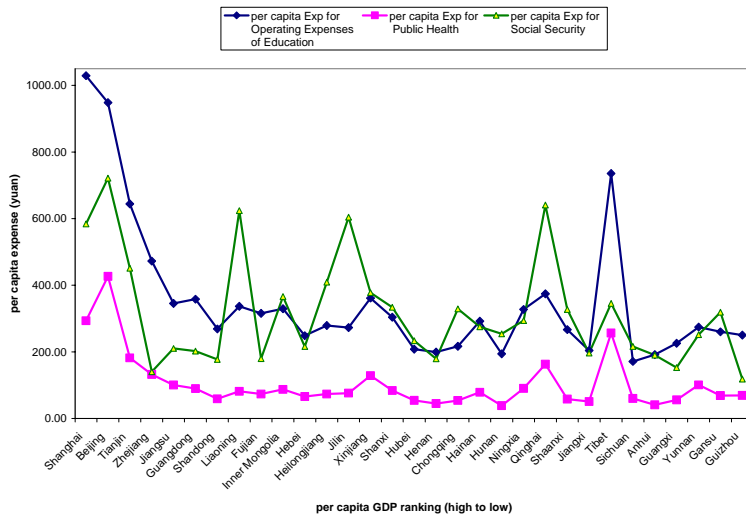
and Ou (2008). Third, about two thirds of total provincial fiscal inequality came from within-region disparities. This leads to the policy implication that in addition to long time focus on regional development policies, in future more effort should be put in bridging divergence within each region.

In addition to provincial total public expenditure, what has happened to spending on basic public services, such as education and health care? Has the inequality of public services financing also stabilized in the same period? Thanks to disaggregated data available at the provincial level, my research is able to break down the total expenditure and analyze the distribution of education expenses, public health expenses and social security expenses, as well as capital construction investment.

Figure 3.4 helps us to visualize provincial per capita budgetary expenditure on education, health, and social security in 2005. The provinces are lined up on the X-axis by per-capita GDP ranking from high to low, with Shanghai the most affluent province and Guizhou the poorest, while the Y-axis shows per capita government expenditure. There are three observations immediately illustrated by the figure. First, there is no surprise that the two richest provincial jurisdictions, Shanghai and Beijing, spend much more on social services compared to the rest of country. Second, expenses for social security are unexpectedly high in the following four provinces: Liaoning, Jilin, Qinghai, and Tibet. The explanation for Qinghai and Tibet is similar to that for their unexpectedly high total government expenditure – that is, they get favorable treatment from the central government due to political concerns. The other two provinces, Liaoning and Jilin, have

to allocate a large budget for social security expenses due to their large population of workers laid off from state-owned manufacturing enterprises (SOEs). These two ‘falling’ provinces, once affluent manufacturing centers, experienced a high unemployment rate due to the massive shutdowns of SOEs following China’s transition to a market economy. Third, besides the outlier situation mentioned in the above, there is no clear pattern of correlation between economic well-being and public expenditure for major social services.

Figure 3.4 Provincial Per Capita Expenditure on Education, Health, and Social Security (2005)



Note: Expenditure for Social Security comprises three parts: expenditure for pension and relief funds for social welfare, expenditure for retired persons in administrative department, and expenditure on subsidies to social security programs.

Source: Authors, based on data from Statistical Yearbook of China 2006.

Next, measuring the inequality of major public services spending can provide information on the distribution of fiscal resources across provincial jurisdictions. Table 3.4 and 3.5 reports respectively the provincial coefficient of variation and Gini coefficients for four

major spending categories – education, health, social security, and capital construction – for the period 1998-2005²².

Table 3.4 Disparities across provinces in selected categories

Coefficient of Variation (1998 – 2005)

	Total			Social	Capital
	Expenditure	Education	Health	Security	Construction
1998	0.65	0.57	0.73	0.71	1.29
1999	0.65	0.56	0.76	0.95	1.20
2000	0.62	0.54	0.78	0.84	1.11
2001	0.60	0.50	0.75	0.76	1.06
2002	0.61	0.49	0.71	0.72	1.15
2003	0.64	0.51	0.72	0.67	1.35
2004	0.65	0.51	0.73	0.71	1.35
2005	0.61	0.48	0.68	0.75	1.25

Source: Author's calculation, using data from China Statistical Yearbooks 1999-2006.

²² The charts are attached in the Appendix 1 &2.

Table 3.5 Disparities across provinces in selected categories**Gini Coefficient (1998 – 2005)**

	Total			Social	Capital
	Expenditure	Education	Health	Security	Construction
1998	0.26	0.24	0.28	0.35	0.43
1999	0.26	0.23	0.29	0.40	0.41
2000	0.27	0.24	0.32	0.38	0.40
2001	0.25	0.22	0.29	0.33	0.40
2002	0.25	0.21	0.29	0.34	0.40
2003	0.26	0.22	0.29	0.32	0.43
2004	0.25	0.22	0.29	0.34	0.41
2005	0.23	0.20	0.26	0.36	0.39

Source: Author's calculation, using data from China Statistical Yearbooks 1999 - 2006.

The disparities of spending for major expenditure categories differ considerably. As shown in the tables, public financing of education enjoyed the lowest fiscal inequality across provinces, less than the overall expenditure, thanks to the traditional culture of respecting and emphasizing education. When it comes to the trend in fiscal inequality, public financing of education and health care generally matches the fluctuation of overall expenditure. This is a steady trend between 1998 and 2005.

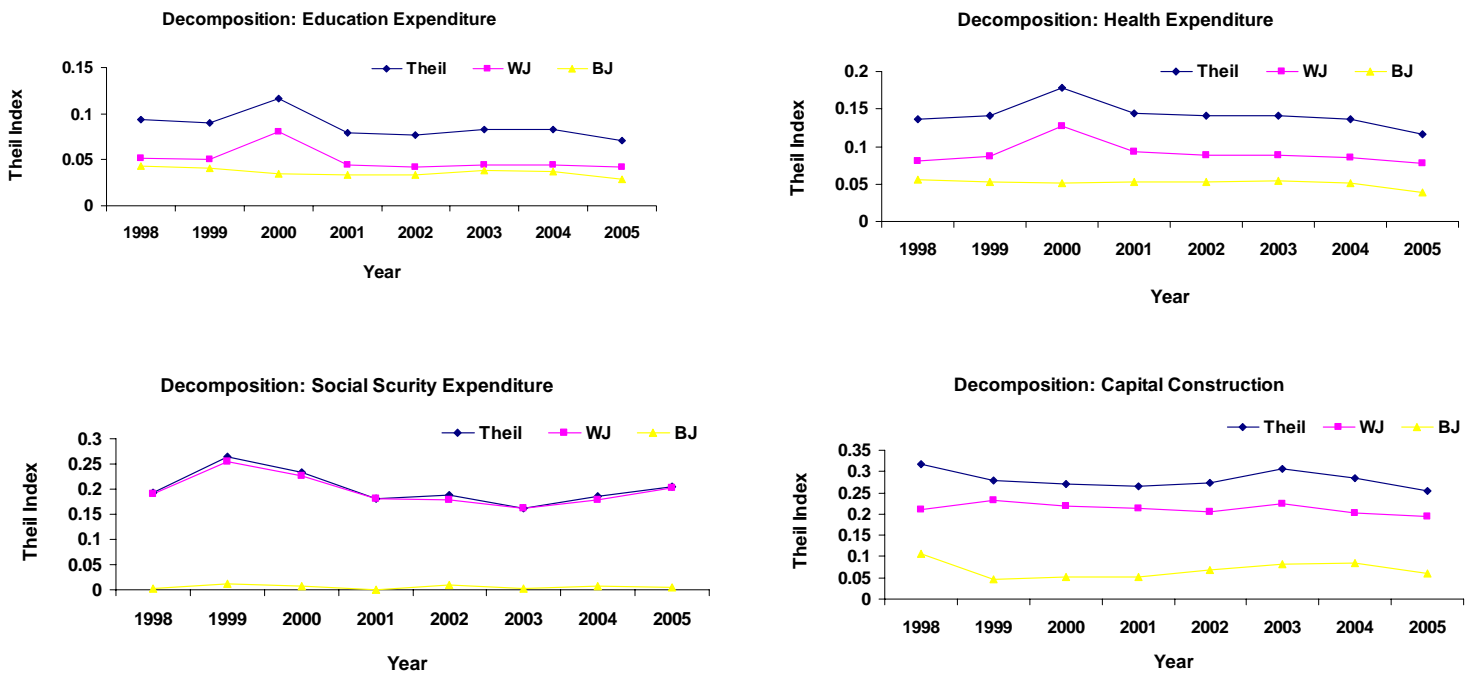
Attention needs to be drawn to the equity of public financing in social security, an issue highly debated in recent years. Expenditure on social security appears to be going against the general trend, with inequality having continuously declined in the period 1999-2003

but headed up again since 2003. All the other expenditure items have seen a declining trend in inequality since 2003. With the exception of social security expenditure, the other expenditure inequality was lower in 2005 than in 1998.

There is also marked inequality of capital construction per capita across provinces. The capital investment in a few eastern provinces is particularly high. The western provinces have experienced increased earmarked central government direct spending as well as government bond financing of infrastructure projects under the Western Development Program. In contrast, central regions have very low infrastructure spending (OECD 2006). As a result, disparities in per capital physical investment are significant.

Figure 3.5 reports the decomposition results by the four expenditure categories. Clearly, within-region inequality contributes more than between-region inequality, particularly in social security expenditure and capital construction spending. Interestingly, almost all the inequality of social security financing comes from within-region, as between-region inequality is close to zero for the entire period. Among the four categories of public expenditure, only inequality of education financing is split almost fifty-fifty between the within-region and between-region categories.

Figure 3. 5 Provincial Fiscal Inequality Decomposition, 1998-2005



Source: Source: Author's calculation, based on data from China Statistical Yearbooks 1999-2006.

3.4.2 Prefectural Fiscal Inequality

Prefectural fiscal inequality, sometimes called ‘sub-provincial’, has attracted more attention in recent years, as many scholars believe it is deteriorating along with widening income inequality. This section focuses exclusively on prefectural fiscal disparity and uses aggregate sub-provincial data to gauge the horizontal fiscal gap between about 300 prefectural units over the period 1994-2004.

A snapshot of prefectural per capita expenditure in 2004 is provided in Figure 3.6. The comparatively lower-spending prefectural governments are concentrated in the middle region instead of the poorer western region. The lowest per capita prefectural spending occurred in Anhui and Henan. Contrary to my expectations, a few poor western provinces enjoyed high per capita spending (highlighted in blue). For example, Xinjiang spent more than 2000 yuan per capita, a similar level of spending to Guangdong and Zhejiang.

Figure 3. 6 Sub-provincial (Prefecture) Per Capita Expenditure Disparities (2004)



Notes: Four metropolitan cities, Beijing, Tianjing, Shanghai, and Chongqing, are not counted because they are considered as provincial jurisdictions in China. Tibet is not included due to data availability.

Source: Author's Calculation based on data from China Statistical Yearbook 2005.

Table 3.6 summarizes some basic indicators across prefecture-level jurisdictions during the period 1994-2004. Compared to the similar table at provincial level (Table 3.3), the maximum-to-minimum rate of per capita expenditure is remarkably higher at the prefectural level. The provincial MMR is about eight to nine, while the prefectural MMR goes as low as about 36 and up to more than 90. If we look at the dispersion from the mean per capita expenditure, the coefficient of variation at the prefectural level is significantly larger than at the provincial level. For instance, in 2004, the sub-provincial CV is 1.04 while the provincial CV is 0.61. Since the mean changes dramatically over the years, the Gini coefficient is in this case a better indicator for measuring inequality. The prefectural Gini is also much larger than the provincial Gini (0.34 vs. 0.25 in 2004). Therefore, according to the statistics of more than 300 prefectural units, sub-provincial fiscal inequality is more severe than provincial level fiscal inequality.

What about the trend in prefectural fiscal inequality? Has it escalated, as many scholars allege? Given the Gini coefficient from 1994 to 2004 shown in Table 3.6, it is easy to find out. The answer is 'NO'. Prefectural fiscal inequality remained surprisingly stable over this eleven-year period, with only a slight increase from 0.32 in 1994 to 0.34 in 2004. One can argue that despite the changes going on in the fiscal system, the impact of policies on the distribution of public expenditure at the prefectural level is negligible. However, the period was one of rapid economic development and widening income inequality at all levels of jurisdiction, and thus the opposite argument also makes sense: maintaining the fiscal inequality at a level almost the same as a decade previously reflects the government's effort to balance the distribution of public spending across the country.

The next chapter will shed light on this issue by analyzing the key policy instrument – the intergovernmental transfer system.

Table 3. 6 Prefectural Disparity of Per Capita Expenditure (1994-2004)

Unit: yuan

Year	Mean	Maximum	Minimum	MMR	CV	G
1994	243.99	5922.07	73.60	80.46	1.03	0.32
1995	294.77	2830.43	75.90	37.29	0.86	0.32
1996	350.70	10301.31	109.40	94.16	1.18	0.31
1997	376.49	4186.73	94.74	44.19	0.87	0.31
1998	440.24	5276.76	144.89	36.42	0.91	0.32
1999	500.39	6295.46	165.01	38.15	0.96	0.33
2000	567.74	13556.87	178.07	76.13	1.14	0.34
2001	700.56	13788.15	222.37	62.01	1.05	0.34
2002	821.24	22070.71	265.75	83.05	1.19	0.34
2003	938.72	23120.16	300.50	76.94	1.14	0.34
2004	1114.24	22865.14	344.51	66.37	1.04	0.34

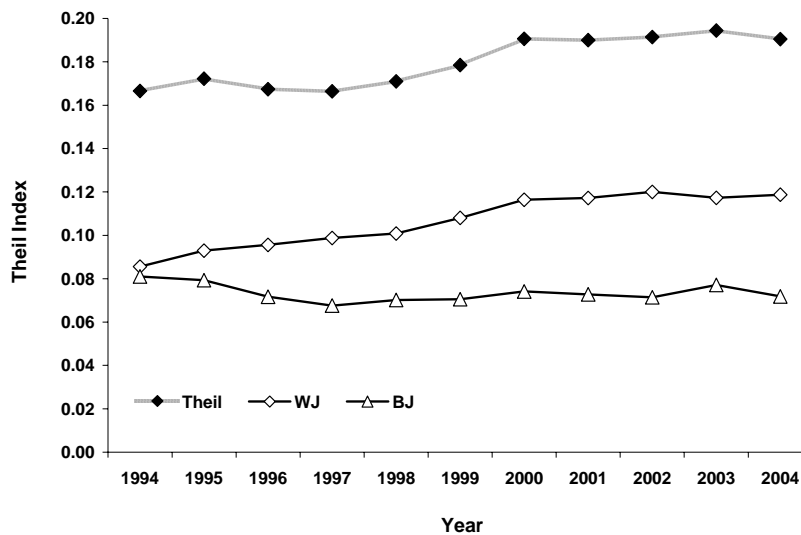
Source: Author's calculation based on data from Statistical Material for Prefectures, Cities, and Counties Nationwide 1995 - 2005.

Besides the trend in prefectural fiscal inequality, it is also useful to find out whether fiscal inequality originates primarily between provinces or within provinces. If between-province inequality is the key factor, fiscal programs, particularly transfers, at the central level are worth more attention. However, if within-province inequality makes the major contribution to overall inequality, the provincial government rather than the central government is to blame, and thus provincial governments need to pay more

attention to fiscal resource distribution. To address this problem, it was necessary to calculate and decompose the Theil index.

The Theil index is decomposed into between-province and within-province inequality, and the results are reported in Figure 3.7. Within-province inequality was almost the same as between-province inequality in the initial year of 1994 – in other words, the two categories contributed half-and-half to overall fiscal inequality. Over the years, between-province inequality remains almost the same. The slight increase in prefectural inequality comes from the within-province divergence. In 2004, the within-province inequality contributes more than 60 percent of the total inequality. Comparing 2004 with 1994, the within-province Theil index increases about 40 percent, but the between-province inequality falls more than 10 percent.

Figure 3.7 Prefectural Fiscal Inequality Decomposition (1994-2004)



Note: WJ means within-jurisdiction (province); and BJ stands for between-jurisdiction (province).
 Source: Source: Author's calculation based on data from Statistical Material for Prefectures, Cities, and Counties Nationwide 1995 - 2005.

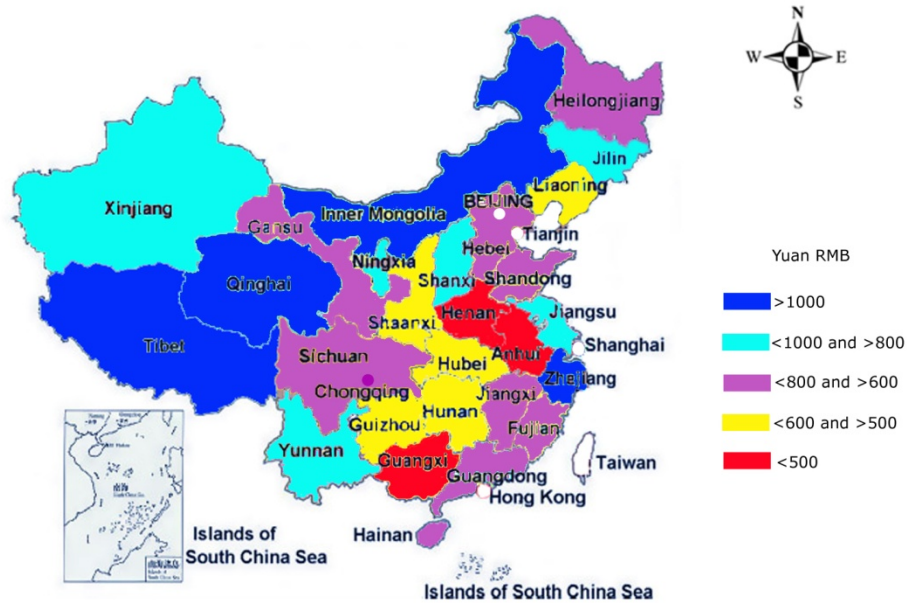
In conclusion, at the prefectural level, there are three major findings: first, I am able to confirm that sub-provincial fiscal inequality is much larger than that at provincial

level; second, contrary to the popular allegation that sub-provincial fiscal inequality increased, my calculation proves that it remained relatively stable over the period 1994-2004; and third, prefectural fiscal inequality came mostly from within-province divergence and therefore each provincial government should pay close attention to the distribution of fiscal resources at the level immediately subordinate to them.

3.4.3 County-Level Fiscal Inequality

There are more than 2000 counties in China. It is more meaningful to look at county-level fiscal inequality by province. Figure 3.8 presents the divergence of county-level per capita expenditure across provinces in 2004. As with the provincial and prefectural levels, the lowest county per capita expenditure resides in Anhui and Henan. Compared to the prefectural level, it is more apparent at the county level that some poor western provinces bear a relatively high per capita expenditure. For example, Inner Mongolia, Qinghai, and Tibet compete with Zhejiang, spending more than 1000 yuan per capita. Xingjiang, Yunnan, Ningxia, and Shanxi spend more than 800 yuan per capita, an expenditure similar to that of Jiangsu province. The unfortunate segment of low-spending counties is again spread mostly in the middle region.

Figure 3. 8 County Per Capita Expenditure Disparities (2004)

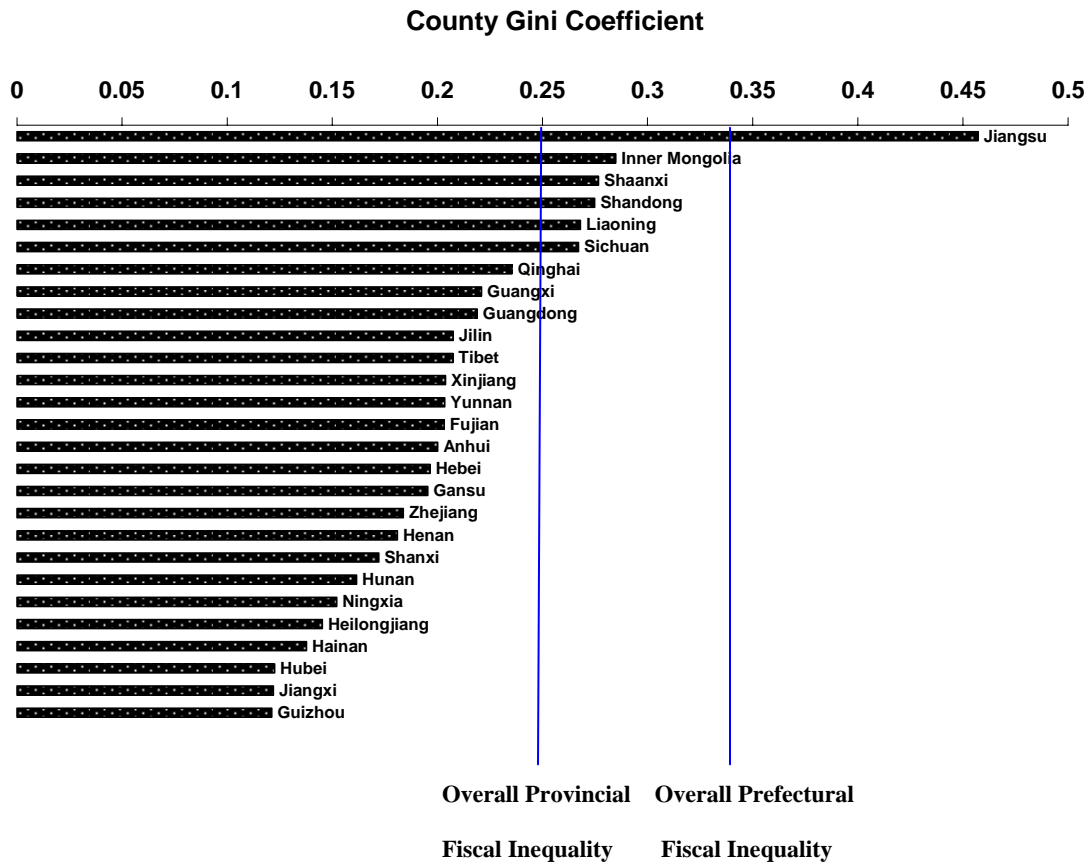


Notes: Four metropolitan cities, Beijing, Tianjing, Shanghai, and Chongqing, are not included.
 Source: Source: Author’s calculation based on data from Statistical Material for Prefectures, Cities, and Counties Nationwide 2005.

In addition to the level of per capita spending, what about the distribution of county-level fiscal resources by province? Figure 3.9 provides a ranking of county-level Gini coefficients by province in 2004. The four metropolitan cities – Beijing, Tianjing, Shanghai, and Chongqing – are not included in the figure. The province of Jiangsu, one of the richest regions, stands out with its highest county-level fiscal inequality (Gini coefficient 0.46). The level of inequality is higher than the overall provincial or prefectural fiscal inequality in 2004 (0.25 and 0.34 respectively). In contrast, Guizhou, one of the poorest provinces, ranks lowest by measure of the Gini coefficient (0.12). Except for Jiangsu, all provinces had a lower county-level fiscal inequality than the overall prefectural fiscal inequality in 2004. Most provinces even had a lower county-

level fiscal inequality than the overall provincial fiscal inequality in the same year. So, at least for 2004, the evidence goes against the common allegation that county-level fiscal inequality is much worse than fiscal inequality at the provincial level.

Figure 3.9 County-Level Fiscal Inequality by Province (2004)



Notes: Four large metropolitan areas (Beijing, Tianjin, Shanghai, and Chongqing) are excluded.
 Source: Source: Author's calculation based on data from Statistical Material for Prefectures, Cities, and Counties Nationwide 2005.

Taking Jiangsu, Yunnan, and Guizhou as representatives, we are able to take a close look at county-level fiscal distribution within each province (see Table 3.7). Jiangsu

has 52 counties, Yunnan 116, and Guizhou 75 county-level jurisdictions. Comparing maximum-to-minimum ratios at different levels of jurisdiction, the county-level ratio is considerably lower than the overall prefectural ratio (66.37 in 2004), compared to the most unequally distributed province of Jiangsu,²³ which has a county-level MMR of 14.5. Yunnan's county-level MMR²⁴ (8.43) was close to the overall provincial MMR (8.76) in 2004, while Guizhou's county-level MMR²⁵ (3.18) was much lower. If we compare the distribution of fiscal resources at the county level using the Gini coefficient, Jiangsu's Gini (0.46) was higher than the overall provincial Gini (0.25 in 2004) and the overall prefectural Gini (0.34 in 2004). But Yunnan and Guizhou had a much lower Gini, both less than the provincial Gini in 2004.

Table 3.7 County-Level Fiscal Inequality in Jiangsu, Yunnan, and Guizhou (2004)

Province	Number of Counties	Mean	Maximum	Minimum	MMR	G
Jiangsu	52	922.00	5171.70	356.71	14.50	0.46
Yunnan	116	806.44	2870.71	340.66	8.43	0.2
Guizhou	75	535.02	1114.02	350.32	3.18	0.12

Source: Source: Author's calculation based on data from Statistical Material for Prefectures, Cities, and Counties Nationwide 2005.

²³ Among 52 counties in Jiangsu, the county with the highest per capita expenditure is Kunshan, located in the city of Suzhou, while the lowest spending county is Guanyun County belonging to the city of Lanyungang. Kunshan is adjacent to Shanghai, and therefore is becoming a major manufacturing base for Shanghai.

²⁴ Yunnan has the highest county-level spending 2870.71 yuan per capita in Anning City, Kunming, and the lowest 806.44 yuan in Zhenxiong County, Zhaotong.

²⁵ In Guizhou, the highest 1114.02 yuan per capita in Yuping County, Tongren, versus the lowest 535.02 yuan in Dafang County, Bijie.

The above analysis finds that county-level fiscal inequality is similar to that at the provincial level and far below the prefectural level's. The next question is, 'What is the trend of fiscal inequality at the county level?' Table 3.8 depicts the trend from 1994 to 2004 by comparing county-level fiscal inequality with the provincial and prefectural levels. The pattern is quite flat, with no sign of the deterioration that many scholars claim exists. Comparing 1994 and 2004, the Gini coefficient remains at 0.27. It seems that the fiscal reforms since 1994 have not had much impact on the overall fiscal disparities at the county level.

Table 3.8 County-Level Fiscal Inequality (1994 – 2004)

Year	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
CV	0.602	0.592	0.553	0.575	0.574	0.565	0.564	0.673	0.555	0.583	0.631
Gini	0.268	0.265	0.251	0.252	0.261	0.255	0.262	0.316	0.253	0.258	0.274
Theil	0.117	0.120	0.101	0.104	0.118	0.104	0.115	0.166	0.107	0.108	0.123

Source: Author's calculation based on data from Statistical Material for Prefectures, Cities, and Counties Nationwide 1995 - 2005.

Over the eleven-year period of dramatic economic growth, did some provinces also succeed in bringing down fiscal inequality? Table 3.9 compares the county-level Gini coefficient in 1994 and 2004 by province. Jiangxi reduced the county-level Gini coefficient almost 50 percent, followed by Hubei 34 on percent and Guangdong on 31 percent. The most remarkable jump in fiscal inequality resides in three relatively affluent

provinces – Jiangsu increased by 117 percent, Liaoning by 76 percent, and Shandong by 72 percent. Tibet had the same county-level Gini coefficient in both 1994 and 2004²⁶.

Table 3.9 County-Level Gini Coefficient by Province: 1994 vs. 2004

Province	1994	2004	percent Change
Jiangxi	0.2439	0.122	-49.98 percent
Hubei	0.1855	0.1225	-33.96 percent
Guangdong	0.3184	0.2189	-31.25 percent
Yunnan	0.2787	0.2035	-26.98 percent
Heilongjiang	0.1931	0.1453	-24.75 percent
Hunan	0.1999	0.1615	-19.21 percent
Henan	0.2239	0.181	-19.16 percent
Gansu	0.2268	0.1954	-13.84 percent
Guizhou	0.1352	0.1212	-10.36 percent
Qinghai	0.2504	0.2355	-5.95 percent
Xinjiang	0.214	0.2039	-4.72 percent
Fujian	0.2035	0.2032	-0.15 percent
Tibet	0.2074	0.2074	0.00 percent
Anhui	0.1991	0.2001	0.50 percent
Ningxia	0.1507	0.1521	0.93 percent
Jilin	0.199	0.2075	4.27 percent
Shanxi	0.1624	0.1721	5.97 percent
Inner Mongolia	0.2681	0.2848	6.23 percent
Sichuan	0.2434	0.2671	9.74 percent
Zhejiang	0.1437	0.1838	27.91 percent
Shaanxi	0.2144	0.2767	29.06 percent
Guangxi	0.1698	0.221	30.15 percent
Hebei	0.1497	0.1965	31.26 percent
Shandong	0.1594	0.2748	72.40 percent
Liaoning	0.1523	0.268	75.97 percent
Jiangsu	0.2111	0.4572	116.58 percent

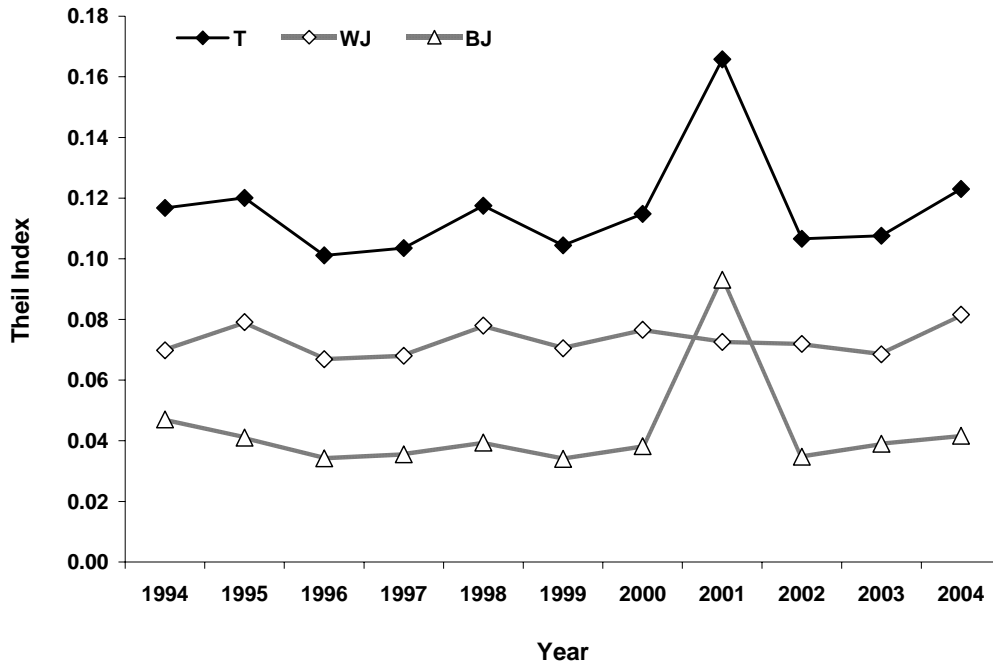
Source: Source: Author's calculation based on data from Statistical Material for Prefectures, Cities, and Counties Nationwide 1995 and 2005.

It is also important to examine whether county-level fiscal inequality comes mostly from between provinces or within provinces. The Theil index is decomposed into between-province and within-province inequality, and the results are reported in Figure

²⁶ See Appendix 4 for a comparison of county level fiscal inequality (Theil index) by province in 2002.

3.10. Apparently, within-province inequality makes the major contribution to the overall inequality. In 2004, within-province county-level inequality contributed about two-thirds of the total inequality. Comparing 2004 with 1994, the within-province Theil index increased about 17 percent, but the between-province county-level inequality measured by the Theil index fell more than 10 percent. Therefore, in order to bring down fiscal inequality at the county level, provincial governments need to put more effort into equalizing the distribution of fiscal resources across counties within each provincial boundary.

Figure 3.10 County Fiscal Inequality Decomposition (1994-2005)



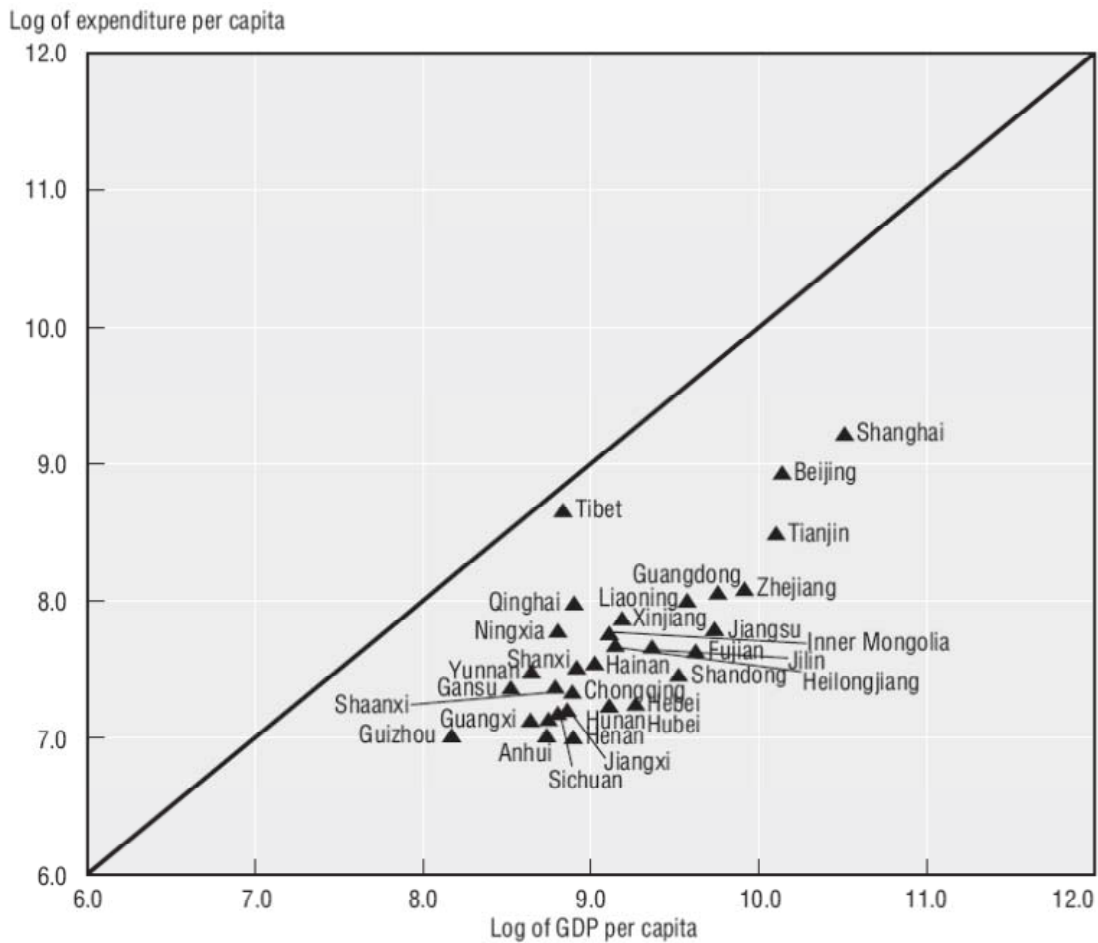
Note: WJ means within-jurisdiction (province); and BJ stands for between-jurisdiction (province).
 Source: Source: Author's calculation based on data from Statistical Material for Prefectures, Cities, and Counties Nationwide 1995 - 2005.

3.5 The Factors Contributing to Fiscal Inequality

The significant spending disparities across provinces can be attributed to variations in revenues arising from differences in incomes. OECD (2006) indicated that China's tax yields tend to be more unequally distributed than income. Using data from 1995-2004, the report found that a small increase in income disparities led to a more marked rise in revenue disparities. Furthermore, per capita expenditure and per capita income presented a positive relationship (see Figure 3.11), with the inequality of spending even larger than inequality in income. The rising disparities in income are mainly caused by China's market reform and the coastal strategy which has given favorable policies to more advanced coastal regions (World Bank 2002). The inequality of fiscal spending and the inequality of per capita income tend to reinforce each other. On one hand, the inequality of public expenditure is mainly caused by unbalanced economic growth across regions; and on the other hand, without proper policy intervention, the disparity of government spending may aggravate income inequality as essential public services are not provided adequately in the disadvantaged localities. However, according to the regression analysis by Zhao and Ou (2008), per capita GDP did not have statistically significant effect on per capita expenditure, which indicated that public spending might be more susceptible to other factors²⁷.

²⁷ In effort to figure out to what extent, the fiscal disparities are attributed to socio-economic factors, Zhao and Ou (2008) experimented different functional forms of regression using per capita expenditure and per capita revenue as dependent variables, and chose double-log specification which presented the best statistical fit. The details of their methodology are attached in the Appendix 5.

Figure 3.11 Relation of Per Capita Expenditure and Per Capita GDP at the Provincial Level (2002)



Source: OECD (2006).

China's large and persistent fiscal inequality is not only associated with unbalanced regional development, but also related to the present inter-governmental fiscal system which pushing down spending responsibilities without providing adequate financial resources. As reviewed in Chapter 2, fiscal decentralization is believed to facilitate more

effective and efficient provision of public services, but meanwhile it may cause greater inequality among regions. This is exactly observed in China. Fiscal inequality is widening over some years and then persistent in recent after-1994 period. Moreover, the issue is particularly of great concern due to the key problem of the large gap between expenditure and revenue assignments at the local level. The financing and delivery of most core public services are devolved to municipalities and counties that vary remarkably across country in terms of their financial capacity. There is no mechanism to ensure national minimum standards of vital public services including education and health care. As a result, governments in poor regions are delivering fewer and lower quality services and passing along a higher proportion of the costs to their constituents, in most cases, farmers (World Bank 2003). Whether the current system of intergovernmental transfers is designed to support more equitable services provision will be examined thoroughly in the next chapter.

Another significant factor may be the population density. With other things being equal, lower population density tends to bring up average costs of public services delivery. In an extreme example of remote mountain regions, class size may be smaller; certain public facilities may not be used in full capacity; or a premium has to be paid to attract teachers, doctors, and administrative staff. Zhao and Ou (2008) confirmed this estimation. They found that population density had a strong negative effect on per capita expenditure.

China's fiscal inequality may be also related to the center's special treatment for minority regions. For instance, Wang (2001) suggested that provinces with

predominantly non-Han population had received the highest levels of subsidies even though their income levels surpassed those of the poorer provinces. This explains why those poor provinces, such as Tibet, Xinjiang, and Qinghai, have low per capita revenue but comparatively high per capita expenditure, which indicates sizable central transfers are received in these provinces. Therefore, the most financially deprived were those poor provinces that were largely *Han*, the majority ethnic group, populated areas. However, the regression model designed by Zhao and Ou (2008) did not approve this speculation. They found although minority autonomous areas had lower per capita revenue but relatively higher per capita expenditure, the effects were not statistically significant.

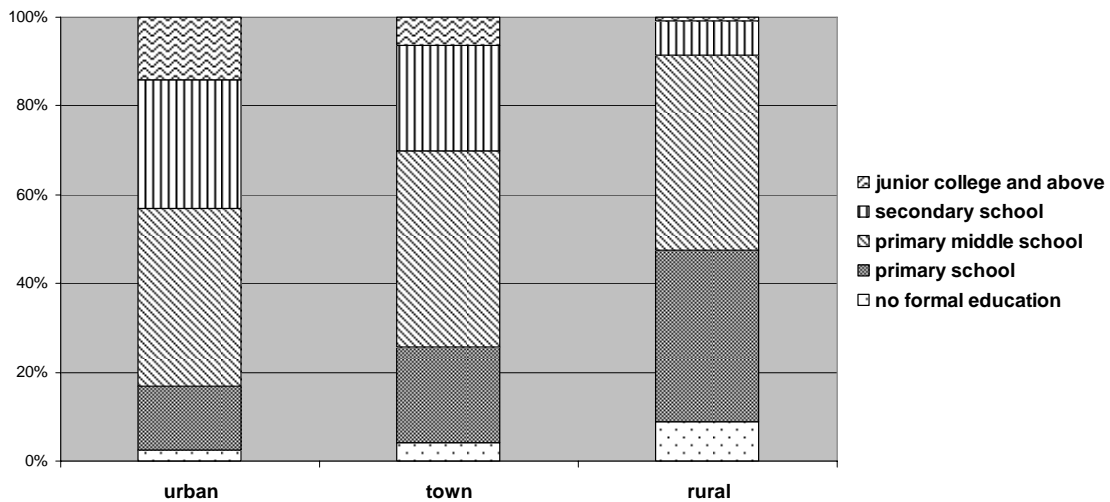
Persistent fiscal inequalities may just reflect China's authorities' emphasis on revenue mobilization. As described in the first chapter, the central government has always been concerned with its revenue capacity measured by the “two ratios” – ratio of total government revenue to GDP and ratio of central government revenue to the total. As the central policymakers are faced with more challenges in coping with the troublesome health care system, the collapsing social safety nets, the inequality of public services provision, the marginalized rural population, and so on so forth, a sufficient supply of fiscal resources is essential to undertake any of those challenges, which also explains why the central government has taken grip on the few most lucrative taxes including VAT, corporate income tax, and personal income tax. In the meantime, despite the center's effective propaganda in promoting the message of building a harmonious society, the government still maintains the most un-equalizing fiscal transfer program of tax rebate which literally rewards rich provinces for their contribution of large revenue collection.

3.6 Does Fiscal Inequality Matter?

Fiscal inequality matters in a country if it results in large disparities in service delivery and outcomes. This is the case in China. The persistence of large fiscal inequality is a major cause of concern because poor jurisdictions are spending so little that the most basic public services such as education and health care are provided at remarkably insufficient levels. Although none of China's provinces is still categorized as "low development" according to the United Nations Human Development Index (HDI), HDI indicators vary substantially across regions. The poorer, predominantly rural provinces, such as Gansu, Guizhou, Tibet, Qinghai, and Yunnan, have HDI 0.59-0.67 similar to Vietnam and Indonesia (with HDI 0.68), while more urbanized provinces, such as Beijing, Guangdong, Jiangsu, Shanghai, Tianjin and Zhejiang, have HDI 0.80-0.89, similar to the levels in Hong Kong, Korea, and Singapore (with HDI about 0.88). The reenrollment rates in junior secondary education arrange from 49 percent in Tibet, to about 60-70 percent in Guangxi, Guizhou, Hainan, Heilongjiang, Ningxia, Yunnan and Qinghai, to about 99 percent in Beijing, Shanghai, Tianjin and Zhejiang. The enrollment rates in senior secondary education vary from less than 30 percent in Anhui, Henan, Inner Mongolia and Yunnan, to 96 percent in Beijing. The completion rate of nine-year compulsory education was 70 percent in poorer provinces in contrast to 100 percent in East China (World Bank 2003). There is also vast inequality in education between rural and urban areas (Figure 3.12). The average length of schooling is about 7 years in rural areas, compared to urban over 10 years and town above 9 years. Few rural students have

the chance to complete junior college or above (0.71 percent) while about 14 percent urban students can do that (World Bank 2007a).

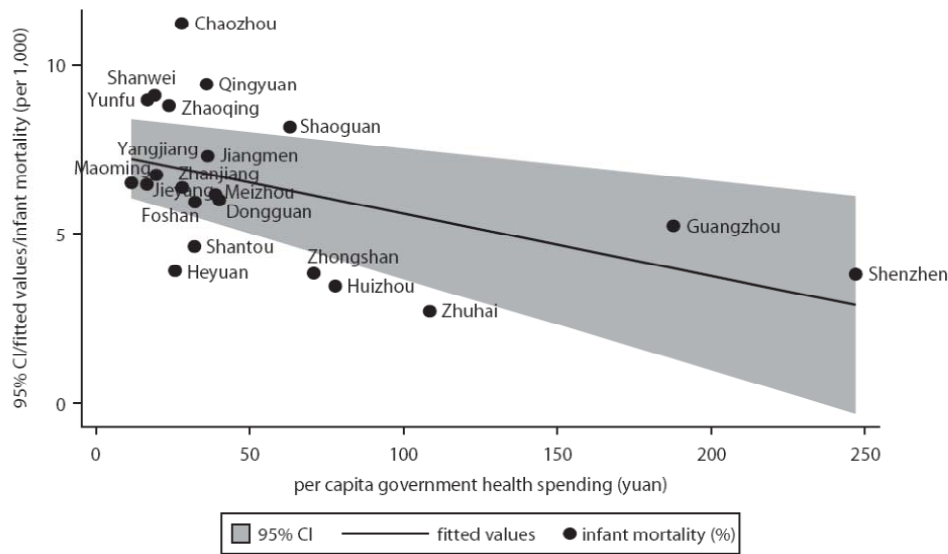
Figure 3.12 Inequality in Educational Attainment: Urban, Town, and Rural Areas



Source: World Bank (2007a).

As for health indicators, life expectancy at birth ranges from about 65 years in Guizhou, Tibet and Yunnan, to 76-79 years in Beijing, Jiangsu, Shanghai and Tianjin. Infant mortality rates are three times higher in rural compared to urban areas (World Bank 2003). Currently, China’s health insurance participation is low which means most people pay directly out-of-pocket for health services. People with low income in poorer regions are less likely to have health insurance, and therefore are more vulnerable to impoverishment due to ill health. Figure 3.13 demonstrates that in Guangdong province, government health spending is regressive, less resources channeled to the more needy areas.

Figure 3.13 Where Need is Greater, Resources are Less



Source: World Bank (2011).

People’s unequal access to education and health care is important aspect of poverty and inequality in their experience. Comparatively low educational attainment and poorer health among children in underdeveloped regions may ultimately pose a major impediment to local economic development, leading to even larger spatial inequality in future²⁸. Equal access to health care is also crucial to reduce inequality. Many of the poor are driven into poverty by illness which in turn hinders people from obtaining opportunities for greater income and wealth. It is very likely that today’s unequal access to education and health care will be materialized into inequality in income tomorrow (World Bank 2011).

To assess whether there is a significant relation between fiscal inequality and disparities in service delivery, Hofman and Guerra (2005) conducted regression analysis using three

²⁸ See Appendix 6 for information about evolution of China’s income inequality from 1980s to 2004.

indicators of provincial level service outcomes, persons per hospital bed, life expectancy, literacy rates, and combined student enrollment for primary, secondary, and tertiary schools for the period 1994-2002. They found except life expectancy, the rest three service outcome indicators had a significant correlation with sub-national expenditures across time, suggesting that persistent fiscal inequalities do matter.

It is important to note that although public spending is critical to improve health and education outcomes, there exist many reasons why increased public services spending does not ensure better services or better outcomes. Allocative efficiency (where money goes to, personnel expenses or infrastructure or poor households) and administrative effectiveness are key factors determining whether more funding would lead to better service outcomes. For example, both Thailand and Peru increased government spending on primary schooling, but school completion rates fell in Thailand while rose in Peru (World Bank 2004).

3.7 Conclusion and Policy Implications

The empirical findings in this chapter provide a basis for assessing the distribution of fiscal resources at three levels of sub-national government – provincial, prefectural, and county – after the 1994 tax sharing reform. Fiscal inequality has become a major cause of concern in China because it undermines government's ability to provide core public services at relatively equitable, socially acceptable standards. It also prevents poor

regions and jurisdictions from delivering sufficient basic services, such as compulsory education, public health care, water and sanitation. In the long run, fiscal inequality has serious implications for China's capacity to sustain its remarkable economic performance. If fiscal inequality is not contained, it might well be detrimental to social and political stability.

Consistent with the common perception, fiscal inequality at provincial, prefectural, and county levels remains large, and that there is no evidence of a sustained reduction in fiscal disparities after the 1994 tax sharing reform. Importantly, fiscal inequality at the prefectural level is remarkably higher. But county-level fiscal inequality is not significantly high, as expected; instead, it is similar to provincial-level fiscal inequality. This finding reinforces the importance of sub-provincial fiscal reform. As mentioned in the introduction, China has a five-tier hierarchy, with each tier of government responsible for fiscal arrangements with its subordinate governments. Therefore, the severe fiscal inequality at the prefectural level requires immediate policy attention from provincial governments. The central government can provide appropriate policy guidance to the provinces in coping with the vast fiscal disparities at the sub-provincial level.

It is worth mentioning that the measurement of provincial fiscal inequality using the Gini coefficient and the Theil index may be smaller than its true value. In Figure 3.1, the curve Lorenz (A) is continuous and smooth when the number of observations (N) is sufficiently large. But if the N is small (N = 31 at the provincial level), the curve becomes a broken line (A'). Since Lorenz curve is always convex, the broken line A' is located above the

smooth line (A). Thus, a small N leads to a small value of Gini coefficient²⁹. In general, Theil index and Gini index move in same direction. The comparison of fiscal inequality at the three levels of government is likely to be affected by this N factor.

Another important finding is that the comparatively lower-spending governments at all three levels are concentrated in the middle region rather than the western areas. Chinese policymakers always think in terms of the tripartite partition of China into eastern, central and western regions. Less attention seems to be paid to the central region, which makes it more difficult for them to catch up with wealthier provinces. Various fiscal subsidies have been introduced to target the western provinces in the late 1990s. The establishment of the ‘go-west’ campaign in 1999 added more impetus to the pro-west initiative by shifting more fiscal transfers to the west. Many jurisdictions in the central and eastern provinces do not qualify for these transfers, simply because of their administrative labels. For example, in 2004, all three levels of government in Anhui and Henan, both central provinces, had the lowest per capita public expenditure. A few poor western provinces enjoyed high per capita public spending – for instance, Tibet, at the sub-national level, ranked in the same tier as Beijing. Xinjiang at the prefectural level spent more than 2000 yuan per capita in 2004, about the same as Guangdong. At the county level, Inner Mongolia, Qinghai, and Tibet spent at a similar level to Zhejiang, with more than 1000 yuan per capita.

²⁹ In my experience, if N is greater than 150, its impact on the Gini coefficient and the Theil index is trivial and could be negligible. At the prefectural level, $N > 300$ and at the county level $N > 2000$, the measurement of fiscal inequality is relatively more accurate.

Furthermore, the results from inequality decomposition indicate that the fiscal disparities within each region are large. At the provincial level, within-region inequality is about twice the between-region inequality – in other words, more than two-thirds of inequality comes from within a region, suggesting that the fiscal capacities of jurisdictions within each of these regions are very different and that the current policy with primary emphasis on balancing between-region disparities needs to be reevaluated.

The findings suggest not only that the policy effort should be shifted from between-region to within-region, but also that it should be shifted from the central government to sub-provincial public finance. As shown in the Theil index decomposition results, at the prefectural level over the period 1994-2004, within-province fiscal inequality increased by about 40 percent, while between-province inequality fell by more than 10 percent. At the county level over the period 1994-2004, within-province inequality increased by about 17 percent, while between-province inequality fell by more than 10 percent.

One salient feature of these findings is the steady trend in fiscal inequality at all three levels of government in the post 1994 period up until 2004. This finding contradicts the mainstream allegation that fiscal inequality is widening along with the increasing income inequality flowing from unbalanced economic development across the country. At the same time, the steady trend also suggests that the fiscal reform of 1994 has not delivered the original intention of using centralized revenues to reduce fiscal disparities, even though the current fiscal system managed to maintain the prefectural and county fiscal inequality in 2004 at a level similar to that of a decade before.

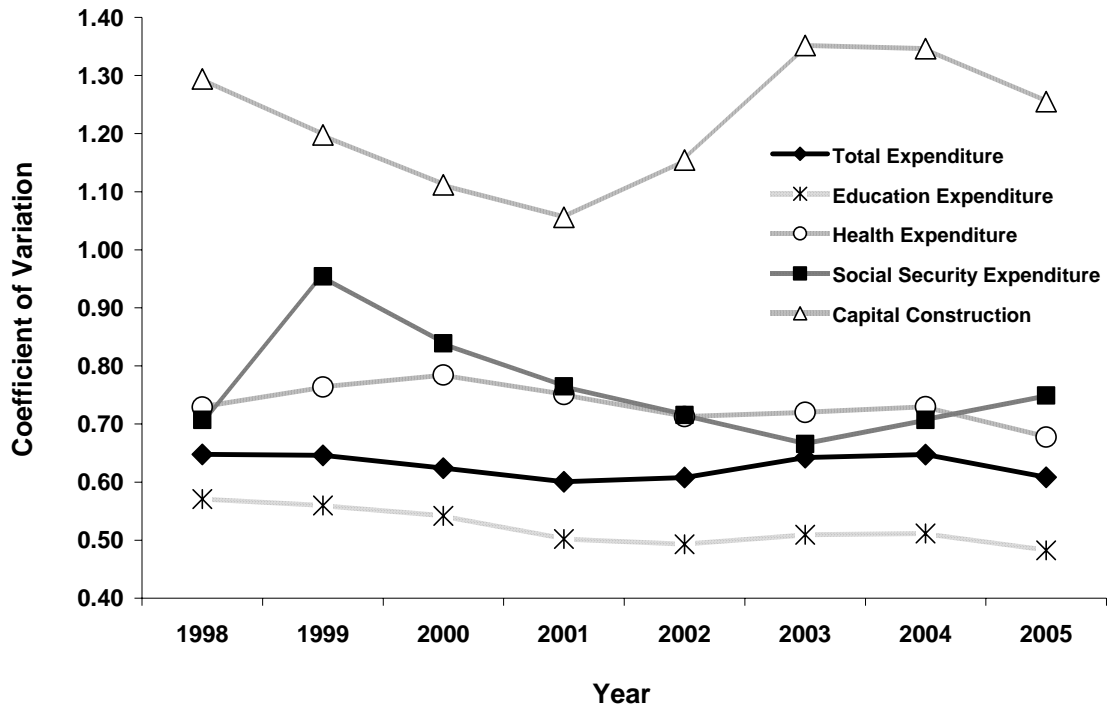
China's large and persistent fiscal inequality at provincial, prefectural, and county levels of government may be attributed to the following reasons. First, significant spending disparities are related to variations in regional revenue collection arising from differences in incomes. Second, the stark fiscal inequality is partly caused by the current arrangements of inter-governmental fiscal system which pushing down spending responsibilities without providing adequate financial resources. Another significant factor may be the population density which affects the costs of public services provision. Moreover, from the political perspective, the issue of wide fiscal disparities is closely associated with Chinese authorities' generous financing towards minority regions which are not necessarily in the poor needy areas. Lastly, persistent fiscal inequality may just reflect China's emphasis on revenue mobilization.

Fiscal inequality matters if it leads to large disparities in service delivery and outcomes. People's unequal access to basic public services, such as education and health care, is regarded as an important aspect of poverty and inequality in their experience. This is the case in China. There is profound and accumulating evidence showing that educational attainment and health care services are unequally provided in certain backward areas in the country. Those disadvantaged governments are spending so little that the most basic public services are provided at remarkably insufficient levels. The outcomes, measured by human development indicators, are differing substantially across the country, leaving those with less and lower quality of education and/or poorer health today translated into tomorrow's even widening inequality of living standards/income.

In order to reduce fiscal disparities, intergovernmental fiscal transfers serve as key policy instrument for the government. The next chapter will make an in-depth investigation of China's intergovernmental transfer system and assess its effectiveness in addressing the issue of fiscal inequality.

Appendix 1:

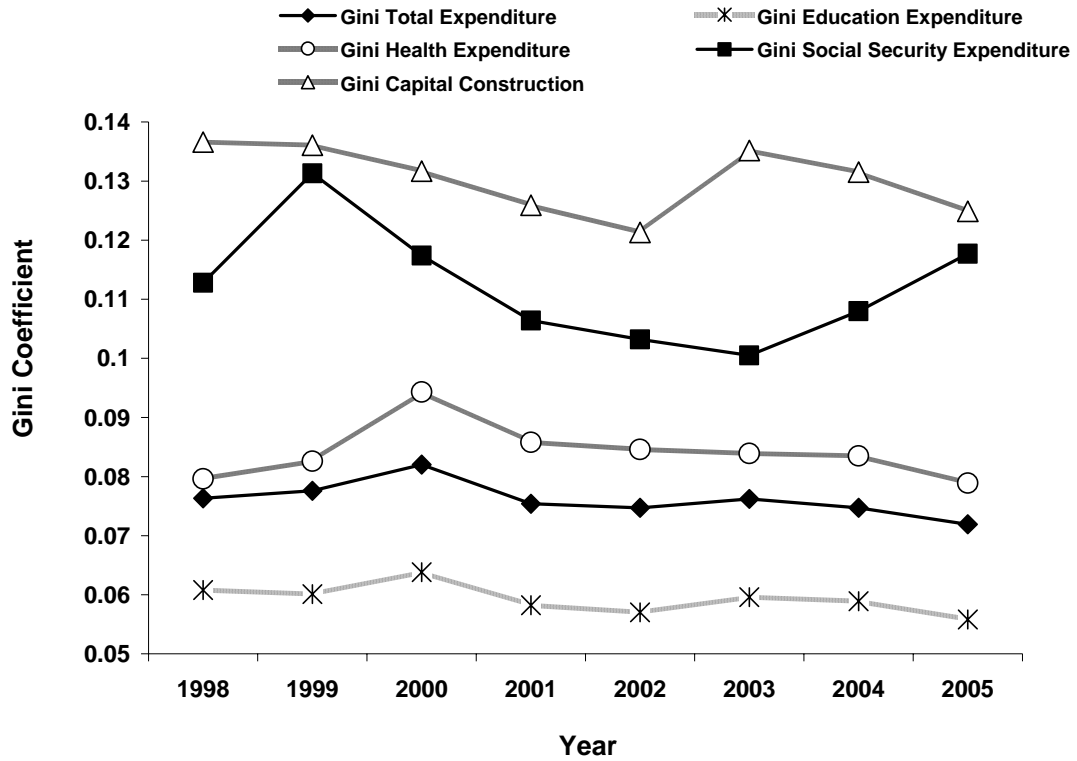
Figure 1 Comparison of Provincial Fiscal Inequality across Expenditure Items
Coefficient of Variation
(1998-2005)



Source: Author's calculation based on data from China Statistical Yearbooks 1999 - 2006.

Appendix 2:

Figure 2 Comparison of Provincial Fiscal Inequality across Expenditure Items
Gini Coefficient
(1998-2005)



Source: Author's calculation based on data from China Statistical Yearbooks 1999 - 2006.

Appendix 3

Table 2 Fiscal Disparities in Selected East Asian Countries

(US\$, latest available years)

Provincial-level Revenues before Grants, per capita

	China	Indonesia	Philippines	Vietnam
Maximum	283.2	59.5	7.6	343.4
Minimum	18.1	3.8	0.2	6.5
Average	55.7	12.1	1.5	36.9
Max./min. ^a	15.7	15.7	35.4	53.0
Standard deviation	54.8	11.6	1.4	61.1
Coefficient of variation ^b	0.98	0.96	0.97	0.79

Provincial-level Revenues after Grants, per capita

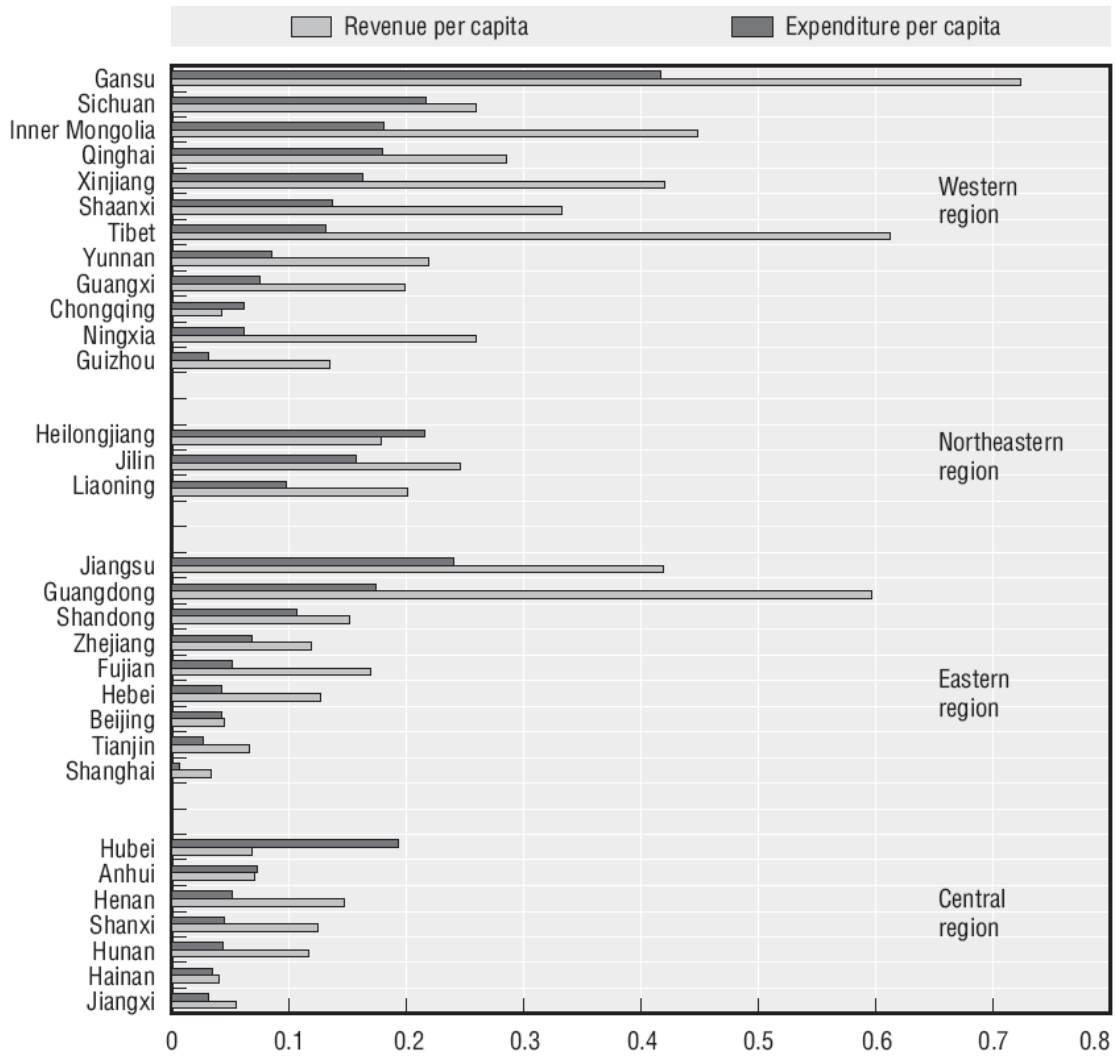
	China	Indonesia	Philippines	Vietnam
Maximum	444.4	431.4	117.5	393.1
Minimum	42.8	39.8	4.2	25.1
Average	100.7	106.3	14.8	65.9
Max./min.	10.4	10.8	28.1	15.7
Standard deviation	83.1	78.9	13.3	65.2
Coefficient of variation	0.82	0.74	0.92	0.42

Note: The coefficients of variation for China are much larger than the calculation presented by the author, which may be partly due to different data source.

Source: Hofman and Guerra (2005).

Appendix 4

Figure 3 County-Level Fiscal Inequality by Province (2002)
Theil index of Inequality



Source: OECD (2006).

Appendix 5

After experimenting with different functional forms (including linear, semilog, and double-log), we adopt the following double-log specification, which in general has the best statistical fit:

$$\begin{aligned} \ln(Y) = & \alpha + \beta_1 \ln(PCGDP) + \beta_2 \ln(POPDEN) + \beta_3 PRIME^2 + \beta_4 PRIME \\ & + \beta_5 MINOR + \beta_6 MUNICP + \beta_7 CENTRAL + \beta_8 WEST + \varepsilon \end{aligned}$$

The dependent variable, Y, is either PCEXP or PCREV. PCGDP is per capita GDP. PRIME is the Primary Ratio, the percentage of GDP that is contributed by the prime industry, a measure of urban-rural dichotomy in production. MINOR refers to Minority Autonomous Areas. MUNICP refers to Municipalities. CENTRAL and WEST refer to provinces in the central or west region, respectively. Summary statistics of these variables in 2006 are provided in the following table.

Variable	Mean	St. D.	Min	Median	Max
Per capita GDP _(Y1000)	7.57	3.99	2.43	6.50	18.17
Per capita local revenue _(Y1000)	0.68	0.64	0.20	0.44	2.87
Per capita local expenditure _(Y1000)	1.24	0.66	0.68	0.96	3.11
Per capita central transfer _(Y1000)	0.56	0.47	0.00	0.41	2.59
Pop density _(1000/km²)	415.00	656.40	2.50	284.30	3734.60
Prime industry GDP ratio	0.13	0.06	0.01	0.14	0.33
Minority area	Dummy variable: 5 Minority areas.				
Municipality	Dummy variable: 4 Municipalities.				
Central province	Dummy variable: 8 central provinces.				
West province	Dummy variable: 12 central provinces.				

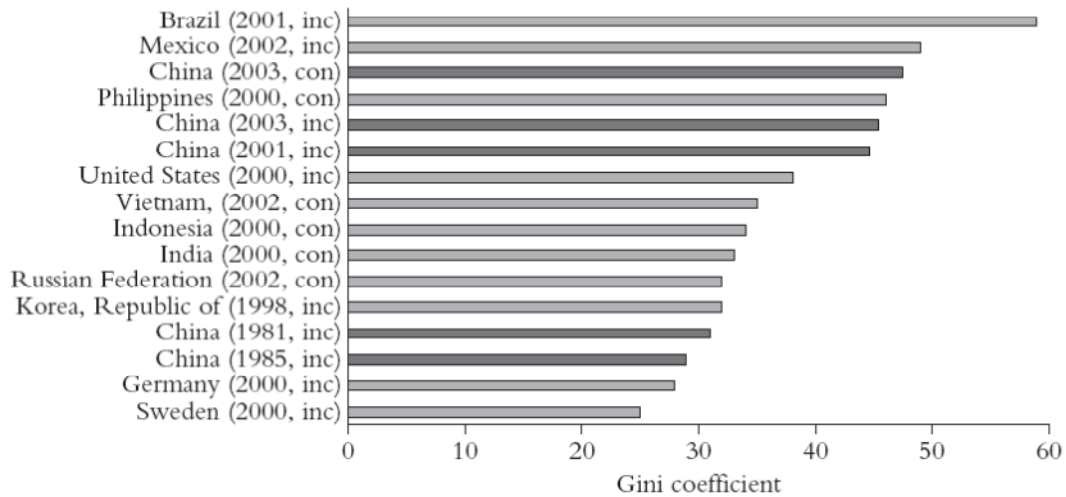
The regression results are reported in the following table.

	PCEXP
	Estimated coefficient
1997-2006	N = 310,
(intercept)	0.960*
PC GDP(log)	0.313
Pop Density (log)	-0.203***
Prime Ratio (square)	21.446***
Prime Ratio	-10.219***
Minority	0.151
Municipality	0.281
Central	-0.030
West	-0.015

Note: * significant at 10 percent level; ** significant at 5 percent level; *** significant at 1 percent level.

Appendix 6

Figure 2 **Income Inequality in China Relative to Selected Countries, 1981–2003**



Note: Income (inc) and consumption (con) by the country name refer to the basis for calculating the Gini coefficients from household survey information.

Source: Bourguignon (2008).

Income inequality in China has rising sharply by international standards. It was comparable to the most egalitarian countries in Northern Europe in the early 1990s. In 2004, China's inequality was higher than in the least egalitarian developed country (the United States) and reached the level similar to the world's most unequal countries, in Latin America and Africa.

Chapter 4:

Evaluating Fiscal Transfer System at Provincial and County Levels

4.1 Introduction

As analyzed in Chapter 2 on the issue of large vertical fiscal gap, China's fiscal system relies heavily on the intergovernmental transfer system to rebalance the mismatching between revenue resources and spending needs at each level of sub-national governments. Furthermore, the large and persistent horizontal fiscal disparities in the course of China's swift economic advancement (examined thoroughly in Chapter 3) also require the transfer system to play an important role in dampening fiscal inequality and promoting people's equal access to public services across the country.

Sub-national governments are highly dependent on fiscal transfers from upper-level government. In 2004, central fiscal transfers accounted for about half of fiscal resources at the provincial level, and made up more than half of total revenues at the county level. Therefore, how transfers are allocated has a great impact on the distribution of fiscal resources.

The existing literature is divided between research focusing exclusively on the provincial level and research that focuses solely on the county level.³⁰ Conclusions drawing upon only one level of government tend to be biased. This chapter aims to fill this gap by

³⁰ Literature review is included in section 4.3.

drawing on fiscal data from the post-1994 period to conduct a comprehensive evaluation of the redistributive effects of intergovernmental transfers in China, at both provincial and county levels. It would be of interest to examine how fiscal transfers have different impact on the redistribution of fiscal resources at the provincial and county levels.

The chapter also aims to resolve the controversy in the literature regarding the redistributive effects of the fiscal transfers across provincial units. One possible explanation for the conflicting findings is that as the intergovernmental fiscal transfer system continues to adjust and evolve -- reflecting the shift of the country's political agenda as well as new issues brought up by ongoing market reform -- studies focusing on different period of time may generate inconsistent observation and analytical results. But even for the same period of time, the existing literature reaches no consensus as to whether the fiscal transfer system is equalizing or not. This is what the chapter intends to work on, resolving the confusion and updating the assessment of the equalization effects of fiscal transfers to the most recent period at both provincial and county levels of government.

In an effort to conduct systematic analysis of the redistributive impact of fiscal transfers, this chapter employs two sets of methodology. One is conventionally used in the literature by comparing the change in fiscal inequality indices (e.g. the Coefficient of Variation or Gini index) before and after transfers. The application of the conventional method helps to ensure intertemporal comparability of results with the existing literature. The other is decomposition method recently introduced to the study of fiscal disparities.

The rest of the chapter is organized as follows. The next section provides an institutional analysis of current system of fiscal transfers. Section 4.3 specifies methodology and examines empirical findings of the equalization impact of the intergovernmental transfer system. The conclusion and policy implications are discussed in Section 4.4.

4.2 Current System of Fiscal Transfers: an institutional analysis

As the issue of fiscal inequality grasped central attention in the late 1990s, more resources have been poured into the pool of intergovernmental transfers. As Figure 4.1 shown, the central transfers rose from RMB 328.5 billion in 1998 to 1017.7 billion in 2004, more than 200 percent increase in seven years³¹. In 2004, transfers are over 70 percent of central revenues (6.5 percent of GDP), a share that is one of the highest in the world.

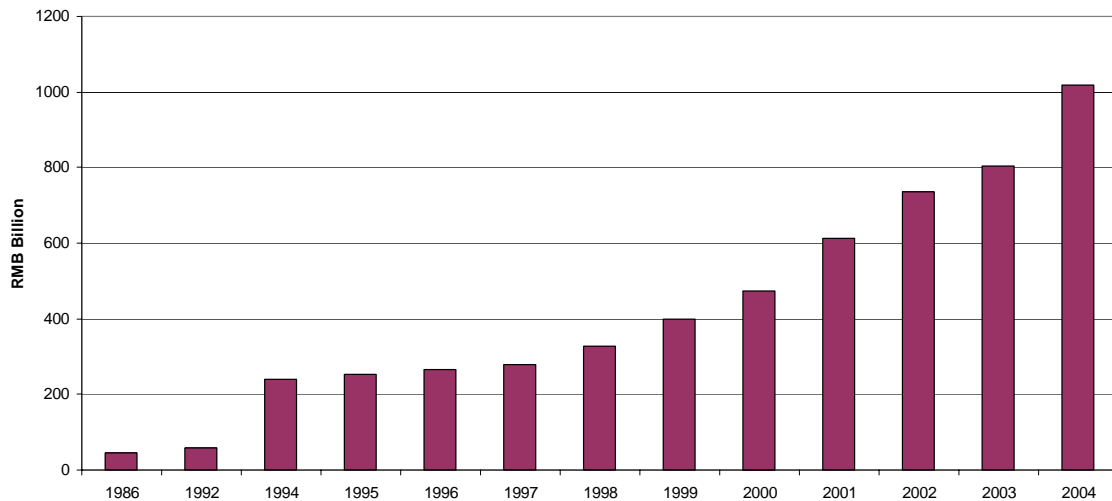
Intergovernmental transfers are widely used around the world to provide local governments additional resources for a mixture of purposes – to bridge fiscal gap, to reduce regional fiscal disparities, to compensate for benefit spillovers, to set national minimum standards, to advocate central policy mandate, and to promote stabilization (Shah and Shen 2008).³² The fast expansion of China's transfers system is mostly financed by introduction of new transfer types (World Bank 2007a). For instance,

³¹ See appendix 1 for complete data of total transfers during 1986-2005.

³² For elaboration of grant purpose and design, see appendix 2.

“Grants for Increasing Wages of Civil Servants” was introduced in 1999 to help sub-national governments implement central policy of civil service wage increases; “Grants for Rural Tax Reform” was established in 2001 to subsidize county, township and village due to their financial loss in the process of downsizing rural fees and taxes; and “Grants for Agricultural Tax Reduction” was added in 2003 to further support grassroots government to cope with the central mandate of abolishing agricultural taxes levied on farmers. A complete list of new transfer programs is provided in Table 4.1.

Figure 4.1 Rapid Increasing Fund for Central Transfers



Source: Transfer data from Ministry of Finance China.

Table 4.1 Calendar of Introducing New Transfer Programs

Year Introduced	New Transfer Programs
1998	Earmarked grants from state bonds
1999	Grants for increasing wages of civil servants
2000	Grants for minority regions
2001	Grants for rural tax reform
2002	Tax Rebate on income taxes
2003	Grants for agricultural tax reduction

In addition to rapid increase of total volume, current transfer system is featured with its main reliance on earmarked grants. According to the Chinese official definition of “earmarked grants”, in 2004 the central government had RMB 322.3 billion in this category, about one-third of the total (see Table 4.2). But if we reclassify the transfer types in accordance with the general concept of “general purpose transfer” and “specific purpose transfer”, the specific purpose transfers accounted for more than half, but if tax rebate is exclude, the percentage goes up to 88 percent. The financial resources injected into the transfer system through earmarked grants mainly comes from two channels, one is from the Fiscal Stimulus Programs implemented in dealing with financial crisis in 1997, and the other source is increased spending on capital construction, mostly for western provinces.

Table 4.2 Transfers at Different Administrative Levels

	Central-Provincial				Provincial-Prefecture		Provincial/Prefecture-County	
	2004		2003		2003		2003	
	Amount (billion yuan)	Percentage of Total Transfers	Amount (billion yuan)	Percentage of Total Transfers	Amount (billion yuan)	Percentage of Total Transfers	Amount (billion yuan)	Percentage of Total Transfers
General Purpose Transfers								
Tax Rebate	405	40 percent	342.4	43 percent	166.7	29 percent	126.2	29 percent
Equalization Transfer	74.5	7 percent	38	5 percent	39.6	7 percent	30.5	7 percent
Subtotal	479.5	47 percent	380.4	47 percent	206.3	36 percent	156.7	36 percent
Specific Purpose Transfers								
Grants for Increasing Wages	91.9	9 percent	89.9	11 percent	79.2	14 percent	68.5	16 percent
Grants for Rural Tax Reform	52.3	5 percent	30.5	4 percent	33	6 percent	33.8	8 percent
Grants for Minority Regions	7.7	1 percent	5.8	1 percent	1.7	0 percent	1.7	0 percent
Prio-1994 Subsidies	12.6	1 percent	12.4	2 percent	18.2	3 percent	16.5	4 percent
Earmarked Grants	322.3	32 percent	242.6	30 percent	149.3	26 percent	98.2	23 percent
Others	51.4	5 percent	43.7	5 percent	84.2	15 percent	54.4	13 percent
Subtotal	538.2	53 percent	424.9	53 percent	365.6	64 percent	273.1	64 percent
Total	1017.7	100 percent	805.2	100 percent	571.7	100 percent	429.8	100 percent

Source: Authors calculation based on the transfer data from Ministry of Finance, China.

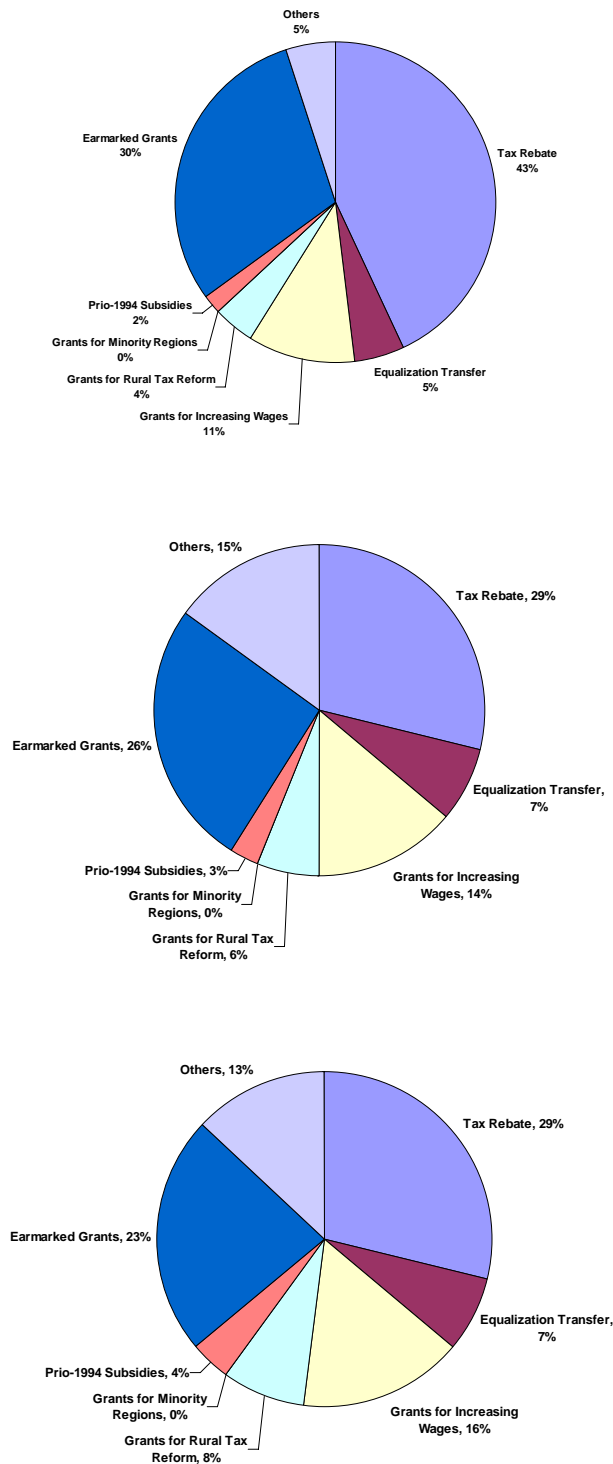
Another salient feature of current transfer system is that the transfer system appears to be funded completely by the central government, with little contribution from intermediate levels. There is no official report about the role of provinces, prefectures, and counties in financing intergovernmental transfers. But according to the calculation in Table 4.2, in 2003 the prefecture level receives RMB 571.7 billion, and the county level gets RMB 429.8 billion. These figures add up to 1,001.5 billion, almost equivalent to the total central transfer of 1017.7 billion, which suggests that provinces virtually contribute nothing to their subordinate levels of government. This observation is confirmed by anecdotal evidence collected from fieldwork studies (World Bank 2007a). This is likely due to the fiscal gap faced by provincial governments which are already financially stressed to meet their own spending needs. The concern associated with such arrangements is that the central transfers may not be used as intended or be subject to leakage when going through the multi-tiered hierarchy because the intermediate levels of government do not pay and therefore have little ownership in the use of transfers, particularly when the center's policy intention is not fully agreed by provincial governments.

In spite of vast territory and marked regional variety, China employs one-style-fits-all approach in designing fiscal transfers at all levels of government. As illustrated in Figure 4.2, transfer composition at provincial, prefecture, and county levels is almost identical, with the same mix of transfer programs and similar weight of each grant. The tax rebate and the equalization transfer are regulated by the center and calculated by similar formulas at sub-national levels (Shah and Shen 2008). Given the size of the country and

the diversity of local jurisdictions (including financial and administrative capacity), a uniform strategy across the board can be hardly justified. As each intermediate level of government allocates transfers using the same criteria, such an approach fails to take into account the difference among local governments by population size, urban/rural character of public services, geographic endowment, local preferences, etc.

Lastly but most importantly, China's fiscal system demonstrates a clear pattern of increasing local dependency on intergovernmental transfers as result of declining local share of revenues while being responsible for more public services. In 2003, fiscal transfers financed more than half of sub-national expenditures, and close to 60 percent of spending at county and township levels (World Bank 2007a). To compare China with OECD countries, Figure 4.3 depicts sub-national share of total expenditure relative to sub-national share of total revenue. Most OECD countries reside close to the 45 degree trendline, which indicates that expenditure decentralization is roughly aligned with revenue assignments. A few countries have relatively large sub-national share of expenditure responsibilities, such as Denmark, US, and Norway, but not as exceptional as China which has 74.1 percent of spending made at sub-national levels where only 47.7 percent of revenues are assigned to in 2005.

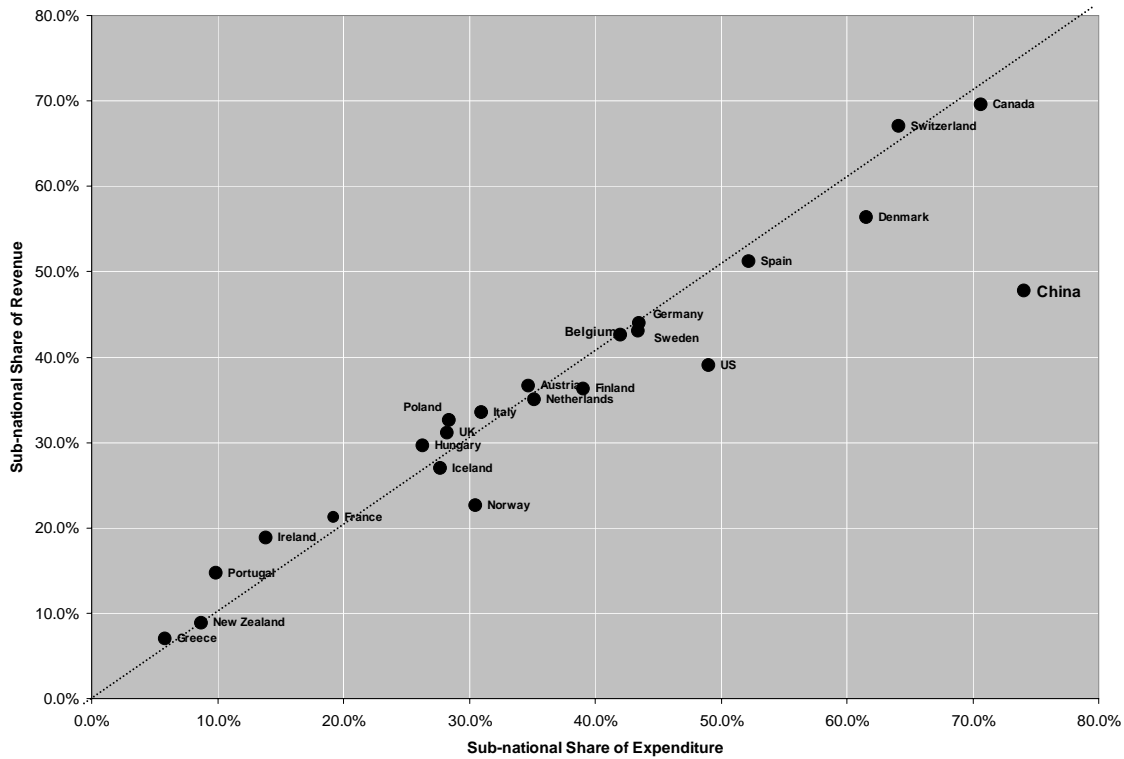
Figure 4.2 Transfer Composition at Different Levels of Government (2003)



Source: Author's calculation based on data from Ministry of Finance, China.

It also appears that transfer dependency is higher at lower levels of government. This is expected because the vertical fiscal gap intensifies at lower tiers of hierarchy (see Chapter 2 for detailed analysis). Table 4.3 compares transfer dependency of provinces with that of counties and townships. The average transfer dependency of provinces is 50.4 percent, with a range of 20.4 percent to 90.9 percent. In contrast for counties and townships, the mean transfer dependency is 57.7 percent, with a minimum value of 40.8 percent in Shandong and a maximum value of 88.5 percent in Tibet.

Figure 4.3 Local Transfer Dependency: China vs. Selected OECD Countries (2005)



Source: Author's calculation based on data from Government Finance Statistics, IMF.

Table 4.3 Transfer Dependency (2003)

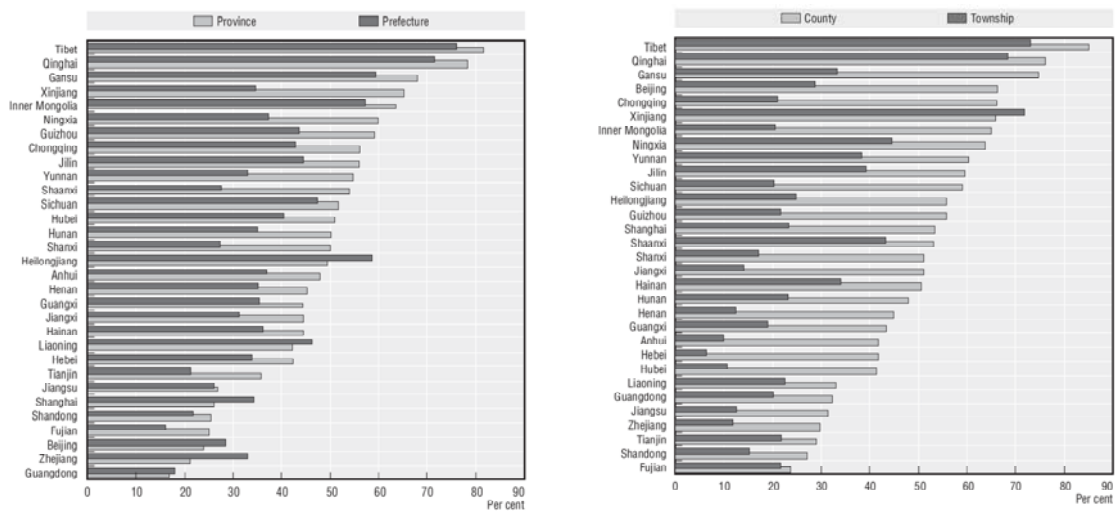
Share of budgetary expenditures financed by transfers	Consolidated provincial expenditures	Expenditures at county and township levels
Average for all provinces (31) (weighted)	50.4%	57.7%
Maximum	90.9%	88.5%
Minimum	20.4%	40.8%
<i>Standard deviation</i>	<i>16.8%</i>	<i>10.4%</i>
<i>Coeff. of variation</i>	<i>0.33</i>	<i>0.18</i>

Source: World Bank (2007a).

Another characteristic associated with transfer dependency is that provinces vary considerably due to their vast difference in revenue and expenditure assignment (see Chapter 2 Figure 2.4). As further disaggregating data by all levels of sub-national governments and by province (see results in Figure 4.4), it appears that prefectures in general are less transfer dependent than provinces. The exceptions are the two wealthiest municipalities (Beijing and Shanghai), and two north-eastern provinces (Heilongjiang and Liaoning), as well as the coastal province of Zhejiang. This is mainly due to sub-provincial fiscal arrangements in these provinces. For example, Zhejiang employs the model of “province managing county” with counties directly reporting to provinces, which makes prefectures lose financial authority over counties and thereby more relying on transfers. Transfer dependency of counties appears quite identical to their respective province, but generally more dependent on transfers than provinces (consistent with Figure 2.3). Townships appear less relying on transfers than their counties, particularly in agriculture provinces, such as Hubei, Anhui, Jiangxi, and Henan (OECD 2006), which may have changed with more updated data due to grand endeavor of the central

government to eliminate fees and agriculture-related taxes in effort to relieve farmers' financial burden since 2001.

Figure 4.4 Transfer Dependency at Different Levels by Province (2001)



Source: OECD (2006).

4.3 Assessing Redistributive Impact of Intergovernmental Fiscal Transfers

As examined in the previous section, China's fiscal transfers have grown rapidly in recent years and sub-national governments are heavily dependent upon transfers as they manage to make ends meet with large spending needs but limited financial resources. Funding more than half of sub-national expenditures, fiscal intergovernmental transfers play a critical role in redistribution of fiscal resources and serve as key policy instrument to dampen marked inequality of public services provision across the country. As pursuing balanced development and building a harmonious society replace the leading single

objective of economic growth in early 2000s, the role of fiscal transfers in promoting regional equalization has been gaining more emphasis and therefore studies of China's transfer system become crucial. Not until recently has the literature started to explore the redistributive impact of the transfer system.

A few studies analyze provincial-level fiscal transfers, but they provide mixed results regarding the equalization role of intergovernmental fiscal transfers. Some scholars argue that the transfer system is equalizing. For instance, Lou (2008) claimed that the redistributive efforts became increasingly effective for the period 1994-2005. But he compares only the percentage of per capita revenue in national average before and after transfers in five wealthiest and five poorest provinces.³³ This makes his approach problematic, for such calculations can lead to an exaggerated view of how successful transfers are in narrowing provincial fiscal disparities. Using the aggregate data of the five poorest provinces without taking the remaining 22 provinces into account leaves it unclear, for example, whether the central government has universal treatment to all poor regions or whether it has in fact favored certain ethnic-minority provinces. Wang (2001), who analyzed the political logic of central transfers in the late 1990s, lent support to the suspicion that the central government was favoring ethnic-minority regions. He suggested that the concern of central policy-makers for national unity was a very important determinant in the transfer system. Wong (2000), studying central-provincial transfers in 1998, argued that the overall impact of the transfer system was actually counter-equalizing, as most transfers were pegged to revenue collection, with more revenue

³³ The five wealthiest provinces are Shanghai, Beijing, Tianjing, Zhejiang, and Guangdong. The five poorest provinces are Sichuan, Anhui, Gansu, Guizhou, and Tibet.

being returned to rich regions. She also argued that the equalization transfer program did not have much impact due to its underfunded resource pool (amounting to around only 1.8 percent of all central transfers to provinces). However, her view is not entirely compelling since it is based mainly on her analysis of policy intents and her observations in a single year.

With improved measurement of fiscal inequality using the Coefficient of Variation or Gini index, existing empirical studies also provide conflicting conclusions about whether intergovernmental transfers play an equalization role. Bahl (1999) studied fiscal inequality over the period 1990-1995 and suggested the fiscal system provided some sort of equalization during this period. Jiang and Zhao (2003) found an improvement in regional fiscal inequality in 2000 and 2001 that could be attributed to increasing central transfers to less developed regions. Based on data in 2002, Hofman and Guerra (2005) suggested that provincial-level grant system contributed to equalization because the disparity of revenues per capita dropped as a result of intergovernmental grants. In contrast, Wong (2002) observed a worsening of the distribution of fiscal resources for the period 1993-1998 and argued that the fiscal transfer system failed to equalize. This argument is not convincing, however, because in the same period income inequality was increasing sharply (Kanbur and Zhang 2005) due to market reform and the coastal strategy, which led to widening disparities in revenue collection across provinces (World Bank 2002). It might have been the distribution of revenue instead of the allocation of central transfers that accentuates the inequality of provincial spending. More compelling evidence was provided by Zhao and Ou (2008), who examined the equalization effects of

fiscal transfers for the period 1978-2006 by decomposing the Gini index of per capita provincial expenditure. They found that central transfers did not play an equalization role, particularly in the post-1994 period, but further contributed to large shares of fiscal dispersion across provinces. Their finding is confirmed by a recent published study, Lin (2011), using the data from 31 provinces for the period 1995-2004 by applying random effects model³⁴. They found that provinces with a higher level income received more per capita transfers, and provinces with a higher growth rate received more per capita transfers. The main problem with Lin's work is that his research only examines the overall impact of the central-province transfer system with the assumption that the Tax Rebate is growth stimulating and all the rest transfer programs are mainly equity promoting. As pointed out in the previous section, the transfer system is expanding rapidly mainly owing to the proliferation of earmarked grants since late 1990s. Instead of assuming these transfer schemes are equalizing (the name may sound equity promoting or policy intention is for equity), it is critical to investigate their real impact.

As for the assessment of the county-level fiscal transfer system, only three studies examined its impact on county-level fiscal divergence. For the period 1994-2000, Tsui (2005) found that fiscal transfers contributed to large shares of fiscal disparity across counties, with only pre-1994 subsidies playing an equalization role in the dispersion of county public expenditure. Equalization grants actually increased inequality, although the impact was negligible. Tsui's work is intriguing because his introduction of the decomposition method helps to quantify the contribution of fiscal transfers to the inequality of local public spending. However, his data only extend up to the year of 2000.

³⁴ See details of Lin's model in Appendix 3.

Since then, the transfer system has been undergoing great changes. The size of central transfers was more than doubled in 2004 (see Figure 4.1) and quite a few new transfer schemes have been established (see Table 4.1). Using more recent data extending up to 2003, Yin (2008) also found that fiscal transfers widened fiscal disparities, with all major transfer schemes contributing to unequal distribution of fiscal resources across county-level units. In contrast, applying fixed effects model for county level data over the period 1997-2003, Zhang and Zheng (2011) found that the transfers excluding tax rebate were equalizing, but overall impact of the transfer system was pro-rich due to the dominant effects of the tax rebate.³⁵ Their work is important because they are able to compile county-level data and provide in-depth analysis on the distributive impact of individual transfer programs at the county level. However, without comparing this information with central-provincial transfer programs in the same period, it is hard to tell whether the distributive pattern of fiscal transfers at the county level is attributable to the overall structural design of the transfer system or to administrative effectiveness in the allocation of transfer funds.

4.3.1 Assessing Intergovernmental Fiscal Transfers: conventional method

In an effort to assess the redistributive impact of fiscal transfers, one commonly used method is to compare the change in fiscal inequality indices (e.g. the Coefficient of Variation or Gini index) before and after transfers (e.g. Bahl 1999; Hofman and Guerra 2005; Lou 2008; OECD 2006(OECD 2006)). .

³⁵ See Zhang and Zheng's model in Appendix 3.

Provincial Level

Table 4.4 shows major indicators for per capita expenditure and per capita revenue. The maximum to minimum rate (MMR) and the coefficient of variation (CV) of per capita revenue are consistently higher than their respective equivalents for per capita expenditure during the period 1994-2005. As my data sources and variable definitions may be different from Martinez et al. (2008) and Wong (2002), which are the source of the data for 1994-97, these results may not be directly comparable. However, the results for the period 1998-2005 are comparable as they have consistent data sources and definition. In 2005, the MMR of per capita revenue is more than double of the MMR of per capita expenditure, 18.37 versus 7.95; and the CV of per capita revenue is 0.96, compared to 0.61 on the expenditure side (Table 4.4).

Since the MMR tends to be biased by outliers and the CV is dependent on the mean, a better inequality measurement of Gini coefficient is also calculated here. Figure 4.5 depicts the trend of Gini indices for both per capita revenue and per capita expenditure from 1998 to 2005. We see that disparities of per capita revenue are significantly higher than those of per capita expenditure over all years. In 2005, the Gini coefficient of per capita revenue is 0.36, compared to 0.23 for per capita expenditure.

All inequality measurements confirm that per capita expenditure is less dispersed than per capita revenue at the provincial level for the period 1998-2005. In other words, after central transfers are added, fiscal resources appear more equally distributed. In past

literature, this result has been interpreted as evidence that the fiscal system provides some degree of equalization.

County Level

What about the re-distributional effects of intergovernmental transfers across county units? Is it consistent with the findings at the provincial level? Table 4.5 provides major indicators on county-level fiscal inequalities. Comparing the MMR of per capita revenue and per capita expenditure, the value on the expenditure side is much lower than the revenue side over the entire period of 1994-2004. In 2004, the MMR of per capita revenue is almost three times that of per capita expenditure. The dispersion from mean, as measured by coefficient of variation, is also less significant on the expenditure side. In 2004, the CV of per capita expenditure is 0.63, compared with 1.24 for the CV of per capita revenue. Figure 4.5 shows the trend of fiscal inequality on both the revenue and the expenditure sides measured by Gini coefficient from 1994 to 2004. It clearly depicts the revenue Gini coefficient positioned above the expenditure Gini coefficient through all these years, and in recent years the gap between the two is widening. In 2004, the Gini coefficient of per capita revenue is 0.46, compared to 0.27 for per capita expenditure.

Table 4.4 Provincial Fiscal Disparities: per capita expenditure vs. per capita revenue (1994-2005)

Year	Per Capita Expenditure					Per Capita Revenue				
	Mean	Maximum	Minimum	MMR	CV	Mean	Maximum	Minimum	MMR	CV
1994	444	1452	157	9.25	0.69	272			15.2	0.99
1995	538	1837	226	8.13	0.71	334			16.3	1.01
1996	632	2348	278	8.45	0.72	414			15.9	1.03
1997	698	2806	308	9.11	0.77	486			16.8	1.09
1998	615	3,211	347	9.25	0.65	399	1,600	144	11.11	0.83
1999	714	3,620	409	8.85	0.65	444	2,849	179	15.92	0.85
2000	826	3,635	225	16.16	0.62	506	2,900	105	27.62	0.84
2001	1,029	4,387	532	8.25	0.60	611	3,776	232	16.28	0.92
2002	1,190	5,307	655	8.10	0.61	663	4,363	274	15.92	0.96
2003	1,333	6,361	741	8.58	0.64	762	5,180	302	17.15	0.97
2004	1,591	7,936	906	8.76	0.65	904	6,350	366	17.35	0.98
2005	1,924	9,259	1,165	7.95	0.61	1,138	7,972	434	18.37	0.96

Note: 1994-97 indicators are calculated from 29 provincial units with Tibet excluded and Chongqing includes in Sichuan province; 1998 - 2005 indicators are calculated from data of all 31 provinces.

Source: Expenditure data for 1994-97 from Martinez et al (2008), Revenue data for 1994-97 from Wong (2002), data for 1998-2005 from author's own calculation.

Table 4.5 County Fiscal Disparities: per capita expenditure vs. per capita revenue (1994-2004)

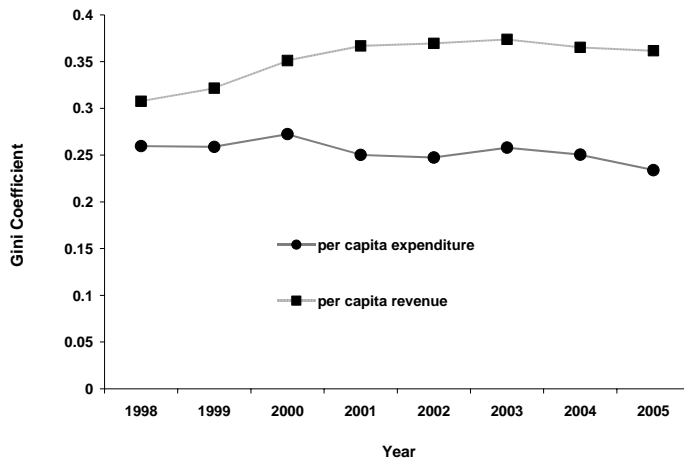
Year	Per Capita Expenditure					Per Capita Revenue				
	Mean	Maximum	Minimum	MMR	CV	Mean	Maximum	Minimum	MMR	CV
1994	153	2531	29	86.27	0.60	83	1652	3	508.31	0.80
1995	178	3875.25	9	444.66	0.59	106	3029	2	1425.41	0.76
1996	215	4260.5	71	59.73	0.55	134	3708.5	2	1912.20	0.69
1997	241	4082	29	141.09	0.57	150	2602	8	325.25	0.67
1998	264	4232	23	188.08	0.57	167	2426	8	286.82	0.72
1999	298	4903	52	94.90	0.57	181	3100	16	200.03	0.80
2000	327	4475	46	97.31	0.56	190	2852	5	570.40	0.82
2001	359	2937	76	38.87	0.67	217	3295	16	203.36	0.97
2002	483	7785	45	174.04	0.56	212	3656	6	595.86	0.94
2003	558	7244	137	53.02	0.58	245	3902	21	182.11	1.08
2004	672	9265	97	95.80	0.63	280	4949	18	274.96	1.24

Source: Author's calculation based on data from Statistical Material for Prefectures, Cities, and Counties Nationwide 1995 - 2005.

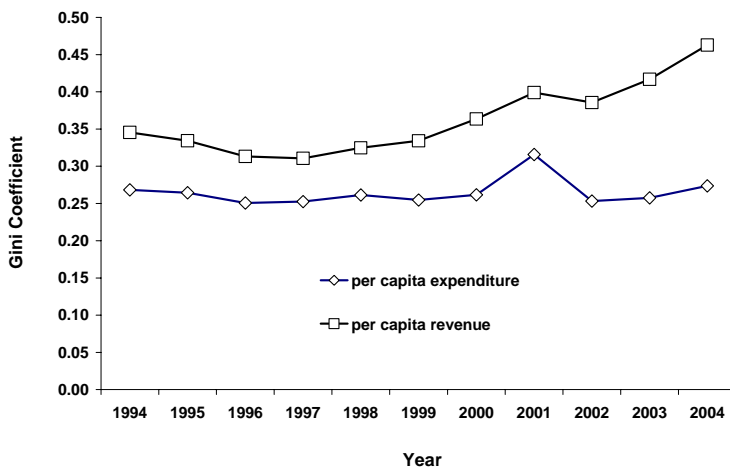
The results measured at the county level are consistent with those for provincial units – the distribution of per capita expenditure is less dispersed than per capita revenue for the period 1994-2004 across county level units. According to the convention in past literature, this could approve that the transfer system helps to bring down fiscal inequality of resource allocation.

Figure 4.5 Gini Coefficient: per capita expenditure vs. per capita revenue

Provincial Level



County Level



Source: Author's calculation based on the provincial data from China Statistical Yearbooks 1999-2006, and the county data from Statistical Material for Prefectures, Cities, and Counties Nationwide 1995 - 2005.

A slightly different way to apply this method is to compare inequality indices for per capita revenue before and after each transfer program in hope to reveal the equalization impact of individual transfer schemes (see Table 4.6 for illustration). As shown in table, at provincial level, all transfer programs are bringing down fiscal inequality as measured by Theil index, even VAT tax rebate (lowering Theil index from 0.337 to 0.277) and Income tax rebate (lowering Theil index from 0.337 to 0.32). Therefore, OECD (2006) concluded that the grant of tax rebate had somewhat reduced fiscal inequality across provinces. At the county level, only VAT tax rebate aggravates the inequality of fiscal allocation (increasing Theil index from 0.197 to 0.267), with all the other transfer programs equalizing to different extent.

Table 4.6 Reduction in Theil Index by Transfer Components (2002)

Provincial Level

	Theil Index
Revenue (excluding transfers)	0.337
Revenue + General purpose (transitory) transfers	0.310
Revenue + Earmarked transfers	0.253
Revenue + VAT and consumption tax refund	0.277
Revenue + Income tax refund	0.320
Revenue + Government bonds	0.332
Revenue + Total transfers	0.235

County Level

	Theil Index
Revenue (excluding transfers)	0.197
Revenue + General (transitory) transfers	0.190
Revenue + Earmarked transfers	0.136
Revenue + VAT and consumption tax refund	0.267
Revenue + Income tax refund	0.182
Revenue + Government bonds	0.178
Revenue + Salary subsidies	0.112
Revenue + Total transfers	0.155

Source: Adapted from OECD (2006).

According to the conventional method of comparing inequality measurement before and after transfers, the conclusion is that the transfer system is equalizing at both provincial and county levels, not only the overall impact, but also the effect of most transfer programs.

However, such conclusion is puzzling because how possible tax rebate is also pro-poor at provincial level (Table 4.6) in view of loud criticism, from a number of close observers of Chinese affairs as well as many leading scholars, about its nature of rewarding rich regions. It is likely that this methodology is flawed. Lower fiscal inequality on the expenditure side than on the revenue side does not necessarily indicate that the fiscal transfer system is equalizing. It is common to get lower inequality figures when two data streams are combined for the measurement of inequality as the mean on denominator gets larger³⁶.

³⁶ Zhao and Ou (2008) also mentioned this issue in their conference paper.

In short, it is hard to tell whether the fiscal transfer system is equalizing or not based only upon the comparison of inequality between the revenue side and the expenditure side, or through observing the trend of fiscal inequality³⁷. An additional methodology is required to analyze the redistributive effects of the transfer system. In the next step, decomposition of the Theil index is used to identify the impact of intergovernmental transfers on the inequality of per capita expenditure at both provincial and county levels.

4.3.2 Assessing Intergovernmental Fiscal Transfers: decomposition method

The decomposition method, through constructing an income-generation function to relate expenditure to transfers, can facilitate quantifying not only the aggregate impact of the overall transfer system but also the individual effects of each fiscal transfer scheme. The intergovernmental transfer system serves as the primary policy mechanism for the government to deal with the issue of fiscal inequality in China. Although not all transfer programs are dedicated to equalizing fiscal resource distribution, it is useful to learn, from the policy perspective, how major transfer programs affect fiscal inequality, and the extent to which they decrease/increase fiscal inequality. The findings will be helpful for the government to improve the effectiveness of fiscal equalization through future reforms of the intergovernmental transfer system.

³⁷ Another methodology flaw is identified and analyzed in Appendix XX.

Methodology

Decomposition by factor component, proposed by Shorrocks (1982) and extended by Tsui (1998) and Tsui (2005), allows one to attribute total inequality to the income sources. Before discussing the methodology, it is necessary to introduce briefly the budgetary accounting system in China. In China's fiscal accounting system, total revenues (*zhong shouru*) consist of two main components, annual revenues and transfers from upper-level government. Annual revenues (*bennian shouru*), denoted as R , is the sum of all tax and non-tax revenues collected in the current year. The balancing components are primarily fiscal transfers (T) as well as any surplus from last year and other items that are not included in annual revenues also add up in the total revenues. On the expenditure side, annual expenditure (*bennianzhichu*), denoted as E , is the total of current expenditure items. The balancing components include all intergovernmental remittances as well as expenditure items that are not accounted for in annual expenditure. The relationship is summarized by the following accounting identity:

$$R + BR = E + BE + AS \quad (1)$$

where R means annual revenue; BR refers to balanced components on the revenue side, including fiscal transfers and any other items that are supposed to be added up in the total revenue; E means annual expenditure; BE stands for balance components on the expenditure side; and AS refers to the accumulated surplus (*gunquan jieyu*).

Rearranging the above identity, I have:

$$E = R + BR - BE - AS \quad (2)$$

The following table 4.7 provides a snapshot of the accounting components in 2003 at the county level.

Since balanced components on the revenue side, **BR**, are mostly transfers, and balanced components on the expenditure side are very small, function (2) could be rewritten as follows:

$$E = R + T + \delta \quad (3)$$

where **E** is annual expenditure, **R** is tax revenue, **T** is fiscal transfer, and **δ** captures all other items that cannot be categorized as tax or transfer.

From (3), the annual expenditure per capita of the *i*th jurisdiction in the *j*th region, E_{ji} , is expressed as follows:

$$E_{ji} = R_{1ji} + R_{2ji} + \dots + R_{Mji} + T_{1ji} + T_{2ji} + \dots + T_{Nji} + \delta_{ji}, \quad (4)$$

where R_{mji} , $m = 1, 2, \dots, M$, is the *m*th category of revenue per capita included in **R**, T_{nji} , $n = 1, 2, \dots, N$, is the *n*th type of intergovernmental transfers per capita, and δ_{ji} is the per-capita residuals.

Table 4.7 Revenues and Fiscal Transfers at the County-level Government (2003)

Unit: 10,000 yuan

Total Revenue	84,948,653	100.00
Annual Revenue (R)	37,944,601	44.67
Value-added tax	6,997,804	8.24
Business Tax	9,390,038	11.05
Enterprise Income Tax	2,507,526	2.95
Personal Income Tax	1,621,638	1.91
Urban maintenance & construction tax	2,045,782	2.41
Agricultural taxes	6,067,687	7.14
Miscellaneous revenues	8,988,528	10.58
Balancing Components (BR)		
Tax rebate	12,598,704	14.83
Pre-1994 subsidies	1,614,323	1.90
Earmarked grants	9,790,349	11.53
Equalization transfer	3,090,509	3.64
Grants for minority regions	129,189	0.15
Grants for rural tax reform	3,354,785	3.95
Miscellaneous subsidies	14,314,080	16.85
Surplus from last year	2,660,226	3.13
Total Expenditure	82,070,651	100.00
Annual Expenditure (E)	73,616,437	89.70
Balancing Components (BE)		
Pre-1994 remittances	3,312,409	4.04
Earmarked remittances	4,474,241	5.45
Others	667,564	0.81
Accumulated Surplus (AS)	2,878,002	

Source: Author, based on data from *Statistical Material for Prefectures, Cities, and Counties Nationwide*.

For ease of exposition, the following vectors, which correspond to the above categories of expenditures and transfers, are used:

$$V = R_1, R_2, \dots, R_M, T_1, T_2, T_N, \delta \quad (5)$$

Let $I(\mathbf{E})$ be some inequality measure of \mathbf{E} . The decomposition exercise divides $I(\mathbf{E})$ into contributions by the factors on the right-hand side of Eq. (2) as follows:

$$I(E) = \sum_{m=1}^M S(R_m; E) + \sum_{n=1}^N S(T_n; E) + S(\delta; E) \quad (6)$$

where each term on the right-hand side is the absolute contribution of a factor S , $I(E)$ is measure of inequality on per capita expenditure, R is tax revenue, T is fiscal transfers, and δ is the residual. $\sum_{m=1}^M S(R_m; E)$ and $\sum_{n=1}^N S(T_n; E)$ may be interpreted as the respective contributions of the local tax system and the intergovernmental transfer system as a whole. Thus, the relative contributions are defined as:

$$s(V; E) = \frac{S(V; E)}{I(E)} \quad (7)$$

where s is relative contribution of factors and S is absolute contribution of factors.

Forcing the factor components $S(V; E)$ to satisfy certain desirable properties proposed by Shorrocks (1982) reduces $s(V; E)$ to a unique functional form given by:

$$s(V; E) = \frac{\text{cov}(V; E)}{\text{var}(E)}, \quad V = R_1, \dots, R_M, T_1, \dots, T_N, \delta \quad (8)$$

$$\text{var}(E) = \sum_{i=1}^I \frac{P_i}{P} (E_i - \bar{E})^2$$

$$\text{cov}(V; E) = \sum_{i=1}^I \frac{P_i}{P} (V_i - \bar{V})(E_i - \bar{E})$$

where $\text{cov}(\mathbf{V};\mathbf{E})$ is the population-weighted covariance between V and E and $\text{var}(E)$ is the population-weighted variance of E . If V is negatively correlated with E , the factor components may be negative. In such a case, the corresponding factor contributes to a decrease in inequalities. In the subsequent discussion of empirical results, we use $s(\mathbf{V};\mathbf{E})$ to gauge the relative importance of the contribution of V to fiscal disparities in a given year.

My data sources mainly come from two channels. For provincial/sub-national data, I have collected government finance information from various years of China Statistical Yearbook from 1998-2005. Besides, the provincial transfer data are from Ministry of Finance directly. For sub-provincial/prefectural and county data, I rely upon the *Statistical Material for Prefectures, Cities, and Counties Nationwide (Quanguo Dishixian Caizheng Tongji Ziliao)*, released by the Ministry of Finance that has detailed figures on budgetary revenues, expenditures and fiscal transfers for all county-level jurisdictions from 1994 to 2004.

Discussion of Results

Table 4.8 summarizes the relative contributions of different transfer schemes across provincial and county units in 2004. The advantage of the decomposition method is that it identifies the contribution to the inequality by each income source without having to collect a number of controlling variables. As expenditure is derived from two income sources – local revenue collection and transfers from upper level of government -- the

contribution to the provincial fiscal inequality was 47 percent by revenue and 53 percent from central transfers.

Table 4.8 Decomposition Results (s-relative contribution)

	Tax Rebate	Earmarked Grants	Equalization Transfer	Grants for Increasing Wages	Grants for Minority Regions	Grants for Rural Tax Reform	Pre-1994 Subsidies
Provincial							
2004	54.31 percent	1.81 percent	-0.96 percent	-3.04 percent	0.57 percent	-1.99 percent	2.30 percent
County							
2004	20.18 percent	10.90 percent	1.63 percent	3.43 percent	0.67 percent	0.29 percent	1.75 percent

Thus, the decomposition results provide accurate evidence showing that the transfer system does not play an overall equalization role in the distribution of fiscal resources across provincial units.

In addition to the aggregate impact of the transfer system, the decomposition also identifies the equalization effect of individual transfer programs. As shown in Table 4.8, tax rebate stands out as the most un-equalizing central transfer program, contributing to more than half to the inequality of provincial per capita expenditure. As noted in the first

chapter, the tax rebate program was instituted to ensure provinces that centralization of tax administration in 1994 would not have adverse consequences for their revenues. The program assured that provinces should expect to receive at least the same revenues they received from value-added tax in 1994 and personal income tax and enterprise income tax in 2001³⁸. Richer provinces submit more to the center, and therefore receive more in return.

Although the aggregate impact of the transfer system is un-equalizing, three transfer programs provide minor equalization on the distribution of fiscal resources although the effects are almost negligible. These three transfers are Grants for Increasing Wages of Civil Servants, Grants for Rural Tax Reform, and the Equalization Transfer. The negative sign means it has negative inequality contributions. *Grants for Increasing Wages of Civil Servants* compensate provincial governments for centrally mandated wage increasing for government employees. This transfer program allocates funding in favor of poorer regions as poorer provinces need more financial assistance to implement such central policy mandate. It reduces about three percent of fiscal inequality at the provincial level. However, the establishment of this transfer scheme has created perverse incentives for inflating payrolls in the form of over-employment by those provincial governments striving to get more funding. *Grants for Rural Tax Reform* is intended to deal with fiscal gap for rural governments due to the elimination of rural taxes and charges since 2000. It reduces fiscal disparities by approximately two percent at provincial level. *The Equalization Transfer*, initiated in 1995, is designed for the purpose of advancing regional fiscal equity and harmony. At the provincial level in 2004, the equalization

³⁸ See chapter one for detailed information of the transfer program.

transfer scheme only cut roughly one percent of fiscal inequality, suggesting a mild impact on provincial fiscal distribution. The weak effect can be attributed mainly to the underfunded pool of resource, which accounts for only about 5 percent of total central transfers in 2004.

The other three major transfer programs also have positive inequality contributions, but the effects are trivial. *The Earmarked Grants* are the second largest transfer program, second to tax rebate (see Table 4.8). Earmarked grants increase fiscal disparities at the provincial level by no more than two percent. *Pre-1994 Subsidies* are equivalent to fiscal gap experienced by some provinces in 1993. In 2004, sixteen provinces, including twelve western provinces and Jilin, Fujian, Shandong, and Hainan, received the transfer. It slightly contributes to fiscal disparities by 2.3 percent. As minority populations generally reside in remote and poor regions, it is surprising to find that *Grants for Minority Regions* also have a positive impact on fiscal inequality. Against this conventional view, minority-populated provinces such as Tibet, Xinjiang, and Qinghai, are not among the poorest in the country, as ranked by per capita GDP in the previous chapter. These provinces, no matter what their fiscal condition, get favorable treatment from the center because preserving the national union is the foremost goal of the Chinese government. Provinces inhabited by ethnic minorities receive an ad hoc grant equal to a base amount of one billion yuan in 2000 with a yearly growth rate of central VAT revenue and the rebate of 80 percent of the central increased VAT collection in the minority provinces (Shah and Shen 2008). Grants for minority regions contribute to provincial fiscal disparities by 0.57 percent.

The decomposition results clearly indicate that fiscal transfers at the county level are counter-equalizing, with all of major transfer programs making a positive contribution to inequality. The aggregate contribution of the transfer system to the inequality of per capita expenditure at the county level is about 39 percent in 2004, lower than the provincial level where it is more than a half. Most of the inequality contribution comes from the Tax Rebate program which accounts for more than 20 percent of fiscal disparities in 2004. Ranked second is the Earmarked Grants, with approximately an 11 percent shares. The inequality contributions from the other transfers programs are trivial. Surprisingly, the impact of the equalization transfer program at the county level also increases fiscal disparities, although the effect is slight (only 1.63 percent).

Why some programs are equalizing at the provincial level but un-equalizing when executed at the county level? And why some transfers, initially design to promote equalization, are actually un-equalizing? One plausible explanation is that counties receive transfers from prefectural governments or directly from provincial governments³⁹; the effect of passing down through the tiers of government might weaken the equalizing impact of the program. Another possibility is that the program design attempts to equalize both fiscal capacity and expenditure needs. While the program aspires to be an ideal model conceptually, in practice, it is highly complex in design and the formula may be poorly crafted, leading to the distortion of the funding allocation. For example, the equalization transfer and the grant for minority regions define “expenditure needs” of

³⁹ In provinces using “province managing county” model, county governments receive transfers directly from provincial governments.

local governments mainly by personnel spending based on current staff numbers (World Bank 2007b). And the last but not least, political favoritism for jurisdictions with large populations of minority groups which are not necessarily in poorer regions may also have some negative impact on the equalization effort.

4.4 Conclusion and Policy Implications

This chapter focuses on analysis of the redistributive effects of the intergovernmental transfer system at both the provincial and county levels in China. The results provide empirical evidence for the discussion of many issues pertinent to reform of China's intergovernmental transfer system and the sub-provincial fiscal system.

The impact of fiscal transfers on regional fiscal disparity has been a debatable issue, and existing literature provides mixed results about whether intergovernmental fiscal transfers play an equalization role in the distribution of fiscal resources. In the first step, we look at fiscal disparities before and after transfers through comparing fiscal inequality indicators for per capita revenue with the indicators for per capita expenditure. Consistent with the common perception, the inequality on the revenue side is much larger than on the expenditure side, and the gap has widened in recent years. Some scholars interpret this as evidence that the fiscal transfer system does provide some degree of redistribution and that the equalization effects have been getting stronger in recent years. My analysis challenges this claim since lower inequality of per capita expenditure may not be

interpreted as equalization effect because the calculation of two data streams tends to produce a lower inequality figure as the mean gets larger on the denominator.

Another common practice in the study of fiscal equalization is to look at the trend of fiscal inequality over a period of time. In the light of rising fiscal inequality over years, some scholars suggest that the intergovernmental transfer system fails to equalize.

However, my analysis does not find widening fiscal inequality for per capita expenditure.

At the provincial level for the period 1998-2005, fiscal inequality remained stable with the trend actually being downward in some of the more recent years; and at the county level from 1994 to 2004, fiscal inequality barely changed at all, except for slight ups and downs from year to year. Even if the trend was rising, it would not necessarily imply that the intergovernmental transfer system was counter-equalizing because the transfers might have been allocating more fiscal resources to poor regions while in the mean time the sharply rising inequality of local revenue collection overshadowed redistributive efforts by the transfer system. This is likely to occur in China due to skyrocketing income disparities that result from unbalanced economic growth across the country.

Neither comparison of the fiscal inequality before and after transfers, nor observation of the trend in inequality measures, is able to provide accurate evidence of the redistributive effects of intergovernmental fiscal transfers. Therefore, the method of inequality decomposition is used to quantify the contribution of fiscal transfers to inequality. The findings help to settle the debate in the literature by providing clear evidence that the aggregate impact of the intergovernmental transfer system as a whole was not fiscally

equalizing up to 2004 at either the provincial or the county levels. One of the key justifications for centralized revenue collection since 1994 has been to use extra resources at the Center to reduce regional fiscal disparities. But although the central government claims that additional resources have been allocated to poorer regions to increase fairness and harmony in intergovernmental fiscal relations (Lou 2008), my analysis suggests that such a policy intention is not manifest in the outcome. However, we cannot ignore the fact that the redistributive effort is evident in some particular areas. For instance, in 2005 Tibet had the lowest per capita revenue but ranked only behind Shanghai and Beijing in terms of per capita expenditure. Being one of the most remote and underdeveloped provinces, Tibet had received a higher level of subsidies. The equalization effort is remarkable in Tibet because, as some scholars argue (e.g. Wang 2001), maintaining national unity is an overriding priority for Chinese policy makers. The reason why my analysis is not consistent with the observations in Tibet may lie in the reality that the poorest regions are not always the ones that are most favored politically. Hence, a higher level of subsidies may end of going to the areas where income levels exceed those of the poorer regions.

As my analysis provides a quantification of inequality contributions by all the major transfer programs, the results reveal that if any action is to be taken to improve the equalization of the intergovernmental transfer system, the action should target the Tax Rebate program. This program accounted for a majority of non-equalization effects of fiscal transfers at both the provincial and the county levels in 2004. The tax rebate transfer was established in the 1994 reform as a static guarantee for richer provinces in

return for their cooperation with revenue centralization at that time. The original intention was to terminate the program in a few years. More than a decade since the reform and large fiscal disparities remaining persistent over the years, the tax rebate transfer continues to channel the largest chunk of fiscal transfers – 43 percent of total transfers at the provincial level and 29 percent of total transfers at the county level – into affluent regions. It is hard to justify its extension beyond the initial “hold harmless” provisions. Unless this transfer program is reviewed and modified, it will be almost impossible to have the intergovernmental transfer system play an equalization role in distribution of fiscal resources.

My findings also indicate that the Equalization Transfer, established in 1995 to target fiscal disparities, fails to serve a meaningful equalization function at either the provincial or the county levels. Its effect is negligible at the provincial level and it even increases fiscal inequality at the county level. Its complex structure, together with several design flaws, makes this program unlikely to achieve a good equalization impact. First of all, the yearly resource of allocation is from an ad hoc year-to-year variable fixed pool, and the pool is small. In 2004, the equalization transfer accounted for only 7 percent of total transfers at the provincial level. No matter how well it might be implemented, such a level of financing would make no difference in the overall distribution of fiscal resources.

At the county level, this formula-based transfer, adopted from the Australian model with cutting edge concepts and models, actually works in the wrong direction. To some extent, the purpose of the program is lost in the calculation and administration, which results

from its complexity. China's equalization transfer applies the representative tax system (RTS) and the representative expenditure system (RES) to equalize both fiscal capacity and expenditure needs⁴⁰. The RTS system is usually adopted in the context of high local revenue autonomy, that is, where there is flexibility in deciding tax rates and tax bases. The standardization of local revenue capacity through the RTS method is to avoid the disincentive effects for tax administration when using actual revenues in determining equalization grants. In China, local governments, however, simply implement central tax policies and have little leeway in defining their own tax rates and bases. Therefore, the implementation of the RTS system in China only complicates matters, and the outcome does not differ much from directly equalizing actual revenues. China also uses the RES system to calculate expenditure needs. While desirable conceptually, expenditure need equalization requires a wide range of reliable data and competent personnel handling calculation and analysis – conditions that are difficult to meet in an emerging economy like China. Even in Australia, this approach to expenditure needs calculation is highly debated and can prove frustrating for anyone who wants to understand it. In view of its calculation complexity, its requirement for dependable data, and its costliness of implementation, expenditure need equalization is better achieved through separate transfer programs for merit goods, rather than through being incorporated in the equalization transfer (Shah and Shen 2008). In short, in order to make the equalization transfer work properly at the county level as well as improve its overall design, it is better not to use the RTS and RES systems in China's context, but rather to adopt a simple system of equalizing actual revenues.

⁴⁰ See detailed explanation of the equalization transfer in the first chapter.

My findings also have important implications relating to administrative reform at the sub-national level. As shown in the analysis, the same transfer program has a contradictory impact on fiscal equalization at provincial and county levels. For instance, while the equalization transfer, the transfer for rural tax reform, and the transfer for increasing the wages of civil servants, all play an equalization role at the provincial level, they actually increase fiscal inequality at the county level. It appears that the effect of the transfers deviates from their original intention as they go down through the four tiers of government, that is, from central to province, from province to prefecture, and finally from prefecture to county, the “layer-cake model of intergovernmental grant flows,” as Shah and Shen (2008) call it. Such a strict vertical hierarchical relationship among the different levels of government requires each tier of government only to manage the allocation of transfers to its directly subordinate governments. The transfer programs, designed by policy makers at the center, seem to lose their purpose as they filter down the layers of administration. One possible explanation is that the funds supposed to reach poor counties may be diverted to other uses by intermediate levels of government. Or a richer county may obtain more transfers because it is placed administratively under a relatively poor province and/or a poor prefecture (Tsui 2005). In this regard, achieving effective fiscal equalization at the county level may entail removing some intermediate tiers of government. Such a policy implication is in line with the ongoing reform of China’s administrative hierarchy, as more provinces are experimenting with the “province managing county” model under which provinces bypass the prefecture level and deal directly with county governments on fiscal matters. This model has been implemented in 11 provinces by 2005⁴¹. In order to improve fiscal equalization at the

⁴¹ For detailed explanation of the model and the list of 11 provinces, see the first chapter.

county level, the reform may be a move in the right direction. But whether the model is desirable in all provinces, particularly those with a vast land area and a sparse population, requires further empirical research, as does the question of how fiscal transfers are administered in the province-managed counties.

Pertinent to fiscal transfers at the county level, my findings indicate that none of major transfer programs plays an equalization role in the distribution of fiscal resources. As studied in the previous chapter, fiscal inequality at the county level in China remains high. This is even more worrisome than the inequality at the provincial level, as core public services like basic education, health care, and social security are mainly provided by county level governments. Therefore, fiscal disparities result in the inequality of public services provision, which in turn escalates unbalanced economic development across the county. In the meantime, county governments are faced with financial stress and are becoming more dependent on fiscal transfers since the central government has pushed rural tax reform since 2000 and since 2004 has eliminated agricultural taxes in order to reduce the tax burden on farmers and ease rural unrest. To fill the fiscal gap caused by this series of reforms, the central government established the grants for rural tax reform to compensate the financially starved county governments. However, the size of the transfer was far from adequate, accounting for less than 10 percent of total transfers at the county level in 2004, and its allocation actually increased fiscal inequality, as the decomposition results indicate. In other words, poor counties are not fiscally compensated with more transfers in order to ensure a sufficient level of basic public services provision. Therefore, my findings suggest that transfers for merit goods such as

education and health care may be also required if these critical public services are to be delivered up to the national minimum standards in the poorest counties. Such transfer programs are likely to make a big difference in addressing the issue of fiscal disparities at the county level, and they may work more effectively than a complex equalization grant by considering both revenue capacity and expenditure needs.

Despite Chinese authorities' effort to pump more fiscal resources into the transfer system and to introduce new transfer schemes targeting at the poor regions, the analysis reveals that these transfers have done little to ease the large disparities in the allocation of fiscal resources across provincial and county units. Plus the pro-rich transfer scheme of tax rebate as well as earmarked grants further aggravates fiscal inequality. Reducing inequality and promoting growth with equity require the allocation of fiscal transfers to the needy. The recent equalization efforts are far from enough, and the transfer system has to be revamped to be compatible with China's quest for building a harmonious society.

Appendix 1

Table 1 Increasing Central Transfers

	Total Transfers from the Central Government (RMB billion)	As percentage of	
		GDP *	Central Government Revenues
1986	46.4	4.5%	59.6%
1987	48.1	4.0%	65.3%
1988	53.8	3.6%	69.4%
1989	56.2	3.3%	68.3%
1990	58.5	3.2%	58.9%
1991	55.5	2.6%	59.2%
1992	59.7	2.2%	60.8%
1993	54.5	1.5%	56.9%
1994	238.9	5.0%	82.2%
1995	253.4	4.2%	77.8%
1996	272.5	3.8%	73.0%
1997	285.7	3.6%	66.3%
1998	332.2	3.9%	67.2%
1999	399.2	4.5%	68.3%
2000	474.8	4.8%	67.9%
2001	601.5	5.5%	70.1%
2002	736.2	6.1%	70.9%
2003	826.1	6.1%	69.6%
2004	1037.9	6.5%	71.7%
2005		6.3%	66.5%

Source: World Bank (2007a).

Appendix 2

The intergovernmental transfers are the dominant source of revenues for sub-national governments in China. The design of these transfers is of critical importance for efficiency and equity of local service provision and fiscal health of sub-national governments. For enhancing accountability, it is desirable to match revenue means (the ability to raise revenues from own sources) as closely as possible with expenditure needs for all orders of government. However, higher level governments must be allowed greater access to revenues than needed to fulfill own direct service responsibilities so that they are able to use their spending power through fiscal transfers to fulfill national and regional efficiency and equity objectives. We can identify six broad objectives for national fiscal transfers each of which may apply to varying degree in China and each of which calls for a specific design of fiscal transfers

Table 2 Principles and Better Practices in Grant Design

<i>Grant Objective</i>	<i>Grant Design</i>	<i>Better Practices</i>	<i>Practices to avoid</i>
To bridge fiscal gap	<ul style="list-style-type: none"> • Reassign responsibilities • Tax abatement • Tax base sharing 	Tax abatement and tax base sharing in Canada	Deficit grants Tax by tax sharing
To reduce regional fiscal disparities	General Non-matching Fiscal capacity equalization transfers	Fiscal equalization programs of Canada and Germany	General revenue sharing with multiple factors
To compensate for benefit spillovers	Open-ended matching transfers with matching rate consistent with spill-out of benefits	Republic of South Africa grant for teaching hospitals	
Setting national minimum standards	Conditional non-matching block transfers with conditions on standards of service and access	Indonesia pre-2000 roads and primary education grants Colombia and Chile education transfers, Canada Health transfers, SUDS program in Brazil	Conditional transfers with conditions on spending alone <i>ad hoc</i> grants
Influencing local priorities in areas of high national but low local priority	Open-ended matching transfers (with preferably matching rate to vary inversely with fiscal capacity)	Matching transfers for social assistance as in Canada	<i>ad hoc</i> grants
Stabilization	Capital grants provided maintenance possible	Limit use of capital grants and encourage private sector participation by providing political and policy risk guarantee	Stabilization grants with no future upkeep requirements

Source: Shen and Shah (2006).

Appendix 3

To test the relationship between intergovernmental fiscal transfers and economic factors, one option is to employ fixed effects model or random effects model depending on the mixture of independent variables and the construction of regression equation⁴². In general, the regression equation can be written as follows:

$$T_{it} = \beta_0 + \beta_1 V_{it}^1 + \beta_2 V_{it}^2 + \dots + \beta_n V_{it}^n + \alpha_1 D_1 + \alpha_2 D_2 + \dots + \alpha_m D_m + \varepsilon_{it}$$

where T_{it} is per capita transfer, $V_{it}^1 \dots V_{it}^n$ represents different independent variables such as per capita GDP and population, $D_1 \dots D_m$ are a set of dummy variables (e.g., minority region), and ε_{it} is the error term.

Table 3 shows the regression results from the random effects model experimented in Lin (2011). Per capita central transfers are positively related to per capita provincial GDP (regression 1) even when other explanatory variables are incorporated into the equation (regression 3 and 5), which indicates that provinces with higher per capita GDP receive more per capita transfers from the central government. The level of statistical significance is at 1 percent. Second, per capita central transfers are also positively associated with growth rate of GDP (regression 2-5), indicating central transfers favor provinces with higher growth rate. The significance level is also 1 percent. Third,

⁴² In general, the decision to treat the between-subject (in our case between-province or between-county) variation as fixed or random depends largely on three conditions: (1) whether it is important to control for unmeasured characteristics of subjects; (2) whether it is important to estimate the effects of stable covariance; and (3) whether the substantial loss of information that stems from discarding the between-subject variation can be tolerated.

population growth rate is not statistically significant (p value 10 percent). Lastly, the dummy variables of western region and minority have both positive sign and are statistically significant at the level of 5 percent, suggesting that the western/minority region receives more per capita transfers from the central government.

**Table 3 Regression of Real per capita Transfers from the Central Government
(1995-2004)**

Variables	(1)	(2)	(3)	(4)	(5)
Per capita real GDP	0.068 (0.006)***		0.054 (0.006)***		0.057 (0.006)***
Growth rate of real GDP		13.798 (1.642)***	7.745 (1.631)***	13.907 (1.643)***	7.482 (1.607)***
Population growth rate		-4.938 (2.558)	-2.744 (2.852)*	-4.949 (2.521)	-2.679
West region (dummy)				0.214 (0.490)	1.023 (0.502)**
Minority region (dummy)				1.479 (0.648)**	1.366 (0.653)**
Constant	0.118 (0.274)	0.114 (0.285)	-0.402 (0.283)	-0.219 (0.316)	-1.066 (0.319)***
Observations	310	310	310	310	310
R-square	0.1091	0.1182	0.1436	0.2504	0.3636

Source: Adapted from Lin (2011)

Note: Standard errors are in parentheses; *p<0.1, **p<0.05, ***p<0.01

Table 4 shows the regression results from the fixed effects model used by Zhang and Zheng (2011).

Table 4 Regression Results for All Counties (1997-2003)

Variables	Transfers excluding		
	Tax Rebate	Tax Rebate	Total Transfer
Per capita GDP	-0.001 (2.75)***	0.006 (44.54)***	0.006 (17.9)***
Population	-0.22 (1.57)	0.115 (1.64)	-0.106 (0.69)
Lag of per capita exp.	0.244 (40.15)***	-0.011 (3.70)***	0.233 (35.37)***
Share of rural population	1.214 (4.29)***	-0.129 (0.91)	1.086 (3.54)***
Share of public employee/pop.	591.989 (3.89)***	1,428.969 (18.90)***	2,020.958 (12.27)***
Per capita own revenue	-0.039 (5.75)***	0.164 (49.14)***	0.126 (17.24)***
Year dummy	Yes	Yes	Yes
Constant	159.247 (6.72)***	-22.236 (1.89)*	137.01 (5.34)***
Observations	14,433	14,433	14,433
Number of counties	2,703	2,703	2,703
R-square	0.45	0.48	0.53

Source: Adapted from Zhang and Zheng (2011)

Note: Standard errors are in parentheses; *p<0.1, **p<0.05, ***p<0.01

Appendix 4

Another popular way of investigating the equalization impact of the transfer system is based upon the trend of fiscal inequality. For the period 1998-2005, the trend of fiscal inequality on the expenditure side remains stable, with only a slight downward trend in more recent years. The coefficient of variation declines from 0.65 in 1998 to 0.61 in 2005, and the Gini coefficient drops from 0.26 in 1998 to 0.23 in 2005. For other periods, when fiscal inequality continued to increase, some scholars argue that the transfer system failed to equalize (e.g. Wong 2000; 2002). However, it needs to be clarified whether the increase of fiscal inequality is attributable to a growing disparity of revenue distribution or to the transfer system itself. It is likely that while the transfer system is equalizing with more transfers going to poor regions, the impact cannot offset the growing inequality of local revenue collection that results from unbalanced economic growth across the country. The following example proves this argument (see Table 5). Say there are three jurisdictions A, B, and C, each having the same population. The fiscal inequality on the expenditure side is increased from 0.53 in year 1 to 1.061 in year 2. Can we draw the conclusion that the transfer system has failed to equalize? The answer is NO, because in this example the transfer system is indeed equalizing, with more resources being allocated to the poorer jurisdictions. The reason why fiscal inequality has increased rests on the rising fiscal inequality on the revenue side, which is likely the reality in China.

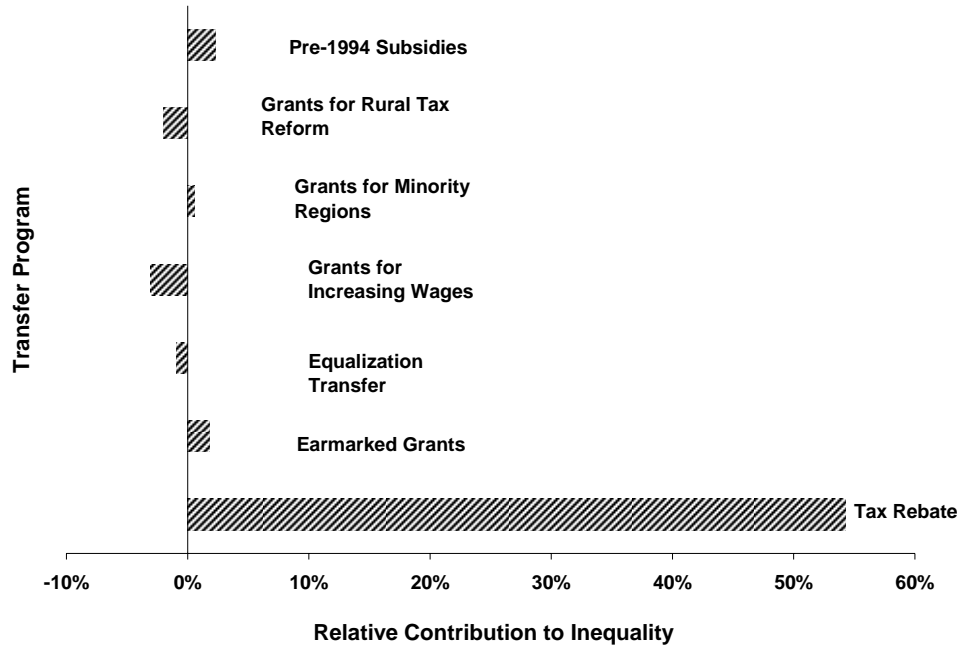
Table 5 Illustration of Revenue Impact on Inequality Calculation

	Year 1			Year 2		
	Revenue	Transfer	Expenditure	Revenue	Transfer	Expenditure
A	100	20	120	100	20	120
B	150	15	165	300	15	315
C	50	25	75	50	25	75
Coefficient	0.707		0.53	1.247		1.061
of						
Variation						

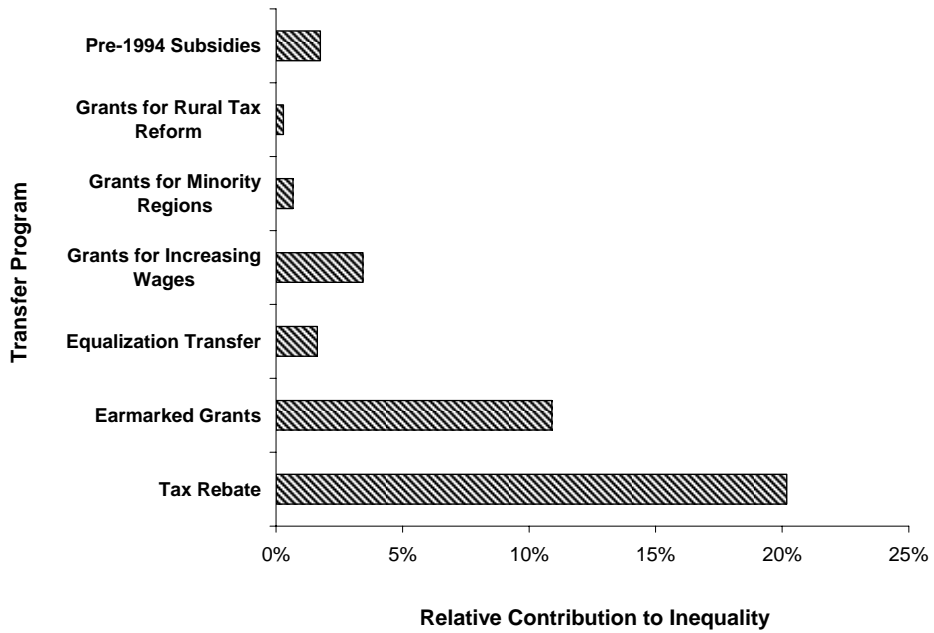
Appendix 5

Figure Contribution of Major Transfer Programs to Fiscal Inequality (2004)

Provincial Level



County Level



Source: Author's calculation.

Conclusion and Policy Recommendations

China's transition from a centrally-planned to a market-based economy has led to a major reconfiguration of its intergovernmental fiscal system. Is China one of the world's most decentralized countries, or one of the most centralized? The answer is, both. In terms of fiscal arrangements, China's sub-national governments are handling more than 70 percent of total government expenditures, compared to the average of one-third in OECD countries. However, sub-national governments have a much smaller share on the revenue side, and virtually no freedom to decide tax bases or set tax rates in a way that matches local revenues with spending needs. The taxing power is entirely in the hands of the central government. Nevertheless, fiscal decentralization is advocated by many for its contribution to China's remarkable economic performance over the last 30 years.

Towards the end of the 1990s, China's development strategy shifted slightly away from single-minded pursuit of GDP growth to redressing imbalances and patching up social safety nets. Some attempt to redirect fiscal resources for equalization was made in 1998 (under the Zhu Rongji Administration 1989 – 2002), with the most publicized program -- Western Development – being launched in 1999. Since then, many new programs have been established to improve public services provision in rural and poorer regions, and more resources have been allocated for human capital development. Central transfers to support rural public services are increasing; improvements are being made to ensure salary payments at the county and township levels; administrative reforms are being

undertaken at the grassroots levels; reforms to public service units (PSUs) are being piloted in many parts of the country; the free Rural Compulsory Education program is taking place; the New Rural Cooperative Medical Scheme and the Rural Medical Assistance Scheme are under way; and the Rural Minimum Living Stipend (*dibao*) is being implemented.

It appears China is fully engaged in implementing the remarkable objective of building a harmonious society and a new socialist countryside. However, accumulating studies in recent years suggest that these new programs are having mixed and in some cases even contradictory effects, which may be largely attributable to the intergovernmental fiscal system. Not only does the current fiscal system hinder the central effort to promote growth with equity, but also the system itself is lagging behind since it is not compatible with today's calls for equitable access to public services and increasing emphasis on human development. This research sheds light on the issue by providing an in-depth analysis of the intergovernmental fiscal system through three of its aspects: public expenditure policies, fiscal inequality, and the fiscal transfer system.

First, an institutional analysis of China's public expenditure policies reveals that there exists a stark vertical fiscal gap at sub-national levels of government (particularly at the county level that bears the main responsibilities for public services provision), and that the gap has been widening over the years. Moreover, as the analysis of public expenditure composition reveals, the allocation of public spending appears out of line with China's development objectives, with a relatively low share of spending on education, health, and

other social needs, relative to GDP, according to international standards. Such a low level public spending on important human development needs is partly attributable to the large fiscal gaps prevalent across sub-national governments. The financing stress of local governments is further aggravated by the lack of accountability of local officials who may be keener on accumulating political equity than on being responsible for ensuring a sufficient level of basic public services. This explains why, despite a sharp increase in central transfers for spending on rural development since late 1990s, these government funds leak as they passing through the hierarchy before reaching the targeted regions; and why in some cases, they are not always used as initially intended. The accountability of local governments to citizens is also weak, with most services provided without any participation by citizens or communities.

Second, fiscal inequality has become a major cause of concern in China because it undermines government's ability to provide core public services at relatively equitable, socially acceptable standards. It also prevents poor regions and jurisdictions from delivering sufficient basic services. Consistent with the common perception, fiscal inequality at provincial, prefectural, and county levels remains large, and there is no evidence of a sustained reduction in fiscal disparities having taken place since the 1994 tax sharing reform. Importantly, fiscal inequality at the prefectural level is remarkably high. But county-level fiscal inequality is not significantly high, as expected; instead, it is similar to provincial-level fiscal inequality. Furthermore, the comparatively lower-spending governments at all three levels are concentrated in the middle region, rather than in the western areas. For example, in 2004 all three levels of government in Anhui

and Henan, both of them central provinces, had the lowest per capita public expenditure. A few poor western provinces enjoyed high per capita public spending – for instance, Tibet, at the sub-national level, ranked in the same tier as Beijing. Xinjiang at the prefectural level spent more than 2000 yuan per capita in 2004, about the same as Guangdong. At the county level, Inner Mongolia, Qinghai, and Tibet spent at a similar level to Zhejiang, with more than 1000 yuan per capita. Besides, the results from inequality decomposition indicate that the fiscal disparities within each region are large. At the provincial level, within-region inequality is about twice the between-region inequality – in other words, more than two-thirds of inequality comes from within a region, suggesting that the fiscal capacities of jurisdictions within each of these regions are very different and that the current policy, with its primary emphasis on balancing between-region disparities, needs to be reevaluated. In addition, the findings suggest not only that the policy effort should be shifted from between-region to within-region, but also that it should be shifted from the central government to sub-provincial public finance. As shown in the Theil index decomposition results, at the prefectural level over the period 1994-2004, within-province fiscal inequality increased by about 40 percent, while between-province inequality fell by more than 10 percent. At the county level over the period 1994-2004, within-province inequality increased by about 17 percent, while between-province inequality fell by more than 10 percent. Lastly but importantly, fiscal inequality demonstrates a steady trend at all three levels of government in the post 1994 period up until 2004. This finding contradicts the mainstream allegation that fiscal inequality is widening along with the increasing income inequality flowing from unbalanced economic development across the country. At the same time, the steady trend

also suggests that the fiscal reform of 1994 has not delivered the original intention of using centralized revenues to reduce fiscal disparities, even though the current fiscal system managed to maintain the prefectural and county fiscal inequality in 2004 at a level similar to that of a decade before.

China's large and persistent fiscal inequality at provincial, prefectural, and county levels of government may be attributed to the following reasons. Significant spending disparities are related to variations in regional revenue collection arising from differences in incomes; the stark fiscal inequality is partly caused by the current inter-governmental fiscal arrangements which push spending responsibilities downward without providing adequate financial resources to the subordinate levels. Another significant factor may be population density which affects the cost of public services provision. Moreover, from the political perspective, the issue of wide fiscal disparities is closely associated with the Chinese authorities' generous financing of minority regions which are not necessarily in poor, needy areas. Lastly, persistent fiscal inequality may just reflect China's emphasis on revenue mobilization.

Fiscal inequality matters if it leads to large disparities in service delivery and outcomes. People everywhere regard unequal access to basic public services, such as education and health care, as an important aspect of poverty and inequality in their own experience. This is no less the case in China. There is profound evidence showing that educational attainment and health care services are unequally provided in certain backward areas of the country. The disadvantaged governments of these areas are spending so little that the

most basic public services are provided at remarkably insufficient levels. The outcomes, measured by human development indicators, differ substantially across the country, translating those with less and lower quality education and/or poorer health today into tomorrow's victims of widening inequality of living standards/income.

Third, the large vertical fiscal gaps at sub-national levels of government (particularly those financially-starved counties, townships and villages in poor regions) and the marked horizontal fiscal disparities both necessitate a large scale system of fiscal transfers. China's fiscal transfer system has been expanding rapidly in terms of both volume and number of transfer schemes. In view of the effort by the central government to shift towards more equitable development, what is the redistributive effect of the transfer system?

To examine the impact of fiscal transfers on regional fiscal disparity, this research employs two sets of methodology. The first looks at fiscal disparities before and after transfers by comparing fiscal inequality indicators for per capita revenue with the indicators for per capita expenditure. Consistent with the common perception, the inequality on the revenue side is much larger than on the expenditure side, and the gap has widened in recent years. Some scholars interpret this as evidence that the fiscal transfer system does provide some degree of redistribution and that the equalization effects have been getting stronger in recent years. However, my analysis challenges this claim. Using a hypothetical example, it proves that the lower inequality of per capita expenditure may not be interpreted as equalization effect because the calculation of two

data streams tends to produce a lower inequality figure as the mean gets larger on the denominator. Therefore, it may be “converging” effect, not “equalizing” impact.

Another common practice in the study of fiscal equalization is to look at the trend of fiscal inequality over a period of time. In the light of rising fiscal inequality over years, some scholars suggest that the intergovernmental transfer system fails to equalize.

However, my analysis does not find widening fiscal inequality for per capita expenditure.

At the provincial level for the period 1998-2005, fiscal inequality remained stable with the trend actually being downward some of the more recent years; and at the county level from 1994 to 2004, fiscal inequality barely changed at all, except for slight ups and downs from year to year. Even if the trend was rising, it would not necessarily imply that the intergovernmental transfer system was counter-equalizing because the transfers might have been allocating more fiscal resources to poorer regions while in the mean time the sharply rising inequality of local revenue collection overshadowed redistributive efforts by the transfer system. This is likely to occur in China due to skyrocketing income disparities that result from unbalanced economic growth across the country.

Neither comparison of fiscal inequality before and after transfers, nor observation of the trend in inequality measures, is able to provide accurate evidence of the redistributive effects of intergovernmental fiscal transfers. Therefore, the method of inequality decomposition is used to quantify the contribution of fiscal transfers to inequality. The findings help to settle the debate in the literature by providing clear evidence that the aggregate impact of the intergovernmental transfer system as a whole was not fiscally

equalizing up to 2004 at either the provincial or the county levels. One of the key justifications for centralized revenue collection since 1994 has been to use extra resources at the Center to reduce regional fiscal disparities. But although the central government claims that additional resources have been allocated to poorer regions to increase fairness and harmony in intergovernmental fiscal relations, my analysis suggests that such a policy intention is not manifest in the outcome. However, we cannot ignore the fact that the redistributive effort is evident in some particular areas. For instance, in 2005 Tibet had the lowest per capita revenue but ranked only behind Shanghai and Beijing in terms of per capita expenditure. Being one of the most remote and underdeveloped provinces, Tibet had received a higher level of subsidies. The equalization effort is remarkable in Tibet because, as some scholars argue, maintaining national unity is an overriding priority for Chinese policy makers. The reason why my analysis is not consistent with the observations in Tibet may lie in the reality that the poorest regions are not always the ones that are most politically favored. Hence, a higher level of subsidies may end up going to the areas where income levels exceed those of the poorer regions.

As my analysis provides a quantification of inequality contributions by all the major transfer programs, the results reveal that if any action is to be taken to improve the equalization of the intergovernmental transfer system, the action should target the Tax Rebate program. This program accounted for a majority of non-equalization effects of fiscal transfers at both the provincial and the county levels in 2004.

My findings also indicate that the Equalization Transfer, established in 1995 to target fiscal disparities, fails to serve a meaningful equalization function at either the provincial or the county levels. Its effect is negligible at the provincial level and it even increases fiscal inequality at the county level. Its complex structure, together with several design flaws, makes this program unlikely to achieve a good equalization impact. First of all, the yearly resource of allocation is from an ad hoc year-to-year variable fixed pool, and the pool is small. In 2004, the equalization transfer accounted for only 7 percent of total transfers at the provincial level. No matter how well it might be implemented, such a level would make no difference in the overall distribution of fiscal resources. At the county level, this formula-based transfer actually works in the wrong direction. To some extent, the purpose of the program is lost in the calculation and administration, which results from its complexity.

My findings also have important implications relating to administrative reform at the sub-national level. As shown in the analysis, the same transfer program has a contradictive impact on fiscal equalization at provincial and county levels. For instance, while the equalization transfer, the transfer for rural tax reform, and the transfer for increasing the wages of civil servants, all play an equalization role at the provincial level, they actually increase fiscal inequality at the county level. It appears that the effect of the transfers deviates from their original intention as they go down through the four tiers of government, that is, from central to province, from province to prefecture, and finally from prefecture to county, the “layer-cake model of intergovernmental grant flows,” as Shah and Shen (2008) call it.

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the county level, and may work more effectively than a complex equalization grant by considering both revenue capacity and expenditure needs.

China's development strategy of building a harmonious society cannot be achieved without a comprehensive reform of the intergovernmental fiscal system that will facilitate equitable and adequate delivery of core public services as well as enhance human capital development in poor localities. This research suggests the following guidelines for future reforms to improve the equity and efficiency of China's fiscal system.

Realign responsibilities with financial and institutional capacity at all levels

The current fiscal system has allowed the emergence of marked gaps between the expenditure responsibilities of sub-national governments and their financial resources. One of the most urgent tasks of fiscal reform is to clarify expenditure assignments for each government level and make sure that funds are available to finance the spending requirement. Currently, many programs are not being implemented or are implemented ineffectively, which is because of the murkiness regarding which level of sub-national governments is responsible for them. Sometimes there are overlapping or even conflicting responsibilities. Some expenditure categories could be centralized without foregoing the benefits of decentralized public service provision. For example, unemployment benefits would be reassigned to the Center, and a gradual shift of township finances to the county level or joint provision of public services could be considered to

solve the problem of scale economies. On the revenue side, one option is to boost local own revenue by developing a modern property tax, and the other suggestion is to offer local governments more discretion in setting local tax rates, such as for property tax or personal income tax.

Increase government spending on human capital development

China's allocation of public spending appears out of line with the country's development needs and objectives, with too much taken by capital construction and general administration and too little (by international standards) going to human development. Reducing inequality is likely to require investing in the poor to help them build the capacity to escape the poverty trap. Such a capacity lies largely on two essential factors, educational attainment and health, which can be influenced by government policies. Therefore, the government can play an important role in reducing poverty and dampening inequality with a policy of investing in people through adequate and equitable service delivery in basic education and health care. The urgency is to increase spending on education, health care, and other social needs, as a share of overall public expenditure and relative to GDP, and meanwhile improve the efficiency of public infrastructure investment as means of curbing future growth in this area.

Streamline administrative hierarchy

The strict vertical hierarchical relationship among the different levels of government requires each tier of government only to manage the allocation of transfers to its directly subordinate governments. The transfer programs, designed by policy makers at the Center, seem to lose their purpose as they filter down the layers of administration. One possible explanation of this is that the funds supposed to reach poor counties may be diverted to other uses by intermediate levels of government. Or, a richer county may obtain more transfers because it is placed administratively under a relatively poor province and/or a poor prefecture. In this regard, achieving effective fiscal equalization at the county level may entail removing some intermediate tiers of government. Such a policy implication is in line with the ongoing reform of China's administrative hierarchy, as more provinces are experimenting with the "province managing county" model under which provinces bypass the prefecture level and deal directly with county governments on fiscal matters. This model has been implemented in 11 provinces by 2005. In order to improve fiscal equalization at the county level, the reform may be a move in the right direction. But whether the model is desirable in all provinces, particularly those with a vast land area and a sparse population, requires further empirical research, as does the question of how fiscal transfers are administered in province-managed counties.

Enhance local government performance and accountability

Also contributing to the low effectiveness of public expenditures are the adverse incentives for sub-national officials and their limited accountability for expenditure decisions. As agents of central government, together with China's top down system of evaluation and promotion of government officials, sub-national governments spend as much as they have in revenue without considering the social trade-off between the benefits of their expenditures and the cost of financing. Also, greater priority is given to capital spending, which encourages local governments to undertake all sorts of investment projects. Moreover, to enhance their career prospects, local cadres pay great attention to the target responsibility system, which ultimately provides incentives to allocate resources in line with the preferences of the higher level of government. In addition, unfunded mandates distort local spending allocations in favor of easily measurable outputs. The inefficiency of many local governments in providing essential public services is also related to the limited involvement of citizens in public service planning, provision, and monitoring.

The central government may need to consider revising the targets and indicators used for evaluating the performance of local governments. The current appraisal system of, although recently amended, still encourages local officials to channel resources into investment projects that are included in GDP, rather than into education or health care which produce no immediate outputs. Therefore, action is required to revise the criteria and designing more explicit indicators for performance in social sectors.

Overhaul the intergovernmental fiscal transfer system to promote equalization

Given the size of China and wide dispersion of government and population across regions, it is unlikely that every sub-national government could be self-sufficient. Therefore a redistributive transfer system would still be indispensable to ensure adequate and equitable public services provision across the country. The current fiscal transfer system still favors the rich at both the provincial and the county levels. Reducing inequality and building a harmonious society require revamping the transfer system to allocate more resources to the needy.

The current fiscal transfer system is overly complex, with a large number of transfer programs being designed ad hoc as short-term palliatives to deal with emerging issues, and then being allowed to continue in perpetuity without any serious reexamination. In the interests of streamlining the fiscal system with the explicit objectives of equalization and promoting the provision of public services, a series of reform options could be considered.

First, introduce an explicit standard of equalization. China's equalization transfer applies the representative tax system (RTS) and the representative expenditure system (RES) to equalize both fiscal capacity and expenditure needs. The RTS system is usually adopted in the context of high local revenue autonomy, that is, where there is flexibility in deciding tax rates and the exploitation of tax bases. The standardization of local revenue capacity through the RTS method is to avoid the disincentive effects for tax

administration when using actual revenues in determining equalization grants. In China, however, local governments simply implement central tax policies and have little leeway in defining their own tax rates and bases. Therefore, the implementation of the RTS system in China only complicates matters, and the outcome does not differ much from directly equalizing actual revenues.

Second, experiment with output-based fiscal transfers to achieve national minimum standards in merit goods such as education, health, and infrastructure. China uses the RES system to calculate expenditure needs. While desirable conceptually, expenditure needs equalization requires a wide range of reliable data and competent personnel handling calculation and analysis – conditions that are difficult to meet in an emerging economy like China. Even in Australia, this approach to expenditure needs calculation is highly debated and can prove frustrating for anyone who wants to understand it. In view of its calculation complexity, its requirement for dependable data, and its costliness in implementation, instead of being incorporated in the equalization transfer, expenditure needs equalization could be discontinued and replaced with transfers for national minimum standards of basic public services.

Such transfers could be based on the relevant service population. In view of the inadequate potential for raising adequate own-source revenues by rural areas, a larger role for the central government must be recognized in financing rural services.

Formulating a list of national minimum standards, including schooling, health care, social relief, clean water, sanitation, and rural roads, would help provide guidelines for

introducing new transfer schemes and establish a commitment for financing. The minimum-guarantee system for basic public services is not only a matter of urgency, but also a feasible policy choice. Based on this concept, a proposal to guarantee public funding for compulsory rural education was adopted in 2006.

Third, correction of the problems in China's grant system is likely to require reducing or even abolishing the transfer of tax rebate. The tax rebate transfer was established in the 1994 reform as a static guarantee for richer provinces in return for their cooperation with revenue centralization at that time. The original intention was to terminate the program in a few years. It is now over a decade since the reform, and large fiscal disparities have persisted over the years, with the tax rebate transfer continuing to channel the largest chunk of fiscal transfers – 43 percent of total transfers at the provincial level and 29 percent of total transfers at the county level – into affluent regions. By doing so, tax rebate makes up more than half of the inequality of per capita expenditure at the sub-national level; it also accounts for about one-fifth of fiscal inequality at the county level. It is hard to justify its extension beyond the initial “hold harmless” provisions. Unless this transfer program is reviewed and modified, it will be almost impossible to have the intergovernmental transfer system play an equalization role in the distribution of fiscal resources. One possible option is to discontinue tax rebate for personal income tax and corporate income tax, allowing supplementary variable flat-rate charges by provincial-local governments.

Last but not least, simplify and formalize the existing earmarked grants. The earmarked grants are the second un-equalizing transfer program at the county level, contributing more than 10 percent to overall fiscal inequality. The centrally sponsored schemes account for a critical source of revenue for local governments in China, and they are supposed to be justified on the same bases as conditional grants in other countries: addressing externalities, pursuing national objectives, and so on. However, one current issue is that China has just too many of these schemes. In the past decade, they have continued to grow. These oversized earmarked grants blur lines of responsibility, burden the administrative capacity of local governments, and undermine local budget autonomy.

China's highly decentralized systems of fiscal management and administration can be an asset for cost-effective service delivery if the intergovernmental fiscal system works in line with China's development priorities. The matter of concern in China is not the size of the nation's financial resources, but the efficiency of their use. Further amendment and reforms of the existing fiscal system are likely to be required in order to promote social fairness and equity. To achieve more equitable access to fiscal resources across regions, the reform of the intergovernmental fiscal system suggested in this section also requires being complemented by a clear and proper definition of government's roles and functions at all levels, and by better mechanisms to strengthen vertical and horizontal accountability.

The reform of China's intergovernmental fiscal system will be a mission requiring enormous political commitment and determination to navigate a way through a variety of

sources of resistance. Let me conclude the dissertation with a popular Chinese proverb.

What is desirable to modernize China's fiscal system is "to get at the root of the problem while solving current issues".

References:

- Agarwala, Ramgopal. 1992. "China: Reforming Intergovernmental Fiscal Relations." *Discussion Paper No.178*. The World Bank: Washington, D.C.
- Ahmad, Ehtisham. 2008. "Taxation Reform and the Sequencing of Intergovernmental Reform in China: Preconditions for a Xiaokang Society," in *Public Finance in China: Reform and Growth for a Harmonious Society*. Shuilin Wang and Jiwei Lou eds. Washington, D.C.: The World Bank.
- Ahmad, Ehtisham, Keping Li, Thomas Richardson, and Raju Singh. 2002. "Recentralization in China?" *IMF working paper WP/02/168*. International Monetary Fund: Washington, D.C.
- Ahmad, Ehtisham, Raju Singh, and Mario Fortuna. 2004. "Toward More Effective Redistribution: Reform Options for Intergovernmental Transfers in China." *IMF working Paper WP/04/98*. International Monetary Fund: Washington, D.C.
- Bahl, Roy and Johannes F. Linn. 1994. "Fiscal Decentralization and Intergovernmental Transfers in Less Developed Countries." *Publius: The Journal of Federalism*, 24:1, pp. 2020.
- Bahl, Roy and Jorge Martinez-Vazquez. 2006. "Sequencing Fiscal Decentralization." *World Bank Policy Research Working Paper*. The World Bank: Washington, D.C.
- Bahl, Royl. 1999. *Fiscal Policy in China: Taxation and Intergovernmental Fiscal Relations*. San Francisco.: The 1990 Institute.
- Bourguignon, Francois. 1979. "Decomposable Income Inequality Measures." *Econometrica*, 47:4, pp. 901-20.

Bourguignon, FRANÇOIS 2008. "Growth, Inequality, and Fiscal Policy from a Historical Perspective: Are There Lessons for China?," in *Public Finance in China*. Jiwei Lou and Shuilin Wang eds. Washington, D.C.: The World Bank.

Davoodi, Hamid and Hengfu Zou. 1998. "Fiscal Decentralization and Economic Growth: A Cross-Country Study." *JOURNAL OF URBAN ECONOMICS*, 43, pp. 244-57.

Dollar, David and Bert Hofman. 2008. "Intergovernmental Fiscal Reforms, Expenditure Assignment, and Governance," in *Public Finance in China: Reform and Growth for a Harmonious Society*. Shuilin Wang and Jiwei Lou eds. Washington, D.C.: The World Bank, pp. 39-51.

Gao, J., J. Qian, S. Tang, B. Eriksson, and E. Blas. 2002. "Health Equity in Transition from Planned to Market Economy in China." *Health Policy and Planning*, 17:1, pp. 20-29.

Hofman, Bert and Susana Cordeiro Guerra. 2005. "Fiscal Disparities in East Asia: how large and do they matter?," in *East Asia Decentralizes: making local government work*. Bert Hofman and Susana Cordeiro Guerra ed. Washington, D.C.: The World Bank, pp. 67-83.

Jiang, Tingsong and Zhiyun Zhao. 2003. "Government Transfer Payments and Regional Development in China." *15th Annual Conference of the Association for Chinese Economics Studies*.

Jin, Hehui, Yingyi Qian, and Barry R. Weingast. 2005. "Regional decentralization and fiscal incentives: Federalism, Chinese style." *Journal of Public Economics*, 89, pp. 1719 - 42.

- Jin, Jing and Heng-fu Zou. 2005. "Fiscal decentralization, revenue and expenditure assignments, and growth in China." *Journal of Asian Economics*, 16, pp. 1047–64.
- Kanbur, Ravi and Xiaobo Zhang. 2005. "Fifty Years of Regional Inequality in China: A Journey through Central Planning, Reform and Openness." *Review of Development Economics*, 9:1, pp. 87-106.
- Lardy, Nicholas R. 1978. *Economic Growth and Income Distribution in the People's Republic of China*. Cambridge and New York: Cambridge University Press.
- Lin, Shuanglin. 2011. "Central Government Transfers: For Equity or for Growth," in *China's Public Finance in Transition*. Joyce Yanyun Man and Yu-Hung Hong eds. Cambridge: Lincoln Institute of Land Policy, pp. 203-26.
- Liu, Mingxing and Victor Shih. 2004. "Research Note: Gauging the Deficit and Welfare Effects of the 1994 Fiscal Reform at the County Level."
- Lou, Jiwei. 2008. "The Reform of Intergovernmental Fiscal Relations in China: Lessons Learned," in *Public Finance in China: Reform and Growth for a Harmonious Society*. Shuilin Wang and Yixing Lou eds. Washington, D.C.: The World Bank, pp. 155-69.
- Martinez-Vazquez, Jorge, Baoyun Qiao, Shuilin Wang, and Heng-fu Zou. 2008. "Expenditure Assignments in China: Challenges and Policy Options," in *Public Finance in China: Reform and Growth for a Harmonious Society*. Shuilin Wang and Jiwei Liu eds. Washington, D.C.: The World Bank, pp. 77-94.
- Ministry of Health. 2004. *An Analysis Report of National Health Services Survey in 2003*. Beijing, China: Center for Health Statistics and Information.
- Montinola, G., Yingyi Qian, and B. Weingast. 1995. "Federalism Chinese Style: The Political Basis for Economic Success in China." *World Politics*, 48:1, pp. 50-81.

- National Bureau of Statistics. 2006. *China Statistical Yearbook 2006*. Beijing, China: China Statistics Press.
- Oates, Wallace. 1972. *Fiscal Federalism*. New York: Harcourt Brace Jovanovich.
- OECD. 2006. *Challenges for China's Public Spending: toward greater effectiveness and equity*. Paris: OECD.
- Oksenberg, Michel and James Tong. 1991. "The evolution of central-provincial fiscal relations in China, 1971-1984: the formal system." *China Quarterly*, 125, pp. 1-32.
- Park, Albert, Scott Rozelle, Christine Wong, and Changqing Ren. 1996. "Distributional Consequences of Reforming Local Public Finance in China." *The China Quarterly*, 147, pp. 751-78.
- Prud'homme, Remy. 1995. "The Dangers of Decentralization." *World Bank Research Observer*, 10:August, pp. 201-20.
- Qian, Y. Y. and B. R. Weingast. 1997. "Federalism as a commitment to preserving market incentives." *The Journal of Economic Perspectives*, 11:4, pp. 83-92.
- Qian, Yingyi. 1999. "The institutional foundations of China's market transition." *Annual World Bank Conference on Development Economics*.
- Qiao, Baoyun and Anwar Shah. 2006. "Local Government Organization and Finance: China," in *Local Governance in Developing Countries*. Anwar Shah ed. Washington, D.C.: The World Bank, pp. 137-68.
- Reardon, Sean F. and Glenn Firebaugh. 2002. "Measures of Multigroup Segregation." *Sociological Methodology*, 32:2, pp. 33-67.
- Riskin, Carl. 2000. "Decentralization in China's Transition." *BRATISLAVA POLICY PAPERS #4*. UNDP: Bratislava.

Shah, Anwar. 2004. "Fiscal Decentralization in Developing and Transition Economies: Progress, Problems, and the Promise." *Policy Research Working Paper 3282*. The World Bank: Washington, D.C.

Shah, Anwar, Zia Qureshi, Amaresh Bagchi, Brian Binder, and Heng-fu Zou. 1994. "Intergovernmental Fiscal Relations in Indonesia: Issues and Reform Options." *Discussion Papers 239*. The World Bank: Washington, D.C.

Shah, Anwar and Chunli Shen. 2006. "Reform of the Intergovernmental Transfer System in China." *World Bank Policy Research Working Paper No. 4100*. The World Bank: Washington, D.C.

Shah, Anwar and Chunli Shen. 2008. "Fine Tuning the Intergovernmental Transfer System to Achieve a Harmonious Society and a Level Playing Field for Regional Development in China," in *Public Finance in China: Reform and Growth for a Harmonious Society*. Shuilin Wang and Jiwei Lou eds. Washington, D.C.: The World Bank.

Shih, Victor, Mingxing Liu, and Qi Zhang. 2004. "'Eating Budget': The Logic of Fiscal Transfers under Predatory Fiscal Federalism."

Shorrocks, Anthony. 1980. "The Class of Additively Decomposable Inequality Measures." *Econometrica*, 48, pp. 613-25.

Su, Ming. 2003. *China: Fiscal Policies and Rural Development (zhongguo nongcun fazhan yu caizheng zhengce xuanze)*. Beijing: China Finance and Economy Publishing House.

Tiebout, Charles. 1956. "A Pure Theory of Local Expenditures." *Journal of Political Economy*, 64, pp. 416-24.

- Tsui, Kai-yuen. 2005. "Local Tax System, Intergovernmental Transfers and China's Local Fiscal Disparities." *Journal of Comparative Economics*, 33, pp. 173-96.
- Wagstaff, Adam and Magnus Lindelow. 2008. "Health Reform in Rural China: Challenges and Options," in *Public Finance in China*. Jiwei Lou and Shuilin Wang eds. Washington, D.C.: The World Bank, pp. 265-86.
- Wang, Shaoguang. 2001. "For National Unity: The Political Logic of Fiscal Transfer in China." Department of Government & Public Administration, The Chinese University of Hong Kong.
- Wong, Christine. 2000. "Central-local relations revisited: the 1994 tax sharing reform and public expenditure management in China." *prepared for the international conference on "Central-Periphery Relations in China: Integration, Disintegration or Reshaping of an Empire?"* Chinese University of Hong Kong.
- Wong, Christine. 2002. "Issues of Equalization in China." *Intergovernmental Fiscal Relations in East Asia Workshop*: Bali, Indonesia.
- Wong, Christine. 2007. "Can the Retreat from Equity be Reserved?," in *Paying for Progress in China*. Vivienne Shue and Christine Wong eds. London and New York: Routledge, pp. 12-28.
- Wong, Christine, Christopher Heady, and Wing T. Woo. 1995. *Fiscal Management and Economic Reform in the People's Republic of China*. Oxford and New York: Oxford University Press.
- World Bank. 2002. *China: National Development and Sub-National Finance*. Washington, D.C.: The World Bank.
- World Bank. 2003. *China: Promoting Growth with Equity*. Washington, D.C.

- World Bank. 2004. *World Development Report 2004: Making Services Work for Poor People*. Washington, D.C.: The World Bank.
- World Bank. 2005. *East Asia Decentralizes: Making Local Government Work*. Washington, D.C.: The World Bank.
- World Bank. 2007a. *China: Improving Rural Public Finance for the Harmonious Society*. Washington, D.C.: The World Bank.
- World Bank. 2007b. *China: Public Services for Building the New Socialist Countryside*. Washington, D.C.: The World Bank.
- World Bank. 2008. "Mid-term Evaluation of China's 11th Five Year Plan." The World Bank: Washington, D.C.
- World Bank. 2011. *Reducing Inequality for Shared Growth in China: Strategy and Policy Options for Guangdong Province*. Washington, D.C.: The World Bank.
- Yin, Heng. 2008. "Fiscal Disparities and the Equalization Effects of Fiscal Transfers at the County Level in China." *Annals of Economics and Finance*, 9:1, pp. 115-49.
- Young, Alwyn. 2000. "The Razor's Edge: Distortions and incremental Reform in the People's Republic of China." *Quarterly Journal of Economics*, 115:4, pp. 1091—135.
- Zhang, Li and Xinye Zheng. 2011. "The Determinants of Intergovernmental Transfer," in *China's Local Public Finance in Transition*. Joyce Yanyun Man and Yu-Hung Hong eds. Cambridge: Lincoln Institute of Land Policy, pp. 191-202.
- Zhang, Tao and Heng-fu Zou. 1998. "Fiscal decentralization, public spending, and economic growth in China." *Journal of Public Economics*, 67, pp. 221-40.

Zhang, Zhihua and Jorge Martinez-Vazquez. 2003. "The System of Equalization Transfers in China." *International Studies Program Working Paper 03-12*. Andrew Young School of Policy Studies. Georgia State University. .

Zhao, Zhirong and Xiaohu Ou. 2008. "China's Fiscal Decentralization and Provincial-level Fiscal Disparities: Decomposing the Inequality Measures." *20th Annual Conference of Association for Budgeting and Financial Management*: Chicago, Illinois.