The Impact of Fiscal Decentralization and Market Transition on Local Public Finance in China: Fiscal Inadequacy and Unmet Social Security Needs

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Declaration

I, Hong Yao Zeng confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

Abstract

One of the frequently observed issues related to fiscal decentralisation in developing and transition countries is that subnational governments may not have adequate resources to finance the expenditure responsibilities decentralised to them. This often results in expenditure needs not being met in poorer areas. In China, fiscal decentralisation has taken place in an extreme form, where the social security responsibility, a conventional central government function, has been devolved to subnational governments during the fiscal reforms.

While existing studies have anatomised the problem of unmet fiscal needs in poorer areas of China using economic and political economy theories of fiscal federalism, they tend to under-estimate or neglect the fiscal needs induced by market transition—the increasing demand for social security by workers from state and non-state sectors since the mid-late 1990s. This research illustrates that excess fiscal decentralisation, as in the case of China, could also create serious fiscal burdens for relatively affluent local areas and generate unmet social security needs in these localities. It is discovered that in response to the emerging social security burdens, even the relatively affluent local governments are forced to adopt measures that may counter the intent of social benefit programs or produce other detrimental consequences.

In addition, this dissertation applies statistical analysis to ascertain a few inconclusive issues raised by the China-specific literature. It is perceived that the negative correlation between the share of consolidated provincial budgetary spending on social security and health sector has become stronger and more significant in more recent time. This suggests that the expansion of social security expenses at subnational levels might have bid away budgetary resources for health. The result from the multiple regression analysis indicates that the degree of market transition has explanatory power on the size of provincial government, even when a number of other independent variables are controlled for. However, the explanatory power of market transition on the size of central-provincial fiscal transfer is not robust.

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I have been very lucky to conduct the research at University College London (UCL), an institution that has excellent research environment and supportive administrative staff. I have gained new knowledge and skills from its Graduate School Skill Development Programs and I also derived a lot of enjoyment from attending many interesting public lectures offered by UCL. I should like to thank the administrative staff of DPU and The Bartlett for providing various supports such as forwarding useful information on a timely basis.

While conducting this research, I have relied extensively on the statistics data of China's provinces, especially Fujian province, as well as the interviews with a number of government officials in Fujian. I owe an enormous debt to these people, who kindly and generously shared the useful data and their experiences with me. Their names are not to be mentioned here, as they all sought anonymity. Without their help, this thesis could not have been complete.

My parents have invariably been my greatest champions. Their enthusiastic support has been a constant source of inspiration. It is to them that this PhD thesis is affectionately dedicated.

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Chapter 1 Introduction

1.1 The Research Context and Research Problem

Dramatic fiscal decentralization reform has taken place across the world over the past three decades. In the developed countries, fiscal decentralization serves as a useful tool to enhance the effectiveness and efficiency of public services provision (Wildasin, 1997). Many developing nations embrace this policy option in order to escape from a variety of economic problems such as ineffective governance and inadequate economic growth (Bird and Vaillancourt, 1999). Fiscal decentralization in transition countries is the natural result of the transformation from over-centralized socialist system to market economy (Bird et al, 1995a). This policy choice has been firmly backed by the international development agencies. The World Bank, for instance, emphasizes fiscal decentralization as one of the major governance reforms in its World Development Report (1999/2000).

Given the widespread implementation of fiscal decentralization in developing and transition countries, an increasing number of scholars and policy-makers have started to scrutinize not only the potential benefits but also the challenges of this policy experiment. Based on the economic theory and political economy theories of fiscal federalism (begins with Oate's Decentralization Theorem, 1972), the virtues of fiscal decentralization are better allocative efficiency and enhanced government accountability. On one hand, local governments, being closer to the local residents,

may have more knowledge with regard to the preferences of local residents than the central government; on the other hand, the pressure of re-election and mobility of individuals to move to other jurisdictions may make local governments more responsive. From the normative economic theory of fiscal federalism, the scope for fiscal decentralization is within the efficiency branch (the role of government to correct market failures by providing public goods). It is also suggested that the other two common government functions macroeconomic stabilization and income redistribution are best performed by the central government, since local governments have limited ability to influence the levels of employment and prices (Oates, 1968) and their attempts to introduce a higher level of redistribution may be restricted by the mobility of tax base (ibid).

Arguably, even if fiscal decentralization is intrinsically valuable, the adoption of this strategy may bring in challenges or problems for developing and transition nations, which to some extent, have qualitatively different institutions from the industrial world. One of the frequently reported issues is that subnational governments in developing and transition nations may not have adequate resources to finance the expenditure responsibilities decentralized to them, which may be the consequence of under-developed local tax base (such as property tax and user charges), the limited autonomy to levy taxes by subnational governments or the central government's monopolized claim over too much tax revenue (Bahl, 1994, Bird et al, 1995; Shah, 2004; Shah and Thompson, 2004). This often results in important fiscal needs in

poorer local areas not being met, if a proper intergovernmental fiscal transfer system is not in place. In the literature, poor local area means locality with low fiscal capacity (the ability to raise revenue from own resources). Unmet fiscal/expenditure needs may only be measured against certain benchmarks (such as minimum per capita spending on certain services or minimum service standards) or criteria (such as whether there are social exclusions or restrictions on access). The problem of unmet fiscal needs at the local levels may also be the outcome of poor local governance. When the institutions of local democracy are weak or absent, which is often the case in many developing countries, there is a greater risk that local governments and resources are captured by the local elites or interest groups (Bardhan, 2002; Shah,1998, 2004). This could undermine the provision of services for the residents at large (when the resources are siphoned away for other uses). These two distinct lines of reasoning derive from the economic theory and political economy theories of fiscal federalism respectively (also called first generation and second generation theories of fiscal federalism, see Oates 2005). In the literature we surveyed, the term local governments may refer to subnational governments or the levels of government that below the province/state level. In this dissertation, we use this term to describe subnational governments.

In the context of China's fiscal decentralization and economic reforms (began in the late 1970s), the problem of unmet fiscal needs at the subnational levels has also been observed and studied by an increasing number of scholars (such as Wong 1991, 1992,

1997; Bahl 1999; Wong and Bird 2005; Tsui and Wang 2004, Liu et al 2006). The academic enquiry on this issue emerged in the early 1990s. Wong's studies (1991, 1992) of the fiscal contracting system in the 1980s raise the issue of fiscal inadequacy in poorer areas of China, as she finds that local governments had become financially self-reliant while at the same time they had been given greater expenditure duties. Fiscal inadequacy describes a situation where a government unit has insufficient revenue to meet its expenditure needs. Subsequently, several studies (such as West and Wong 1995, Part et al 1996, Rong and Shi, 2001) confirm the early concern that poor local areas could not deliver a satisfactory level of services (in particular education service) to the residents. Other researches (such as O'Brien and Li 1999; Tsui and Wang 2004) highlight that some poor local authorities tends to make unlawful extractions from local households and enterprises in order to cover their expenditure needs. In addition to these research findings, there are ample evidence (such as Tsui, 1996; Tsui, 2005; UNDP, 2005) that horizontal fiscal inequality (the disparity of fiscal capacity across local governments) had been growing in a fast pace during the 1980s and such trend has not been reversed after the 1994 Tax-Sharing reform.

Adopting the first generation fiscal federalism theory as the analytical framework, a number of scholars such as Wong (1997, 2000,2005), Bahl (1999), Shen et al (2006) see the coexistence of large unmet fiscal needs in poor local areas and high level of horizontal fiscal inequality as a severe intergovernmental fiscal coordination failure

arising from China's piecemeal decentralization reforms. It is pointed out that similar to other developing and transition nations, the subnational governments in China have become dependent on central-local fiscal transfers after the Tax-Sharing reform, as the subnational governments are entitled to a much smaller share of the productive tax bases while carry out a much larger portion of the consolidated expenditure responsibility. Whilst stronger fiscal capacity of the central government may imply its ability to support the poor areas via higher level of transfer payment, the existence of several "bad" practices such as tax rebates (which benefit rich area), non-predictable and non-transparent rules of intergovernmental transfers have compromised such important objective (Wong, 2005). Since 2004, fiscal inadequacy may have become more serious in jurisdictions that are agricultural-based; as in 2004 some of the agricultural taxes were abolished and were only partially compensated by new intergovernmental fiscal transfers (Whiting, 2007).

In more recent years, another tranche of arguments (represented by Tsui and Wang 2004, Liu et al 2006) added to the discussions of this research issue by applying the conceptual frameworks of the political economy theories of fiscal federalism. For Tsui and Wang, the problem of unmet fiscal needs at the local levels is attributable to low fiscal capacity but the unmet needs in social services such as education and health are also attributable to the perverse government incentive structure (embedded in China's cadre management system). The system, devised to evaluate the performance of cadres, places too much weight on economic growth, making local governments

pursue short-term GDP growth blindly. The point is that when more resources are spent on capital investments--the GDP generating projects, fewer resources are available for financing services such as education and health. According to Tsui and Wang (2004), altering the government incentive structure and prioritize the services provision may help mitigate the problem, but for poorer local areas higher fiscal transfers from the higher levels of governments are required in the first place. The viewpoints from Liu et al (2006) are more pessimistic and controversial. They borrow the concept of "Leviathan" government assumption from the pubic choice literature developed by Brennan and Buchanan (1980), which presumes that government officials are rent-seekers and are inclined to extract resources from the economy for their own benefits. Liu et al contend that in poorer areas, local governments could be far more predatory than their counterparts in rich areas, because they face less constraint from the market than governments in rich areas. Thus the governments in the transfer-dependent poor areas often use the "unrealistic" central mandates such as birth controls and grain procurement as excuses to add more personnel, consuming large amount of fiscal resources that could otherwise be used to cover the important expenditure needs (Liu et al, 2006). They, however, do not define the term "unrealistic central mandates", so one is no clear what are the other unrealistic mandates apart from the two given examples. The implication of this line of analysis is that removing unrealistic top-down policy burdens would reduce the chance of local government expansion, which in turns may help alleviate fiscal inadequacy in poor local areas. They further argue that higher fiscal transfers alone would not solve the problem.

These two strands of research contribute enormously to the understanding of fiscal inadequacy and unmet fiscal needs at the local levels. It is justified that jurisdictions with very low fiscal capacity would require additional fiscal transfers so that they are able to provide a minimum level of services that are of national concern. This is the case even if the two "governance" problems identified by political economy perspectives are solved. However, existing studies while extensively analysing the unmet fiscal needs in poor areas (with a focus on education and health sectors), tend to under-estimate or even neglect (the political economy approaches) one of the very important fiscal needs induced by market transition—the expenditure needs of the widespread introduction of social security since the mid-late 1990s. The social security needs induced by market transition is an insight from the regulation theory. In the Chinese context, social security refers to state-mandated social insurances, means-tested social benefits and subsidized employment services such as re-employment training services. Although social security is a conventional central government responsibility (from fiscal federalism perspective and in practice), in China it has largely been devolved to the subnational governments during the fiscal reforms. Since the mid-late 1990s, there have been two additional noteworthy changes. First, the social security responsibility previously assumed by the state-owned enterprises (SOEs) has been transferred to the local governments, as part of the SOE restructuring process (employees now also need to assume part of the responsibility via mandatory social insurance contributions). Secondly, social security schemes have since then been gradually extended to non-state sectors, in which we witness a

continuous expansion of wage-labour. While a few authors such as Wong and Bird (2005), Wong (2005) raise the concern that decentralized provision of social security could be a serious problem for local public finance and discover that sizeable amount of the central-local transfers were used to subsidize local social security (in particular the SOE sector), to our knowledge, there is no systematic enquiry on the magnitude of fiscal needs in social security sector at the local levels. Studies of social security reforms such as Guan (2000), Saunders and Shang (2001), Duckett (2003, 2004) , Duckett and Hussain (2008) clearly illustrate the evolution of the social security system in China. Yet they provide little quantitative evidence (no quantitative evidence at the local levels) for one to properly assess the fiscal impacts. In other words, these studies have not analysed the social security issues from the public finance perspective. When the social security needs at the local levels are overlooked or under-estimated, one is inclined to conclude that unmet fiscal needs only occur in poor local areas (a frequently observed problem arising from fiscal decentralization). Given the decentralization of social security function, the widespread introduction of social security since the mid-late 1990s and local diversity in the pace and scale of market transformation, it is possible that even relatively well-off areas have suffered from fiscal inadequacy and struggled (or not been able) to meet the emerging social security responsibilities.

This dissertation seeks to investigate the impact of market transition on local social security spending and verify whether there have been unmet fiscal needs in social

security sector in relatively affluent local areas during the post Tax-Sharing reform era (1994-2008). Relatively affluent areas refer to areas with both per capita GDP and per capita fiscal revenue above the median of the population. We are aware that there could be other important fiscal needs arising from market transition, such as the requirements to invest in infrastructure and urban services (e.g. water supply and public transport), which are the basic ingredients of a well-functioning market economy. Studies (e.g EBRD, 1996) have revealed that in many transition countries the infrastructure inherited from the old regime often reflects the misplaced priorities (tilted toward heavy industry sector with little consideration of the environmental impact). Therefore there have been substantial needs of infrastructure investment in telecommunication, water treatment and road transport in those countries during market transition (ibid). This research does not concern with the infrastructure spending needs induced by market transition in China, as there have already been several studies (such as Carsten and Feng, 2004; Fan and Zhang 2004; Su and Zhao, 2006) covering China's public investment in infrastructure. We are also aware that in a few Eastern European transition countries and former Soviet Union such as Hungary and Russia, part of the budgetary responsibility for social security was also transferred to subnational governments during their marketization reforms, a process Bird et al (1995a) called “pushing the deficit down”. Yet, there are sharp differences between the situation in China and in these countries, in particular in terms of the economic structure. The Eastern Europe and former Soviet Union introduced market reforms at a time when the economies were urban and over-industrialized, with virtually the

entire population covered by an extensive social welfare system that is beyond the financial capacity of the state (Sachs and Woo, 1994). The stagnant economic situation after the "shock therapy" reform significantly increased the number of persons claiming the social benefits while at the same time the tax base was shrinking. Thus decentralization of social security created deep problems for local areas (usually the poor areas) that are more stagnant (see Bird et al 1995b for a discussion of this issue in Hungary). In contrast, China began reform as an agricultural society with a much smaller industry sector (in 1978, 71% of the labour force was in agricultural; only 15% was in industry and half of which was in SOEs, see Sachs and Woo, 1994). Only the staff and workers in the bureaucracy and SOEs, a very small section of the population, were covered by the state welfare system. The second difference is that China had not thoroughly reformed its SOE sector until mid-late 1990s, after the economy experienced near twenty-year's fast growth. Therefore, unlike the social security reforms in Eastern European and former Soviet Union, where there was no much change in the coverage of social security, the social security reforms in China in the mid-late 1990s involve the transfer of social welfare responsibility borne by the SOEs to the government, as well as the introduction of social security to the non-state sectors. It might be tempted for one to argue that the fiscal burden of social security could not have been a problem in China, given its fast economic growth and a smaller SOE sector for resturcturing. But on one hand, the evidence (from Wong and Bird, 2005) that some of the central-local transfers were used to subsidize local social security sector may indicate fiscal inadequacy at the local levels; on the other hand,

the expansion of social security coverage may also require subsidies from the governments. Hence, it is difficult to reach a coherent conclusion without doing an empirical research. This research might help enable further comparison between the excess decentralization experience in China and in those Eastern European countries and former Soviet Union.

This research also recognises that, while the two political economy approaches are relevant to the issue of unmet fiscal needs at the local levels, especially in poorer areas, they have neglected other important variables such as market transition, income growth and urbanisation. Liu el al (2006) argue that local government over-staffing problem would be much more serious in poor areas than in rich areas, as factor mobility in developed areas constraints the expansionary tendency of local governments. This is still a contestable argument (discussed in more detail in Chapter 3). Even if government staff expansion is the case, the explanation for this phenomenon may go beyond the unintended consequence of those two central policy mandates. An alternative explanation might be that market transition, urbanisation and income growth have created demand for various forms of public services and investment that require additional administrative capacity (more staff). Tusi and Wang (2004) point out that spending on capital investment may have siphoned away the resources required for financing the standard public services such as education and health. An alternative explanation may be that the pressure to cover social security issue bid away resources that would be otherwise available for education and health.

The secondary intention of this research, therefore, is to statistically test these two alternative hypotheses derived from the political economy perspectives. Statistical analysis is also employed to test the variation of central-provincial transfers could be explained by the variation of relative sizes of the local SOE sector. This test is used to ascertain an untested proposition from Wong and Bird (2005), where they argue that the aim of fiscal equalization via central-local fiscal transfers may have been compromised by sizable transfers that went to social security subsides (in particular in the SOE sector).

The overall conclusion of this dissertation is that devolution/decentralization of social security (redistribution) function to local governments during market transition is intrinsically problematic. This is because market transition provides a context in which the social security needs could grow in a fast pace and could be underestimated. The consequence is that even the relatively affluent regions have not been able to cover the social security needs and forced to adopt measures that counter the intent of social security programs (such as restrict the access for those who need the services most). It may also give rise to the problem of social security fund mismanagement. In one extreme case, we find that a very rich local government unit was forced to use the loan from a state-owned bank to settle social security arrears for employees of a distressed corporation and engage in risky real estate business in order to pay back the loans. Part of the risk, thus has been shifted to the state-owned banking system. The original contribution of this dissertation is that first it has a systematic enquiry of the

social security sector at the subnational levels of China using fiscal federalism perspective, which has not been done before; secondly it provides concrete evidence of unmet social security needs at the subnational levels (for all the provincial units) using unpublished and published statistics as well as some government internal reports, to our knowledge such evidence has not yet been presented by other scholars.

1.2 The Geographical Research Area and the Structure of this Thesis

The research problem is tackled by using a combination of quantitative approach and an in-depth case study. The quantitative part of the research covers the provincial governments (all 31 provincial units in mainland China are considered). See Figure 1.1 for the government structure of China. In the case study of Fujian province (highlighted in Figure 1.2), the focus is on the provincial and prefecture level. There are several reasons to concentrate on these two levels of government and the Fujian province. First, the social security services are mainly the responsibilities of provincial and prefecture-level governments(the contribution-based social insurances are normally pooled at provincial or prefecture-level and these two levels of government are the major providers of social benefit programs). Secondly, the provincial level statistical data are much more accessible than prefecture-level or county-level data. This is because China Statistics Yearbooks (which provide some statistical indicators the 31 provinces) are published over the internet and the statistics yearbooks of each province are easier to collect as there are only 31 provincial units

and some provinces also publish the data over the internet; and even using sampling methods, collecting a representative sample for the 333 prefecture-level municipalities can be extremely difficult. Thirdly, the in-depth case study in Fujian province is used to further explore and ascertain the issues (e.g. the more detailed breakdown of social security expenditure and the government's decisions in implementing social benefit programs) not covered by the cross-sectional provincial analysis. Fujian is a coastal province that has managed to develop its economy at a faster-than-average rate over the reform era. Its per capita GDP and per capita budgetary revenue have consistently ranked within the top 10 places out of the 31 provincial units since the mid-1980s. In this regard, Fujian is a relatively affluent province. In the case study, we seek to study at the provincial level and one of its more affluent municipalities (there are nine prefecture-level units within Fujian). The detailed research methods as well as the validity and reliability issues are discussed in Chapter 4.

Figure 1.1 Mainland China's Government Structure (by the end of 2005)

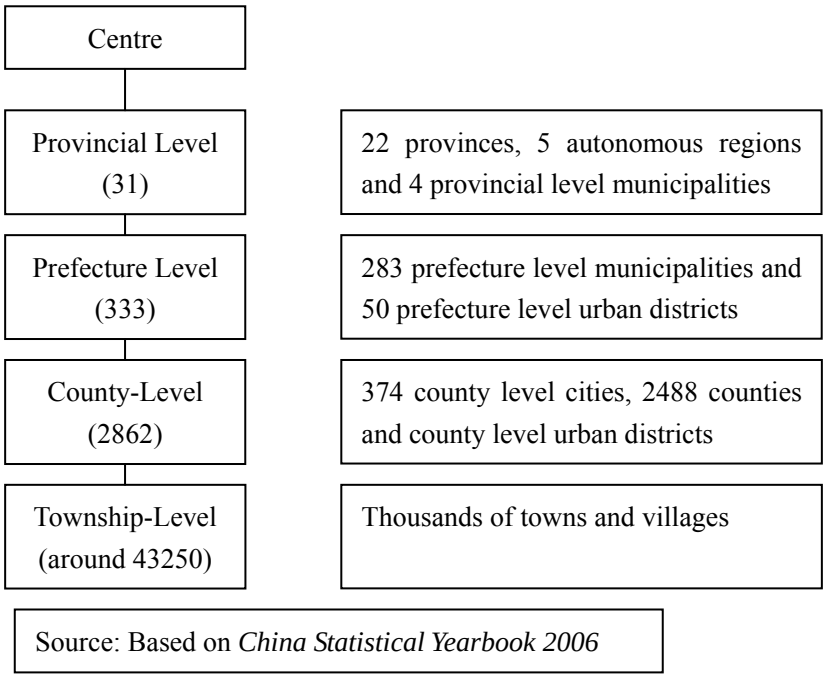


Figure 1.2 the location of Fujian Province

The rest of this dissertation is structured as follows: the next chapter critically reviews the debates of the two generation theories of fiscal federalism in order to understand the problem of unmet fiscal needs at the local levels under fiscal decentralization (in developing and transition countries). Chapter 3 provides a brief review of China's fiscal system between 1949 and 2008 (the contextual background), analyses the current perspectives on the research problems in China and attempts to advance the debates by providing our nuanced conceptual framework and hypotheses. In Chapter 4 Research Methodology, we clearly illustrate the research methods employed, including the detailed research areas, choices of research techniques, research time span and the validity and reliability issues. Chapter 5, Chapter 6 and Chapter 7 present the analysis of the research findings. Chapter 8 summarizes the research findings, discuss the policy implications and limitations of this research.

Chapter 2 Fiscal Decentralization and Intergovernmental Fiscal Relations: a Review of the Theories and Debates

This chapter reviews the economic theory and political economy theories of fiscal federalism, the theoretical perspectives underlying fiscal decentralization and intergovernmental fiscal relations. But before moving on, it is necessary to clarity the specific type of fiscal decentralization is referred to by this thesis . Three broad forms of fiscal decentralization could be distinguished (Bird et al 1995a; Ebel and Yilmaz, 2002). Delegation is the weakest form of fiscal decentralization, which means that local governments only act as agents of the central government in carrying out expenditure and tax-collecting functions and they have little autonomy in policy-makings. Delegation is sometimes named as administrative decentralization. De-concentration refers to a situation where the central government disperses some of the responsibilities to its regional branches. Devolution is the most extreme form of fiscal decentralization, where subnational governments gain independent decision making power over a range of expenditure and taxation responsibilities. The spirit of fiscal decentralization is reflected in devolution, as the two generations of fiscal federalism theories suggest. In this dissertation, we follow the convention to treat fiscal decentralization synonymous to devolution.

The purpose of this review is to specify the rationale of fiscal decentralization and

illustrate how the normative theories are applied to deal with the problem of unmet fiscal needs at subnational levels, in particular in developing and transition nations. Since fiscal federalism is a subfield in public finance, we begin the review with the broader public finance theory, then narrow down to the two generation theories of fiscal federalism as well as the principles of intergovernmental fiscal relations.

2.1 The Economic Roles of the Government under Public Finance Theory

Although the original fiscal thoughts could be traced back as far as to Adam Smith's *The Wealth of Nations* (published in 1776), the more sophisticated public finance theory emerged around half a century ago. Proponents (such as Nozick, 1974) of the "minimal state" believe in the market's roles in efficiently allocating all goods and services and merely assign the role of the government to property right protection and enforcement. Samuelson's (1954) discovery of market failure challenged the view that competitive economies would always lead to Pareto efficient outcome under standard conditions. Musgrave (1959) in his famous book *Theory of Public Finance* goes a step further to propose an active role for the public sector as to correcting various forms of market failures (the Efficiency Branch), stabilizing the macroeconomy (the Stabilization Branch after Keynes) and establishing an equitable distribution of income (the Distribution Branch). These three economic roles of the public sector are the core concerns of public finance theory. The economic theory of fiscal federalism (or so-called the first generation theory of fiscal federalism, developed after Oates

1972) goes one step further to address the hierarchical structure of the public sector within the efficiency branch. It lays out a normative framework to address the questions of which functions of the public sector should be assigned to which levels of the government (if there is more than one level of government). The theory also justifies the use of intergovernmental fiscal transfers to correct various kinds of coordination failures in a decentralized setting. Under Musgravian Paradigm, the government is assumed to be benevolent or a social welfare maximiser. This basic assumption is removed by the second generation theories of fiscal federalism (the political economy perspectives), which models various kinds of political processes to consider the trade-off between centralization and decentralization. The economic theory of fiscal federalism provides the rationale for fiscal decentralization by distinguishing national public goods from local public goods. In reality, public goods or services only make up a very small proportion of the government budgets. A large amount of the public expenditure items (such as education, health care and welfare services) are not public goods, but publicly provided private goods or quasi-private goods (Boadway et al, 1994). Since the intergovernmental fiscal relations do concern with expenditure needs wider than the narrowly defined public goods/services, it is imperative to give a brief accounts of the economic rationales underlying the provision of these services by the government.

The public goods or collective goods theorized by Samuelson (1954) are known as Pure Public Goods. They have the property that “one man’s consumption does not

reduce some other man's consumption" (ibid). In other words, the marginal costs of an additional person consuming pure public goods are zero and it is extremely costly, if not entirely impossible, to exclude any individual from enjoying the pure public goods. The most common cited example is national defence. The reason for government to intervene to provide the pure public goods is that private provision of such goods is inefficient: given the zero marginal cost of extending the goods to additional users, the necessary user charges from private producer would make some potential users to forgo consumption, "creating a deadweight efficiency loss" (Oakland, 1987, p485); in addition, if exclusion is not possible (the free-rider problem) or the cost of exclusion is prohibitive, the private producer would be either unable to collect user charges to finance the production or would incur large loss in collecting user charges, which is a source of inefficiency. Therefore, there is a need for the "coercive enforcement of cooperative behaviour among self-seeking agents" (Inman, 1987, p653), so that consumer preferences for the public goods could be revealed.

There are goods or activities that could create either positive or negative externalities. For example, inoculation against communicable diseases generates positive spillover effects for the others, because it reduces the chance of other persons being affected; pollution, on the contrary, has negative externalities for the others living in the community. Like the case in pure public goods, the presence of externalities could make market allocation of these "goods" or "bads" inefficient. Goods with external benefits tend to be under-produced, while goods with negative spillovers can be

over-produced (all because private producer would "overlook" these spillover effects). Thus, there is a role for the government to play: rewarding or penalizing the agents to reflect the true benefits or costs of their externality-producing activities. The difference between pure public goods and goods with externalities is that for pure public goods, there is no rivalryness among consumers, while there is rivalry among consumers for goods with externalities (Musgrave, 1959).

Unlike pure public goods, certain public goods may be subjected to congestion or crowding. Although larger membership could reduce the per capita cost of the public goods or services, it could also lead to deterioration in the quality of these goods or services. An example is a local park (Oates, 1968): the admission of additional residents to the park benefits existing community by allowing the costs of the construction of the park to be divided among more persons, but there would be a point where the marginal benefits (cost-sharing) equal the marginal costs (congestion). This class of goods comes to be known as local public goods or club goods, because its benefits accrue to the group of the local community only and are subject to congestion. Club theory, introduced by Buchanan (1965), models how individuals with the same tastes sort themselves into groups to share the public goods under the Tiebout's (1956) framework. The meaning of local public goods is not entirely consistent. Some scholars (such as Oates 1968) argue that local public goods do not necessarily need to have the feature of congestion, as long as they have a limited spatial dimension (this seems to be the case in the much of the fiscal federalism theory).

There may be cases where the production of certain goods or services require considerable economics of scale (or says a very large amount of fixed capital), a situation known as natural monopoly commodities. Market failure arises when the average cost of production exceeds marginal cost at any levels of output. Inman (1987) summarizes that there would be two inefficient outcomes under such situation. In the case where no threat of market entry exists, the firm would charge the price higher than the marginal cost and under-produce the goods. In the case where a threat of entry exists, the firm would charge the price at long-run average cost, not the marginal cost. In both cases, the outcomes are not Pareto efficient. The solution requires the government to extract demand information from all consumers.

The development of information economics in the past three decades has improved the understanding of the market process. Asymmetric or incomplete information is such a situation that sellers know more about the quality of the goods than the buyers. There are two potential problems: moral hazard and adverse selection. The seller may have the incentive to under-provide quality, knowing that the consumer may have less knowledge of the products they are selling (the moral hazard problem) (Inman, 1987). Adverse selection arises when the consumers choose to forgo the consumption as a result of not being able to distinguish between good or bad products (ibid). The market may collapse when these two problems are serious. The role assigned to government here is to regulate or provide certification about the sellers to the consumers.

Education, health and various forms of social insurances are not public goods in the sense that these goods are excludable and "rival". They are quasi-private goods. Although there seems to be no single dominant answer as to why these goods are provided by the public sector, several lines of reasoning do exist. For the public provision or financing of education, some contends that there are positive externalities arising from an educated person. Others believe that education is a merit good—it is good for the children to go to school, no matter how they think. Feldstein (1975) introduces a concept of categorical equity to justify government's involvement in financing/delivering these services: the consumption of these categories of goods/services should not be linked to individual's ability to pay (the level of consumption is not allowed by society to differ substantially between individuals). Thus, there involves an element of income redistribution. Similar arguments may be applied to health care. But for social insurances, there are different reasons. According to Stigliz (1989,1991 and 1992), the public pension insurance is introduced partly as a response of a market failure—the imperfection of the annuity market (annuity is the financial product which perpetually pays fixed nominal amount of return to the investors on a annual basis; unlike bonds, annuity has no maturity dates). Theoretically, annuity is a suitable insurance product against old age, as it pays every year no matter how long an individual lives. But individuals may opt for government guaranteed bonds that have certain maturity dates (says 30 years); if they think they are unlikely to live longer than another 30 years. There is also adverse selection problem: the insurance company worries that those annuity insurance buyers are those

most confident that they will live long (ibid). The potential unprofitability would make the private insurance company reluctant to provide these products. The second possible reason why a public pension scheme is needed is that people may decide not to save enough or fail to save enough for their old ages. So it may be desirable for the government to act paternalistically to force individuals to save for their future (Atkinson, 1987). This reason is similar to merit good argument. Income redistribution is another consideration, given that the link between what individuals contribute and what they receive in future is not so strong. Although the economic rationales provide some justification for the provision of various forms of social security, they do not give a historical account as to why these services were introduced in the first place. The insights from regulation theory provide better answer to this question (briefly discussed in Chapter 3).

2.2 From Public Finance to Fiscal Federalism

The first generation theory of fiscal federalism (FGT) and some empirical evidence suggest that the two branches, Stabilization and Distribution (the distribution here refers to interpersonal income redistribution), are best performed by the central (national) governments. The case against local redistribution is that migration or the mobility of capital and high income individuals would distort or prevent a successful distributive goal. Suppose that when a local jurisdiction actively imposes higher taxes and redistributes more income to the poor, more poor are likely to be lured to this area

in response to the policy change, but the higher income individuals and households are also likely to move out of this community to avoid a higher level of taxation. Musgrave (1997, p68) argues that "federal government with its nationwide coverage can afford the use of progressive taxation while state and local jurisdictions, fearful to lose tax base, must rely on flatter income and larger regressive sales taxation". This is not to say local governments could not be involved in any kinds of redistribution. It simply implies that local governments have limited capacity to offer their own redistribution agendas. In fact, in the US, the state governments are also involved in certain social security provision. There are, however, some arguments for local redistribution. Pauly (1973) considers income redistribution from a utility perspective. He suggests that rich individuals are more inclined to help the poor in their own communities than in other areas and local redistribution satisfies both rich and poor in the local community. But when the income redistribution preference is a national goal, distribution policy is no longer a local public good (Musgrave, 1997). In the real world, most countries assign this function primarily to the central (federal) government; yet some of the transition countries, including China and a few East European transition countries, have decentralized this function to subnational governments during their economic reforms.

The stabilization function of the government specified by Musgrave is that the government needs to maintain near full employment with stable prices in an inherently cyclical economy. Such responsibility should also be rested on the central

government because the local governments do not have the access to monetary tools and are open to trade and migration. Therefore, they have limited ability to influence the levels of employment and prices. Oates (1968) uses a simple local income and payment model to demonstrate that local governments could not stabilize the local economy without harming the neighbouring jurisdictions. Specifically, he shows that leakages to imports and exports could render local stabilization policies ineffective. Thus remedying unemployment and stabilising the price are to be conducted on a national scale.

Therefore, the scope for fiscal decentralization in FGT is in the Efficiency branch. There is consensus that national public goods, such as national defence, must be the responsibility of the federal government. In a country where there is more than one level of government, should the provision of local public goods or services (benefits accrued to a limited geographical area, e.g. local police services) be left to local public sector or should it still be delivered by the central government? The "Decentralization Theorem" formalized by Oates (1972) offers a very straightforward answer.

> "…in the absence of cost-savings from the centralized provision of a local public good and of inter-jurisdictional externalities, the level of welfare will always be at least as high (and typically higher) if Pareto-efficient levels of consumption are provided in each jurisdiction than if any single, uniform level of consumption is maintained across all jurisdictions" (Oates 1972, p54)

Such argument for fiscal decentralization, labelled as first generation theory of fiscal federalism (FGT) is grounded on economic efficiency consideration: the local governments, being closer to the residences, have better knowledge than the central government to acquire the information of local preferences; therefore they could be more efficient than the central government (which tends to provide uniform level of output). Thus decentralization of local public goods provision provides opportunities for social welfare gains. An extended line of argument for fiscal decentralization is that it could encourage the experimentation of public policies in different jurisdictions (often called laboratory federalism) to promote innovations and cost-effectiveness in public programs (Oates, 1999). As a result, new knowledge and innovations could lead to diffused benefits to the country as a whole, since various localities can learn from the failures and successes of others (Garzarelli, 2006).

The famous Tiebout (1956) model to some extent strengthens the case for fiscal decentralization. Tiebout senses that competitive local governments could provide bundles of local public services at different tax rates (prices) and the competition process could be analogical to the competitive markets for private goods. Therefore, mobile households can "vote with their feet", selecting the locality that perfectly matches their tastes. Such decentralized government competitions suggested by Tiebout would ultimately lead to optimal mixes of communities and group choices, in particular when local public goods and services are subjected to congestions. The Tiebout's assumptions (see Rubinfield 1987 for the summery and comments of the

nine assumptions), however, may be unrealistic. Oates (2005) in his recent paper to update the FGT of fiscal federalism, points out that Tiebout's model as the impetus for fiscal decentralization may be exaggerated. He envisions a situation where the households are absolutely immobile, the efficient output level of local public goods would still vary from one jurisdiction to another. It is questionable that why should households migrate solely because of the local tax-expenditure differentials rather than other factors such as employment opportunities. Researches (see Boadway 2001) in industrial nations show that local tax differentials often have only a marginal influence on migration choices. In the setting of many developing countries, the assumption that households move across regions in searching for higher welfare benefits is far too stringent (Bardhan, 2002). A more balanced argument is made by Boadway (2001), which states that the main message of the Tiebout model is useful, because when there are heterogeneous communities and some potential mobility, decentralized decision-makers will strive to provide the best mix of public goods and services that they could.

According to FGT, there are potential costs of fiscal decentralization. When economics of scales exist in public goods provision, centralization is said to be more cost-effective. But provided that local public goods only require the finance, not necessarily the production, from the local public sector, local governments could still enjoy scale economics by using private contractors (Tullock, 1969). Secondly, since the boundaries of local jurisdictions are fixed, there will be inevitably some spillover

effects (the benefits or costs of certain public goods or services produced in one jurisdiction may spill over to other localities). When there are expenditure externalities, we know that local provision of these public goods and services would be sub-optimal (under-producing the goods and over-producing the bads). There are basically two solutions. One is to assign the provision of these services to higher levels of government. A more favourable solution (according to most of the economists) is to utilize central-local subsidies or taxes to offset the externality problems. In the case of positive externalities, the higher level of government could provide an open-ended matching grant (with matching rates proportional to the level of externalities) to simulate the recipient to extend the output of local public goods to the point where marginal social benefits equal the marginal cost. A tax could be levied by the central government to penalize for negative externalities. Empirically, the levels of these externalities are difficult or even impossible to measure.

Similar to expenditure externalities, tax externalities occur when taxes levied in one region spill over to other regions, which could also have positive or negative effects. Positive tax externalities are induced from tax competitions. When decentralized governments use tax incentives to attract business, the result may be a "race to the bottom"; where all regions charge tax rates that are too low from an efficiency point of view (Boadway, 2001). Negative tax externalities could happen when a local jurisdiction could export the taxes to non-residents (for instances, taxes levied on products that are purchased by residents from other states). In theory the matching

grants may also be used to correct for tax externalities, in practice, however, it is very difficult to measure the net effect arising from tax externalities. An important implication is that decentralized levels of government whenever possible, should only charge benefit taxation (such as user-charges) to mobile units and that non-benefit taxes (such as taxes on capital and businesses) on highly mobile unit are better assigned to the central government. Another reason for assigning personal income tax to the central level is for income redistribution. According to this principle, the theory suggests that taxes on immobile units, such as land or property qualify for good local taxes, as they do not create locational inefficiencies (Oates, 1999).

2.3 Principles of Intergovernmental Fiscal Relations under FGT

In additions to the expenditure and tax externalities problem mentioned above, there are other cases that may require intergovernmental fiscal arrangements. These problems include three forms of horizontal fiscal inequity, fiscal inefficiency and the vertical fiscal imbalance. We briefly review these issues in turn. This section benefits enormously from Boadway (2001), Bird (2002), Bird and Smart (2002), Bird and Tarasov (2004), Shah (1997,2004,2006).

The notion of fiscal equity differs from conventional interpersonal equity. It concerns with redistribution of financial resources between regions rather than redistribution of income between individuals. Although is still a subjective concept deserving some

kinds of value judgment, horizontal fiscal equity may call for: comparably equal treatment of individuals no matter where they live (Buchanan, 1950; Buchanan and Goetz, 1972; Boadway 2001); a national minimum standards of certain public goods and services such as basic education, the consumption of which should not be based on individual's ability to pay (named as categorical equity by Feldstein 1975) and finally a more levelled playing field for different regions to compete (this point receives the least support from the economic perspective and it has much more to do with politics see Oates 1999 for elaborated discussion). Intergovernmental fiscal relations normally address the first two kinds of horizontal fiscal inequity.

Fiscal decentralization would inevitably create differences in fiscal capacities among local jurisdictions. It could then result in differences in net fiscal benefits across local communities. Net fiscal benefit is known as the difference between what a resident receive (the services provided by the local public sector) and what he/she has paid (Boadway 2001). In some relatively well-off local communities the residents may be levied at a lower tax rate but still get the same or more public services than those who residing in poorer community. Therefore, otherwise identical persons are treated different simply because they live in different places. This is a source of horizontal fiscal inequity to the extent that poorer residents do not relocate to these communities with higher net fiscal benefit. It becomes a fiscal inefficiency problem when the poor relocate to these communities in response to higher net fiscal benefits differentials. But as discussed earlier, household relocation based on net benefit differentials is not

usual, in particular in developing countries. Boadway (2001) points out: the principles of horizontal fiscal inequity and fiscal inefficiency are self-reinforcing. But when net fiscal benefits are reflected in differences in property prices, the argument for equalizing fiscal capacities could be weakened. This is because the individuals living in higher income communities may consume certain public services at low tax-price; but they may have to pay higher housing prices for these benefits. The theoretical solution of this kind of horizontal fiscal inequity is to introduce an equalization grant (unconditional grant) to bring up the fiscal capacities of poorer regions to certain standards so that they are able to provide the public services at comparable tax rates (though the recipients may not choose to do so).

Under the decentralized settings, some poorer areas may not be able to provide even a minimum level of public services that are of national concern. These public goods and services such as basic education and health care are merit goods in nature and are also considered as in-kind transfers. The consumption of these public services may not be allowed by society to differ substantially between individuals. To effectively enforce a national minimum standard, the central government could provide a conditional non-matching grant to these poor areas (with the condition being that the transfer could only be spent on the targeted public services).

In addition to efficiency and equity considerations, there is a practical need for intergovernmental fiscal transfers, which is to close the vertical fiscal imbalance.

Vertical fiscal gaps/imbalance (thereafter VFI) arises when some levels of government raise more revenues than the corresponding expenditure needs, while other levels of government have expenditure responsibilities exceeding their revenue-raising capacities (Bird and Tarasov, 2004). In such situation, transfer of financial resources between different levels of government is required to close the gap. Empirical studies (notably Bird and Tarasov, 2004) find that the size of VFI varies substantially across countries and there is no well-established theory to determine the right level of VFI. Vertical fiscal imbalance is quantitatively the largest need for intergovernmental fiscal transfers in most countries, especially in developing countries (Shah, 2004). The central government tends to raise more revenue than it needs for several reasons (because the mobile tax bases are better assigned to the central level in the interest of tax harmonization). If the VFI is large enough, the central government may incorporate equalization elements in the central-local fiscal transfers to correct for both VFI and fiscal inequity problems.

The adoption of intergovernmental fiscal transfers in individual countries may not fully follow the economic principles (in some cases it may even contradict with the economic principles). In the USA, there is no equalization grant; but specific grants (spending is restricted to certain category such as education) from the federal government to the states do have an equalization element, where poorer state would get a larger share. For many years, the Canadian, German and Australian governments have been using formula-based equalization transfers (taking into account both the

needs and capacities) to help boost the fiscal capacities of less-developed regions as well as to maintain the minimum provision of certain public services (see the dedicated analysis by Bird 2002; Bird and Smart 2002; Bird and Tarasov 2004). But as pointed out by Bird and Tarasov (2004) and Shah (2006), the amount of resources transferred may be much larger than economic theory (i.e. horizontal and categorical equity consideration) could explain. A study (Boex and Martinez-Vazquez 2005) surveying the determinants of the incidence of intergovernmental grants across twelve countries confirm that horizontal allocations of intergovernmental grants are not just determined by economic considerations but more by political factors (see Grossman 1994 for detailed discussion of political factors in determining the grants). It is very difficult for the developing and transition countries to introduce a sophisticated intergovernmental fiscal transfer system (as required by the FGT theory). Because the formula-based transfer system requires significant amount of data collection and data computation, which are costly and the implementation of such a system may introduce incentive problems such as local manipulation of the data inputs to obtain more resources (Bird, 2002).

Given the diversity of institutions across countries, it is also unrealistic to lay out a uniform prescription for the implementation of an optimal intergovernmental fiscal transfer system for developing and transition countries. Suggested by a number of authors (such as Shah 2006; Bird and Smart, 2002; Bird, 2004), at the broadest level, the desirable characteristics of intergovernmental fiscal transfers are simplicity,

transparency and objectivity. Fiscal transparency sends a clear signal to both recipient governments and their citizens about where the resources come from and for what reasons, thus it promotes accountability (Shah 2006). In addition, fiscal transparency in resource distribution to a great extent avoids unproductive and inequitable political bargaining for more resources. A simple and objective formula to resource allocation reduces the chances of local manipulation in order to receive more resources. In practice, adhering to these three "basic" rules is by no means easy, however.

2.4 The Second Generation Theories of Fiscal Federalism (SGT)

By assuming uniform level of output by the central government and a Pigouvian view of government as social welfare maximiser, the first generation theory of fiscal federalism (FGT) sees greater welfare gains from fiscal decentralization and proposes various forms of intergovernmental fiscal transfers to correct for potential inefficiencies and promote fiscal equity. These two key assumptions have however been criticized by the political economists, who justify fiscal decentralization from different angles. Moreover, some of the empirical effects of intergovernmental grants seemed to deviate from the predictions by FGT; for example, there are some unintended consequences of the grants such as the "fly paper effect", "common pool problem" and "soft budget constraint problem". The political economy approaches to fiscal decentralization (second generation theories of fiscal federalism, SGT) could shed some lights on these issues and generate some caveats for the design of intergovernmental fiscal relations.

In a nutshell, the political economy perspectives differ from traditional public finance analysis in that they treat governments as endogenous social institutions that have their own agendas; so even if there are roles (e.g. correcting market failures) for the governments to play, the governments themselves may not automatically adopt Pareto-improving policies, because their decisions are influenced by voters' preferences, politicians, pressure groups, special interest groups, the bureaucratic machinery and any other participating agents(Inman, 1987; Rubinfeld, 1987). In other words, the adoption of any policy by the governments is the balanced result of rational political agents participating in the decision-making process. Another difference is that the political economy approach emphasizes political process in revealing individuals' preferences for public services (Boadway, 1997), while the traditional public finance theory assumes the government has full information. Buchanan and Tullock (1962) were among the earliest scholars studying and mimicking (by using models) the various aspects of the political process (for instance, lobbying, legislative bargaining, and electoral competitions). The development of this strand of research helps to understand government failure and propose policy remedies to improve the political outcomes. The political economy literature is enormous (see for example, Persson, 2000 for a review) and we could only discuss some of the most relevant ones on fiscal decentralization.

Political economists often question the ad hoc assumption made by traditional economic theories that politicians are benevolent social planners. By considering the

worst case, Brennan and Buchanan (1980) developed a “Leviathan” hypothesis that treats politicians as rent-seekers who tend to maximize the extraction (tax revenue) from the economy (the politicians have strong incentives to stay in power, augment the salaries and control more money and people). Since the voters have little knowledge of the cost function underlying the public services provision, they could only control the tax side. These two authors offer several principles to constrain the Leviathan. One of the potential solutions is fiscal decentralization. They envisage that the horizontal government competitions in a decentralized system may be used as the disciplining forces to restraint the expansionary tendencies of local governments: when the tax bases are mobile, an increase in tax rates may lead to exodus of mobile factors. This view contrasts stridently with the Pigouvian approach of government competitions, which suggests that local tax rates are likely to be too low, given the existence of various kinds of spillovers. In a similar vein, Qian and Weingast (1997) Qian (1998) develop a so-called “market-persevering federalism” theory, seeing fiscal decentralization as an effective way to constrain the expansionary government and preserve the private market, which could lead to higher economic growth. However, the empirical evidence that fiscal decentralization could constrain the expansionary tendency of the governments are at best mixed (see Oates 1985, Rodden 2003a, 2003b and Zhu and Krug 2005a). The empirical evidence that fiscal decentralization leads to higher economic growth are also hybrid (see Oates, 1999 for a discussion).

The recent development of the SGT has managed to model both Leviathan and

Pigouvian elements into the theoretical analysis of fiscal decentralization (governments are assumed to be in-between Leviathan and Pigouvian). In addition, they depart from the early assumption (proposed by Oates, 1972) that the central provision of public goods is uniform. They emphasize political processes under which voters provide an endogenous disciplining force on politicians within political jurisdictions (Epple and Nechyba, 2004). Many of these papers make the use of Tiebout framework. Some of those scholars follow the line of incomplete-contract and principal-agency framework. Incomplete contracts originally referred to the incomplete control rights allocated to different stakeholders (of a company): managers, debtors, shareholders and so on (Oates, 2005). Elections are also examples of incomplete contracts. Central to incomplete-contract and principal-agency perspective is information asymmetry and imperfect monitoring. While SGT considers a range of different political processes using different assumptions, it generally justifies fiscal decentralization from two aspects: efficiency and political accountability. Models of legislative decision-making with centralization (such as Lockwood, 1998; Besley and Coate 2003) stress the cause of efficiency loss under centralization. Models of electoral control (e.g. Besley and Case 1995) study the degree to which incumbents are accountable to voters under the situation of centralization and decentralization. The insight from these theoretical researches is that if the probability that bad (rent-seeker) incumbent losses the election is sufficiently high, fiscal decentralization (due to increased government competitions and enhanced local control) could result in higher voter welfare.

What would be the case when voters have insufficient knowledge about the political choices they face? Besley and Case (1995) adopt the term yardstick competition to study the behaviour of competitive governments under the situation of information asymmetry. In this type of model, voters endeavour to maximize their welfare by comparing the outcome in neighbouring jurisdictions with performance of their own local governments. So if the voters observe a disproportionate (relative to other jurisdictions) rise in local taxes, a signal that local officials are engaging in rent-seeking or are ineffective, they may challenge the politician when they are up for re-election (ibid). Yardstick competitions allow voters to more easily identify local Leviathan politicians (Epple and Nechyba, 2004; Belleflamme, 2005) but the premise is that transparency in government decision-making is in place and a mass media that are not subject to censorship (Lockwood, 2005).

Most of the SGT literature is indifferent to the solution of coordination problems arising from fiscal decentralization (i.e. the failure to internalize spillovers and the failure to address fiscal inequity under fiscal decentralization). But the insights from some of the SGT literature do help understand the potential negative effects of intergovernmental fiscal transfers. For instance, the widely known "fly-paper effect"— a dollar increase in intergovernmental transfers lead to much higher local public spending than a dollar increase in residents' private income (see Hines and Thaler 1995 for a comprehensive review) could be explained by the SGT literature: the bureaucrats are far from benevolent (if not outright Leviathan) and they do seek to

enlarge their power by expanding the budget (Shah, 2006). Thus it is suggested that vertical fiscal imbalance is better keep to the minimum—so that the local governments would have to raise the revenue at the margin (establishes a clear connection between revenue and expenditure to hold them accountable). Another justification for lower level of vertical fiscal imbalance (self-financing) is that when the link between expenditure and taxes are obscured (voters become less likely to spot overspending by the local government) or intergovernmental grants can be easily obtained by negotiations or lobbying, local government may have a fiscal illusion that they can easily exploit the national common fiscal resources (the common pool problem) and expect the central government to bail them out for their own fiscal indiscipline—soft budget constraint problems (Rodden, 2002, 2003a; de Mello 2000).

2.5 Fiscal Decentralization in Developing and Transition Nations: the Problem of Unmet Fiscal Needs at the Local Levels

While the theories of fiscal federalism suggest that fiscal decentralization may improve allocative efficiency and accountability, the FGT also recognizes the possible costs of fiscal decentralization as a result of economic externalities, horizontal fiscal inefficiency and fiscal inequity. From a normative standpoint, the FGT proposes a series of intergovernmental fiscal transfers to deal with these issues, with the basic assumption that government is benevolent with full information. Departing from this assumption, some of the SGT recognize the potential negative effects of intergovernmental fiscal transfers. Both FGT and SGT are relevant for understanding

the problem of unmet fiscal needs at the local levels in developing and transition nations.

A number of authors, notably, Bird et al (1995b), Bird and Vaillancourt (1999), Shah (1998, 2004), Dabla-Norris (2006) and Ebel and Yilmaz (2002) have offered extensive studies of this problem on a cross-country basis, applying the fiscal federalism theories as the analytical framework. Some common findings could be summarized from these studies. It is reported that subnational governments in developing and transition nations often have inadequate own source of revenues to finance the expenditure responsibilities devolved to them, which may be attributable to under-developed local tax base (such as property tax and user charges), the limited autonomy to levy taxes by subnational governments or the central government's monopolized claim over too much tax revenue. In the context of transition nations, revenue inadequacy may also be the result of marketization, where the old soviet-type tax bases have been eroded while new market-conforming tax bases not being introduced on time. In a nutshell, there tends to be a much larger vertical fiscal imbalance in developing and transition countries than in developed nations. Shah and Thompson (2004) argue that while in most countries the central government often raise more revenue than its expenditure needs, in developing and transition economies, centralization of taxing responsibilities is much more pronounced than would be based on economic considerations. Thus subnational governments of these countries are usually more dependent on the central government for the transfer of fiscal

revenue.

In these nations, it is a common practice for the central government to return part of the tax revenue it collected to subnational governments on the basis of the geographic origin of the revenues. This is called derivation-based tax sharing and the implication is that higher income areas get higher tax returns because these areas normally have higher tax bases. So provided that the budget in rich areas could be balanced after receiving the tax returns, some poorer localities may still not have enough resources to carry out the important decentralized expenditure functions, resulting in fiscal needs not being met in those areas. This is especially the case when the economic development in local areas is so diverse in many developing and transition countries. Even if all the locally generated revenues are retained at their respective areas, it may still be unrealistic to expect smaller, less developed areas to carry out many costly functions such as education, health care and social welfare without additional fiscal supports. Of course, given the same level of fiscal capacity, some areas are likely to have higher financial needs in these sectors than other areas because of demographic differences such as higher proportion of school age population or aged population. As reviewed in section 2.4, the principles of intergovernmental fiscal relations provide three different normative justifications for the central government to transfer additional fiscal resources to support the local governments. If difference in net fiscal benefits across local governments is the problem, equalization grants can be used to boost the fiscal capacity of poor areas and the recipient governments are free to spend

the grants on any sector (this honours the objective of fiscal decentralization—better preference-matching). If provision of a minimum level of services that are of national interest is the purpose, conditional non-matching transfers are often used and the recipient governments must spend the transfers on the pre-determined expenditure items. The third reason is to correct for positive externalities, using conditional matching grants. It is found by those studies that the problem of unmet fiscal needs at the local levels may be mitigated if properly designed intergovernmental fiscal transfers are in place. But the extents to which the fiscal capacities between different local areas are equalized and the minimum level of service is defined are still a matter of central government's fiscal capacity. In other words, a higher level of equalization and a higher minimum national standard would require more fiscal transfers, which may not always be feasible if the central government's fiscal position is not that strong. Shah (2004) states that although central-local fiscal transfers in many developing and transition countries do incorporate equalization and expenditure need elements, lack of explicit equalization standards tend to compromise the objective.

Apart from the failure in division of expenditure and revenue responsibilities and intergovernmental fiscal coordination, the problem of unmet fiscal needs at the local levels may also be attributable to political reasons. It is revealed that when the institutions of local democracy are weak or absent, which may be the case in many developing countries, there is a greater risk that local governments would be captured by the local elites or interest groups (Prud'homme, 1995; Tanzi, 2001; Bardhan, 2002;

Shah, 1998, 2004). This could undermine the provision of social services for the residents at large, when the scarce fiscal resources are siphoned away for other uses. Strengthening local democracy institutions (where citizens could voice and exist) is the perceived solution to this local governance problem.

While the original fiscal federalism theory (Oate's Decentralization Theorem 1972) was broadened to deal with decentralization of quasi-private goods and services such as education, health and welfare services, it has not been developed to address decentralization of social security function (redistribution). Moreover, as the theory was developed in the context of industrial nations in particular the US and Canada, it to some extent implicitly assumes that a welfare state is the starting point (assumes that a well established redistribution system is already in place). As reviewed at the beginning of this chapter, fiscal federalism theories suggest that local governments are unlikely to be able to carry out active redistribution when the tax bases are mobile. Contrary to the conventional approach, in a few transition countries such as Hungary, Russia and China, a large part of the social security function has been decentralized to subnational governments during their market transition processes. The study of local public finance in Hungary by Bird et al (1995 b) suggests that decentralized provision of social security would also justify the use of central-local fiscal transfers. Because on one hand, when the taxing responsibility is relatively centralized, decentralization of any expenditure function would need to come with the fiscal transfer to close the vertical fiscal imbalance; on the other hand, redistribution is normally of national

interest and also subject to certain minimum national standard. They point out that shifting the social security responsibility to lower levels of government in those Eastern European transition economies and former Soviet Union is the central governments' strategy to push the deficit downward. This is largely because the Eastern Europe and former Soviet Union introduced market reforms at a time when the economies were urban and over-industrialized, with virtually the entire population covered by an extensive social welfare system that is beyond the financial capacity of the state (Sachs and Woo, 1994). The stagnant economic situation after the "shock therapy" reform significantly increased the number of persons claiming the social benefits at a time when the tax base was shrinking. Thus Bird et al (1995b) find that decentralization of social security created deep fiscal problems for local areas, usually in the poor areas, where much of the social security needs could not be properly met.

We argue in the next chapter that while there are paralleling studies of the problem of unmet local fiscal needs in poorer areas of China, unmet fiscal needs in social security sector at the local levels tend to be under-estimated and under-researched. This research aims to fill in this small gap by investigating and verifying whether there have been unmet fiscal needs in social security sector in relative affluent local areas during China's post Tax-Sharing reform era (1994-2007). In comparison to the Eastern Europe and former Soviet Union, China began reform as an agricultural society with a much smaller industry sector (in 1978, 71% of the labour force was in agricultural; only 15% was in industry and half of which was in SOEs, see Sachs and

Woo, 1994). Only the staff and workers in government institutions and SOEs, a very small population section, were covered by the state welfare system. The second difference is that China had not thoroughly reformed its SOE sector until mid-late 1990s, after the economy experienced twenty-year's fast growth. Therefore, unlike the social security reforms in Eastern European and former Soviet Union, where there was no much change in the coverage, the social security reforms in China in the mid-late 1990s involve transfer of social welfare responsibility borne by SOE to the government, as well as the introduction of social security to the non-state sectors. It might be tempted for one to argue that the fiscal burden of social security could not have been a problem in China, given its fast economic growth and a smaller SOE sector. But on one hand, the evidence (from Wong and Bird, 2005) that some of the central-local transfers were used to subsidize local social security sector may indicate fiscal inadequacy at the local levels; on the other hand, the expansion of social security coverage may also require subsidies from the governments. Hence, it is difficult to reach a coherent conclusion without doing an empirical research. This research might help enable further comparison between the excess decentralization experience in China and in those Eastern European countries and former Soviet Union. In Chapter 3, we critically review the research problem in the Chinese context and make a small step to propose an extended framework to help better understand the problem.

Chapter 3: China's Fiscal Decentralization in the Context of Market Transition: Toward an Extended Framework to Recognize the Problem of Unmet Social Security Needs at the Local Levels

In Chapter 2, we review the theories of fiscal federalism and principles of intergovernmental fiscal relations and illustrate how the normative theories deal with the problem of unmet fiscal needs at subnational levels in developing and transition nations. In this chapter, we discuss the research problem of unmet fiscal needs at the local levels of China. In the first three sections (3.1 to 3.3) of this chapter, we briefly review the evolution of China's fiscal system since the founding of People's Republic of China in 1949. From the late 1970s, several rounds of reforms have been introduced to the fiscal sphere, which gradually converted the highly centralized Soviet-style fiscal regime (established in 1949) to a more market-conforming and decentralized fiscal system. But the conventional view is that the reforms are not fully complete, as the division of expenditure responsibilities between different layers of governments is not clarified and a transparent and rule-based intergovernmental fiscal transfer system is still not in place. It is in such a contextual background that the research problem has been raised. The review aims to capture the important changes and continuities in the fiscal system over the period and the emphasis is on the more recent period, in particular the post-1994 Tax-Sharing system. Specifically, we discuss the revenue and expenditure assignments, central-local fiscal relations and fiscal

administration in three distinguishable periods, namely, the pre-reform system (1949-1979), the Fiscal-Contracting period (1980-1993) and the Tax Sharing System (1994 till now). From section 3.4 to 3.8, we critically review current debates on the problem of unmet fiscal needs at the local levels, identify the research gap, and propose an extended theoretical framework to complement existing studies. Four testable hypotheses are generated at the end of this chapter.

3.1 The Pre-Market Reform Fiscal Regime (1949-1979)

During Mao-era, the fiscal system in China was highly centralized and compatible with the Soviet-type economic system, with its primary objective being the fulfilment of the central plans. On the revenue side, most of the government income derived from taxes and profits from industry sector, which comprised of State-Owned Enterprises (SOEs, the dominant form) and a small number of collective enterprises. The tax structure was simple: a commercial-industrial tax (i.e. the turnover tax, tax rates differentiated by products) applying to all enterprises and the enterprise income tax levying on collective enterprises (Wong et al, 1995). There were no property tax, personal income tax or resources taxes that are common in market economies. In addition to the tax levies, SOEs were obligated to remit most of the profits to the state, so the effective tax rates on SOEs would be over 90 percent (Perkins, 1988). The SOEs were essentially part of the bureaucracy because like local governments, they were also the budgeting units. By 1979, around 80 percent of the government revenue

came from industrial profits and taxes and the government revenue as share of national income reached 40 percent (Finance Statistic Yearbook of China, 2001). The secret of this revenue buoyancy from industrial sector was the result of what Wong (1991) called the "price scissors". Under central planning, the prices of all products and material inputs were set by the central government. The state set quotas and artificially fixed low prices for the delivery of crops (Perkins, 1988). This allowed the state to transfer the surplus from agriculture to industrial sector (Wong, 1991).

On the expenditure side, priority was given to capital construction (particularly in heavy industry) and national defence projects, both were national responsibilities. Throughout the period, these two items jointly consumed more than 60 percent of the budgeted spending (ibid). This was similar to the experiences of Soviet-Unions in the 1930s. The composition of government spending (including both the central and local governments) was determined at the national level in the Five Year Plans and annual plans. Budgeting process was used to decompose the plan targets down to production units and lower levels of governments. Therefore, though local governments were given the responsibility over day-to-day administration and the provision of social services (such as education, health, public safety and transportation), they had little right to decide the spending structure. In other words, there was only delegation (administrative decentralization), where local governments acted as agents of the central government.

The tight political control enabled the central government to rely on local governments for the collection of most revenues. The central government only collected profits and taxes from a few large SOEs as well as the exercise taxes on its own (Zhang, 1999) and up to 1993 there had no independent National Tax Bureau. Local governments collected and transferred the fiscal revenues to the central government, which then decided the allocation of resources among local government units and across different sectors. The only discretionary resource the local governments had was the extra-budgetary revenue (EBR). In the pre-reform era, the size of EBR had been quite small: around 5 percent of the budget (Wong, 1992). Five major types of central-provincial revenue sharing arrangement were experimented in the 1960s and 1970s, at a time when the central government was searching for better central-local fiscal relations. The central government, by controlling most of the government revenue, was able to transfer financial resources to poorer provinces to promote interregional equality in both income and fiscal revenue. The link between expenditure and revenues at the local levels was very weak. For instance, Shanghai would normally surrender 80 percent of the revenue it collected to the centre while some poor provinces could spend much more than the revenue they collected, as a result of fiscal redistribution (ibid). According to Yang (1990), much of the fiscal redistribution was used to eradicate regional industrial disparities via interior-oriented investments. In a nutshell, the fiscal regime under Mao-era was redistributive at the expense of economic efficiency. Local governments had little incentive or scope to promote local economic development or collect additional revenues.

3.2a The Changing Fiscal Regimes (1980-1993)

The introduction of market reform (first in rural sector then expanded to industrial sector) since 1978 had placed significant challenges on the fiscal system, in both the revenue and expenditure sides. Between 1980 and 1993, the central-provincial fiscal regimes were frequently adjusted, making it increasingly intricate. It makes more sense to firstly discuss the shifting central-local fiscal arrangements as well as the logics behind these alterations and then move on to consider the changing composition of government revenue and expenditure, including the extra-budgetary revenues (EBR) and off-budget revenues (OBR). The major types of central-local fiscal arrangements over the period are highlighted in Table 3.1.

Table 3.1 Major Reforms in the Fiscal Sphere (1980-1993)

1980 to 1983	'Eating in Separate Kitchens'; Five Main Arrangements 1.Lump-sum Transfer (in Guangdong and Fujian) 2.Sharing Total Revenue,sharing rate alterred annually by the central government (in Beijing, Shanghai and Tianjin) 3.Sharing Total Revenue, sharing rate fixed for five years (in Jiangsu) 4.Dividing Revenue by Sources and Remitting the Surplus (in 16 provinces) 5.Dividing Revenue by Sources and Receiving Subsidies (in 8 provinces)
1983 to 1987	Enterprise Tax Reforms; Frequent revisions in Revenue-Sharing 1.Sharing Total Revenue replaced Dividing Revenue in 24 provinces in 1983 2.Tax-for-profit reform launched in 1983 but withheld in 1986 3.Enterprise Contract Responsibility System reintroduced in 1986
1988 to 1993	Contracting Extended to Central-local Fiscal Arrangements in 1988; Some Minor Changes in 1989-1992 1.Basic Sharing with Growth:province retains growing portion of locally collected revenues (10 provinces) 2.Basic Sharing: province retains fixed proportion of revenues (3 provinces) 3.Lump-sum Transfer: extension of 1980 Guangdong-Fujian type (4 provinces) 4.Fixed Quota with Growth: contract nominal amount for the first year and increase at certain rates in subsequent years (2 provinces) 5.Fixed Quota with Central Subsidies: province receives fixed amount of subsidies from the center (11 provinces)
Source:	summarized from Oksenberg and Tong(1991), Agarwala(1992) and Wong et al(1995)

The five types of central-provincial fiscal arrangements enacted in the early 1980s were either the extension or continuation of the experiments in 1960s and the late 1970s. The key purpose of these experiments was to give local governments greater incentives in revenue collection and developing local economies. The provinces gained more power to decide the composition of local spending, as the ministries replaced the mandatory targets (used under central planning) with reference targets for the local governments. Moreover, the provincial governments obtained the right to determine the intergovernmental fiscal relations within the provinces. Thus fiscal decentralization began formally. This paralleled the reforms in SOE sector, where the enterprises were given marginal authority in production output (provided that they had already met the planned output targets, they could trade the additional products at market prices), were allowed to keep a larger portion of profits for their disposal and were given control over the depreciation funds (Wong, 1991). Unchanged from the previous system, local governments were prohibited from issuing bonds. Under these fiscal arrangements, sufficient funds would be retained at the local levels to cover the budgeted expenditure (Oskenberg and Tong, 1991) but the level of autonomy the provinces would enjoy differs significantly (see Table 3.1).

Two southern coastal provinces, Fujian and Guangdong enjoyed the greatest autonomy and highest revenue collection incentives, because every year they either received (in the case of Fujian) from or transferred (in the case of Guangdong) revenue to Beijing on a lump-sum basis (such term would be fixed for five years and

the incentives came from the upward potential of revenue that could be retained at the local areas). This contrasted with the conditions of the three provincial level municipalities Beijing, Shanghai and Tianjin, which must negotiate with the centre to determine the revenue-sharing rates every year and were subject to tight central control. They ended up with retaining the smallest share of locally generated revenues. The fiscal agreement between Jiangsu province and the centre differed from the Fujian-Guangdong case in that the proportion of revenue remittance rather than the amount was fixed for five years. Such agreement ensured that both the centre and provinces would share the gain and share the pain—they would get the same revenue growth/decrease rates. Two other similar types of fiscal arrangements applied to the remaining 24 provinces. The rationale for both was that the sharing rates were not the same across the sources of revenue. Enterprises profits were shared on the basis of ownership: central enterprise profits accrued to the central government, local enterprise profits accrued to local authorities and enterprises under dual leadership sent 80 percent of the profits to the centre and 20 percent to local governments (Wong 1992, p 209). Those minor taxes were assigned to the central (e.g. customs duties) and local governments (e.g. income tax on collective enterprises) respectively. The most important tax—the industrial and commercial tax became the "adjustment income": the level of retention depended on the interaction between local fiscal capacity (the ability to generate revenue from enterprise profits and the minor taxes) and the expenditure requirements (the past levels of spending). Thus the 24 provinces could be subdivided to two group: 8 provinces (dominated by ethnic minority) with chronic

fiscal inadequacy would keep most share of the industrial-commercial tax plus central subsidy, while the other 16 provinces may have to surrender most part of this tax plus sending a proportion of local enterprise profits and minor taxes (ibid). Scholars described these central-local fiscal divisions as "eating in separate kitchens", as opposed to "eating in the same pot" of the pre-reform system. An important implication, first noted by Wong (1992) is that local government budgets became increasingly dependent on the surplus generated by local enterprises. Apart from the fiscal arrangements used in Beijing, Shanghai and Tianjin, these fiscal regimes tended to strengthen the links between local expenditure and local revenue.

The implementation of these fiscal regimes was not smooth in an era of "turbulence". The rural economic reform initiated in 1979 (the introduction of household responsibility system and the dual price system) pushed the crop prices up (toward the true market prices) yet the grains sold in urban areas were fixed by the state at very low prices decades ago (Perkins, 1988). The fear of potential political unrest (should there be a sudden price rise) made the government introducing the price subsidies. In the early 1980s, price subsidies consumed near 10 percent of budgetary expenditure and contributed to central government budget deficits (Lardy 1983, cited by Perkins, 1988). Almost at the same period (1980-1982), industrial profits started to fall, because on one hand the production costs increased (a result of the increase in input prices) and on the other hand, the entry of non-state enterprises started to put competitive pressure on less efficient SOEs. The five fiscal regimes collapsed to three

in 1983, with the fourth and fifth types being converted to the Jiangsu type—sharing total revenue. However, the sharing ratio was subject to the review of the central government, which essentially gave the central government greater flexibility in extracting revenues to close the deficits. In 1983, a uniform enterprise income tax (the first stage of the supposed tax-for-profit reform) was introduced to replace the SOE profit remittance approach, in order to reduce the bargaining between the government and the SOEs. This experiment was short-lived because of the hefty criticism from the disadvantaged SOE sector. The profitability rates differed across SOEs and to a large extent this was due to administrative measures (e.g. the input and output prices were fixed by the state). A uniform enterprise tax created a very unequal distribution of retained profits among SOEs. From 1986, the enterprise income tax system, along with other types of proposed taxes such as capital tax was suspended, since the profit rates of SOEs continued to fall. Resource taxes were only applied to coal, petroleum and gas production (Wong, 1992). A so-called enterprise contract responsibility system came into effect. Such system was not fundamentally different from the old profit remittance approach of the Soviet-type system, where SOEs signed contracts with its supervisory agency specifying the amount of profits to be remitted. This made the effective tax rates vary substantially across the SOEs. By abandoning the tax-for-profit scheme and returning to enterprise contracts, the government hoped the profitability of SOEs (its main tax base) would restore.

Returning to enterprises contracting did not yield the expected outcome. The two

widely cited ratios—the government budgeted Revenue-to-GDP ratio and the central government's share of budgeted revenue declined from 1986 onward (see **Table 3.2** columns A and B). In 1988, the practice of enterprise contracting was extended to central-local fiscal arrangements. Under the fiscal contracting system (1988-1993), the central government negotiated with individual provinces to determine the amounts of payments to be transferred upward (or subsidies to be received from the centre) and each province signed contractual agreements with lower level governments for the same purpose. Five major types of central-provincial arrangements could be identified (summarized in **Table 3.1**). The provinces, apart from those requiring fixed central subsidies (11 provinces) could retain part or all of the above quota fiscal revenues. This gave local jurisdictions strong incentives in revenue mobilization. The fiscal contracting system lasted for 6 years until the implementation of Tax-Sharing-Reform in 1994. It is generally recognized that the fiscal system became further decentralized with the introduction of fiscal contracting system, in terms of both expenditure and revenue assignments (Wong, 1991).

Table 3.2 Budgeted and Extrabudgetary Revenue-to-GDP ratios and Central Government's Share

	A Central share of BR %	**B** BR/GDP %	**C** Subsidy/GDP %	**D** EBR/GDP %	**E** B+C+D %	**F** EBR/BR %	**G** Central share of EBR %
1952-1960	64.98	29.48	0	3.36	32.84	11.40	n/a
1961-1970	28.9	27.05	0	4.59	31.64	16.97	n/a
1971-1980	15.95	28.47	0	8.55	37.02	30.03	n/a
1980	24.5	25.50	n/a	12.26	37.76	48.09	n/a
1981	26.5	24.00	n/a	12.29	36.29	51.20	n/a
1982	28.6	22.80	n/a	15.08	37.88	66.14	33.7
1983	35.8	22.90	n/a	16.23	39.13	70.87	37.2
1984	40.5	22.80	n/a	16.49	39.29	72.32	39.6
1985	38.4	22.20	5.62	16.97	44.79	76.44	41.6
1986	36.7	20.70	3.16	16.91	40.77	81.68	41.2
1987	33.5	18.20	3.12	16.82	38.15	92.44	40.8
1988	32.9	15.70	2.97	15.69	34.36	99.96	38.4
1989	30.9	15.70	3.52	15.65	34.87	99.66	40.3
1990	33.8	15.70	3.10	14.51	33.31	92.42	39.6
1991	29.8	14.50	2.34	14.89	31.73	102.69	42.6
1992	28.1	12.90	1.65	14.32	28.87	110.99	44.3
1993	22	12.30	1.16	4.05	17.52	32.96	17.2
1994	55.7	10.80	0.76	3.86	15.42	35.78	15.2
1995	52.2	10.30	0.54	3.96	14.80	38.43	13.2
1996	49.4	10.40	0.47	5.47	16.34	52.60	24.3
1997	48.9	11.00	0.47	3.58	15.05	32.53	5.1
1998	49.5	11.70	0.40	3.65	15.75	31.21	5.3
1999	51.1	12.80	0.32	3.77	16.90	29.49	6.8
2000	52.2	13.50	0.28	3.86	17.64	28.57	6.5
2001	52.4	14.90	0.27	3.92	19.10	26.32	8.1
2002	55	15.70	0.22	3.72	19.64	23.71	9.8
2003	54.6	16.00	0.17	3.36	19.53	21.01	8.3
2004	54.9	16.50	0.14	2.94	19.58	17.81	7.5
2005	52.3	17.20	0.11	3.03	20.33	17.61	7.3
2006	52.8	18.40	0.09	3.04	21.52	16.52	7.3

Note:
A= Central government's share of total government revenue
B= Budgeted Revenue-to-GDP ratio
C= Subsidies to loss-making SOEs as a percentage of GDP
D= Extrabudgetary Revenue-to-GDP ratio
E= the sum of item B, C and D
F= Extrabudgetary to budgeted revenue ratio
G= Central government's share of total extrabudgetary revenue

Source: author's calculation from China Finance Statistics Yearbook 2007

3.2b The Budgetary Decline

The cause and implications of the budgetary decline since the 1980s need to be further elaborated. While the budgeted revenue-to-GDP ratio started to drop as early as in 1980, the central government's share in budgeted revenue first rose in 1980-1984 then plummeted. The rise during 1980-1984 was largely an outcome of revenue reclassification. For instance, as detailed by Wong (1991), the central government incorporated some of the most profitable enterprises in industries such as tobacco, petrochemicals into national corporation in 1982-1983. The central government hoped to close its deficits by gaining a larger part of the revenue. But since the mid 1980s, the effect of these measures had been offset simultaneously by the deterioration of SOEs profitability and more importantly, the failure to adjust the tax structure to capture the growth of non-state sector (Zhang, 1999). The expenditure patterns had also changed, with growing expenditure burdens bone by the local governments. The combined effect of budgetary decline and decentralization of expenditure responsibilities was that the governments became increasingly reliant on extra-budgetary revenues (EBR) and even off-budget revenues (OBR).

As the market reform deepened, capital constructions and national defence, two largest spending sectors in Mao-era experienced the sharpest reduction. Wong (1991) reported that capital construction as a percentage of total expenditure downed to 23.4 percent in 1988 from 40.7 percent in 1978, while national defence downed to 8.1 percent in 1988 from 15.1 percent in 1978. Both items were responsibilities of

national government and this trend seemed to be quite in line with the budgetary decline. The cutback in capital allocation by the government does not imply a reduction of investment in economic activities. Because the SOEs began to use bank loans to finance working capital, while in the past the working capital of SOEs was covered by the budget. The spending needs in education, government administration, price subsidies and subsidies to loss-making SOEs had emerged or increased in the same period. Price subsidies on urban food had grown at a fast pace that the central government could not afford to. The response was that the central government allocated a fixed amount of subsidy to provinces and each province would need to make up the gaps from its own budget. Effectively, this meant over 70 percent of the price subsidies became local responsibility (Wong, 1991). Subsidies to loss-making SOEs emerged in the 1980s for the first time and in the Chinese budgeting practice this item is subtracted from budgeted revenue and not shown on the expenditure side. Column C of Table 3.2 reports the amount of this item against GDP. It shows that the relative importance of this spending was decreasing, but how this responsibility was divided between the central and local governments is not clear. The expansion of higher-educational system, which was still fully funded by the state, resulted in higher share of budgetary spending in education in both the central and local budgets. So this component's weight in the consolidated budget jumped to 18 percent in 1988 from 10.1 percent in 1978 (ibid). Finally, the increased spending also came from the establishment of offices at the township level in 1985. The reason was that the operation of rural household responsibility system had sharply increased the number

of tax payers in rural areas (6 million collective production units in pre-reform era and 200 million households since market reform), which required more tax-collectors (ibid). It should be noted that the budget at township level was not fully consolidated to formal local government budget: a significant part of the township budget was called "self-raised fund", an OBR item (this item was re-categorized in EBR in the late 1990s). We could see that the fiscal decentralization process in the 1980s was ad hoc rather than well-planned. Neither the revenue nor the expenditure responsibilities between different levels of government were clearly defined. Table 3.3 depicts the broad division of expenditure responsibilities between the centre and local governments.

Another noticeable trend between early 1980s and 1993 is that the size of both EBR and OBR were greatly enlarged. As mentioned, the growth of the informal finance was in part a response to the increasing government responsibilities and the shrinking formal tax base. So what exactly are EBR and OBR and how significant they were? The explanatory notes of China Statistics Yearbook 2005 (chapter 8) indicate that:

> "Extra-budgetary fund refers to financial fund of various types not covered by the regular government budgetary management, which is collected, allocated or arranged by government agencies, institutions and social organizations while performing duties delegated to them or on behalf of the government in accordance with laws, rules and regulations."

Off-budget revenues are fees and surcharges levied by local government departments and the single largest part of OBR is the land transfer fees. EBR is earmarked for

specific expenditure categories and is subject to the oversight of correspondent Finance Department, while the operation of OBR was opaque and there was no readily available statistics for OBR. In a recent conference on China's central-local fiscal relations, some participants reveal that most of the OBR is dedicated to basic infrastructure investment at the local levels (Whiting, 2007) (also see Su and Zhao 2006 and Carsten and Feng 2004 for elaboration on this point). From Table 3.2, column D and F, we could count that the size of EBR exploded between 1980 and 1992. In 1988, the size of EBR was almost the same to the size of budgeted revenue and in 1992 the size of EBR was 110.99 percent of budgeted revenue. In 1993, a definitional change was made to extra-budgetary funds, where SOE earnings were taken out from these accounts. This marked the attempt to separate the operation of SOEs from the governments and such attempt had been facilitated by the 1994 Tax-Sharing-Reform (discussed in next section). Thus there was a sharp drop in the size of EBR in 1993. As most of the EBR and OBR were extracted from the same tax bases as budgeted revenue, local governments therefore may have essentially diverted a considerable portion of funds from budgetary revenue to EBR or even OBR and effectively reduced the amount of remittance to the centre. Most scholars (such as Wong, 2005) criticize the use of EBR and OBR, as they obscure budgetary practice and contribute to horizontal fiscal inequality (because EBR and OBR are more abundant in rich areas and these funds are not subject to sharing with the central government).

Comparing to the pre-reform system, the fiscal regimes since the 1980s had been moving toward self-financing at the local levels. During the fiscal contracting period (1988-1993), the central government's capacity to exert massive interregional fiscal redistribution (the practice in the Mao-era) was significantly constrained, as a result of general budgetary decline and the decline of central government's share of total budgeted revenue. Some scholars such as Wong (1991, 1992) express concern that the sharp reduction in fiscal redistribution in the context of expenditure decentralization would create fiscal challenges for governments in poor local areas. Wong (1991) and Tsai (2004) further argue that the fiscal contracting system offered local government the incentive to set up trade barriers (local protectionism) and make duplicated and inefficient investments. However, some other scholars (e.g. Oi, 1992; Qian and Weingast 1997; Qian 1998) give much credit to the fiscal contracting system, highlighting its positive incentive effect for local governments to foster economic development.

Table 3.3: Major expenditure responsibilities between central and local governments

Main expenditure responsibilities of the central government
1. Defence
2. Foreign affairs
3. Operation of the central government
4.Operational expenses for cultural, educational, scientific and public health undertakings at the central level
5. Key capital construction
6.Technical renovation and new product development in centrally owned enterprises
7.Agriculture
8.Subsidies
9.Macro-economic control and regional coordination of economic development
10.Social security
11.Debt
Main expenditure responsibilities of subnational governments
1.Operation of local governments
2.Operational expenses on cultural, educational, scientific and public health undertakings at the local level
3.Local capital construction
4.Fund for technical renovation and new product development in locally owned enterprises
5.Agriculture
6.Urban maintenance and construction
7.Social security
8.Subsidies

Source: adapted from Zhang and Martinez (2003)

3.3 The Fiscal System after the 1994 Tax-Sharing Reform

In 1994, a Tax-sharing-system (TSS) was introduced to replace the fiscal contracting approach and on 1 January 1995 the TSS was written into the Budgetary Law. The stated objective of this reform was to increase the two ratios (budgeted revenue-to-GDP ratio and the central government's share of total budgeted revenue) so that the government, especially the central government could have more leverage in macroeconomic management and fiscal redistribution. The effects of this reform

were more profound than raising the two ratios. The TSS transformed the ways in which fiscal revenue were generated, collected and clarified, broadened the tax bases and brought China's fiscal practice more in line with that of market economies.

Under the TSS, fiscal revenue no longer comes from SOE profit remittance but from taxation; and taxes are divided into central taxes, local taxes and shared taxes. Table 3.4 lists the assignment of taxes between the central and local governments. The tax structure has been simplified and the tax rates have become more uniform. Value-Added Tax (VAT) replaces multi-rated product taxes and is levied at a uniform rate of 17 percent. The coverage of VAT has been broadened to all manufacturing, wholesale and retail enterprises (Ma, 1997). This single most buoyant tax is shared between the central and local governments at 75:25. But in order to gain a quick support from relative wealthy provinces for the 1994 reform, the central government promised to return a fraction of shared VAT and exercise taxes (consumption tax) to source provinces and guaranteed that each province would receive at least the amounts they retained in 1993. To stimulate the growth of these tax bases, 30 percent of the growth in tax revenues would also be returned to the province of the origin. Tax rebate is calculated as:

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

Where:

TR_t - tax rebate to a province at year t

VAT – value-added tax

ET – Excise taxes (*Xiaofei Shui*)

An excise tax (consumption tax) on goods was established in the reform and assigned exclusively to the central government. Thus consumption on all goods (domestic and imported) would be taxed. The reform also extended business tax (5 percent tax rate, local tax) to service sector and reduced the tax rate for enterprise income tax (EIT) to a uniform 33 percent in 1994 from some 55 percent in the 1980s. In 2002, the central government increased its share of security stamp tax to 97 percent and converted personal income taxes (PIT) and enterprise income taxes (EIT), two fast growing taxes, to shared taxes from pure local taxes. The share rate of PIT and EIT between the central and local governments was 50:50 in 2002 and has become 60:40 since 2003. Therefore the revenue has been further recentralized since 2002. The value-added tax, consumption taxes, business tax and enterprise income tax together accounted for around 86 percent of the budgeted revenue in 1995 and around 80 percent in 2006 (calculated from Statistics Yearbook of China 2007).

To some extent, the officially stated objective—raising the two ratios, has been achieved. Immediately after the reform in 1994, the central government's share of budgetary revenue jumped to 55 percent (comparing to the averaged 31.6 percent between 1980 and 1993) and remained at around 50 percent thereafter. The budgeted revenue-to-GDP ratio also climbed to 18.4 percent in 2006 after dropping to its lowest point 10.3 percent in 1995 (Table 3.2). The increase in the central government's share of budgeted revenue was attributable to central government's dominant share in major taxes. But the central government's disposable revenue may not have substantially increased, because of the built-in tax rebates. Several factors could jointly explain

the boost of revenue-to-GDP ratio. The new tax structure has become capable of capturing the growth of non-state sectors and the state has also taken measures to reduce the revenue losses (Zhang, 1999). In addition, the Fiscal Management Reform launched in the late 1990s has re-categorized some of the EBR and OBR to budgeted revenue. The government pledged to gradually transform OBR to EBR and to put EBR under the stricter supervision of corresponding Department of Finance. For instance, the self-raised funds by township governments (formally a big item in OBR) were consolidated to EBR by 1999. After a series of changes, the relative importance of EBR to budgeted revenue has plunged to less than 20 percent, though in absolute term the size of EBR has still been growing (see Table 3.2).

Table 3.4: **Central Taxes, Local Taxes and Shared Taxes since 1994**

I. Taxes exclusively assigned to the Central Government

1.Excise taxes

2.Taxes collected from the Ministry of Railroads and from the headquarters of banks and insurance companies

3.Income taxes, sales taxes and royalties from offshore oil activities of foreign companies and joint ventures

4.Energy and transportation fund contribution

5.Seventy percent of the three sales taxes collected from enterprises owned by the Ministry of Industry, the Ministry of Power, SINOPEC (petrochemicals), and the China nonferrous metals companies.

6.All customs duty, VAT and excise taxes on imports

7.Enterprise income tax collected from banks and other financial institutions.

II. Taxes shared between the central and local governments

1.Value-added tax (75 percent central, 25 percent provincial)

2.Natural resource taxes (coal, gas, oil, and other minerals if the enterprises are fully Chinese owned.)

3.Construction tax on the cost of construction of buildings that are outside the plan and financed from retained earnings

4.Salt tax

5.Industrial and commercial tax, and income tax levied on foreign and joint venture enterprises.

6.Security and exchange tax (50 percent central, 50 percent provincial) – added in late 1990s

7.Income tax of all enterprises – added in 2002

8.Personal income taxes – added in 2002.

III. Taxes exclusively assigned to local governments

1.Business (gross receipts) tax falling on sectors not covered by VAT (transportation and communications, construction, finance and insurance, post and telecommunications, culture and sports, entertainment, hotels and restaurants, and other)

2.Rural market (stall rental) trading tax

3.The urban maintenance and construction tax (a surcharge on the tax liability of enterprises for business tax, consumption tax, and VAT)

4.The urban land use tax

5.Vehicle and vessel utilization tax

6.Thirty percent of the product and VAT revenues collected from enterprises owned by the Ministry of Industry, Ministry of Power, SINOPEC, and the China nonferrous metals companies

7.Value-added tax on land

8.Education surtax

9.Entertainment and slaughter taxes

10.Property tax

11.Surtax on collective enterprises

12.Resources tax

13.Fixed asset investment tax (discontinued in 1999)

14.Fines for delinquent taxes.

Source: Wong (2000), World Bank (2000b)

The tax-sharing reform also altered the tax administration: a National Tax Bureau was established (under the supervision of the central government) to collect central government revenue and the shared revenues. Local Tax Bureau (under the supervision of provincial governments) would only be responsible for collecting local taxes. A clarified and transparent tax sharing system helped to eliminate revenue uncertainty induced by frequent central-local negotiations. The separation of national and local tax offices ruled out the opportunities for local governments to hide or divert revenues that would otherwise belong to the central government. Wong and Bird (2005) argued that the link between enterprises and local governments has been diluted as local governments only get 25 percent of the VAT. This reduces local governments' incentive to over-invest in industries with high tax rates and mitigates the economic distortions. These positive changes mark China's transition from an ownership state to a tax state.

However, the reform is recognized as incomplete by a number of scholars such as Ma (1997), Zhang (1999), Bahl (1999), Zhang and Martinez (2003), Dable-Norris (2005), Wong and Bird (2005), Shah and Shen (2006) and Shen et al (2006). First, after the 1994 reform, there has only been recentralization of budgeted revenue, while the expenditure responsibilities were still extensively decentralized and remained vaguely defined (see Table 3.3). Wong (2005) compares the revenue-expenditure division between the central and local governments among OECD countries and a number of developing countries and finds that China is almost the most decentralized country in

terms of expenditure assignment. Thus there have been large vertical fiscal imbalances: since 1994, all provinces have become dependent on the central-local fiscal transfers to finance their expenditure. From Table 3.5, one could easily calculate that the average per capita provincial fiscal revenue covers only around 55 percent of the average per capita fiscal expenditure. This implies that around 45 percent of the local expenditure has to be financed by the transfer. While vertical fiscal imbalance itself is not a problem, a high level of imbalance may create perverse incentives for local governments and with such a high level of imbalance, the role of central-local fiscal transfers becomes extremely important in determining fiscal efficiency and fiscal equity. A vaguely defined expenditure assignment may increase the chances for governments to shift expenditure responsibilities downwards.

Table 3.5 Per Capita Fiscal Revenue and Expenditure of Various Provinces (Yuan) and their inequality 1994-2005

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Per Capita fiscal revenue												
Pronvincial Average	242	305	379	421	491	548	609	734	805	921	1097	1378
Highest	1256	1552	1977	2282	2607	2859	3084	3776	4363	5179	6350	7972
Lowest	90	90	100	121	146	180	208	232	274	300	366	434
Ratio (higest/lowest)	14	17	20	19	18	16	15	16	16	17	17	18
Coefficient of variation	0.92	0.97	1.0	1.04	1.04	1.07	1.07	1.12	1.17	1.17	1.2	1.18
Per Capita fiscal expenditure												
Pronvincial Average	445	538	632	698	814	947	1080	1383	1620	1792	2082	2538
Highest	1414	1837	2348	2806	3218	3632	3866	4387	5307	6361	7936	9259
Lowest	157	226	278	308	349	411	478	532	655	741	906	1165
Ratio (higest/lowest)	9	8	8	9	9	9	8	8	8	9	9	8
Coefficient of variation	0.68	0.71	0.72	0.77	0.76	0.76	0.73	0.73	0.75	0.77	0.75	0.73

Source: year 2005: author's calculation from China Statisitcal Yearbook 2005-2006; all other years: based on UNDP (2005)

Secondly, although the tax bases were broadened in 1994, local governments still have no authority to set up the tax bases or alter the tax rates (lack of formal tax autonomy). The conventional local taxes such as user charges and property taxes in

developed market economics were not introduced in the 1994 reform. On the contrary, there are numerous local arbitrary and illogical charges in China that tend to create urban price distortions (Bird, 2004). Hong (2003) lists a large number of fees imposed by Shanghai government on real estate development and concludes that the only motivation for these fees was revenue generation. Some of these charges are part of the budgeted revenues, but most of them remain in extra-budgetary or off-budget revenues. In any case, these arbitrary charges are not economically efficient. Bird (2004) further argues that it is important for local governments (in particular the more affluent ones) to be able to raise adequate revenue from their own tax bases, in order to promote fiscal accountability.

The third deficiency lies in the intergovernmental fiscal arrangements. Shah and Shen (2006) point out that the residence based enterprises income taxes (current practice) may deprive poor provinces of significant revenues because company headquarters usually locates in rich provinces. A residence based tax charges the company on the basis of the company's registered place, normally its headquarters. The conventional practice of enterprise income taxes in industrial nation is source based, where the taxes would attribute to various locations in which the firms operate. Many authors such as Wong (2000) and Tsui (2005) argue that the tax rebates (derivation-based tax sharing) contributed to widening horizontal fiscal disparities (Table 3.5 depicts the extent of fiscal inequality at the provincial level). Table 3.6 shows that the magnitude of tax rebates in central-provincial transfers decreased over the years, yet they still

occupied around 40 percent of total transfers in 2004. While in 1995, the Minstry of Finance introduced an equalization grant (called transitory period grant up to 2002, see Table 3.6), its size is still too small to have a sizeable equalizing impact. In 2004 it occupies 7.3 percent of total central-regional transfers, comparing to 0.8 percent in 1995 the year of introduction. Dable-Norris (2005), Shah and Shen (2006) and Shen et al criticize that the design of current equalization grant is problematic as it is too complex and lack of explicit equalization standards. The ad hoc earmarked grants in sum constitute the second largest transfer (after tax rebates). These grants form the most secret part of central-provincial transfers and even experts cannot fully tell their allocation basis. According to Shah and Shen (2006), both equalization transfer and those special purpose transfers have some equalizing effect and the impact from special purpose transfers is higher. But other authors such as Wong (2000) argue that some special purpose transfers require matching funds from local governments, which could exacerbate fiscal inadequacy problems in poor areas. Wong (2000) further argues that the grants for increasing wages of civil servants (to compensate local governments for centrally mandated wage increase) may create perverse incentives for bureaucratic expansion, because the wage levels of civil servants in poor areas are too generous comparing to costs of living in those areas. The grants for rural tax reforms were introduced to compensate more agricultural-based local areas for the abolishment of some agricultural taxes. It is argued that the amount of transfers only covered part of the revenue loss, thus those more agricultural-based areas tend to suffer further (Whiting, 2007).

Table 3.6 Transfers from the Central Government to Subnational Governments by type
Units=100 millions RMB Yuan

Year	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Total	2389	2533	2672	2801	3285	3992	4748	5893	7348	8656	10177
1.Revenue sharing plus tax rebates	1799	1867	1949	2012	2083	2121	2207	2431	3328	4196	4335
	75.3%	72.9%	72.9%	71.8%	63.4%	53.1%	46.5%	41.3%	45.3%	48.5%	42.6%
2.Prior-1994 Grandfathered subsidies	114	115	111	112	113	114	120	contained in tax rebates			
	4.8%	4.6%	4.2%	4.0%	3.5%	2.9%	2.5%				
3.Equalization grants		21	35	50	61	75	85	138	279	380	745
		0.8%	1.3%	1.8%	1.8%	1.9%	1.8%	2.3%	3.8%	4.4%	7.3%
4.Grants for minority regions							26	35	39	55	76
							0.5%	0.6%	0.5%	0.6%	0.7%
5.Grants for increasing wages of civil servants						108	217	631	817	901	993
						2.7%	4.6%	10.7%	11.1%	10.4%	9.8%
6.Grants for rural tax reform								80	245	305	307
								1.4%	3.3%	3.5%	3.0%
7.Other earmarked transfers	476	499	578	627	1029	1574	2093	2355	2434	2577	3223
	19.9%	21.3%	21.6%	22.4%	31.3%	39.4%	44.1%	40.0%	33.1%	29.8%	31.7%

Source: calculated from various sources including: Zhang and Martinez (2003), Su and Zhao (2006), China Statistical Yearbook 2005; Note that items do not add up to 100 percent

3.4 The First Generation Theory of Fiscal Federalism (FGT) Perspective on the Problem of Unmet Fiscal Needs at the Local Levels

Wong's studies (1991, 1992) of China's fiscal contracting system in the late 1980s raise the issue of fiscal inadequacy in poorer areas of China, as all local governments had become self-financing while at the same time they had been given greater expenditure duties and the central government' s capacity to implement fiscal redistribution was significantly weakened. While the 1994 reform helped boost the central government's fiscal capacity, the fiscal support to poorer areas have not been strengthened; at least in a decade's time, the size of equalization transfers had still been very small, comparing to other central-local transfers. Fiscal inadequacy describes a situation where a government unit has insufficient revenue to meet its expenditure needs. Unmet fiscal/expenditure needs may only be measured against certain benchmarks (such as minimum per capita spending on certain services or minimum service standards) or criteria (such as whether there are social exclusions or restrictions on access).

Since the 1990s, studies of the education and health sector at the local levels provide concrete evidence that much of the education and health needs in many poor areas have not been properly met. The early study by West and Wong (1995) compares indicators of education attainment and health outcomes between Shandong (an affluent coastal province) and Guizhou (a poor inland province) in the context of fiscal contracting system. It demonstrates that up to 1993, the levels of education

provision in counties and cities of Guizhou lagged far behind Shandong and fell far short of national goals set by the central government (in 1986, the 9-year Compulsory Education Law was passed and provinces set the target dates for achieving this goal). For instance, in 1990 the rural illiteracy rate for Shandong was 26 percent (equal the national average), while for Guizhou it was 41 percent; the primary and middle school drop-out rates were also much higher in Guizhou than in Shandong; in addition, the dilapidated and dangerous school buildings were concentrated in Guizhou while they had been eliminated in Shandong (ibid). In terms of health outcomes, there are also striking differences between the two provinces. For example, in 1990 the infant mortality rate in Shandong was 14.2 (male) and 18 (female) per 1000 births, lower than the national average: 34.4 (male) and 36.3 (female), while in Guizhou, the infant mortality rate was 60.7 (male) and 65.6 (female) per 1000 births (ibid). West and Wong (1995) argue that the much lower education and health outcomes were to a large extent the result of fiscal inadequacy of Guizhou (where the education and health services were under-provided and the quality of provisions were compromised). Part et al (1996) also provide similar evidence from Shaanxi province (a lower-middle income province) showing that under the fiscal contracting system, poorer local governments' ability to provide basic social services had been compromised.

In more recent years (under the Tax-Sharing system), studies of education service has been extended to cover almost all provinces with the availability of new statistics data. For instance, Wang et al (1998, cited by Rong and Shi, 2001) classify all the

provincial units to four types according to their levels of economic development in 1996 and find that there are substantial gaps between the most developed areas (type 1 region) and the least developed areas (type 4 region) in educational attainments. According to Wang et al, in 1996 the illiteracy rates for type 1 region and type 4 region were 8.2 percent and 20 percent respectively; around 68 percent of the population in type 1 region completes 9-year education or higher, while only around 36.5 percent of the population in type 4 region complete 9-year education or higher (ibid). Rong and Shi (2001) also argue that under-investment in education in poor areas could explain much of the low educational attainments in these areas. It is reported (see O'Brien and Li 1999; Tsui and Wang 2004) that some poor local authorities were forced to make unlawful extractions from local households and enterprises in order to finance the services. According to UNDP (2005), the goal of 9-year compulsory education may have yet to be achieved in many poor areas of China.

Adopting the first generation theory (FGT) of fiscal federalism as the analytical framework, a number of scholars such as Wong (1997, 2000,2005), Bahl (1999), Shen et al (2006) see the coexistence of unmet fiscal needs (in terms of education and health) in poor local areas and persistent high levels of horizontal fiscal inequality as a severe intergovernmental fiscal coordination failure arising from China's piecemeal decentralization reforms. It is recognized that in the late 1980s, central government spun-off expenditure responsibilities to lower levels of government and greatly

reduced its fiscal support for poorer local governments as a result of revenue starving (discussed in the previous sections). Thus the expenditure needs in poor areas were far from being met, because of inadequate fiscal resources. These authors argue that while the 1994 reform recentralized tax responsibilities, there was no commensurate centralization of expenditure responsibilities, therefore (similar to other developing and transition nations) the subnational governments in China have become dependent on central-local fiscal transfers to close the fiscal gaps. Stronger fiscal capacity of the central government may imply its ability to support the poor areas via higher level of transfer payment, yet a properly designed transfer system that could promote fiscal equity (reduce net fiscal benefit differentials) and ensure the provision of a national minimum level of services in poor areas is still not in place. Perverse practices such as the tax rebates and other non-transparent grants may have also compromised the equalization objective. Wong and Bird (2005) further highlight that the aim of fiscal equalization via central-local fiscal transfers may have been compromised by sizable transfers that went to social security subsides. The persistent high levels of horizontal fiscal inequality after 1994 (see Table 3.5 for provincial fiscal inequality; see Tsui 2005 and Yep 2008 for county-level fiscal inequality) were often cited as an evidence of failure in intergovernmental fiscal relations. In sum, authors of the FGT camp expect China's current intergovernmental fiscal system to be further rationalized to be in line with the intergovernmental fiscal relations prescribed by the first generation theory of fiscal federalism, so that the fiscal resources could be effectively channelled to poor areas to cover the fiscal needs.

3.5 The Political Economy Perspectives

In more recent years, Tsui and Wang (2004) and Liu et al (2006) use political economy approach to analyse the problem of unmet fiscal needs at the local levels (some of the authors in the FGT camp such as Wong and Bird 2005 also consider political factors, but political factors are not their core concerns). Central to this line of analysis is the perception of China's central-local relations, where a "top-down" view and a "bottom-up" view could be identified. Tsui and Wang take up a strict "top-down" vision, while Liu et al combine both views in their analyses.

The rift between "top-down" and "bottom-up" visions lies in the extent of local government autonomy in China. At one end of the spectrum, there is a paradigm called market preserving federalism (Montinola et al, 1995; Qian and Weingast 1997) contending that China is a de facto federalist state. This strand of literature sees the high marginal revenue retention rates at the provincial level under the fiscal contracting system and the proliferation of local off-budget resources as the evidence of local government autonomy. They further attribute China's economic growth to local autonomy and inter-jurisdictional factor mobility (acting as the disciplining force to constrain local predatory behaviour). Another "bottom-up" vision is supplied by Li (1997, 2006), in which she considers central-local relations as non-zero sum game. From Li's position, local governments are partners of the central government in policy formation and implementation and local autonomy is most evident in local policy initiatives. However, Hsu (2004) argues that while there maybe some policy

areas whereas central-local relations are non-zero sum game, there are also areas where central-local relations are necessarily zero-sum (conflicting).

At the other end of the spectrum, scholars (such as Huang 1995, 2002; Solinger 1996; Wedeman 1999; Edin 2003; Whiting 2001 and Tsui and Wang 2004) envision a top-down and still somewhat monolithic Chinese state system despite decades' decentralization process. They quarrel that the existence of cadre management system is itself a powerful counter-force to local autonomy. The cadre management system (see Whiting 2001 for insightful discussions on the evolution of this system) was devised in the mid 1980s and matured in the mid 1990s, with a purpose to evaluate, promote and dismiss leading cadres. Each level of government only assesses the performance of cadre one level below (e.g. the centre appoints provincial leaders and let provincial governments supervise municipal cadres) and there are quantitative targets and qualitative targets set by higher levels of the government to assess the performance of their subordinate governments. Thus the cadre management system is essentially a vertical administrative monitoring mechanism. For these authors, this elaborated system serve to bring local preferences in line with central preferences and but such a mechanism may suffer from principal-agency problem (due to deficiency in monitoring). Unlike the conventional principal-agency problems in the SGT fiscal federalism literature where the principal is the voters at large and the agency is the elected government officials, the China-specific literature treat the principal as the central government while the agency as local governments. Wedeman (1999) argues

that the principal-agency problem in China could be magnified many times because there are so many layers of governments, for example, a provincial government is both the agent of the centre and the principal of its municipal governments. The implication from Wedeman's study is that the implementation of central government policies at the lower levels of government might not be effective due to difficulty in monitoring. But his research has little to say about the problem of unmet fiscal needs at the local levels. Tsui and Wang (2004), on the other hand, emphasize multi-task principal-agency problem (a concept developed by Holstrom el al 1991 and Dewatripont, 2000): when there are multiple tasks, the agent would have incentives to exert efforts on tasks that are easily measurable and tasks with high priorities at the expense of tasks that are less measurable. Thus, in contrast to the market-preserving federalism theory, Tsui and Wang interpret China's economic growth story as the result of successful local implementations of the central government's primary preference—economic growth. Interestingly, Chen et al (2005) studies the linkage between political turnover and economic performance in China and finds that the central government tends to promote the provincial leaders with good economic performance and terminates those with bad economic performance. This result to some degree supports the top-down vision.

Both Tsui and Wang (2004) and Liu et al (2006) recognize that there is no popular election in China and nor will there be popular elections in the near future, because top-down administrative monitoring is a necessity for the Communist Party to stay in

power (elections at the village level should be viewed as efficiency-enhancing device rather than formal democracy, see Edin 2003; because while the village governor is elected, the village secretary, the boss of village governor, is directly appointed by township governments). Therefore, local residents have limited influences over local leaderships. According to the strict top-down view adopted by Tsui and Wang, the problem of unmet fiscal needs at the local levels could only be solved by higher amount of central-local fiscal transfers (this view is no different from authors in the FGT camp) and a corresponding change in target priorities of the cadre management system (to change the incentive structure, a standard solution of the principal-agency problem). This is because current cadre management framework puts too much weight on economic construction, which spurs local capital investment and may make local governments downplay the provision of social services, which have long-term developmental impacts (this is similar to the situation in the 1980s indentified by Wong 1991, 1992: during the 1980s, revenue-starved local governments were eager to over-invest in revenue-generating projects and under-provide basic social services). The point is that when more resources are spent on capital investments, fewer resources are available for financing services such as education and health. Tsui and Wang argue that provision of social services such as education and health care should be prioritized via the assignment of a higher weight in the vertical cadre management system.

The anatomy by Liu et al (2006) is very different. First, they make a distinction

between areas with high autonomy—those developed coastal areas with more abundant local fiscal resources (both formal and informal) and higher factor mobility and areas with low autonomy—those inland poorer areas that are more transfer-dependent from the above and with lower factor mobility. Secondly, they borrow the concept of "Leviathan" government from the pubic choice literature and contend that in poorer areas, local governments are far more predatory in extracting resources from the economy (because they face less constraint from the market than the governments in rich areas do). Thirdly, they argue that the cadre management system--the "yardstick" is problematic, as it places too many unrealistic policy burdens (such as birth control and grain procurement) on lower level governments, especially government units in less developed areas. It is noted that Liu et al do not give a very clear definition of the term "unrealistic policy burdens"; therefore one is not clear what other burdens are unrealistic, apart from birth control and grain procurement. Li (2006) also states that the obsolescence and/or ambiguity of central policies often leave too much room for local governments to interpret. The overall effect is that the "predatory" governments in poorer areas then make use of these policies to add more and more personnel and expand the expenditure, consuming large amount of fiscal resources which could otherwise be used for public services provision. Liu et al further argue that governments in more affluent areas have higher autonomy and their behaviours are also more disciplined by the market force, hence these rich local governments tend not to implement the unrealistic or obsolescent central policies and they are much less predatory and less expansive. These authors

also observe that governments in rich areas are more responsive to businesses and more eager to promote local economic development than their counterparts in poorer areas. Therefore, for Liu et al, the key option to solve the problem is not increasing fiscal transfers from the above, but removing those unrealistic top-down policy burdens in the first place to mitigate costly government expansion so as to free up vital fiscal resources for services provision. In comparison with the study by Tsui and Wang (2004), Liu et al use much stronger assumption of government behaviour (predatory) and selectively apply the arguments from market-preserving federalism theory, a perspective strongly rejected by Tsui and Wang (2004). One recent empirical study of China's provincial differences in effective tax rates on foreign direct investments (FDI) by Zheng (2006) demonstrate that less developed provinces tend to have lower effective tax rates on foreign enterprises than those developed provinces or those provinces with stronger fiscal autonomy. This is because the comparative economic advantage of more developed areas enables them to tax more on mobile companies. This result casts doubt on Liu's argument that poorer local governments are necessarily more predatory than governments in developed areas. However, Liu's argument that government staff expansion contributes to fiscal inadequacy and subsequently unmet fiscal needs in poor local areas may still be valid. What Zheng's research has really challenged is the market-preserving federalism theory. In the recent conference on central-local fiscal relations in China, some participants reveal that staff wage expenses occupy near 70 percent of China's budgetary expenditure, which is substantially higher than the levels in other countries (Whiting, 2007). What

maybe questionable is Liu's reasoning of government staff expansion. We argue in the next section that there may be other possible reasons (such as market transition, income growth and urbanization) underlying government staff expansion. We also argue that the study of Tsui and Wang (2004) neglect social security spending (induced by market transition), which may be a factor that bid away fiscal resources for education and health.

3.6 Reflecting on Existing Debates and Proposing a Nuanced Perspective to Extend the Understanding of the Research Problem

The two strands of research contribute enormously to the understanding of fiscal inadequacy and unmet fiscal needs problem at the local levels. It is justified that jurisdictions with low fiscal capacity require additional fiscal transfers in order to provide a minimum level of services that are of national concern. This is the case even if the two "governance" problems identified by political economy perspectives are solved. However, existing studies while extensively analysing the unmet fiscal needs in education and health sectors in poor areas of China, tend to under-estimate or even neglect (the political economy approaches) one of the very important fiscal needs induced by market transition—the expenditure need of the widespread introduction of social security since the mid-late 1990s. The insights from the regulation theory demonstrate the importance of social security in a market economy (briefly reviewed in section 3.7). In the 2006 conference on central-local fiscal relations in China (see Whiting, 2007), social security issues have totally been bypassed. Social security

typically has two main components: social insurance and tax-financed social benefits. Social insurance is financed by contributions from employer and employee and benefits are paid when risks (unemployment, old age, health risks etc) occur. Tax financed social benefits are normally for social assistant purpose, which aims to cover the basic needs of the poorest section of the population (van Ginneken, 2003). In many American literatures, social security is often referred to as state organized old age pension. In the Chinese context, social security refers to state-mandated social insurances, means-tested social benefits and subsidized employment services such as re-employment training services. Although social security is a conventional central government responsibility (from fiscal federalism perspective and in practice), in China it has largely been devolved to the subnational governments during the fiscal reforms. Since the mid-late 1990s, there have been two additional noteworthy changes. First, the social security responsibility previously assumed by the state-owned enterprises (SOEs) has been transferred to the local governments, as part of the SOE restructuring process (employees now also need to assume part of the responsibility via mandatory social insurance contributions). Secondly, social security schemes have since then been gradually extended to the non-state sectors, where we witness a continuous expansion of wage-labour. While a few authors such as Wong and Bird (2005), Wong (2005) raise the concern that decentralized provision of social security would be a serious problem for local public finance and they find that sizeable amount of the central-local transfers were used to subsidize local social security sector, to our knowledge, there is no systematic enquiry on the magnitude of fiscal needs in social

security sector at the local levels. Studies of social security reforms such as Guan (2000), Saunders and Shang (2001), Duckett (2003, 2004), Duckett and Hussain (2008) clearly illustrate the evolution of the social security system in China. Yet they provide little quantitative evidence (no quantitative evidence at the local levels) for one to properly assess the fiscal impacts. In other words, these studies have not analysed the social security issues from the public finance perspective. When the social security needs at the local levels are overlooked or under-estimated, one is inclined to conclude that unmet fiscal needs only occur in poor local areas (a frequently observed problem arising from fiscal decentralization). Given the decentralization of social security function (which is excess comparing to conventional decentralization approach), the widespread introduction of social security since the mid-late 1990s and local diversity in the pace and scale of market transformation, it is possible that relatively affluent regions have also suffered from fiscal inadequacy and struggled (or not been able) to meet the emerging social security responsibilities.

This dissertation seeks to investigate the impact of market transition on local social security spending and verify whether there have been unmet fiscal needs in social security sector in relative affluent local areas during the post Tax-Sharing reform era (1994-2008). By explicitly considering the social security sector our nuanced perception of the problem of unmet fiscal needs at the local levels is depicted in Figure 3.8, which could be compared with the prevailing view depicted in Figure 3.7.

Specifically, we argue that excess fiscal decentralization in China may have led to fiscal inadequacy (so that unmet fiscal needs occur) even in relatively affluent regions.

Figure 3.7 The Prevailing View of Unmet Fiscal Needs at the Local Levels

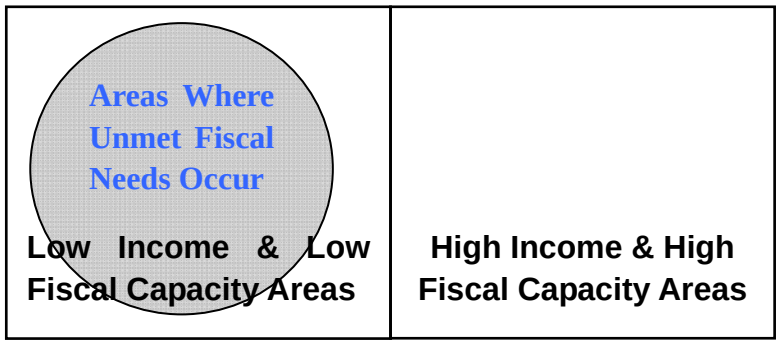
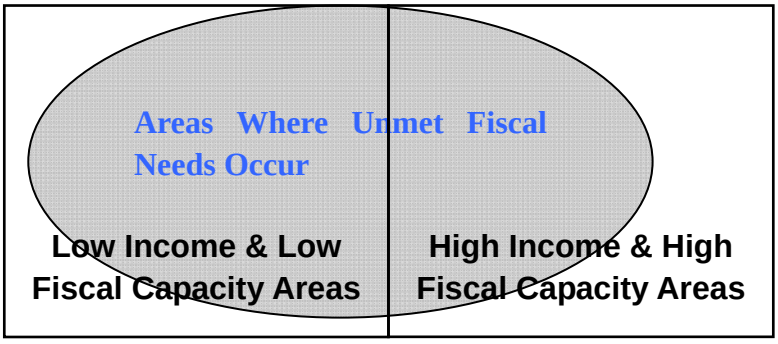


Figure 3.8 Our Nuanced View of Unmet Fiscal Needs at the Local Levels



This research also recognises that, while the two political economy approaches are relevant to the problem of unmet fiscal needs at the local levels, especially in poorer areas, they have neglected other important variables such as market transition, income growth and urbanization. Liu el al (2006) argue that local government over-staffing problem would be much more serious in poor areas than in rich areas, as factor mobility in developed areas constraints the expansionary tendency of local bureaucracy. This is an inconclusive issue as they did not provide evidence confirming that the relative number of government staff in affluent areas is smaller.

More importantly, even if government staff expansion is the case, the underlying reasons for this phenomenon may go beyond the unrealistic central policy mandates such as birth control and grain procurement. An alternative explanation might be that market transition, urbanization and income growth have created demand for various forms of public services and investments that require additional administrative capacity (more staff). Tusi and Wang (2004) point out that spending on capital investment may siphon away the resources required for financing the standard public services such as education and health. An alternative explanation may be that the pressure to cover social security issue bid away resources that would be otherwise available for education and health. The secondary intention of this research, therefore, is to statistically test these two alternative hypotheses derived from the political economy perspectives (the statistical data for government staff number are normally available in the statistics yearbooks of each province but many provinces do not publish this information, therefore it is not feasible to directly test the hypothesis related to government staff expansion; a compromised method is then used, where the relative size of staffing level is approximated by the relative size of government--budgetary expenditure-to-GDP ratio).

Finally, this research intends to test to what extent the variation of central-provincial transfers could be explained by the variation of relative sizes of the local SOE sector. This test is used to ascertain an untested proposition from Wong and Bird (2005), where they argue that the aim of fiscal equalization via central-local fiscal transfers

may have been compromised by sizable transfers that went to social security subsides in the SOE sector. Before offering the detailed hypotheses, we would like to draw insights from regulation theory to further discuss the reasons behind the social security expansion (to non-state sectors) and give a brief account of China's recent social security reforms.

3.7 The Insights from Regulation Theory on the Development of Social Security

The modern public finance theory and theories of fiscal federalism analyse facets of allocation, stabilization and redistribution functions of the public sector in the context of welfare state. Capitalist-democratic welfare state is the contextual background for the analysis. As we briefly reviewed in Chapter 2, the economic rationale for public provision of various forms of social insurances is partly grounded in market failure and merit goods consideration, for instance, the failure of annuity market, the information asymmetry and adverse selection problems and the uncertainties faced by individuals over their future. These normative justifications do not tell us on what conditions did these redistributive services emerge and how they evolved into current sophisticated forms. Authors from the regulation school do not take the capitalist welfare state as granted, but see the development of welfare state as a social and historical process.

The origin of social security was the social aids organized by Church at the local levels a few hundred years ago. Later, social insurances such as work injury insurance

and unemployment insurance were offered to cover those who work in arduous sectors such as mining and railways (Andre, 2002). To certain extent, it was union pressure and increase in strikes that forced the governments in western industrial countries to set up social security for workers during late nineteenth century and early twentieth century. The social security system was finally extended to the general population during the post-war periods in western industrialized countries. Between the 1940s and the early 1970s, one has witnessed strong economic growth combined with growth in public expenditure on social security in these countries. To date, for most OECD countries, the largest public spending is on redistribution—the social security sector. For instance, in 2005, most of the OECD countries spent between 25 to 35 percent of their total general government expenditure on social security benefits (OECD statistics database, http://stats.oecd.org/index.aspx, accessed 8th June 2008) The figures do not include health insurance payments, which are included in health spending. The combination of spending on health and expenditure on social security benefits is the aggregated social expenditure. In 2005, most of OECD countries spent between 40 to 60 percent of their total government expenditure on aggregated social expenditure (ibid).

According to scholars in the regulation school, the development of capitalist economy fundamentally transforms the society into employers-those who have the means of production and whose aims are to accumulate money, and the employees-who do not have the means of production and whose survival depends on selling his/her labour

power as commodities. Aglietta's (1997) analysis of American capitalism over the long term (1870-1970) demonstrates that while the capitalist continuously transforms the labour force for productivity gains, it has to deal with the demands from organized wage-earners for improved living conditions. The increases in real wages and transformations in the life of workers are evidence of the "institutional compromises" in capitalism development. Similarly, the modern welfare state that covers social security and universal education was gradually institutionalized by the same social movement, at the time when wage-earners become the dominant social form (Andre, Chapter 12, 2002). These occur all the more logically when democratic regimes prevail with a political arena capable of imposing new obligations on private accumulation (Boyer, 2002).

Aglietta's work (1997, p231-238) clearly illustrates that social security is indispensible for the well-functioning of a market economy. This is because socialisation of risks (such as unemployment and sick) helps to stabilize private consumption of commodities when social security benefits "accrue to the wage-earners in forms independent of current maintenance cycle of labour-power" (ibid). Social security facilitates capital accumulation as the responsibility/cost of wage-earners' welfare is shifted to the society/state from individual firms (rather than providing guaranteed welfare benefits for the wage-earners, which could go beyond the capacity of the firms especially when the economy is stagnant or the firms become less competitive, the firms only make social insurance contributions for their

wage-labour). What could be carefully inferred is that when a market economy is established and the wage-based society is expanding, there is inevitable demand by wage-earners for welfare protection, and to a large extent the provision of such protection would be ultimately borne by the state. A democratic environment helps to facilitate such process.

3.8 China's Social Security System at a Glance

China's social security system is not built from scratch. The system was established in 1949 when the People's Republic of China was founded. Comparing to the conventional model, the Chinese social security system in pre-reform era (1949-1979) was comprehensive in terms of programs offered and but was very restricted in the sense that it was only designed for employees in the state (public) sector, which comprises state-owned enterprises (SOEs), public service units, government administrative departments and official social organizations. The major components of the pre-reform social security system are summarized in **Table 3.9**. There were several distinctive features. First, the benefits were provided by individual's respective work unit and there was no social pooling. Since all work units are budgeting units of the central government, the benefits were essentially paid from the central budgeted expenditure. Secondly, the objective was to guarantee everyone with urban hukou a job, so there was no unemployment insurance scheme; the state provided cash benefits to the urban "Three Nos" (no working ability, no family and no

income). Thirdly, the system was strongly urban-biased. Rural residents, the majority of the population (around 90 percent in 1950 and 82 percent in 1978, calculated from China Statistics Yearbook 2000), were expected to rely on their family, kin and local community to cope with the risks (White, 1998). Several authors such as Duckett (2003) and Saunders and Shang (2001) point out that at such low level of economic development, the welfare provisions in urban areas were very generous. The high level of provision would become unaffordable if same benefits were extended to rural workers (Saunders and Shang, 2001). To prevent a flood of rural workers into urban labour market, the government used the household registration system (hukou) to restrict rural-urban migration. That is even if a peasant migrated to urban area, without an urban hukou, he/she would still be excluded from the urban social welfare system.

Table 3.9 China's Social Security System before the market reform

Components	Urban Sector	Rural Sector
Social Insurance	1. Pension, medical and work injury insurance were provided by state sector employees' respective work units	1.Under rural collective economy, medical care was provided by local community (cooperative health system)
	2. No contribution from employees	2. No pension insurance
	3. Social pooling was limited and acted as the last resort	3. Pulbic ownership of land and equal distribution of the right to farm work
Social Benefits	1. Full employment policy, therefore there was no unemployment insurance	1.Full employment policy, no unemployment insurance
	2. Cash benefits for those who with no ability to work, no family and no income ("Three Nos")	2. Cash benefits for those who with no family support (also based on local collective economy, not the governemnt)
Other Benefits	1. The work units provided free housing for the staff	
	2. The prices of food and other subsistence materials were kept at low level as a result of government subsidies	

Source: summarized from Guan (2000) p116 and Saunders and Shang (2001)

The system started to become problematic when market reform initiated in 1978. The fast expansion of collective-sector (up to late 1990s) and private sector (which paralleled the expansion of industrial and service sectors) created a competitive force, driving inefficient SOEs (which provided generous pension and health benefits to their employees) to the brink of bankruptcy. Full-employment policy (in the urban area) was no longer the agenda and in 1986 an unemployment insurance scheme for urban SOE workers was first introduced. But the major development of unemployment insurance came only after 1997, when SOEs started to be restructured across the country (Duckett and Hussain, 2008). Under the new unemployment insurance, employers and employees in the SOEs are then required to make contribution to the plan and the scheme has since then being extended to other urban residents. State-mandated contribution-based pension, health, work injury and maternity insurances have also started to be introduced to SOEs during the mid-1990s and then to urban non-state sectors (employees in township-village enterprises and peasant labour working in urban enterprises are eligible to participate in pension insurance) in the late 1990s. These social insurances are pooled either at prefecture-level or the provincial level (pooling within the same SOE industry was an early practice, but has largely been abolished since the mid-1990s). During the course of SOE restructuring, social security responsibility previously assumed by the SOEs has been transferred to the local governments, which act as the last resort by providing subsidies to the social insurance schemes if there are deficits (Duckett, 2003). The governments also offer subsidized re-employment or training services for the laid-off

workers and then the job-seekers at large, but employees now also need to assume part of the responsibility via mandatory contributions to social insurances. In 1998, Ministry of Labour and Social Security was created to regulate the social security system (Saunders and Shang, 2001). In 2008, Ministry of Personnel was merged with Ministry of Labour and Social Security and the new ministry became Ministry of Human Resource and Social Security. In the rural sector, the collapse of rural collective economy (when the household responsibility system was introduced in the 1980s) denotes that the welfare supports from rural communities has significantly been weakened. It was not until 2003 did the government begin to introduce a new rural cooperative medical insurance to its rural residences and start to subsidize rural pension insurance. No unemployment, work injury or maternity insurances exist in rural areas. In terms of social assistance, the government has started to operate a mean-tested social relief system targeting poor households (both urban and rural) living below officially designated poverty lines since the mid-late 1990s. In sum, there is still considerable divide between social security in urban areas and rural areas. The only two obvious changes are that non-farm workers (without urban hukou) are now allowed to participate in urban enterprise pension insurances and the governments have started to assume a limited part of the rural social security programs.

Some authors such as Duckett (2003) argue the fact that social security was not widely introduced at the very beginning of China's market transition (but introduced

in the mid-late 1990s) may be explained by several factors. First, there has no formal democratic mechanism for consultation. Secondly, the SOE restructuring did not start at the beginning of market transition but was initiated in the mid-late 1990s. Thirdly, while there is an All-China Federation of Trade Unions, it could not effectively channel the demand for social security by wage-earners, as it is an official organization. In recent years the Chinese governments, especially the central government have paid significant attention to labour-capital relations and social security: the expansion of social security system was the third of the nine key objectives in the national campaign for building-up a Harmonious Society in 2006 (Renmin Ribao, web edition, published on 15th October 2006, accessed 19th October 2006 http://politics.people.com.cn/GB/8198/70195/index.html); in June 2007, the new Labour Contract Law was approved by the NPC (effective from Jan 2008), under which the employers become obliged to pay social security contributions to their formal workers (the official website of People's Republic of China, published on 29th June 2007, http://www.gov.cn/flfg/2007-06/29/content_669394.htm, accessed 2nd July 2007).

3.9 The Testable Hypotheses

We develop four testable hypotheses:

H1: In the post TSS period (1994-2008), even certain relatively affluent locality has not been able to fully meet the emerging social security needs, resulting in under-provision of social security (Relatively affluent locality refers to jurisdiction that has both per capital GDP and per capita fiscal revenue above the median of the population).

Notes to H1: This is the core hypothesis of this thesis. In the literature (such as Bird and Tarasov, 2004) , rich and poor areas are often measured by per capita GDP (a simplified measure). Using actual per capita fiscal revenue as the measurement may not be appropriate since the actual revenue could reflect fiscal capacity as well as tax effort of a given jurisdiction. In the Chinese case, the tax bases and tax rates are uniform and set at the central level; therefore, it is possible for localities with similar levels of per capita GDP to have quite different levels of per capita fiscal revenue and such differences may derive from the differences in economic structure and tax efforts. Hence, we define the relative affluent areas with both GDP and fiscal revenue measures.

H2: In the post TSS period (1994-2008), there have been negative correlations between the share of consolidated provincial budgetary spending on social security and health sector, and between the share of consolidated provincial budgetary spending on social security and education sector.

Notes to H2: This is the alternative hypothesis (the pressure to cover social security issue bid away resources that would be otherwise available for education and health) to Tsui and Wang's (2004) proposition.

H3: In the post TSS period (1994-2008), holding other factors constant, larger sizes of provincial governments (expressed as higher levels of consolidated budgetary expenditure-to-GDP ratios across provinces) could be in part explained by higher degrees of market transition and higher levels of urbanization and income.

Notes to H3: Whereas the absolute value of per capita fiscal expenditure in a given locality may be largely explained by the level of its per capita fiscal revenue, budgetary expenditure as share of local GDP reflects the relative size of the government. This hypothesis indirectly tests the alternative explanation of government staff expansion. An explicit assumption made is that higher relative size of government (government expansion) is associated with higher staffing level (government staff expansion). We are aware that this correlation is not perfect and may not even be very strong, as the cost of employing personnel only constitutes part of the government expenses. Thus this test could only serve as a preliminary step to explore the underlying dynamics of government expansion. Formal testing government staff expansion hypothesis would have to be left to future research, when all the relevant data become available. The only available proxy for market transition is the gross industrial output value of non-state-owned and non-state-controlled enterprise as share of total provincial gross industrial output value. Higher ratio may

stand for higher degree of market transition (this might not be necessarily the case, for instance, assuming that two areas have the same ratio, one area could still have higher degree of market transition than the other area if it has achieved more effective enterprise management in the SOE and state-controlled enterprise sectors).

H4: In the post TSS period (1994-2008), holding other factors constant, higher amount of per capita central-provincial fiscal transfers could be in part explained by lower level of market transition.

Notes to H4: Once again, the proxy for market transition is the gross industrial output value of non-state-owned and non-state-controlled enterprise as share of total gross industrial output value. Lower level of market transition is associated with higher share of gross industrial output value generated by SOE and state-controlled enterprises. This hypothesis help tests the claim made by Wong and Bird (2005), where they argue that sizable central-provincial transfers went to the social security (in particular in the SOE sector). We are conscious that in this hypothesis, the market transition variable could not be used to distinguish the transfer that was used to cover the SOE social security issue from the transfer that was used to finance specific SOE projects. What is actually tested is that if the transfers were not biased toward the SOE sector, one could expect this hypothesis to be falsified.

Chapter 4 Research Methodology

This research is conducted by using a combination of quantitative and qualitative methods. Specifically, we use correlation analysis and multiple regression analysis to test Hypothesis 2, 3 and 4 (at the provincial level) and employ a case study of Fujian province to address Hypothesis 1(the cross-sectional provincial analysis also tests Hypothesis 1). The selection of these research methods is not arbitrary, but based on careful consideration of the natures of our hypotheses as well as the pros and cons of other possible research methods. In the following sections, we briefly review the debates between qualitative method and quantitative method, clarify the reasons why the alternative research techniques are not chosen, lay out our approach and discuss the validity, reliability and research ethics issues in our research.

4.1 Quantitative Versus Qualitative Research

The qualitative-quantitative debate has been one of the hottest methodological issues in social science research for quite a long period of time. The debate as to whether quantitative method or qualitative method is more appropriate has taken place at both the philosophical and operational levels. At the philosophical level, this divide is rooted in epistemological and ontological assumptions, in terms of whether there is an objective reality in nature or multiple realities. The positivist paradigm sees the world as largely deterministic and the objectivity is a characteristic that resides in the individual scientist and it believes science as the way to uncover the truth (Trochim,

2006); therefore, under this paradigm, deductive reasoning and quantitative measure is commonly used to postulate, test and revise theories to better predict the reality. Positivist paradigm predominates in science and believes in empiricism. In contrast, the interpretivist paradigm or the naturalist paradigm view reality as subjective and socially constructed (Glesne and Peshkin, 1992) and the knowledge is context and time dependent (Cousins, 2002). These paradigms suggest that, as reality is not purely objective (value-free), there are multiple value-bound realities. Under these philosophical and ontological assumptions, the qualitative researcher believes that the best way to understand any phenomena is to immerse or participate in it. According to Trochim (2006), many qualitative researchers see "quantification as limited in nature, looking only at one small portion of the reality that cannot be split or unitized without losing the importance of the whole phenomenon". Inductive reasoning is more common in qualitative research. It is clear that it is the fundamental philosophical dichotomy between positivism and interpretivism that make some scholars view quantitative and qualitative methods as irreconcilable.

Such divide is significantly diminished in the post-positivist paradigms (one of which is critical realism). The post-positivist paradigms reject the positivist idea that any individual can see the world perfectly as it really is and believe the best way to approach objectivity is to use multiple fallible sources to get a better idea of what is happening in reality (Trochim, 2006). In other words, the post-positivism sees any single scientific measure is imperfect or biased, thus the true objectivity could never

be uncovered—it could only be approached/perceived using multiple measures and observations (which is called triangulation). The imperfection or bias of any measure or observation is essentially the result that there are gaps between reality and people's perceptions of reality. In comparison, positivism concerns a single objective reality; interpretivism concerns multiple realities; while post-positivism concerns multiple perceptions about a single, mind-independent reality (Healy and Perry, 2000). Under the post-positivist paradigms, the quantitative and qualitative approaches are not necessarily rival (ibid).

Despite the dualist debate between the underlying philosophical assumptions of qualitative and quantitative researches, scholars recognize that actual research may not exactly fit those ideal paradigms. Thus quantitative and qualitative approaches may be integrated to generate a better understanding of the multifaceted questions, as suggested by a number of scholars such as Patton (1990), Strauss and Corbin (1990) and Trochim (2006). Quantitative approach yields precise and powerful results that could be generalized. But statistical research may be unable to take full account of the many interaction effects that take place in social settings, because it ignores effects that may be important, but that are not statistically significant (Cronbach 1975, p. 124). Qualitative approach, on the hand, could be used to pursue a deeper understanding of specific phenomenon or "actor" in the complex and dynamic social world. The disadvantage with the qualitative method is that it has limited ability to mine out observed factors and limited ability to generalize the findings. Therefore in

most qualitative studies, the researchers consider transferability—extrapolating one situation to other similar situations. Because of their differing features, quantitative approach may be better at answering confirmatory questions and explaining the relationships between measured variables and qualitative approach may be excelled in tackling exploratory questions. In this regard, qualitative approach could be supplementary to quantitative analysis (or vice versa). When moving away from the philosophical to operational consideration, the selection of research methods may largely depend on the nature of questions one seeks to answer. Of course, we are aware that, as reminded by Hathaway (1995), the decisions about the adoption of research methods could also be based on other factors such as the proposed audience of findings, time and availability of resources

4.2 The "Mixed Methods" Approach

Our decision to adopt the "mixed methods" approach (combination of quantitative and qualitative methods) is based on the nature of the hypotheses. We form the hypotheses via the critical review of the relevant literature and logical reasoning. In other words, the specific hypotheses are deduced rather than induced. Hypothesis 2, 3, and 4 are questions that concern variations/differences, which are better answered via the statistical analysis of numerical data. Hypothesis 1 is a question that requires some exploratory observations and interpretation in the public policy sphere (for instance, we would like to find out the policy decisions on social security provision and to

explore the reasons of under-provision of social security).

Our hypotheses focus on the subnational levels of government in China. Before the hypotheses are formally tested, we provide a descriptive analysis of the aggregated national statistical data. The analysis at this level would not directly confirm or reject the hypotheses and it only serves to capture the country's overall economic and fiscal trend in the context of market transformation. The study at this layer serves as an essential prelude for further analysis at the provincial level and the Fujian case study.

Hypothesis 2, 3 and 4 are tested using consolidated provincial statistical data. A census is used, where we take all 31 provincial units into the analysis. In such case, no sampling strategy is needed. The primary reason we test these three hypotheses at the provincial level rather than at prefecture-level is that the statistical data at this level are more accessible. All the statistical data used are secondary data from China Statistics Yearbooks, Industrial Statistics Yearbooks of China, China Labour Statistics Yearbooks or statistics yearbooks of various provinces. The statistics yearbooks of the provinces are easier to collect than the statistics yearbooks of prefecture-level cities as there are only 31 provincial units and some provinces also publish the data over the internet; even using sampling methods, collecting a representative sample for the 333 prefecture-level municipalities is extremely difficult. These three hypotheses cannot be tested at the county-level because many of the required indicators are not provided

in county-level statistics (there are 2862 county-level government units, which could make the collection of data even more difficult). Descriptive statistics, correlation analysis and cross-sectional multiple regression techniques are used in addressing these three hypotheses. We refrain from using panel regression (cross-sectional and time-series) because many of the statistical indicators have been modified and become incomparable with previous year's data (for instance, the definition of urban non-agricultural population was changed in 2002/2003) and for some key indicators, we have only been able to collect the data of more recent years (the issue of validity and data reliability is discussed later). Model specifications are provided in the subsequent chapters along with the research findings. We use a Fujian province case study to verify Hypothesis 1(The cross-sectional provincial analysis also address Hypothesis 1, but the case study tackle the hypothesis in more depth).

There are four major types of qualitative research designs, namely, case study, ethnography, phenomenology and grounded theory. Ethnography is normally used in studying culture and behaviour, phenomenology is the typical method in philosophy, grounded theory is the inductive method (originated from sociology) that builds theories from the analysis of data and case study is used to shed light on a phenomenon and has wider application among researchers than grounded theory (for more detail description of these qualitative methods, see Leedy, 1997). This research does not concern culture and behaviour or philosophy and the hypotheses are deduced from the literature, therefore case study is more appropriate for testing Hypothesis 1.

As pointed out by many scholars such as Feagin, Orum and Sjoberg (1991), case study is an ideal method when a holistic, in-depth investigation is needed. Detailed contextual analysis is one of the advantages of case study. According to Yin (1993), case study could be used to describe, explore, explain or evaluate phenomenon or programs. There could be single-case or multiple-case applications. Like some of the other qualitative methods, case study has been criticized as the research results from case study may not be generalized to other situations and may be biased. Nevertheless, if carefully designed, bias could be minimized or even eliminated. In addition, case study researchers normally focus on transferability rather than generalization. The Fujian province case study is a single case study and the selection of Fujian province is based on two criteria. We seek to verify fiscal inadequacy and unmet social security needs in one of the more affluent areas (preferably in the coastal region). Moreover, we must have the access to relevant information—published statistics and some unpublished government reports. Fujian, a coastal province in southeast China is the only province out of the nine that meets these criterions. Fujian has managed to develop its economy at a faster-than-average rate over the reform era. Its GDP per capita and per capita fiscal revenue have consistently ranked around 7^{th} to 10^{th} out of 31 provinces since 1994 (author's calculation from China Statistics Yearbooks). Three of the nine prefecture-level municipalities in Fujian are very affluent cities. In the Fujian case study, we not only use the whole province as a subject for analysis, but also investigate the situation in its second richest prefecture-level municipality Quanzhou to enrich the understanding of the research problem. The case study is both

explanatory and exploratory. We interview several government officials in Fujian's Finance Department and Bureau of Statistics as well as Quanzhou's Finance Bureau, Statistics Bureau and State-owned Assets Supervision and Administration Commission. The main purpose of the interviews is to gain access to relevant official reports and memos. We also conduct a careful research of relevant published secondary data to corroborate the quantitative analysis.

The data-gathering fieldwork has taken places in several stages. In December 2006, a pilot/preliminary fieldwork was conducted to enhance the understanding of the research questions. Between December 2007 and August 2008, we collected all the quantitative data and interviewed 9 government officials in Fujian province (15 face-to-face interviews). The final fieldwork took place between April and May 2009, where a few more reports were collected. **Appendix 1** provides the list of interviews.

4.3 Validity, Reliability and Research Ethics

Validity and reliability are the key considerations of any research project. Validity is normally defined as the best available approximation to the truth of a given proposition, inference, or conclusion (Trochim, 2006). Reliability is often referred to as the consistency of measure and test in quantitative studies or the consistency of the researcher's interpretation of participant meanings in qualitative studies (McMillan and Schumacher, 1993). There are three broad types of validity: construct validity,

internal validity and external validity. Construct validity concerns the degree to which the operationalisation reflects the concept or the construct. In other words, it is an assessment of how well a researcher translates the theories into actual measures (Trochim, 2006). Internal validity is an estimate of causal inferences. External validity refers to the extent to which the result of the study could be generalized to other cases.

There are some potential threats to validity and reliability. In our research, how do we minimize the threats in order to enhance validity and reliability? In terms of Hypothesis 2, 3 and 4 (tested using quantitative approaches), the potential threats to construct validity may come from the fact that we have to use some proxies to represent the concept. In some cases, the indicators/proxies themselves equal the concept (e.g. budgetary revenue). In other cases, the indicators we used may only approximate the concept. For instance, we use the industrial output of non-SOE and non-state-controlled enterprises as share of total industrial output to proxy market transition. We therefore ignore the tertiary sector and implicitly assume that the effect of the industrial sector is representative. Such compromise is the typical result of using secondary data in quantitative studies. We are unable to completely eliminate such kinds of threat and we seek to reduce the negative impacts by searching for alternative indicators or alternative evidence as much as possible (triangulation) and by comparing the indicators used in other similar quantitative studies. The internal validity check is performed via the statistical analysis of the numerical data, where different means and methods are employed to make sure that the result is robust. In

terms of external validity, the result of Hypothesis 2, 3 and 4 may not be a concern because we study the whole population (the 31 provinces) and the results need not to be further generalized.

In terms of the quantitative analysis, reliability refers to consistency of measure in the indicators employed. Since all the economic and statistical data in our analysis are secondary data and are collected and assembled by the Statistics Bureaus and the Finance Departments at various levels of government, the question of reliability in measure/observation becomes a question of whether China's statistical data are reliable. In retrospect, there have been many criticisms on China's official statistical data, in particular on the reported GDP figures. For a comprehensive review, see Rawski (2001). It has been reported that, the governments, especially local governments tended to overestimate the GDP figures in order to impress higher levels of government and the investors. The former premier Zhu Rongji in 2000 openly admitted that the exaggeration of Chinese economic data was rampant (Baumohl, 2004). Under-supply of qualified staff in the statistic departments may further obscure the problem (ibid). Nevertheless, the National Bureau of Statistics has devoted strong efforts to upgrade data quality by training staff in local statistics departments and sending its own staff to help data-collection in local areas since 2003. It has become much more difficult for local governments to "cook the books". Several rounds of national economic surveys have also been served to correct bias and errors in previous statistic reports. There is another problem in Chinese statistics, that is, many of the

indicators, such as unemployment rates, are not in line with international conventional standards; because those indicators are the legacy of the economic system in the pre-reform era. Therefore, we are very cautious in using and interpreting the statistical data in China. First, we use more up-to-date statistics, given the fact that data are often revised. For instance, we look at the 2004 data from both 2005 and 2006 yearbooks, in cases that the 2004 data have been revised. Secondly, we use multiple sources of evidence to corroborate the figures. For example, we collect social security statistics from Department of Statistics as well as from Department of Finance to check whether there are discrepancies. Thirdly, we examine the time-series data to dictate whether there are definition changes for the indicators. Finally, when there are contradictions between the Chinese definitions and international conventions of certain data, we make specifications.

In the qualitative part of the research (the Fujian case study to address Hypothesis 1), we also make efforts to reduce the threats to validity and reliability. Construct validity and reliability are difficult to maintain in case studies, because to some degree there is subjectivity in measures and observations by the researchers. We are aware that construct validity and reliability are different, although both are related to measures/observations. Construct validity refers to how well we measure what the theories want us to measure, while reliability refers to how consistent we interpret/measure participant meaning. Yin (1993) proposes the use of multiple evidence to reduce the threats to construct validity and reliability in case studies. In

our studies, subjectivity in measures and interpretation of participant meaning is minimized as we collect supporting government reports to corroborate the interview notes. In terms of internal validity in qualitative studies, the typical threat is the social interaction threats, where participants respond to the investigators purposefully (or even lying to the researches) because of the influences from the researches, which results in the causal-conclusion generated from the studies invalid. To reduce such kind of threat, we limit the questions that ask for personal opinions from the government officials and request for relevant government reports or other sources of information. The drawback of such "rigid" design, however, is that we reduce the chances to capture anecdotal evidence that might be interesting. Unlike quantitative research that uses probability sampling (i.e. random selection of samples to represent the population) to facilitate the generation of the result from the statistical analysis, qualitative researches do not normally aim to generalize the result. Therefore, the criteria for external validity in case study is more with translatability—to what degree the understanding in one case could be extended to other cases? In our studies, we aim to improve the translatability by providing the clear socioeconomic background of Fujian province as well as a detailed description of the case itself. Thus the typicality of the Fujian case could be grasped by other researches. Our transparent and pre-specified research methodology may also facilitate comparisons by other researches.

This research does not investigate controversial or politically sensitive topics, but we

still comply with the ethical principles. Permissions are obtained before entering the field, before conducting any interview and before borrowing any government report and document. Oral or written consent is obtained before photocopying the documents. Anonymity is ensured when conducting interviews, as requested by the interviewees. With regard to a small number of unpublished government internal reports yet are important to our studies, we read them on-site, take notes (if permitted) and use the evidence to corroborate the interview notes.

Chapter 5 The Impact of Market Transition on Public Finance—an Analysis at the National Level

This chapter examines the changes in the fiscal spheres, especially the structural changes in China's consolidated budgetary spending at the national level in the 1990s (in particular in the post 1994 era). The purpose is to assess one of the very important fiscal needs arising from market transition: the expenditure need of the widespread introduction of social security since the mid-late 1990s. The discussion in this chapter does not directly address the hypotheses, yet it serves as a necessary prelude and helps to improve the understanding of the analysis at the sub-national levels.

5.1 The Expansion of Wage-Labour and the SOE Restructuring

Since the late 1970s, there has been continuous expansion of wage-labour outside the state sector in China. Table 5.1 reports the number of non-farm employed persons by urban and rural areas between 1990 and 2006 (constrained by space, the figures prior to 1990 are not reported). The total number of non-farm employed persons increased from around 279.1 millions in 1990 to around 477.69 millions in 2006. This means that assuming no elimination of jobs, on average, around 12.41 million new non-farm jobs were created each year during the 16-year period. The rural non-agricultural sectors (township and village enterprises, private enterprises and self-employed individuals) expanded faster than the urban sectors: a 79 percent increase in job positions was realized between 1990 and 2006, which was higher than the 66.1

percent growth in the urban sectors. The discrepancy may be a result of the relative success of rural industrialization, which generated much more jobs; and the restructuring of state-owned enterprises (SOE) in the urban sectors, which slowed down the new job creation. A survey of the urban sectors in Table 5.1 reveals that three out of the ten sub-sectors experienced decline in job positions, which to some extent counteracted the job creations in the other seven sub-sectors, especially the non-state sectors. We could see that in 1990, the state-owned units (covering both SOEs and the government agencies, institutions and organizations) and the urban collective-owned units (covering collective enterprises and a few public services units) together accounted for around 81.5 percent of the total urban job posts. In 2006 this number dropped to merely 25.4 percent, though the SOE sector is still the single largest urban sector in terms of the number of employees. Some of the job loss was nominal: for instance, when a collective enterprise is privatized, its employees would no longer be recorded as collective enterprise employees but entered as private enterprise employees. But a large part of the job losses in the SOE sector were real, because prior to the market reform, most of the state-owned firms did not recruit employees according to viable economic rules, which often led to redundancy and inefficiency. SOE restructuring was therefore accompanied by laying-off the redundant workers.

Table 5.1 the Number of Non-Farm Employed Persons by Urban and Rural Areas in China (10000 persons)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Total Number of Employed Person	27910	28806	30348	32804	33537	35427	37289	37953	38745	39912	40043	40842	41952	43226	44431	46091	47769
Urban Employed Persons	17041	17465	17861	18262	18653	19040	19922	20781	21616	22412	23151	23940	24780	25639	26476	27331	28310
State-owned Units	10346	10664	10889	10920	11214	11261	11244	11044	9058	8572	8102	7640	7163	6876	6710	6488	6430
Urban Collective-owned Units	3549	3628	3621	3393	3285	3147	3016	2883	1963	1712	1499	1291	1122	1000	897	810	764
Cooperative Units									136	144	155	153	161	173	192	188	178
Joint Ownership Units	96	49	56	66	52	53	49	43	48	46	42	45	45	44	44	45	45
Limited Liability Corporations									484	603	687	841	1083	1261	1436	1750	1920
Share-holding Corporations Ltd.				164	292	317	363	468	410	420	457	483	538	592	625	699	741
Private Enterprises	57	68	98	186	332	485	620	750	973	1053	1268	1527	1999	2545	2994	3458	3954
Units Funded fr HK,Macao,Taiwan	4	69	83	155	211	272	265	281	294	306	310	326	367	409	470	557	611
Foreign Funded Units	62	96	138	133	195	241	275	300	293	306	332	345	391	454	563	688	796
Self-employed Individuals	614	692	740	930	1225	1560	1709	1919	2259	2414	2136	2131	2269	2377	2521	2778	3012
Rural Employed Persons	10869	11341	12487	14542	14884	16387	17367	17172	17129	17500	16892	16902	17172	17587	17955	18760	19459
Township and Village Enterprises	9265	9609	10625	12345	12017	12862	13508	13050	12537	12704	12820	13086	13288	13573	13866	14272	14680
Private Enterprises	113	116	134	187	316	471	551	600	737	969	1139	1187	1411	1754	2024	2366	2632
Self-employed Individuals	1491	1616	1728	2010	2551	3054	3308	3522	3855	3827	2934	2629	2474	2260	2066	2123	2147

Note: Rural Employed Persons do not include peasonts that work on the farmland

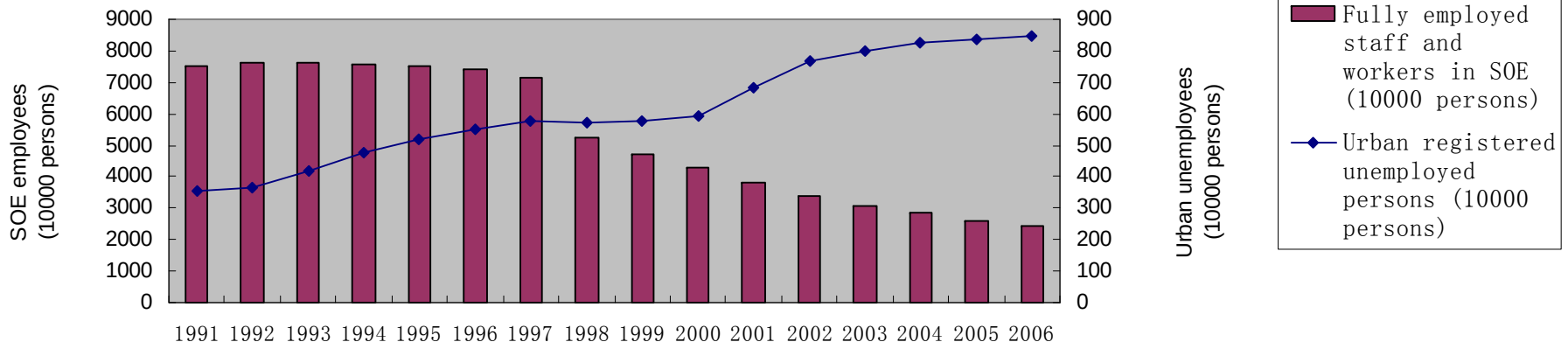
Source: Compiled from China Statistics Yearbook 2007 by the author

Table 5.2 Basic statistics of SOE employment and urban unemployment (10000 persons)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Employed Persons in SOE and State-Controlled Enterprises									5978	5732	5333	5030	4693	4583	4288	4290
Fully employed staff and workers in SOE and State-controlled enterprises									5827	5564	5141	4821	4461	4335	4036	4026
Fully employed staff and workers in SOE	7502	7643	7642	7545	7544	7404	7131	5220	4733	4265	3809	3382	3067	2841	2570	2456
Urban registered unemployed persons	352	364	420	476	520	553	577	571	575	595	681	770	800	827	839	847
SOE Laid-off workers at year-end								595	653	657	515	410	260	153	61	

Source: adapted from China Statistics Yearbook 2007 and China Labour Statistical Yearbook 2004-2007

Figure 5.3 The number of SOE workers and urban registered unemployees



Source: Compiled from China Statistics Yearbook 2007 by the author

Table 5.2 brings us closer to the effects of SOE restructuring. The SOE reforms were piloted in a few jurisdictions during the early 1990s and the formal national campaign started from 1997 and finished between 2004 and 2006 in most areas. From 1998, many of the state-owned enterprises have been converted to state-controlled enterprises and only a small number of state-owned enterprises have been completely privatized (Interview 2). Table 5.2 shows that the number of SOE laid-off workers peaked in 2000 (6.57 millions) then diminished to 0.61 millions in 2005. The cumulative number of laid-off workers may be well above 25 millions. The SOE laid-off workers would be compensated with basic living stipends for two years, then transferred to urban unemployment benefits for up to another two years (if he/she still could not find a job) then transferred to urban minimum livelihood assistance scheme (Saunders and Shang, 2001; reconfirmed in Interview 2). The compensation standard is highest for the basic living stipends, then urban unemployment benefits, then the means tested urban minimum livelihood assistance (ibid). The laid-off workers would also be entitled to free employment training or reemployment services (subsidized or provided by the governments) (ibid). Figure 5.3 depicts that while the number of fully employed staff and workers in SOE dropped since 1994, the official controlled number of urban registered unemployed persons rose during the same period. These figures are underestimated as they do not include the number of unemployed rural migrant workers.

The heavier expenses for SOE restructuring may come from subsidies to social

security accounts. Social security reforms went hand in hand with the SOE restructuring. The purpose was to transfer the welfare provision responsibility from individual enterprises (including SOE and other non-state-owned enterprises) to the society at large to pool the risks. Many of the state-owned firms were unable to make the required social insurance contributions for their employees and the laid-off workers. Thus the governments also had to take up such responsibilities (Interview 2). Pension insurance has been the primary concern among the five social insurances (there are pension insurance, unemployment insurance, medical insurance, work injury insurance and maternity insurance). The government pledged "Two Ensure" in the late 1990s: to ensure a fully and on time delivery of basic pensions for retired people of enterprise and to ensure a basic standard of living for SOE laid-off employees (Finance Yearbook of China 2005, p380). The demand for contributory social insurances and non-contributory social benefits could have also been increased with the continuous growth of wage-labour. Many of the requirements may have yet to be met, as illustrated below.

The number of urban employees participated in pension insurance, unemployment insurance, medical insurance and work injury insurance has augmented largely since the establishment of these services (see Table 5.4 and Table 5.5). However even if we take the widest covered pension insurance as an example, the number of urban participants is only 141.3 millions, around 49.9 percent of the number of employed persons in urban units in 2006 (calculated from Table 5.1 and Table 5.5). When the

township-village enterprise sector is taken into account (employees in this sector are also eligible to participate in urban enterprise pension insurance), the participation rate becomes much lower (around 32.9 percent). The participation rates of urban unemployment insurances, medical insurances and work injury insurances must be lower than the participation rate of pension insurances, as the numbers of participants by the end of 2006 were smaller than the number of pension participants. There are two separated pension insurances for urban workers, one for those who work in enterprise and another one for employees in government agencies, organisations and institutions (launched in the late 1990s) (Interview 2). One could observe from Table 5.5 that from 1999, the figure under "participating employees" started to become larger than "enterprise employees only". Before 1999, the pension for government staff was paid directly from the budget and the employees did not need to make any contribution. The reform launched in 1999 aimed to gradually introduce a contribution-based pension scheme to the public sector. But so far only a very small number of government employees is transferred to this scheme and the majority of the government employees still enjoys the privilege of state paid pension (Interview 2). At this level of analysis, we are unable to detect any potential under-provision of social benefits/assistances, because the relevant data is not available (this issue is tackled in the Fujian case study). What has become clear is that since the mid 1990s, the social security sector has grown to a sizable budgetary item (analyzed in the next section).

Table 5.4: The Number of Person Participated in the three Urban Social Insurances (unit: 10000 persons)

Year	1994	1996	1998	2000	2002	2004	2006
Unemployment Insurance	7968	8333	7928	10408	10182	10584	11187
Medical Insurance	375	791	1509	2863	6926	9044	11580
Work Injury Insurance	1822	3103	3781	4350	4406	6845	10269

Source: adapted from China Statistics Yearbook 2007

Table 5.5: the Number of People Participated in Basic Pension Insurance (10000 persons)

Year	**Total Participants**	**Participating Employees**		**Participating Retirees**	
			of which Enterpise Employees		of which Enterprise Retirees
1990	6166	5201	5201	965	965
1991	6740	5654	5654	1087	1087
1992	9456	7775	7775	1682	1682
1993	9848	8008	8008	1839	1839
1994	10574	8494	8494	2079	2079
1995	10979	8738	8738	2241	2241
1996	11117	8758	8758	2358	2358
1997	11204	8671	8671	2533	2533
1998	11203	8476	8476	2727	2727
1999	12485	9502	8859	2984	2948
2000	13617	10447	9470	3170	3017
2001	14183	10802	9733	3381	3171
2002	14737	11129	9929	3608	3349
2003	15507	11647	10325	3860	3557
2004	16353	12250	10904	4103	3775
2005	17488	13120	11711	4368	4005
2006	18766	14131	12618	4635	4239

Source: adapted from China Statistics Yearbook 2007

5.2 The Emerging Social Security Sector

Since 1990, the GDP, government budgetary revenue and expenditure have achieved remarkable growth in both nominal term (11.3 times) and real price (4.74 times, see Table 5.6). The size of budgetary expenditure has been slightly larger than the revenue, with an average annual deficit around 4.5 percent of the budgeted revenue. Another noteworthy trend is the share of budgetary revenue and the share of budgetary expenditure as proportion of GDP. Both ratios declined until 1995 and they started to climb up again from 1996. This was cited as one of the successes of 1994 Tax-Sharing-Reform. As already specified by some scholars (such as Zhang, 1999), the growth in budgetary revenue after the reform has also been contributed by reclassifying some of the extra-budgetary revenue to budgetary revenue (Described in Table 5.7, the size of extra-budgetary revenue in 2005 was only around 15 percent of the budgetary revenue). It may be reasonable to state that the governments spent more as they became more affluent, however, another explanation could be that higher amount of spending was driven by the growing needs.

There is one important issue that needs to be clarified. The general government budgetary revenue and expenditure of China does not include the contributions to and payments from state-mandated contribution-based social insurance funds. In other words, social insurance funds are kept off-budget. In contrast, the international practice is to include the social insurance contributions in general government budgetary revenue and treat payments from state-mandated social insurance funds as

part of general government expenditure. Thus the level of budgeted social security spending in OECD countries is not directly comparable to the level of budgeted social security spending in China. It is obvious that, if the international standard is adopted, China's level of social security spending would have been much higher. In those literature on China's public finance issues, scholars have always used the official figures without making adjustment. This may be because the social insurance funds are earmarked for social insurance payments only and the governments could only make subsidies to those funds (they could not withdraw the funds for other budgetary spending needs). In this regard, the level of social insurance funds does not imply the fiscal capacity of the government. It is rather difficult if one would like to make such adjustment to China's budgetary figures. Since the budgetary spending on social security includes the subsidies made by the government to social insurance funds and the exact amount of subsidies to social insurance funds is not reported/available, simply adding up the social insurance payments to budgeted expenditure may count the amount of subsidies twice (overstating the total expenditure). Likewise, the total social security spending (budgeted spending on social security plus payments from social insurance funds) may be overstated. Therefore, we are not able to make such adjustment. Nevertheless, the budgetary data on social security (and the trend) alone are already illustrative.

Table 5.6 China's GDP, budgeted revenue & expenditure (1990-2006) at nominal price and constant 1990 price; unit: 100 million Yuan

	Nominal Price					Constant 1990 price		
Year	GDP	Budgeted Revenue	Budgeted Expd	Revn as% of GDP	Expd as % of GDP	GDP	Budgeted Revenue	Budgeted Expd
1990	18668	2937	3084	16	17	18668	2937	3084
1991	21781	3149	3387	14	16	20381	2947	3169
1992	26923	3483	3742	13	14	23284	3012	3236
1993	35334	4349	4642	12	13	26535	3266	3486
1994	48198	5218	5793	11	12	30006	3249	3606
1995	60794	6242	6824	10	11	33284	3418	3736
1996	71177	7408	7938	10	11	36616	3811	4083
1997	78973	8651	9234	11	12	40020	4384	4679
1998	84402	9876	10798	12	13	43155	5050	5521
1999	89677	11444	13188	13	15	46443	5927	6830
2000	99215	13395	15887	14	16	50359	6799	8064
2001	109655	16386	18903	15	17	54539	8150	9401
2002	120333	18904	22053	16	18	59492	9346	10903
2003	135823	21715	24650	16	18	65456	10465	11879
2004	159878	26396	28487	17	18	72057	11897	12839
2005	183868	31649	33930	17	18	79575	13697	14684
2006	210871	38760	40423	18	19	88398	16248	16945

Source: author's calculation from China Statistics Yearbook 2007

Table 5.7: Basic statistics of Extra-budgetary Revenues (EBR) and Extra-budgetary Expenditures (EBE); unit: 100 million yuan

Year	Total EBR (100 M Yuan)	Central Gov share (%)	Local Govs share (%)	EBR as % of Budgetary Revenue	Total EBE (100 M Yuan)	Central Gov share (%)	Local Govs share (%)	EBE as % of Budgetary Spending
1990	2709	40	60	92	2707	38	62	88
1991	3243	43	57	103	3092	41	59	91
1992	3855	44	56	111	3650	44	56	98
1993	1433	17	83	33	1314	15	85	28
1994	1863	15	85	36	1710	13	87	30
1995	2407	13	87	39	2331	15	85	34
1996	3893	24	76	53	3838	27	73	48
1997	2826	5	95	33	2686	5	95	29
1998	3082	5	95	31	2918	5	95	27
1999	3385	7	93	30	3139	5	95	24
2000	3826	7	94	29	3529	6	94	22
2001	4300	8	92	26	3850	7	93	20
2002	4479	10	90	24	3831	7	93	17
2003	4567	8	92	21	4156	8	92	17
2004	4699	8	93	18	4352	9	91	15
2005	5544	7	93	18	5242	9	91	15

Source: author's calculation from China Statistics Yearbook 2007

Table 5.8(100 M RMB, 1990 price)	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Real GDP	18668	20381	23284	26535	30006	33284	36616	40020	43155	46443	50359	54539	59492	65456	72057	79575	88398
Real Total Budgetary Revenue	2937	2947	3012	3266	3249	3418	3811	4384	5050	5927	6799	8150	9346	10465	11897	13697	16248
Real Total Budgetary Expenditure	3084	3169	3236	3486	3606	3736	4083	4679	5521	6830	8064	9401	10903	11879	12839	14684	16945
Construction & Urban Maintenance	547	524	481	445	398	567	616	686	904	1307	1301	1531	1877	2020	1986	2295	2485
Enterprises Innovation Funds	201	217	241	367	309	326	326	390	392	469	520	554	539	584	618	712	798
Rural Production Expenses	222	228	233	243	249	236	262	284	320	351	389	457	545	547	763	776	906
Social Security	55	63	57	57	59	63	94	166	305	620	770	988	1303	1280	1404	1601	1828
National Defence	290	309	327	320	343	349	370	412	478	557	613	717	844	919	992	1071	1249
Government Administration	303	322	367	402	454	478	535	576	678	790	907	1093	1473	1657	1830	2093	2364
Price Subsidies	381	350	278	225	196	200	234	280	364	361	529	369	319	297	359	432	582
Culture,Edu, Health, Science	617	662	686	719	796	803	877	965	1102	1247	1389	1672	1967	2171	2318	2642	3113
Others	467	494	567	709	802	715	768	920	979	1127	1645	2021	2035	2404	2569	3063	3621

Source:author's calculation from China Statistics Yearbooks 2001-2007 (using implicit GDP deflator)

Table 5.9 the Indices of:	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Real GDP	100	109	125	142	161	178	196	214	231	249	270	292	319	351	386	426	474
Real Total Budgetary Revenue	100	100	103	111	111	116	130	149	172	202	231	277	318	356	405	466	553
Real Total Budgetary Expenditure	100	103	105	113	117	121	132	152	179	221	261	305	354	385	416	476	550
Construction & Urban Maintenance	100	96	88	81	73	104	113	125	165	239	238	280	343	369	363	419	454
Enterprises Innovation Funds	100	108	120	183	154	162	162	194	195	233	259	275	268	291	308	354	397
Rural Production Expenses	100	103	105	110	112	106	118	128	144	158	176	206	246	247	344	350	409
Social Security	100	114	104	103	108	115	171	302	553	1127	1399	1796	2368	2325	2552	2908	3322
National Defence	100	106	113	110	118	120	128	142	165	192	211	247	291	317	342	369	430
Government Administration	100	106	121	133	150	158	177	190	224	261	299	361	486	547	604	690	780
Price Subsidies	100	92	73	59	51	52	61	73	96	95	139	97	84	78	94	113	153
Culture,Edu, Health, Science	100	107	111	117	129	130	142	156	178	202	225	271	319	352	376	428	504
Others	100	106	121	152	172	153	165	197	210	241	352	433	436	515	550	656	775

Source:author's calculation from China Statistics Yearbooks 2001-2007 (using implicit GDP deflator)

We now turn to analyse the budgetary expenditure composition to highlight the impact of market transition on social security. Table 5.8 records major expenditure items since 1990 and the figures are deflated to 1990 price using implicit GDP deflator from China Statistics Yearbooks (2001-2007). Table 5.9 compiles the indices of all Table 4 items over the same period in order to capture the rate of change of each item. Here are the simplified explanations for some of the expenditure items, which summarized from the explanatory notes of China Statistics Yearbook (2005). Construction & Urban Maintenance refers to all capital construction expenditure (not only cover urban infrastructure but other capital outlays such as school buildings) and urban maintenance expenses. Enterprise Innovation Funds refer to subsidies to both public and private enterprises for the purposes of production upgrading or promotion of science and so on. Rural Production Expenses refer to all operating expenses in rural sectors (which exclude capital spending). Social Security covers three sub-items, namely, “pensions and relief funds for social welfare”, “social security subsidiary expenses” and “expenditure for retired persons in administrative departments”. All the subsidies on social insurance funds and on SOE restructuring are contained in “social security subsidiary expenses”, while the social benefit payments are included in “pensions and relief funds for social welfare”. Government Administration covers the operating expenses of government agencies and organizations, but excludes the operating expenses of government institutions (public services units). Culture, Education, Health and Science refer to the operating expenditure of these four sectors. "Others" cover a wide range of other public service department expenses (e.g. the

expenses of Industry, Commerce and Transportation Departments).

From Table 5.8 and Table 5.9, one could notice that the most fast-expanding item is Social Security, which grew from 5.5 billions in 1990 to 182.8 billions (constant 1990 price) in 2006, an over 33 times increase. The other two sectors that beat the benchmark growth rate (the growth rate of total budgetary expenditure) are Government Administration and Others, which expanded more than 7 times between 1990 and 2006 (the benchmark growth rate is 5.5 times). But the pace of such expansion is still dwarfed by the Social Security sector. The Price Subsidies experienced the slowest growth, it rose to 58.2 billions in 2006 from 38.2 billions in 1990, only a 1.5 times differences. The growth rates of all the other items are just slightly below the benchmark growth rate. A closer examination of Social Security sector shows that its growth trajectory was not steadily: the turning point was in 1996 in which there was a sharp rise. The growth path of social security spending cannot be simply explained by the increase in government revenue and its trend is much more associated with the trend of SOE restructuring (see Table 5.2 and Table 5.3). In around ten year's time, the Social Security sector has become one of the sizable expenditure item (see Table 5.10) consuming around 11 percent of the budgeted expenditure. Note that the budgetary spending figure of social security we presented here is an underestimated one, because it does not include the medical care subsidy for the government administrative institutions (which is a social security item, as classified by the Finance Yearbook of China 2005). A careful comparison between

Finance Yearbook of China (2005) and China Statistics Yearbook (2005) reveals that, medical care subsidy for the government administrative institutions is hidden under the "operating expenses for public health" in China Statistics Yearbook. There has been a definition change since 2005 and the statistical information of this item has become unavailable from Finance Yearbook of China. Between 1998 and 2004, the medical care subsidy for the administrative institutions averaged 1.3 percent of the annual budgetary spending (Finance Yearbook of China 2005, p379). If this ratio were unchanged, then the budgeted social security spending would consume more than 12 percent of the consolidated budgeted expenditure in 2006.

We notice from China Statistics Yearbook 2008 that there was a thorough change in the categorisation of China's budgetary expenditure items, making the expenditure data of the year 2007 incomparable with previous years' data. Therefore, the 2007 statistical information is not reported here. There is an interesting evidence, which may suggest the that concern of social security funding pressure by the government has increased. In 19th June 2009, the State Department of China decreed that in future all the state-owned and state-controlled enterprises listed in China's domestic stock markets must transfer stock equal to 10 percent of the shares offered to National Social Security Fund after their initial public offerings (FT Chinese Edition, 22nd June 2009, http://www.ftchinese.com/story/001027132, accessed 23rd June 2009). Before, only those state-controlled enterprise listed in stock exchange of Hong Kong were required to make the transfer. The National Social Security Fund is a reserve fund

established by the central government in 2000 in order to prepare for future social security obligations (National Council For Social Security Fund, http://www.ssf.gov.cn/jj/qgsbjj/200812/t20081208_1019.html, accessed 23rd June 2009). The source of finance of this fund largely comes from the subsidies made by Ministry of Finance as well as the SOE stock transfers (ibid). In contrast, social security funds managed by provincial or municipal governments are mainly financed from the contributions made by employers and employees (the government made limited subsidies) and current contributions finance current benefits (Interview 3). Therefore, social security funds managed at the local levels have much smaller balance available for investment and the balance is required to be invested in government bonds or deposited in commercial banks (Interview 2)

Table:5.10 the distribution of budgetary items in selected years

	1990	1996	2001	2006
Construction & Urban Maintenance	17.8%	15.1%	16.3%	14.7%
Enterprises Innovation Funds	6.5%	8.0%	5.9%	4.7%
Rural Production Expenses	7.2%	6.4%	4.9%	5.3%
Social Security	1.8%	2.3%	10.5%	10.8%
National Defence	9.4%	9.1%	7.6%	7.4%
Government Administration	9.8%	13.1%	11.6%	14.0%
Price Subsidies	12.3%	5.7%	3.9%	3.4%
Culture,Edu, Health, Science	20.0%	21.5%	17.8%	18.4%
Others	15.1%	18.8%	21.5%	21.4%
Total	100.0%	100.0%	100.0%	100.0%

Source: calculated from China Statistics Yearbook 2005-2007

Table 5.11: Expenditure Responsibility between the Central and Local Government

Distribution of Expenditure Items 2006 Unit: 100 M Yuan and %	Total	Central	Local	Central	Local
Expenditure for Capital Construction	4390	1484	2907	34%	66%
Enterprise Innovation Funds	1903	486	1417	26%	74%
Urban Maintenance and Construction Expenditure	1699	0	1699	0%	100%
Rural Production Expenses	2161	194	1967	9%	91%
Social Security	4362	356	4006	8%	92%
National Defence	2979	2947	32	99%	1%
Government Administration	5639	655	4984	12%	88%
Price Subsidies	1388	550	837	40%	60%
Expenses for Culture, Edu, Science and Health	7426	719	6707	10%	90%
Operating Expenses in Other Departments	2043	247	1796	12%	88%
Other Expenditure	6433	2353	4080	37%	63%
Total Budgetary Expenditure	40423	9991	30431	25%	75%

Source: author's calculation from China Statistical Yearbook 2007

5.3 Conclusions

The evidence presented in this chapter confirms our earlier speculation that market transition has generated growing fiscal needs for the governments in the area of social security. Some of the needs have been met, resulting in significantly increased budgetary expenditure on social security. But the aggregate coverage ratios of social insurances are still low, which signal that a large part of the needs may have yet to be dealt with. The fact that the central government requests the SOEs to transfer part of the stock to the National Social Security Fund may suggest that the concern of social security funding pressure by the government has increased. Since most of the social security responsibilities have been decentralized to local governments (Table 5.11 shows that local governments covered around 92 percent of the consolidated social

security expenditure in 2006), the analysis at the sub-national levels provide better insights of the problem of fiscal inadequacy and unmet social security needs. Although the expenditure of government administration has increased in a faster pace than the general budgetary expenditure, it may not necessarily suggest that there has been government expansion. Because this expenditure item only covers the operating expenses of government agencies and organization (jiguan danwei) and a large portion of public sector expenditure is on government institutions (pubic services units). The evidence presented in this chapter does not address any of the four hypotheses. The testing results of the four hypotheses are discussed in the next two chapters.

Chapter 6 The Impact of Market Transition on Local Public Finance—Cross-Sectional Analyses at the Provincial Level

6.1 Introduction

In Chapter 5, we highlight the major changes in the fiscal spheres at the national level during the 1990s. The result indicates that market transition has already had an increasing impact on public finance, evidenced in the growing level of spending on social security between 1990 and 2006. It also reveals that there has been considerable unmet social security needs. In this chapter, the provincial cross-sectional analyses tackle Hypotheses 2, 3 and 4; some evidences presented in this chapter also address Hypothesis 1.

In section 6.3, we analyse the changing patterns of social security spending across the provinces as well as the coverage status of several social insurance schemes to evaluate the fiscal impact from market transition and identify unmet social security needs in different provinces. A mini case study on Shanghai's social security fund is also reported to further illustrate the magnitude of social security needs and fiscal inadequacy problem at subnational levels. Hypothesis 1 is supported. In section 6.4, we use simple correlation analysis to test Hypothesis 2 and the result to some extent confirms this hypothesis. In section 6.5, we use multiple regression to analyse Hypothesis 3 and the result rejects this hypothesis. In section 6.6, we use correlation and multiple regression to test Hypothesis 4 and the end result only partially confirms

this hypothesis.

6.2 Identifying the Relatively Affluent Areas

Table 6.1 and Table 6.2 present a few key indicators of China's provinces in 1995 and 2004. The consolidated provincial budgetary revenue in 1994 (in which the Tax-Sharing reform took place) contains the tax rebates, but from 1995 onward the consolidated budgetary revenue figures does not include the tax rebates. Therefore the 1994 figures are not comparable with post 1994 fiscal data. That is why 1995 is used as the benchmark year instead of 1994. As the unpublished social security data collected are in the year of 2004 (these data were collected in 2009 fieldwork and they had been the only available cross-provincial data by that time), for consistence, we have to select 2004 as the year for analysis. Nevertheless, the consolidated provincial expenditure data on social security from 1998 to 2006 are presented here to facilitate the comparison. The year 1998 is the earliest year where the social security data for all the provinces become available (from China Statistics Yearbooks), while 2006 is the latest year in which these statistics are still reported (as already discussed in Chapter 5, most of the official fiscal expenditure data since 2007 are not comparable with previous years' data as a result of categorization change). Unless specified otherwise, the Chinese budgetary data reported in this dissertation are consolidated budgetary data (i.e. the consolidated provincial expenditure contains the expenditure of lower level governments as well as the expenditure of the provincial level

government alone). This is a rule used in China's official statistics data. Another important issue is that the budgetary expenditure of sub-national governments in China are after-fiscal transfer expenditure.

From Table 6.1 and Table 6.2, a few striking features could be summarized. First, the 31 provinces differ considerably in terms of population, GDP per capita, per capita budgeted revenue and expenditure. The size of population in a few western provincial government units such as Tibet, Qinghai, and Ningxia is only a fraction of the average or median provincial population. There is a very high concentration of resources: the top 2 wealthiest provincial units Shanghai and Beijing have much higher levels of fiscal capacity (per capita income and fiscal revenue) than the others. Secondly, the budgetary expenditure figures (after central-provincial transfers) are larger and more equalized than the budgeted revenue figures (as the coefficient of variation (CV) of the expenditure is lower than the CV of revenue, reported in Table 6.1 and 6.2). For a few provincial units such as Tibet and Qinghai, their expenditure ranking are much higher than the revenue ranking, while in some relatively affluent provinces such as Shandong, the expenditure ranks much lower than its revenue. Since the expenditure figures are shown as after-transfer figures, which do not necessarily represent fiscal capacity, we weight the rankings of per capita GDP and per capita budgeted revenue to reflect the relative fiscal capacity of a province. At the same level of per capita GDP, the discrepancy in per capita revenue between localities may mirror the differences in economic structure and tax efforts (the tax bases and tax rates are set by

the central government). Thus weighting the GDP and revenue ranking may produce a better approximation of fiscal capacity than the revenue ranking alone. Two weighted ranks (for 1995 and 2004) are presented in Table 6.3 (if weighting lead to same values between two or more provinces, the one with higher GDP ranking would be ranked higher) and the provinces are rearranged to fit a conventional classification, which divides China into eastern, central and western regions. There maybe several ways to categorize the provinces to different regions. The categorization in this research follows the one defined by the National Bureau of Statistics of China (http://www.stats.gov.cn/tjzs/t20030812_402369584.htm accessed on 11th April 2008).

We are aware that such ranking makes an assumption that those provinces ranked above the median value are recognized as relatively rich areas and those below the median value are counted as relatively poor areas. To adhere to the more strict definition (both per capital GDP and per capita fiscal revenue must be above the median value) of relatively affluent areas proposed in Chapter 3, we find out that only the top 13 provinces in terms of 2004 ranking could be recognized as relatively affluent areas. The 14th province Hebei has per capita fiscal revenue ranked in the 18th place and the 15th province Jinin has per capita revenue ranked in the 17th place. However, if the mean value (population weighted mean, see Table 6.2, 2004 figures) is used instead, there would only be 9 provinces having per capita GDP above the average figure, 8 provinces having per capita fiscal revenue above the average figure.

The population weighted mean is used to mitigate the effects from a few western provincial units that have extremely small number of population. In this case, only 7 provinces (the top 7 provinces of the 2004 weighted ranking, see Table 6.3) could be reckoned as relatively well-off areas and the remaining 24 provinces are all relatively poor localities. Such skewness reflects that there is concentration of resources in a few provincial units such as Beijing, Shanghai and Tianjian. The 7th richest province is Fujian, where our case study is conducted. Using mean value rather than median value to classify the provinces may be too strict. Nevertheless, to be more objective, we bear these two types of division method in mind in the following analysis.

Table 6.1 Provincial population, GDP, budgeted revenue and expenditure (in per capita) and their ranks in 1995 (10000 persons, 10000 Yuan)

1995	Population	GDP		Fiscal		Fiscal	
			Rank	Revenue	Rank	Expenditure	Rank
Beijing	1251	12052	2	921	2	1234	3
Tianjin	942	9894	3	657	3	991	4
Hebei	6437	4427	13	186	17	297	22
Shanxi	3077	3497	17	235	13	367	17
InnerMongolia	2284	3752	15	191	16	447	15
Liaoning	4092	6826	7	451	5	669	6
Jinin	2592	4387	14	244	12	466	13
Heilongjiang	3701	5381	10	274	8	472	12
Shanghai	1415	17664	1	1552	1	1837	1
Jiangshu	7066	7296	6	244	11	359	18
Zhejiang	4319	8237	5	270	9	417	16
Anhui	6013	3011	24	139	26	226	30
Fujian	3237	6472	8	363	7	530	11
Jiangxi	4063	2879	26	158	23	272	26
Shandong	8705	5690	9	206	15	317	20
Henan	9100	3284	22	137	28	228	29
Hubei	5772	3655	16	173	21	281	24
Hunan	6392	3336	20	169	22	272	25
Guangdong	6868	8639	4	557	4	765	5
Guangxi	4543	3296	21	175	20	309	21
Hainan	724	5017	11	394	6	585	9
Chongqing	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Sichuan	11325	2157	29	148	24	245	27
Guizhou	3508	1814	30	111	29	243	28
Yunnan	3990	3063	23	246	10	589	8
Tibet	240	2338	27	90	30	1453	2
Shaanxi	3514	2951	25	146	25	292	23
Gansu	2438	2288	28	139	27	334	19
Qinghai	481	3489	18	179	18	599	7
Ningxia	513	3415	19	175	19	448	14
Xinjiang	1661	4906	12	230	14	580	10
Mean	4009	5170		305		538	
Median	3608	3703		198		432	
STDEV	2795	3410		296		382	
CV	0.70	0.66		0.97		0.71	
Population Weighted Mean		4700		248		401	

Source: calculated from China Statistics Yearbook 1996 & 2005

Table 6.2 Provincial population, GDP, budgeted revenue and expenditure (in per capita) and their ranks in 2004 (10000 persons,10000 Yuan)

2004	Population	GDP	Rank	Fiscal Revenue	Rank	Fiscal Expenditure	Rank
Beijing	1493	40591	2	4987	2	6017	2
Tianjin	1024	30381	3	2404	3	3662	4
Hebei	6809	12451	11	599	18	1154	23
Shanxi	3335	10709	15	769	12	1556	15
InnerMongolia	2384	12756	10	825	10	2366	6
Liaoning	4217	15822	9	1256	7	2209	9
Jinin	2709	11525	13	614	17	1874	12
Heilongjiang	3817	12446	12	758	13	1827	13
Shanghai	1742	46342	1	6350	1	7936	1
Jiangshu	7433	20185	6	1319	6	1765	14
Zhejiang	4720	24679	4	1708	5	2252	7
Anhui	6461	7366	26	425	28	931	30
Fujian	3511	16415	7	950	8	1472	18
Jiangxi	4284	8069	24	480	24	1060	27
Shandong	9180	16364	8	902	9	1296	21
Henan	9717	8803	19	441	27	906	31
Hubei	6016	9364	17	516	21	1074	24
Hunan	6698	8423	23	479	25	1074	25
Guangdong	8304	22718	5	1708	4	2231	8
Guangxi	4889	7023	28	486	23	1038	28
Hainan	818	9767	16	697	14	1555	16
Chongqing	3122	8625	21	643	15	1268	22
Sichuan	8725	7312	27	442	26	1026	29
Guizhou	3904	4298	31	382	30	1072	26
Yunnan	4415	6981	29	597	19	1503	17
Tibet	274	8042	25	366	31	4884	3
Shaanxi	3705	8571	22	580	20	1394	19
Gansu	2619	6447	30	398	29	1363	20
Qinghai	539	8647	20	501	22	2548	5
Ningxia	588	9135	18	637	16	2092	11
Xinjiang	1963	11254	14	793	11	2145	10
Mean	4175	13920		1097		2082	
Median	3817	9767		637		1555	
STDEV	2695	9852		1316		1572	
CV	0.65	0.71		1.20		0.75	
Population Weighted Mean		12950		904		1591	

Source: calculated from China Statistics Yearbook 2005

Table 6.3 the ranking and weighted orders of per capita GDP and per capita fiscal revenue by region and by year (1995 and 2004)

	1995 Ranking			2004 Ranking		
	GDP	Revn	Weighted	GDP	Revn	Weighted
Eastern						
Beijing	2	2	2	2	2	2
Fujian	8	7	7	7	8	7
Guangdong	4	4	4	5	4	5
Guangxi	21	20	21	28	23	26
Hainan	11	6	9	16	14	16
Hebei	13	17	14	11	18	14
Jiangshu	6	11	8	6	6	6
Liaoning	7	5	5	9	7	8
Shandong	9	15	11	8	9	9
Shanghai	1	1	1	1	1	1
Tianjin	3	3	3	3	3	3
Zhejiang	5	9	6	4	5	4
Central						
Anhui	24	26	25	26	28	28
Heilongjiang	10	8	10	12	13	11
Henan	22	28	24	19	27	22
Hubei	16	21	19	17	21	19
Hunan	20	22	22	23	25	23
InnerMongolia	15	16	16	10	10	10
Jiangxi	26	23	23	24	24	24
Jinin	14	12	13	13	17	15
Shanxi	17	13	15	15	12	13
Western						
Chongqing	n/a	n/a	n/a	21	15	18
Gansu	28	27	28	30	29	30
Guizhou	30	29	30	31	30	31
Ningxia	19	19	20	18	16	17
Qinghai	18	18	18	20	22	20
Shaanxi	25	25	26	22	20	21
Sichuan	29	24	27	27	26	27
Tibet	27	30	29	25	31	29
Xinjiang	12	14	12	14	11	12
Yunnan	23	10	17	29	19	25

source: calculated from Table 6.1 and Table 6.2

6.3 Analysis of the Changes and Differences in Social Security Spending and Social Insurance Coverage

The analysis at the national level demonstrates that there has been substantial increase in the proportion of budgeted expenditure on social security and there is still a large proportion of population not covered with social insurances. Now the central question is to what extent such increase has taken place in relatively affluent areas and whether and to what extent there have been unmet social security needs in relatively affluent areas. We attempt to answer this question by examining the development of social security sector across different provincial units.

In China Statistics Yearbooks, three budgetary expenditure items are counted as social security spending, namely, “pensions and relief funds for social welfare”, “social security subsidiary expenses” and “expenditure for retired persons in administrative departments”. As reported in Chapter 5, “medical care subsidy for the administrative institutions”, a social security expenditure item, is included in operating expenditure for public health. Therefore, total budgetary spending on social security is still underestimated when we add these three items altogether. Nevertheless, our primary intention is to understand the portion of social security spending that is directly related to market transition. Expenditure for retired persons in administrative departments and the related health expenses subsidy have invariably been the budgeted social security expenditure items since 1949 and are not directly tied to market transition, though market transition may indirectly impact the level of these

spending (e.g. higher cost of health care may require more subsidies). In contrast, "social security subsidiary expenses" has been a completely new fiscal expenditure emerged in the 1990s when the government started to shoulder the responsibility of public enterprise workers' welfare. It contains the subsidies on social security funds and urban employment services as well as the living stipends for SOE laid-offs. "Pensions and relief funds for social welfare" have four major subcategories—pension for disable and bereaved families, expenditure on retirees from military services, social welfare and relief funds and expense on disaster relief. At least two of the four sub-categories are directly related to market transformation. The data of these four sub-categories are only reported in finance yearbooks of each province and we have only been able to collect the finance yearbooks of Fujian province. Therefore, the "Pensions and relief funds for social welfare" could not be further decomposed for analysis on a cross-sectional basis.

In Table 6.4, "pensions and relief funds for social welfare" and "social security subsidiary expenses" are aggregated and shown as share of total provincial budgetary spending for the period between 1998 and 2006 (the figures of the odd years are not reported in this table to save space). It is easy to observe from this table that in all areas, the aggregated social security spending has increased faster than the total budgetary expenditure between 1998 and 2006 (or between 1998 and 2004), indicated by the increasing ratios. This trend is not very different from what we observe at the national level and it means that to some degree, the expenditure structure in all

provinces has been adjusted to accommodate the emerging social security needs. It could also be observed that different provinces have invested different proportions of their total budgetary expenditure to tackle the needs. Take the years 2004 and 2006 as examples, among the 13 relatively affluent provinces (2004 ranking), 9 provinces allocated equal or less than 10 percent (the median value) of the budgeted expenditure in the aggregated social security item. However, two relatively rich provinces Heilongjiang and Liaoning spent much higher levels of the budgeted expenditure on this aggregated item than the others. In 2004, Heilongjiang spent 16.8 percent and Liaoning spent 17.8 percent of the budgeted expenditure on this item. In 2006, the spending ratios for these two regions were 18.1 and 17.8 respectively. Even if we apply another measure that only reckons the top 7 provinces as relatively rich provinces, we would still find Tianjin bearing higher than the average burdens. This in part suggests that even some affluent areas have been plagued with onerous fiscal burdens. However, we are aware that the level of social security spending alone does not tell us the important issues such as whether and to what extent there have been social exclusions or unmet social security needs.

Table 6.4 The Combination of "Pensions and Relief Fund" and "Social Security Subsidiary Expenses" as Share of Total Provincial Budgeted Expenditure

	1998	2000	2002	2004	2006	06/98 ratio	Weighted Rank 95	Weighted Rank 04
Eastern								
Beijing	0.030	0.035	0.044	0.055	0.058	1.96	2	2
Fujian	0.030	0.040	0.041	0.044	0.046	1.57	7	7
Guangdong	0.022	0.031	0.041	0.042	0.040	1.78	4	5
Guangxi	0.027	0.045	0.068	0.063	0.069	2.59	21	26
Hainan	0.025	0.073	0.114	0.118	0.113	4.59	9	16
Hebei	0.041	0.080	0.091	0.089	0.100	2.46	14	14
Jiangshu	0.034	0.043	0.052	0.058	0.066	1.96	8	6
Liaoning	0.055	0.170	0.206	0.178	0.178	3.27	5	8
Shandong	0.036	0.052	0.059	0.063	0.064	1.75	11	9
Shanghai	0.018	0.023	0.032	0.050	0.071	3.96	1	1
Tianjin	0.039	0.108	0.108	0.106	0.115	2.98	3	3
Zhejiang	0.032	0.032	0.039	0.046	0.050	1.58	6	4
Central								
Anhui	0.037	0.084	0.132	0.114	0.104	2.79	25	28
Heilongjiang	0.064	0.142	0.133	0.168	0.181	2.83	10	11
Henan	0.031	0.084	0.098	0.101	0.092	2.99	24	22
Hubei	0.070	0.101	0.109	0.135	0.145	2.08	19	19
Hunan	0.044	0.102	0.120	0.139	0.136	3.13	22	23
InnerMongolia	0.053	0.076	0.075	0.095	0.074	1.41	16	10
Jiangxi	0.063	0.093	0.123	0.117	0.110	1.77	23	24
Jinin	0.077	0.093	0.138	0.195	0.155	2.01	13	15
Shanxi	0.048	0.104	0.130	0.140	0.101	2.12	15	13
Western								
Chongqing	0.062	0.138	0.147	0.119	0.125	2.01	n/a	18
Gansu	0.032	0.090	0.090	0.137	0.111	3.50	28	30
Guizhou	0.042	0.075	0.089	0.080	0.076	1.82	30	31
Ningxia	0.035	0.103	0.182	0.069	0.085	2.40	20	17
Qinghai	0.060	0.141	0.103	0.118	0.112	1.87	18	20
Shaanxi	0.039	0.113	0.128	0.126	0.116	2.97	26	21
Sichuan	0.052	0.084	0.109	0.106	0.105	2.02	27	27
Tibet	0.033	0.033	0.036	0.046	0.044	1.35	29	29
Xinjiang	0.030	0.058	0.085	0.072	0.076	2.53	12	12
Yunnan	0.035	0.060	0.071	0.079	0.066	1.92	17	25
Mean	0.042	0.081	0.097	0.099	0.096	2.39		
Median	0.037	0.084	0.098	0.101	0.100	2.08		

Source: author's calculation from China Statistics Yearbook 1999-2007

Table 6.5 Major Indicators of the Basic Enterprise Pension Insurance (2004)

Indicators/ Regions	Coverage Ratio A	Coverage Ratio B	Subsidy as % of Insurance Income	Subsidy as % of Budgeted Expenditure	Retiree as % of Active	Replace-ment Ratio	Weighted Rank 04
Eastern							
Beijing	0.362	n/a	0.008	0.002	0.480	0.59	2
Fujian	0.209	0.229	0.024	0.003	0.280	0.5	7
Guangdong	0.463	0.510	0.016	0.003	0.170	0.62	5
Guangxi	0.273	0.326	0.161	0.019	0.340	0.69	26
Hainan	0.444	n/a	0.383	0.067	0.470	0.58	16
Hebei	0.266	0.308	0.177	0.032	0.360	0.66	14
Jiangshu	0.367	0.402	0.039	0.008	0.310	0.78	6
Liaoning	0.487	0.544	0.285	0.084	0.450	0.73	8
Shandong	0.275	0.304	0.047	0.009	0.240	0.85	9
Shanghai	0.588	n/a	0.046	0.009	0.520	0.53	1
Tianjin	0.473	n/a	0.211	0.057	0.530	0.69	3
Zhejiang	0.331	0.355	0.017	0.003	0.200	0.8	4
Central							
Anhui	0.310	0.355	0.229	0.037	0.350	0.77	28
Heilongjiang	0.557	0.650	0.274	0.060	0.410	0.78	11
Henan	0.278	0.324	0.202	0.034	0.320	0.85	22
Hubei	0.383	n/a	0.228	0.047	0.350	0.78	19
Hunan	0.239	n/a	0.249	0.039	0.420	0.71	23
InnerMongolia	0.362	0.437	0.259	0.031	0.370	0.8	10
Jiangxi	0.314	0.368	0.265	0.035	0.380	0.63	24
Jinin	0.492	0.587	0.218	0.052	0.390	0.91	15
Shanxi	0.342	0.403	0.194	0.037	0.330	0.75	13
Western							
Chongqing	0.357	0.411	0.298	0.049	0.520	0.56	18
Gansu	0.301	0.365	0.214	0.032	0.390	0.81	30
Guizhou	0.223	n/a	0.249	0.026	0.430	0.69	31
Ningxia	0.314	0.370	0.165	0.027	0.330	0.66	17
Qinghai	0.411	n/a	0.363	0.052	0.390	0.67	20
Shaanxi	0.309	0.364	0.259	0.044	0.380	0.87	21
Sichuan	0.296	n/a	0.203	0.036	0.460	0.6	27
Tibet	0.145	n/a	0.417	0.016	0.680	0.7	29
Xinjiang	0.449	0.557	0.294	0.061	0.420	0.64	12
Yunnan	0.235	0.281	0.261	0.028	0.460	0.65	25

Note: 1.Coverage A= The number of participating employees dividied by the sum of urban employees and employees in township enterprises 2. Coverage B takes the number of staff working in government agencies and institutions out of the denominator used in the calculation of Coverage A 3.Retiree/Active Ratio=participating reitiree number divided by the number of participants that are currently working 4.Replacement Ratio=average amount of pension divided by the average wage

Source: calculated from unpublished social security statistics compiled by Ministry of Finance of China and statistics yearbooks of various provicnes (2005)

We learn from field interviews (Interview 2) that prior to 2004, most of the social security subsidies went to the SOE sector. The governments paid social insurance contributions for non-performing SOEs and some distressed collective-owned enterprises, if these enterprises were unable to make enough contributions for their employees. Subsidies to the social insurances were also needed when there were funding shortfall. The governments also subsidized training and reemployment services and living stipends for the laid-offs from SOEs and collective-owned enterprises (ibid). Though the coverage of Basic Enterprise Pension Insurance, Urban Health/Medical Insurance, Urban Unemployment Insurances, Urban Work Injury Insurance and Urban Maternity Insurance have all expanded since the late 1990s, the governments made little subsidy for participants of these programs who are from the non-state sectors. In many areas, collecting social insurance contributions from non-state sector participants have become an important means to cover the shortfall in local pension funds (Interview 3). After 2004, there has been two important changes. Although the SOE restructuring process in most of the eastern provinces has completed and generated no more laid-offs by 2005, the governments still subsidized the reemployment and training services, which have become general public services for urban residences (including the rural migrants) who are unemployed or who would like to upgrade their skills (ibid). Another change is that the governments have started to increase the subsidies on rural health care--the New Cooperative Rural Health Insurance scheme. These changes are observed from the Fujian case study where relevant data have been gathered. In this chapter, we focus on provincial statistics on a

cross-sectional basis. The statistics of the 2004 Basic Enterprise Pension Insurance, Urban Health Insurance and Urban Unemployment Insurance for all the provinces have been collected and are analysed as follows.

For the Basic Enterprise Pension Insurance, six key indicators are presented in Table 6.5. The target population for this pension insurance is the urban workers that work outside government agencies, organizations and institutions plus the enterprise employees in rural areas (the workers of township and village enterprises). Since the data of total number of retired persons is not reported in any official statistics, only the coverage ratio of employees is presented. For several provinces, the number of workers in government agencies, organizations and institutions is not available (these data are normally contained in statistics yearbooks of each province, but some provinces do not publish these data in their provincial statistics yearbooks) . Therefore, two types of coverage ratio are provided. Coverage ratio A divides the number of the pension insurance participants by the number of urban employed persons and employed persons in township-village enterprise. Coverage ratio B is the more accurate measure, which divides the participant number by the target population—the number of urban employed persons plus township enterprise employed persons minus the number of employees in government agencies, organizations and institutions. Shown in Table 6.5, the coverage ratio B could be 2% to 10% higher than coverage ratio A (a larger discrepancy between the two coverage ratios suggest that, a higher proportion of employees works for the government). But by any measure, none of

the provinces have achieved 100 percent coverage and most of provinces have the coverage ratios lower than 60 percent. A close examination between Table 6.4 and Table 6.5 finds that the coverage rates across provinces bear no direct relationship with the relative fiscal strength of the provinces.

Reported in Table 6.5, fiscal subsidy as share of pension income is a measure that may indicate the relative level of participating employees from non-performing SOEs or collective-owned enterprises. It may also reveal the age structure of the pension insurance participants (higher ratio may be the result of too many retired persons relative to pension insurance contributors). It is not possible to identify which effect is dominant, however. Among the top seven richest provinces (Beijing, Fujian, Guangdong, Shandong, Zhejiang, Jiangshu and Shanghai) that have very low subsidizing rates, Guangdong and Shanghai have much higher coverage ratios than the other five areas. In fact, Guangdong and Shanghai are the two "forerunners" that first allow the employed persons from township-village enterprises to participate in the pension insurance (Interview 3). But the governments did not make any subsidy to township-village enterprises. Subsidy as share of budgetary expenditure shows to what extent the operation of pension insurance has become a fiscal burden to local governments. Interestingly, among the top five spenders (they are Liaoning, Tianjin, Heilongjiang, Hainan and Xinjiang), Lianning, Tianjin and Xinjiang are relatively rich provinces. In the other end of the spectrum, Beijing, Fujian, Guangdong, Jiangshu and Zhejiang are the bottom five spenders and these five candidates are also relatively

affluent provinces. This contrast shows that the level of subsidy to pension insurance has been very different, even among the rich areas. This is by large the result that provinces have differing levels of non-performing SOEs and collective-owned enterprises. In most areas, subsidy to the Basic Enterprise Pension Insurance is the single largest sub-item in "Social Security Subsidiary Expenses".

Retiree—active worker ratio measures the number of pensioners relative to the number of pension contributors. A high retiree-active ratio indicates a higher risk that the pension fund may be unable to meet the withdrawing demand from retired persons. The pension insurance scheme in all provinces has been further reformed in more recent years. One of the major change is the introduction of personal accounts. Now the pension fund has a social pooling portion and personal accounts. The individuals make contributions toward their own personal accounts while their employers make contribution to the social pooling portion (Interview 3). When retired, the individuals would first withdraw pensions from their own personal accounts and if their own accounts run out of funding (e.g. when they live longer than the life expectancy), the social pooling portion would be used to subsidize the individual accounts. With regard to retiree-to-active ratios (reported in Table 6.5), the pension funds of Fujian, Guangdong, Shandong and Zhejiang, four rich provinces are in better conditions—they have a larger section of young workforce. In contrast, Shanghai, Tianjin, Chongqing and Tibet have much higher retiree-to-active ratios, which means their pension funds have higher withdrawing pressure. Shanghai and Tianjin are the

most affluent provincial units in China, while Chongqing and Tibet belongs to the relative poor group.

Replacement ratio, reported in the next to last column of Table 6.6 is computed as the average pension payment divided by pension contributors' average wage (there are various methods for the calculation of replacement ratio; the one reported in Table 6.6 is the official figure adopted from the social security statistics). A very generous pension payment (high replacement ratio) may suggest that the pension fund have higher risks of falling into deficit when, for example, the return on pension fund investment unexpectedly drops or the number of pensioners increase faster than the number of contributors. A very low replacement ratio may imply that the quality of living of the retired persons maybe compromised, as a retired person only gets a small fraction of his/her income before retirement. The variation in replacement ratio across jurisdictions could not be explained by differences in local fiscal strength or weakness. Several factors may jointly affect the replacement ratio. For instance, the average pension payment is strongly affected by pension standards of individual SOEs, since the pensioners at the moment are dominated by SOE retirees (one must make at least 15 year's contribution before he/she could start withdrawing the pension, Interview 3). Secondly, the average wage of the pension insurance contributors maybe affected by the relative number of participants from non-SOEs and the discrepancy in average wage between SOE workers and non-SOE workers. Thirdly, the central government has in recent years raised the basic pension standards several times (Interview 3) .

Without other information, it is not possible to further specify the factors that determine the variations of replacement ratio.

To our surprise, in more recent years, the increase of social security subsides in some areas has also been the consequence of population aging (more accurately, the aging problem of the pension insurance participants). According to a recent news (released on 23rd Feb 2009, http://news.sina.com.cn/c/2009-02-23/003317266065.shtml, accessed on 25th Feb 2009), Shanghai paid between 17billion and 18 billion yuan out of its municipal budgeted expenditure (not including the budgetary expenditure of its subordinated counties and urban districts) in 2008 to cover the deficit of the social insurance funds, in particular the Basic Enterprise Pension Insurance Fund and the Urban Health Insurance Fund. This was because the number of withdrawers (most were pensioners) had significantly grown. Even after the huge amount of subsidies, there were still 6 to 7 billions outstanding liabilities that could not be balanced in 2008 and the government of Shanghai had to defer the payment for the remaining liabilities to 2009. Around 7 billions out of the 17 or 18 billions were used to subsidize the enterprise pension insurance fund, which was about 5.6 times of the amount of subsidy to pension fund in 2004 (author's calculation). Note that 7 billions were only the amount paid out from the unconsolidated municipal budgetary expenditure (not the consolidated budget that takes lower level government budget into account). The figure for the consolidated budgetary expenditure is likely to be bigger than 7 billions. Shanghai has the highest proportion of old age population in its

total population. By the end of 2007, the proportion of population aged 65 and above in Shanghai was around 14.3 percent, while the national average was about 9.2 percent (the median value among the 31 provincial units was about 8.9 percent) (author's calculation from China Statistics Yearbook 2008). Also see Table 6.5, in 2004, the retiree-active ratio of the pension insurance of Shanghai was the third highest among the 31 provincial units (it is not clear whether the ratio has changed since then). One could observe that (from Table 6.5) in 2004 the replacement-ratio of the pension insurance of Shanghai was the second lowest. If the replacement-ratio were higher (higher pension payment relative to contribution), the deficit problem would have become bigger for Shanghai. According to the news, both the mayor (Han zheng) and the party secretary (Yu Zhengsheng) of Shanghai expressed deep worries about the status of Shanghai's social security funds and Shanghai’s fiscal inadequacy issue. They acknowledged that Shanghai has invariably been China's richest provincial unit, but the spending requirements for Shanghai have also been very hefty. But it is still a surprise to many that Shanghai's budget could not cover its social security deficit.

Apart from the aging issue, mismanagement may also contribute to the funding shortfall or the risk of funding shortfall. It is widely reported by the press in 2006 that between 2002 and 2004, the former director of Shanghai's Department of Labour and Social Security, Zhu Junyi, breached the regulation by defalcating around 3.45 billion (Chinese Yuan) from Shanghai's social insurance funds to invest in a risky private

corporation as a result of corruption (Xinhua News, released on 20th August 2006, http://news.xinhuanet.com/fortune/2006-08/20/content_4983597.htm accessed on 10th November 2006; in Chinese). It was not until the early 2007 did the authority claw back the diverted amount of money and the associated interest payments (Xinhua News, http://news.xinhuanet.com/fortune/2007-01/29/content_5666491.htm, released on 29th Jan 2007, accessed 4th Feb 2007; in Chinese). According to the regulation, social insurance funds managed by the subnational governments are only allowed to invest in government bonds and deposit with commercial banks, which generate very low but virtually riskless return (Interview 4). Subnational social insurance funds are normally managed by one or more subsidiary public service units of local Bureau of Labour and Social Security. In Shanghai, one of the corresponding public service unit is called Shanghai Enterprise Annuity Development Centre and this is where Zhu junyi diverted the funds from. In terms of the amount of fund managed (more than 10 billion CNY managed in 2004), it is the largest social security fund managing unit among the 31 provinces (Interview 5). Overseeing such a huge amount of money, the unit has a weak management structure: many of the staff are part-time employees who are also the public servant (gong wu yuan) of Shanghai's Bureau of Labour and Social Security (Renmin Ribao, released on 26th September 2006, http://finance.people.com.cn/GB/67607/4858539.html, accessed on 10th November 2006; in Chinese). Therefore, it has been difficult for the government to perform the role of supervision over the Enterprise Annuity Development Centre. The government of Shanghai has since 2006 started to consider options to improve the supervision of

the social insurance funds (such as converting the Enterprise Annuity Development Centre to an independent trust fund with its own corporate governance structure) (ibid).

The Shanghai's scandal is not the only case of social security fund mismanagement. Renmin Ribao (People's Daily newspaper) reveals that between 1986 and 1997, more than 10 billions of social insurance funds in China were unlawfully diverted for other use; between 1998 and 2005, the government clawed back 16 billions diverted fund but there was still 1 billion fund yet to be clawed back by 2005 (released on 11th August, 2006, http://finance.people.com.cn/GB/1045/4694460.html, accessed on 10th November 2006; in Chinese). By 2005, the Ministry of Labour and Social Security (renamed to Ministry of Human Resource and Social Security) had been informed 96 cases of defalcation of social insurance funds (ibid). We learn from the interviews (Interview 5 & 6) with government officials of Fujian's Finance Department that diversion of social insurance funds to invest in risky assets happened in numerous areas, corruption was one of the reasons and another obvious reason was that some of the governments wanted to earn higher returns for the funds to meet the growing withdrawing needs and therefore took very high risks. Highly decentralized management of social insurance funds contribute to the difficulty of monitoring by higher levels of government. Since many social insurances are pooling at the municipal levels (some province pools the pension and unemployment funds at the provincial level), a province would typically have dozens of social insurance funds. In

2007, the National Audit Office of China issued new regulations to subject the operation of social security funds to much stricter supervision (Interview 5&6). It is unclear whether this measure would be adequate to prevent any mismanagement of social security funds in future.

Table 6.6 Key Indicators of Urban Unemployment Insurance (2004) unit : 10000 Yuan

Indicators/ Regions	Coverage Ratio	Fiscal Subsidy	Total Income	Total Fiscal Expenditure	Weighted Rank04
Eastern					
Beijing	n/a	0	155759	8982756	2
Fujian	0.532	1716	70261	5166787	7
Guangdong	0.798	409	280033	18529500	5
Guangxi	0.515	15	59953	5074721	26
Hainan	n/a	25	16704	1272006	16
Hebei	0.816	828	101171	7855591	14
Jiangshu	0.765	4226	266612	13120404	6
Liaoning	0.697	87163	240844	9313979	8
Shandong	0.639	1460	206790	11893716	9
Shanghai	n/a	0	295126	13825254	1
Tianjin	n/a	0	64582	3750212	3
Zhejiang	0.475	6948	159501	10629355	4
Central					
Anhui	0.693	10030	80372	6015280	28
Heilongjiang	0.762	50	82996	6975516	11
Henan	0.840	781	102350	8799580	22
Hubei	n/a	863	77543	6462888	19
Hunan	n/a	74	68745	7195435	23
InnerMongolia	0.644	808	37826	5641117	10
Jiangxi	0.481	413	37024	4540598	24
Jinin	0.689	335	56449	5077758	15
Shanxi	0.731	79	42415	5190569	13
Western					
Chongqing	0.604	5	36393	3957233	18
Gansu	0.661	106	31137	3569366	30
Guizhou	n/a	40	36371	4184181	31
Ningxia	0.407	10	8728	1230177	17
Qinghai	n/a	70	10199	1373363	20
Shaanxi	0.775	468	76155	5163052	21
Sichuan	n/a	635	92367	8952534	27
Tibet	n/a	0	4619	1338335	29
Xinjiang	0.552	1	69682	4210446	12
Yunnan	0.454	0	52600	6636354	25

Note: Coverage Ratio= the number of participating employees (excluding employees of government agencies, organizations and institutions) dividied by the number of urban employees that work outside government agencies, organizations and institutions

Source: calculated from unpublished social security statistics compiled by Ministry of Finance of China and statistics yearbooks of various provinces 2005

The Urban Unemployment Insurance (Table 6.6) is supposed to cover urban economic active population (above 16 and able and willing to work),who are subject to the risk of unemployment. Those who work in government agencies and organizations are not subject to the risk of unemployment. To date, the rural migrant workers are still not

eligible to participate in this insurance. Fieldwork interviews show that a small but growing number of employees in the public service units are required to join the unemployment insurance scheme, as there has been reform that aimed to convert some public service units to public enterprises (Interview 3). However, in calculating the unemployment insurance coverage ratio, we ignore this group of employees because it is not possible to identify the number of public service unit workers that are subject to unemployment risks. It is also not possible to count the exact number of migrant workers. Since the number of migrant workers are likely to be larger than the number of participants from public services unties, the overall effect is that, the estimated coverage ratios are likely to be biased downwards. Table 6.6 shows that the variation of the 2004 coverage ratio across provinces are different from the variation of provincial GDP or fiscal revenue. The not-so-accurate coverage rates of Urban Unemployment Insurance were higher than the coverage rates of pension insurance. This is because employees in township-village enterprises were not allowed to participate in this scheme. What is quite clear is that none of the area has achieved 100 percent coverage. It is surprising that the fiscal subsidy on unemployment insurance varies so hugely between regions. Beijing, Shanghai, Tianjin, Tibet and Yunan did not subsidize the insurance at all, while Liaoning and Anhui spent 871.63 millions and 100.3 millions respectively in 2004. Comparing the amount of subsidy with the provincial budgeted expenditure, we find that only the subsidies made by Liaoning (a rich province) and Anhui (a poor province) were sizeable.

Table 6.7 Key Indicators of Urban Health Insurance (2004) unit : 10000 Yuan

Indicators/ Regions	Coverage Ratio	Fiscal Subsidy	Total Income	Total Fiscal Expenditure	Weighted Rank04
Eastern					
Beijing	0.427	0	891937	8982756	2
Fujian	0.347	375	339672	5166787	7
Guangdong	0.510	665	1175526	18529500	5
Guangxi	0.341	0	216535	5074721	26
Hainan	0.211	42	48979	1272006	16
Hebei	0.333	3109	355074	7855591	14
Jiangshu	0.459	488	944043	13120404	6
Liaoning	0.402	635	537173	9313979	8
Shandong	0.330	940	621722	11893716	9
Shanghai	0.498	0	1342929	13825254	1
Tianjin	0.443	23789	250348	3750212	3
Zhejiang	0.577	6903	675963	10629355	4
Central					
Anhui	0.261	339	223822	6015280	28
Heilongjiang	0.234	224	346652	6975516	11
Henan	0.319	1909	332443	8799580	22
Hubei	0.216	551	343653	6462888	19
Hunan	0.384	3154	342424	7195435	23
InnerMongolia	0.247	3403	151678	5641117	10
Jiangxi	0.193	3980	124295	4540598	24
Jinin	0.216	701	148304	5077758	15
Shanxi	0.228	17	181600	5190569	13
Western					
Chongqing	0.290	0	156063	3957233	18
Gansu	0.235	27	108013	3569366	30
Guizhou	0.203	10	89114	4184181	31
Ningxia	0.288	0	43312	1230177	17
Qinghai	0.298	357	66389	1373363	20
Shaanxi	0.351	9298	217089	5163052	21
Sichuan	0.322	328	474898	8952534	27
Tibet	0.140	0	12534	1338335	29
Xinjiang	0.296	1085	318135	4210446	12
Yunnan	0.327	130	325085	6636354	25

Note: Coverage Ratio= the number of participants dividied by urban population

Source: calculated from unpublished social security statistics compiled by Ministry of Finance of China and statistics yearbooks of various provinces 2005

For Urban Health Insurance (Table 6.7), the target population is the urban residences, including those migrant workers who stay in the city for over one year. The contribution-based urban heath insurance system was established in 1998. The system

was initially designed for the workers in the public sector and urban enterprises. In more recent years, the ordinary resident, migrant workers and university students from other areas have become eligible to participate. Like the pension insurance, this insurance is financed by participant's contributions and contains both social pooling portion and personal accounts. The government made subsidies when those distressed SOEs were unable to make contributions for their employees or when the insurance fund ran into deficit (Interview 5 in Fujian confirms that the governments of Fujian also made limited subsidy for the residents). One could see from Table 6.7 that the coverage ratio of this insurance scheme in 2004 was quite low across provinces. Similar to the unemployment insurance, there is significant difference in the amount of fiscal subsidy made to this insurance fund between localities. But this time, Tianjin (rich province) and Shaanxi (poor province) replaced Liaoning and Anhui, as the top two spenders. The subsidies in all other regions are not sizable. Comparing to pension insurance subsides, the sizes of subsides on Urban Health Insurance Fund and Urban Unemployment Insurance are very small (except in the four provincial units we specified).

It is not possible to analyse the social assistance issues (such as the expenditure and unmet needs) across the provincial governments, as there are inadequate data. These issues are dealt with in the Fujian province case study. However, the cross-sectional analysis presented so far is supportive to Hypothesis 1 (In the post TSS period (1994-2008), even certain relatively affluent locality has not been able to fully meet

the emerging social security needs, resulting in under-provision of social security). Three key points could be summarized from the above findings. First, all provincial units have increased their levels of budgetary spending on social security since 1998 and the levels of spending in a few relatively affluent areas were much higher than the benchmark. Since a large part of the social security spending was devoted to the SOE sector, this may suggest that the distribution of non-performing SOEs across the geographical areas has been highly imbalanced but was not highly related to the fiscal capacity of the provinces. Secondly, even after several years of expansion of social insurance coverage, there have still been a considerable proportion of population not covered by the social insurances. In other words, there has been severe social exclusions. This is the case even for relatively affluent provinces. But it is not clear whether those who not covered by social insurances are only from the non-state sectors (the case study of Fujian shows that the answer is not). Thirdly, the mini-case from Shanghai demonstrates that social security could be a hefty fiscal burden for the government, even for the richest area (aging is also an issue not to be overlooked). Finally, the evidences of mismanagement of social insurance funds in Shanghai and in other areas suggest that decentralized management of social insurance funds may be problematic, as supervision of those funds could be a challenging task for the governments. Mismanagement of social insurance funds generates the risks that may lead to shortfall in social insurance funds and create unexpected fiscal pressure for the government.

6.4 Has Budgetary Spending on Social Security Crowded-Out Budgetary Spending on Education and Health?

In Chapter 5 and section 6.3 of this chapter, the evidence presented suggests that the proportion of social security spending (no matter in the national or subnational levels) has significantly increased since the 1990s. This section seeks to answer the question as to whether the increased budgetary spending on social security has crowded-out the spending on education and health sectors. Specifically, it tests Hypothesis 2: in the post TSS period (1994-2008), there have been negative correlations between the share of consolidated provincial budgetary spending on social security and health sector, and between the share of consolidated provincial budgetary spending on social security and education sector.

We run the correlation analysis using provincial-level data for 2004 and 1998 (the data for all the 31 provinces are available). As already highlighted in last section, between 1998 and 2004, the share of consolidated provincial budgetary spending on social security in almost all provinces rose greatly. Thus it would be useful to compare the testing results of these two years to see whether the increasing share of spending has led to different level of correlation coefficients. All data are entered in natural logarithm form to reduce the effect of outliers. Social2_04 stands for the aggregation of “pension and relief funds” and “social security subsidiary expenses” as share of total consolidated provincial budgetary spending for the year 2004. Edu_04 stands for the operating expenses of education as share of total consolidated provincial

budgetary spending for the year 2004. Health_04 stands for the operating expenses of health as share of total consolidated provincial budgetary spending for the year 2004. "LN" is natural logarithm. The result shows that for 2004 (see Table 6.8), there are negative correlations between the percentage of budgeted spending on social security and the percentage of budgeted spending on education (the correlation coefficient is -0.249, but only significant at the 0.1 level), and between the proportion of budgeted expenditure on social security spending and the proportion of budgeted expenditure on health (the correlation coefficient is -0.511, significant at the 0.01 level). However, the correlation coefficient (-0.249) between social security sector and education sector is very weak (negligible) and only significant at the margin, though it is significant. The trade-off effect between social security and health spending is stronger and the correlation coefficient of -0.511 is considered to be moderate. To further analyse the relationship between the level of spending between social security and health, we regress the share of spending on health (the dependent variable) against the share of spending on social security (the independent variable) for 2004. The result (Table 6.10 a,b and c) shows that the beta coefficient of LNSocial_04 is -0.22 and significant. Since both variables are entered in natural log form, this result could be interpreted as across the provinces, 1 percent increase in the share of budgeted spending on social security is associated with around -0.22 percent decrease in the share of budgeted spending on health.

Table 6.8 Correlations between the share of consolidated provincial budgetary spending on social security (two sub-items aggregated), health and education (2004 data)

		LNSocial2_04	LNEdu_04	LNHealth_04
LNSocial2_04	Pearson Correlation	1	-.249	-.511**
	Sig. (1-tailed)		.089	.002
	N	31	31	31
LNEdu_04	Pearson Correlation	-.249	1	.369*
	Sig. (1-tailed)	.089		.021
	N	31	31	31
LNHealth_04	Pearson Correlation	-.511**	.369*	1
	Sig. (1-tailed)	.002	.021	
	N	31	31	31

**. Correlation is significant at the 0.01 level (1-tailed).

*. Correlation is significant at the 0.05 level (1-tailed).

Table 6.9 Correlations between the share of consolidated provincial budgetary spending on social security (two sub-items aggregated), health and education (1998 data)

		LNSocial2_98	LNEdu_98	LNHealth_98
LNSocial2_98	Pearson Correlation	1	-.163	-.181
	Sig. (1-tailed)		.190	.165
	N	31	31	31
LNEdu_98	Pearson Correlation	-.163	1	.448**
	Sig. (1-tailed)	.190		.006
	N	31	31	31
LNHealth_98	Pearson Correlation	-.181	.448**	1
	Sig. (1-tailed)	.165	.006	
	N	31	31	31

**. Correlation is significant at the 0.01 level (1-tailed).

Table 6.10a Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.511[a]	.261	.235	.16727

a. Predictors: (Constant), LNSocial2_04

Table 6.10b ANOVA [b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.286	1	.286	10.223	.003[a]
	Residual	.811	29	.028		
	Total	1.097	30			

a. Predictors: (Constant), LNSocial2_04

b. Dependent Variable: LNHealth_04

Table 6.10c Coefficients [a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-3.749	.168		-22.271	.000
	LNSocial2_04	-.220	.069	-.511	-3.197	.003

a. Dependent Variable: LNHealth_04

Comparing the results in Table 6.8 and Table 6.9, one could easily see that both the negative correlation coefficients in 1998 were smaller and insignificant than the negative correlation coefficients in 2004 . This suggests that the trade-off effect became more obvious in more recent year when the social security sector grew to a relatively large spending sector. One may be interested in whether such trade-off effects have been stronger in poor areas than in rich areas. However, the total observation is only 31; dividing 31 observations to sub-groups would not be viable for statistical testing. Such gap would require additional research in future, when prefecture-level data are collected.

The above statistical outcomes partially confirm Hypothesis 2. As strictly speaking, only the negative correlation between the share of budgeted spending on health and the share of budgeted spending on social security for 2004 is to be reckoned. This result suggests that to some extent, the growth in social security spending may have crowded-out the budgeted spending on health at the local levels. One may question

that this effect has only been nominal, since the reduction of the share of operating expenses for health may have been compensated by the increase of subsidies on health insurance. Reported in Table 6.7, the subsidies for health insurance fund across provinces were much lower (even the top spender Tianjin only spent 0.63 percent of its budgeted expenditure on health insurance subsidy in 2004) comparing to the subsidies for pension insurance fund. This suggests that the growth of subsidies on health could only explain a small part of the increase in aggregated social security spending. Thus the trade-off effect between spending on health and spending on social security could be real. Of course, the fact that health insurance has been introduced as a protection might itself be a reason that governments reduced the share of operating expenses for health, when they were forced to free up resources to accommodate the growth of social security expenses.

6.5 What Explains Bigger Provincial Governments?

This section tests Hypothesis 3: In the post TSS period (1994-2008), holding other factors constant, larger sizes of provincial governments (higher levels of consolidated budgetary expenditure-GDP ratios across provinces) could be in part explained by higher degrees of market transition and higher levels of urbanisation and income. The proxy for market transition is the gross industrial output value of non-state-owned and non-state-controlled enterprise as share of total provincial gross industrial output value. A cross-sectional multiple regression model is employed to test this hypothesis. The model is specified as:

$$FisGDP = a + \beta_1 * Market + \beta_2 Urban + \beta_3 GDP + \beta c * C + u$$

The dependent variable FisGDP stands for consolidated provincial fiscal expenditure as share of provincial GDP. "Market" stands for market transition. There may be other possible proxies for market transition such as using the industrial value-added to replace the gross industrial output value or use the number of employed persons in non-state-owned and non-state-control enterprise employment numbers as percentage of employed persons in all enterprises. However, the value-added figures are not available and the total number of employed persons in enterprise is only available in a few provinces.

In the above model, "Urban" stands for urbanisation rate. The true urbanisation rate (the percentage of population residing in urban areas) is only available for a few

provinces (from their statistics yearbooks). Thus we must comprise by using the proxy--the share of non-agricultural population in total population. This is a serious underestimated figure (in particular for area with a large number of migrant workers) and might not be a good measurement of urbanisation. The definition for non-agricultural population has changed several times since the 1990s. But the definitional change has always been nation-wide. Thus although the figures have been inconsistent over time, they are still comparable across provinces for any given year. "GDP" stands for per capita gross regional produce of a province.

Table 6.11: List of Independent Variables

Variables	Description
GDP	Per capita regional GDP, Chinese Yuan; data available from 1995 to 2006
Density	Population density (persons per square km); the cost of public services provision is normally higher in lower density areas; data available from 1995 to 2006
Trade	Total volume of foreign export and import as percentage of GDP, a proxy for openness; data available from 1995 to 2006
Urban	Urbanization rate, the true urbanziation rate (percentage of population residing in urban areas) is only available in a few provinces in the year 2000 and 2006; we use the share of non-agricultural population in total population as a proxy for urbanization (this may be probematic because non-agricultural population is based on household regristration, not the true level of urban population); data available from 1995 to 2005
Age65	The proportion of population aged 65 and above, a not-so-perfect proxy for spending needs in health and pension; data available from 2001 to 2006
Wage	The average wage of state sector employees (Yuan), an imperfect proxy for the cost of government employees because state sector covers SOE employees whose wage payments are not from the budgets; another problem is that the number of employees in the government sector is unknown, so even if the average wage is higher, the total cost could stilll be low if fewer persons are working for the government. data available from 2001 to 2006
Market	The gross industrial output value of non-state-owned and non-state-controlled enterprises as share of total provincial gross industrial output value. Data available in 2003 and 2005 (the 2005 China Industrial Statistics Yearbook does not provide information regarding the total gross industrial output value for 2004 for unkonwn reasons)
Dummy	Dummy variable for provincial units that are autonomous regions, which are Inner Mongolia, Xinjiang, Ningxia, Tibet and Guangxi.

Source: compiled from China Statistics Yearbooks 1996-2007, China Industrial Statistics Yearbooks 2004-2006, China Population Statistics Yearbooks 1996-2006 and statistics yearbooks of various provinces 2003-2005

There are seven control variables for the model (listed in Table 6.11). In the above model, “C” stands for control variables. We are not only interested in whether “Market”, "Urban" and "GDP" have any explanatory power on the variation of “FisGDP”, but are also interested in whether such power are robust or not in the presence of other possible factors. This is the reason of employing control variables. U stands for the error term. All variables in the model (except the dummy variable) are transformed using the natural logarithm. This helps to reduce the effect of outliers and improve the stability of the model. The dummy variable cannot be log-transformed, as log0 is undefined. We use 2004 data to test the model, so the result could be readily compared with what we have analysed in the previous sections (in fact, no matter 2003 data or 2005 data are used, the testing results are very similar and would lead to same conclusions). The number of observation is all the 31 provinces. For the variable "Market", the average of 2003 and 2005 figures is used, as 2004 data are not available.

Table 6.12 describes the dependent and independent variables before log transformation. When considering the dependent variable, Tibet is an outlier. The budgeted expenditure-to-GDP ratio (FisGDP) of Tibet is 60.7 percent, much higher than the peer. In terms of population density, a number of western provincial units have much lower density than other provinces. In terms of openness (Trade), several eastern provincial units have much higher ratios than the western and central provinces. In terms of urbanization (using the share of non-agricultural population as

proxy), Beijing and Shanghai have much higher values than other areas and the average urbanization value is only 34.1 percent, while the true national urbanization rate in 2004 was already 41.7 percent (as reported by China Statistic Yearbook 2005). This confirms that the measure of urbanization underestimates the true level of urbanization. When comparing the per capita GDP with the average wage of state sector employees, one could discover that Tibet has extremely high wage level relative to its per capita GDP. In terms of the level of market transition, a few coastal provinces such as Zhejiang, Jiangsu, Guangdong and Fujian have much higher levels of market transition: most of the gross industrial output in these provinces have been generated by the non-state enterprises. After log-transformation, the effect of the outliers has been greatly reduced. Depicted in Table 6.13, the value of most variables ranges within three standard deviations of the mean value. The outlier effect of Density_04 is still strong, this is due much to the sharp contrast between the population density of Shanghai and that of Tibet.

Table 6.12 Dependent and Independent Variables (original form)

	FisGDP 2004	GDP 2004	Density 2004	Trade 2004	Urban 2004	Age65 2004	Wage 2004	Market 2003_05
Eastern								
Beijing	0.148	40591	910	1.248	0.735	0.111	29674	0.476
Fujian	0.09	16415	283	0.66	0.309	0.085	15603	0.792
Guangdong	0.098	22718	462	1.514	0.487	0.079	22116	0.82
Guangxi	0.148	7023	206	0.1	0.185	0.084	13579	0.481
Hainan	0.159	9767	231	0.341	0.378	0.075	12652	0.428
Hebei	0.093	12451	361	0.128	0.266	0.08	12925	0.611
Jiangshu	0.087	20185	696	0.911	0.42	0.107	18202	0.828
Liaoling	0.14	15822	285	0.413	0.479	0.095	14921	0.443
Shandong	0.079	16364	585	0.323	0.322	0.092	14332	0.711
Shanghai	0.171	46342	2114	1.586	0.812	0.154	30085	0.593
Tianjin	0.121	30381	859	1.081	0.597	0.108	21754	0.626
Zhejiang	0.091	24679	448	0.585	0.267	0.098	23506	0.861
Central								
Anhui	0.126	7366	461	0.121	0.208	0.085	12928	0.46
Heilongjiang	0.147	12446	84	0.114	0.481	0.068	12557	0.22
Henan	0.103	8803	587	0.062	0.213	0.081	12114	0.554
Hubei	0.115	9364	324	0.096	0.344	0.082	11855	0.456
Hunan	0.128	8423	316	0.077	0.214	0.088	13928	0.512
InnerMongolia	0.185	12756	21	0.098	0.382	0.075	13324	0.443
Jiangxi	0.131	8069	257	0.082	0.281	0.08	11860	0.421
Jinin	0.163	11525	142	0.174	0.452	0.075	12431	0.287
Shanxi	0.145	10709	213	0.121	0.297	0.071	12943	0.456
Western								
Chongqing	0.147	8625	379	0.115	0.25	0.114	14357	0.474
Gansu	0.211	6447	65	0.084	0.227	0.066	13623	0.221
Guizhou	0.249	4298	222	0.072	0.158	0.075	12431	0.317
Ningxia	0.229	9135	113	0.135	0.352	0.057	14620	0.423
Qinghai	0.295	8647	8	0.099	0.295	0.059	17229	0.2
Shaanxi	0.163	8571	180	0.092	0.249	0.077	13024	0.286
Sichuan	0.14	7312	180	0.086	0.223	0.088	14063	0.561
Tibet	0.607	8042	2	0.073	0.16	0.064	30873	0.275
Xinjiang	0.191	11254	12	0.204	0.367	0.063	14484	0.179
Yunnan	0.215	6981	115	0.097	0.164	0.077	14581	0.31
Minimum	0.079	4298	2	0.062	0.158	0.057	11855	0.179
Maximum	0.607	46342	2114	1.586	0.812	0.154	30873	0.861
Mean	0.165	13919.7	358.7	0.351	0.341	0.084	16212	0.475
Std. Deviation	0.096	9852	402.6	0.446	0.159	0.02	5517.2	0.19

Source: see Table 6.11

The test begins with a correlation analysis, which serves to discover the relationship between the dependent variable and each of the independent variables and to check whether there are high correlations between any two independent variables. An insignificant and low correlation between the dependent variable and an independent

variable means that this independent variable has little explanatory power and would normally be excluded from subsequent regression analysis. A very high and significant correlation between two independent variables may suggest the two independent variables are better not to be entered in the regression model at the same time. If they are entered at the same time, multicollinearity problem may arise. Multicollinearity problem describes a situation where the set of independent variables, as a group well explains the variation in the dependent variable (the model is statistically significant and the R square is high) , but none of the individual independent variables are significantly different than zero. Multicollinearity problem could also arise even when the correlations between any two independent variables are low, this is because linear combination of the variable may also lead to high correlations. We use the multicollinearity diagnostics in SPSS 16 to identify multicollinearity problem and to drop the variables that contribute to this problem.

Table 6.13 Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
FisGDP_04	31	-2.54	-.50	-1.9020	.41640
SOE_03_05	31	-1.9720	-.1970	-.732387	.4697224
GDP_04	31	8.37	10.74	9.3702	.55391
Dummy	31	.00	1.00	.1613	.37388
Density_04	31	.82	7.66	5.2387	1.46098
Trade_04	31	-2.78	.46	-1.6440	1.02879
Urban_04	31	-1.84	-.21	-1.1673	.42518
Age65_04	31	-2.87	-1.87	-2.4967	.21239
Wage_04	31	9.42	10.43	9.7197	.31498
Valid N (listwise)	31				

Table 6.14 Correlations between FisGDP_04 and independent variables

		Fis GDP_04	Market_03_05	GDP_04	Dummy	Density_04	Trade_04	Urban_04	Age65_04	Wage_04
Pearson Correlation	FisGDP_04	1.000	-.728	-.404	.489	-.759	-.413	-.279	-.478	.060
	Market_03_05	-.728	1.000	.514	-.266	.716	.553	.203	.634	.368
	GDP_04	-.404	.514	1.000	-.177	.466	.905	.837	.638	.724
	Dummy	.489	-.266	-.177	1.000	-.599	-.227	-.146	-.408	.013
	Density_04	-.759	.716	.466	-.599	1.000	.510	.352	.758	.119
	Trade_04	-.413	.553	.905	-.227	.510	1.000	.761	.605	.696
	Urban_04	-.279	.203	.837	-.146	.352	.761	1.000	.418	.386
	Age65_04	-.478	.634	.638	-.408	.758	.605	.418	1.000	.474
	Wage_04	.060	.368	.724	.013	.119	.696	.386	.474	1.00
Sig. (1-tailed)	FisGDP_04	.	.000	.012	.003	.000	.010	.064	.003	.373
	Market_03_05	.000	.	.002	.074	.000	.001	.136	.000	.021
	GDP_04	.012	.002	.	.170	.004	.000	.000	.000	.000
	Dummy	.003	.074	.170	.	.000	.109	.217	.011	.473
	Density_04	.000	.000	.004	.000	.	.002	.026	.000	.262
	Trade_04	.010	.001	.000	.109	.002	.	.000	.000	.000
	Urban_04	.064	.136	.000	.217	.026	.000	.	.010	.016
	Age65_04	.003	.000	.000	.011	.000	.000	.010	.	.004
	Wage_04	.373	.021	.000	.473	.262	.000	.016	.004	.
N	FisGDP_04	31	31	31	31	31	31	31	31	31
	Market_03_05	31	31	31	31	31	31	31	31	31
	GDP_04	31	31	31	31	31	31	31	31	31
	Dummy	31	31	31	31	31	31	31	31	31
	Density_04	31	31	31	31	31	31	31	31	31
	Trade_04	31	31	31	31	31	31	31	31	31
	Urban_04	31	31	31	31	31	31	31	31	31
	Age65_04	31	31	31	31	31	31	31	31	31
	Wage_04	31	31	31	31	31	31	31	31	31

The correlation matrix above (Table 6.14) shows that there are significant correlations between FisGDP_04, the dependent variable and six out of the eight independent variables. Five correlations are significant at the 0.01 level, one at 0.05 level (GDP_04). The correlation coefficient (r equals -0.279) between FisGDP_04 and Urban_04 is only significant at the 0.1 level. It is surprising that apart from Dummy, Density and Wage, all the other independent variables have unexpected correlations between the dependent variable. The correlations above show that bigger government is associated with lower degree of market transformation (lack of market transition), lower level of urbanization (not very significant), lower level of income, lower level

of international trade and lower proportion of aged population. One would normally expect these correlations to be positive, in other words, one would expect government with higher degree of market transition, urbanization, income, international trade and higher proportion of aged population to be associated with higher expenditure-to-GDP ratios for higher investment needs in infrastructure, public services, administrative capacity and redistribution. Given the contrary result, Hypothesis 3 may have to be rejected. Multiple regression analysis is employed to further ascertain this result. Wage_04 has very low correlation with the dependent variable (the Pearsonian r is only 0.06) and the correlation is insignificant at all, therefore it would be excluded from further regression analysis. It is noticed that there are high correlations in-between several independent variables, which could lead to multicollinearity problem in the multiple regression. The correlations between GDP_04 and Trade_04, between GDP_04 and Urban_04, between Trade_04 and Urban_04, and between Density_04 and Age65_04 are very high and significant (the r are: 0.905, 0.837, 0.761 and 0.758 respectively). Indeed, a locality has higher income is highly likely to be more actively engaged in foreign trade and more urbanized. It is also interesting that the higher the population density is, the more likely an area has higher proportion of population aged 65 or above. Multicollinearity problems could be mitigated or avoided when these variables are entered at the different times. Before performing each regression analysis, the residuals are analysed (using histogram and scatter plot) to ensure that the model assumptions for dependent variables are satisfied.

Table 6.15: Multiple Regression Estimates Dependent Variable: FisGDP_04

Independent Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Constant	***-2.488 (-21.633)	***-2.221 (-10.256)	0.944 (0.787)	-1.657 (-1.875)	***-1.711 (-3.838)	0.342 (0.338)
Market_03_05	***-0.708 (-5.718)			**-0.378 (-2.264)	**-0.445 (-2.569)	***-0.427 (-2.792)
Urban_04		-0.273 (-1.564)				
GDP_04			**-0.304 (-2.378)	0.019 (0.186)		
Density_04				***-0.14 (-2.958)	**-0.104 (-1.759)	***-0.196 (-3.686)
Dummy					0.181 (1.092)	
Trade_04					0.026 (0.455)	
Age65_04						*0.629 (1.909)
Ajusted R Square	0.514	0.046	0.134	0.607	0.612	0.653
Partial R^2 for Market_03_05	0.514	N/A	N/A	0.16	0.202	0.224
Partial R^2 for GDP_04	N/A	N/A	0.134	0.001	N/A	N/A
Multicollinearity	No	No	No	GDP_04	Trade_04	Age65_04
Observations	31	31	31	31	31	31

Note:
a. t-statistics in parentheses
b. * significant at 0.1 level; ** significant at 0.05 level; ***significant at 0.01 level

Table 6.15 (continued): Multiple Regression Estimates

Dependent Variable: FisGDP_04				
Independent Variables	Model 7	Model 8	Model 9	Model 10
Constant	***-1.48 (-4.243)	*-2.187 (-1.933)	-0.361 (-0.401)	-2.541 (-1.099)
Market_03_05	**-0.369 (-2.352)	***-0.688 (-4.687)		
GDP_04		-0.03 (-0.268)	-0.048 (-0.464)	-0.126 (-0.785)
Density_04	***-0.139 (-3.02)		***-0.208 (-5.254)	
Age65_04				-0.728 (-0.371)
Ajusted R Square	0.62	0.498	0.549	0.191
Partial R^2 for Market_03_05	0.165	0.44	N/A	N/A
Partial R^2 for GDP_04	N/A	0.003	0.008	0.022
Multicollinearity	No	Yes	Yes	Yes
Observations	31	31	31	31

Note:
a. t-statistics in parentheses
b. ** significant at 0.05 level; ***significant at 0.01 level

The regression results (using SPSS 16) are presented in Table 6.15. Model 1, 2 and 3 are simple regressions that regress FisGDP (dependent variable) against Market, Urban and GDP respectively. The outcomes show that urbanisation (measured as the share of non-agricultural population in total population of a province) could not explain the variation of the size of the government (Model 2, the t statistics for Urban_04 is insignificant), while both market transition and per capita income could explain part of the variation of the size of the government. Market alone could explain around 51.4 percent of the variation of FisGDP (Model 1), whilst GDP alone could explain only about 13.4 percent of the variation of FisGDP (Model 3). The beta coefficient of Market is negative and significant at the 0.01 level, since both the

dependent and independent variable are in log form, this could be interpreted as 1 percent increase in market transition could result in around 0.708 percent decrease in the size of government, when other variables are not controlled for. The beta coefficient for GDP is negative and significant at the 0.05 level. To check the robustness of these results, control variables are introduced (Model 4 to Model 10). Since Urban has no explanatory power at all, it is excluded from further regression analysis.

The results of Model 4 to Model 10 demonstrate that the explanatory power of Market is robust--holding other variable constant, Market could still explain part of the variation of FisGDP and the beta coefficients are always significant different than zero (at the 0.01 level). We noticed that Market alone could explain around 51.4 percent of the variation of FisGDP, but when Density is controlled for, the partial R square for Market drops to mere 16.5 percent (Model 7). This tells that some of the variance explained by Market could even be better captured by Density. We notice that the beta coefficient of Density is negative (lower population density areas are likely to have bigger government (higher expenditure/GDP ratio), holding other conditions constant).Government administrative cost and cost of public services could go up when the population density is lower (they may need more money to provide the same level of services). Model 4 to Model 10 (with the exception of Model 7) all suffer from different degrees of multicollinearity problem, which reduce the significance of the control variables (apart from Density, each of the control variable

alone has very small explanatory power over FisGDP) as well as the significance of GDP. In fact, when GDP is combined with any other independent variables, its beta coefficient becomes insignificant. Therefore, the tendency that high income area is likely to have smaller government is not robust (can be easily overridden by other factors). Model 7 seems to be the best model as it has relatively high explanatory power and does not suffer from multicollinearity problem. In model 7, the two variables (Market and Density) together explain around 65 percent of the variation of the dependent variable FisGDP. Adding other variables makes only small changes in the adjusted R square.

The testing result rejects Hypothesis 3. The result shows that holding other factors constant, larger sizes of provincial governments (higher levels of consolidated budgetary expenditure-GDP ratios across provinces) could be in part explained by lower (not higher) degrees of market transition; and they could not be confidently explained by the levels of urbanisation (the relation is not significant) or income (the relation is not very robust). The insignificant correlation between the size of government and the level of urbanization may also attribute to measurement errors of urbanization (where the share of non-agricultural population is used as a proxy). We would hark back to this issue after presenting the analysis of central-provincial transfers (as the result provides some insights to the variation of the sizes of provincial governments).

6. 6 Perspectives on Central-Provincial Fiscal Transfers

This section tackles Hypothesis 4: In the post TSS period (1994-2008), holding other factors constant, higher amount of per capita central-provincial fiscal transfers could be in part explained by lower level of market transition.

As discussed in the literature review (see Table 3.6 in Chapter 3), central-local fiscal transfers cover a large proportion of consolidated sub-national budgeted expenditure. The transfers constitute tax-rebates (where more affluent areas get larger share of tax return), equalization transfers and numerous specific purpose grants (also called earmarked grants). It is already known that the size of the equalization transfer has been very small, comparing to the tax-rebates. Given the obvious discrepancy in per capita fiscal revenue rankings and per capita fiscal expenditure rankings (see Table 6.1 and Table 6.2), it is possible that the allocation principles of the earmarked grants are not similar to tax-rebates. But it is not clear whether the overall effect of central-local transfers has been equalizing or counter-equalizing and whether market transition could explain part of the variation in central-local transfers. The market transition variable could not be used to distinguish the transfer that was used to cover the SOE social security issue from the transfer that was used to finance specific SOE projects.

The detailed data on actual central-local transfers are not available from any published statistics. We therefore proxy the size of central-provincial transfer by using the

difference between consolidated per capita fiscal expenditure and revenue of a province (the variable marked as Trans_04). Since 1994, all provinces are transfer-dependent on the central government so the after-transfer expenditure figure is always higher than the revenue figure. The differences between fiscal expenditure and fiscal revenue are not entirely attributable to fiscal transfers, because the fiscal revenue not used in one fiscal year would be rolled over to next fiscal year. By using the difference of expenditure and fiscal revenue as a proxy for transfer, we assume that the amounts of rolling-over are negligible or are proportional to the amount of fiscal transfers in all provinces. The model is specified as follows:

$$Trans\_04 = a + \beta_1 * Market\_03\_05 + \beta c * C + u$$

The independent variables used in this model are imported from Table 6.12. The new independent control variable Rev_04 stands for per capita fiscal revenue of a province. All the variables, except the dummy variable, are log-transformed. Once again, correlation analysis comes before the regression analysis.

Table 6.16 Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Trans_04	31	5.97	8.42	6.7226	.53731
Rev_04	31	5.90	8.76	6.6675	.70451
GDP_04	31	8.37	10.74	9.3702	.55391
Dummy	31	.00	1.00	.1613	.37388
Density_04	31	.82	7.66	5.2387	1.46098
Trade_04	31	-2.78	.46	-1.6440	1.02879
Market_03_05	31	-1.7218	-.1499	-.827970	.4282055
Urban_04	31	-1.84	-.21	-1.1673	.42518
Age65_04	31	-2.87	-1.87	-2.4967	.21239
Wage_04	31	9.42	10.43	9.7197	.31498
Valid N (listwise)	31				

Table 6.17 Correlations between Trans_04 and other independent variables

		Trans_04	Rev_04	GDP_04	Dummy	Density_04	Trade_04	Market_03_05	Urban_04	Age65_04	Wage_04
Pearson Correlation	Trans_04	1.000	.081	.050	.489	-.682	-.064	-.593	.172	-.315	.289
	Rev_04	.081	1.000	.956	-.177	.505	.901	.436	.827	.684	.719
	GDP_04	.050	.956	1.000	-.177	.466	.905	.514	.837	.638	.724
	Dummy	.489	-.177	-.177	1.000	-.599	-.227	-.266	-.146	-.408	.013
	Density_04	-.682	.505	.466	-.599	1.000	.510	.716	.352	.758	.119
	Trade_04	-.064	.901	.905	-.227	.510	1.000	.553	.761	.605	.696
	Market_03_05	-.593	.436	.514	-.266	.716	.553	1.000	.203	.634	.368
	Urban_04	.172	.827	.837	-.146	.352	.761	.203	1.000	.418	.386
	Age65_04	-.315	.684	.638	-.408	.758	.605	.634	.418	1.000	.474
	Wage_04	.289	.719	.724	.013	.119	.696	.368	.386	.474	1.00
Sig. (1-tailed)	Trans_04	.	.333	.394	.003	.000	.366	.000	.177	.042	.057
	Rev_04	.333	.	.000	.170	.002	.000	.007	.000	.000	.000
	GDP_04	.394	.000	.	.170	.004	.000	.002	.000	.000	.000
	Dummy	.003	.170	.170	.	.000	.109	.074	.217	.011	.473
	Density_04	.000	.002	.004	.000	.	.002	.000	.026	.000	.262
	Trade_04	.366	.000	.000	.109	.002	.	.001	.000	.000	.000
	Market_03_05	.000	.007	.002	.074	.000	.001	.	.136	.000	.021
	Urban_04	.177	.000	.000	.217	.026	.000	.136	.	.010	.016
	Age65_04	.042	.000	.000	.011	.000	.000	.000	.010	.	.004
	Wage_04	.057	.000	.000	.473	.262	.000	.021	.016	.004	.
N	Trans_04	31	31	31	31	31	31	31	31	31	31
	Rev_04	31	31	31	31	31	31	31	31	31	31
	GDP_04	31	31	31	31	31	31	31	31	31	31
	Dummy	31	31	31	31	31	31	31	31	31	31
	Density_04	31	31	31	31	31	31	31	31	31	31
	Trade_04	31	31	31	31	31	31	31	31	31	31
	Market_03_05	31	31	31	31	31	31	31	31	31	31
	Urban_04	31	31	31	31	31	31	31	31	31	31
	Age65_04	31	31	31	31	31	31	31	31	31	31
	Wage_04	31	31	31	31	31	31	31	31	31	31

The correlation matrix (reported in Table 6.17) illustrates that there are small positive correlations between Trans_04 and Rev_04, and between Trans_04 and GDP_04, but the correlations are insignificant. This suggests that the effect from counter-equalizing tax-rebate may have been neutralized by other types of transfers. The correlation coefficients between Trans_04 and Trade_04 (negative) and between Trans_04 and Urban_04 (positive) are insignificant. The small positive correlation between Trans_04 and Wage_04 is only significant at the margin (at the 0.1 level). There is also a small negative correlation between Trans_04 and Age65_04 (significant at the 0.05 level). This result shows that to a small extent, area with higher level of old aged population tends to be associated with lower level of fiscal transfer. The three independent variables dummy, Density_04 and Market_03_05 each has significant correlation with Trans_04. They may be interpreted as autonomous regions tend to receive higher level of transfers from the central government; areas with lower population density may receive higher level of transfers from the central government, and areas with higher level of SOEs (lower degree of transition) may receive higher level of transfers from the central government.

Table 6.18: Multiple Regression Estimates Dependent Variable: Trans_04

Independent Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Constant	***6.106 (35.045)	***8.036 (29.6)	***6.609	***7.513 (13.879)	***6.122 (38.146)	***7.709 (10.686)
Market_03_05	***-0.745 (-3.969)			-0.271 (-1.114)	***-0.626 (-3.493)	-0.354 (-1.398)
Density_04		***-0.251 (-5.016)		***-0.194 (-2.717)		-0.133 (-1.488)
Dummy			***0.703 (3.019)		**0.512 (2.497)	0.284 (1.125)
Partial R^2 for Market_03_05	0.33	N/A	N/A	0.042	0.303	0.068
Ajusted R Square	0.33	0.446	0.213	0.451	0.432	0.456
Multicollinearity	No	No	No	No	No	YES
Observations	31	31	31	31	31	31

Note:
a. t-statistics in parentheses
b. * significant at 0.1 level; ** significant at 0.05 level; ***significant at 0.01 level

From the regression analysis (results reported in Table 6.18), one could see that Market_03_05 alone could explain 33 percent of the variation in central-local transfer (1 percent increase in the level of gross industrial output value generated by non-state industries leads to 0.745 percent decrease in per capita central-local transfers, when other variables are not controlled for). This is still lower than the 44.6 percent explainable by population density (Density_04). Moreover, when Density_04 is controlled for, Market_03_05 becomes insignificant (see Model 4, the absolute value of beta coefficient for Market_03_05 also drops to 0.271 from 0.745). This may signal that, an important policy intention of the central government is to heavily subsidize those remote and less populous areas like Tibet, Qinghai, Gansu and Ningxia to compensate for the higher cost of public services delivery (or other reasons). Given the much smaller size of population in these remote areas, a not-so-large amount of

fiscal transfers could easily lead to high level of per capita fiscal transfers in these areas. Model 6 suffers from multicollinearity problem: when Market, Density and dummy are combined, these three variables are individually insignificant, but the model itself is significant. Note that none of the model has adjusted R square higher than 50 percent. Therefore, there must be other important factors explaining the size of central-local transfers.

On balance, one may draw a few concluding points from above correlation and regression analysis. First, the equalization transfer has not played an influencing role at all (if equalization transfer is influential, one would see negative and significant correlation between per capita transfer received by a province and per capita fiscal revenue of the province); secondly, the effect of tax-rebates may have been neutralized by other kinds of transfers; thirdly, although part of the central-local transfers may have been devoted to social security subsidies in the SOE sector (as discovered by Wong and Bird 2005), the allocation basis of central-local transfers seems to be more determined by population density. Hypothesis 4 cannot be firmly supported (it is only partially supported). But in any scenario, there is a large amount of variation in central-local transfer that is still unexplained.

A comparison between the result in Section 6.5 and the result in this section, one could discover that those factors that could explain the size of provincial governments could also in part explain the level of central-provincial fiscal transfers and those

factors that could not explain the size of provincial governments could not explain the variation of central-provincial fiscal transfers. This suggests that central-local transfers may be very influential in determining the variation of the sizes of provincial governments. We then run a simple regression using FisGDP_04 as the dependent variable and Trans_04 as the only independent variable. The result shows that Trans_04 alone could explain 70.3 percent of the variation of FisGDP_04 (significant at the 0.01 level) and 1 percent increase in the amount of transfer could lead to about 0.654 percent increase in the size of provincial government. Given the relative small population size of several western provinces (they also have very low population density) and the large levels of vertical fiscal imbalance (all areas receive transfers from the central government to finance part of their expenditure), the central government's financial support over those western provinces (one could clearly observe much larger level of discrepancy between per capita expenditure and per capita revenue in several western provinces from Table 6.2) makes the population density variable having such as a strong explanatory power over the size of provincial government. Note that the market transition variable is more significant and robust in explaining the size of provincial government than in explaining the size of central-provincial transfers (both are negative relations), this suggests that part of the spending on the SOE sector is paid from provinces' own budgetary revenue. Since the determinants of the central transfer are still largely unexplained and the sizes of transfer are considerable, the transfer might "wipe-out" the potential explanatory power of those variables such as GDP, Urbanization and Trade on the size of the

provincial government. Further research on the determinants of central-local transfers would be needed to clarity this issue. It would also be useful to statistically analyse the sizes of government at sub-provincial levels (larger number of observations could enable the comparison within and in-between the sub-groups: western, eastern and the central governments).

6.7 Concluding Comments

This chapter covers a range of issues. The analysis of social security spending and social insurance coverage across provinces supports Hypothesis 1 (In the post TSS period (1994-2008), even certain relatively affluent locality has not been able to fully meet the emerging social security needs, resulting in under-provision of social security). It is discovered that even some relatively affluent areas have plagued with serious fiscal burdens induced by market transition and the social security coverage was still universally low (social exclusion is an universal problem across the provinces). The Shanghai mini-case shows that aging is another factor contributing to increased social security subsidies. It is also revealed that mismanagement of social insurance funds has been a severe problem in many areas. The important implications of these findings (from fiscal federalism perspective) would be discussed in the conclusion of Chapter 7, after analysing the evidences from Fujian's case study.

Hypothesis 2 is partially confirmed (H2: In the post TSS period (1994-2008), there

have been negative correlations between the share of consolidated provincial budgetary spending on social security and health sector, and between the share of consolidated provincial budgetary spending on social security and education sector). The results from the correlation and simple regression analyses suggest that to some extent, the growth in social security spending has crowded-out the spending on health (the pressure to cover social security bid away the resources that would otherwise be available for health). Although it is found that there has been negative correlation between the level of budgeted social security spending and the level of budgetary spending on education, such correlation is not very significant. Additional research would be needed to investigate whether the trade-off effects (between social security and health spending) have been stronger in poor areas, because as reviewed in Chapter 3, there has already been under-provision of health services in poor areas. The research could be conducted by collecting prefecture-level data and divide the observations to sub-groups for statistical testing. Alternatively, one could conduct comparative case studies in poor areas and rich areas.

The statistical results reject Hypothesis 3 (H3: In the post TSS period (1994-2008), holding other factors constant, larger sizes of provincial governments could be in part explained by higher degrees of market transition and higher levels of urbanization and income). The result shows that holding other factors constant, larger sizes of provincial governments (higher levels of consolidated budgetary expenditure-to-GDP ratios across provinces) could be in part explained by lower (rather than higher)

degrees of market transition; and they could not be confidently explained by the levels of urbanisation (the relation is not significant, which may be attributable to measurement errors of urbanization, where the share of non-agricultural population is used as a proxy). Larger sizes of the governments could be partially explained by lower level of per capita GDP, but when other variables are controlled for, the beta coefficient becomes insignificant, which suggests that this relation is not robust.

Hypothesis 4 cannot be firmly supported (H4: In the post TSS period (1994-2008), holding other factors constant, higher amount of per capita central-provincial fiscal transfers could be in part explained by lower level of market transition). It is found that higher amount of per capita central-provincial fiscal transfers may be in part explained by lower degree of market transition. However, when the factor of population density is taken into account, the effect of market transition becomes insignificant. It is further discovered that the size of central-provincial transfers has strong influence over the size of provincial governments. But the determinants of the central transfer are still largely unexplained by above models. The statistical results also suggest that part of the spending on the SOE sector is paid from the provinces' own budgetary revenue (from the statistical analyses it is not possible to further distinguish the budgetary spending on productive projects undertaken by SOEs from the spending on the SOE social security issues).

Chapter 7 Social Security Development in Fujian Province--an Investigation of Local Fiscal Inadequacy and Unmet Social Security Needs

7.1 Introduction

As the analyses in Chapter 6 shows, Fujian is a relatively affluent province that spent much less on social security than many other provinces (Table 6.4, Chapter 6). On the other hand, its social security coverage ratios (especially the Basic Enterprise Pension Insurance) are lower than many of its peer (Table 6.5 to Table 6.7, Chapter 6). It is not certain whether lower level of spending could be explained by Fujian's much smaller SOE-sector (Table 6.12, Chapter 6) or by its lower social security coverage (or both). Moreover, lower social security spending in Fujian may also match the relatively lower level of fiscal transfers it received from the central government. The Fujian case study, thus serves to investigate not only the fiscal needs related to the state sector, but also the demands from non-state sector and to what extent these demands have been met. This case study is designed to test Hypothesis 1: In the post TSS period (1994-2008), even certain relatively affluent locality has not been able to fully meet the emerging social security needs, resulting in under-provision of social security. The case study explores the evolution of the social security sub-sectors and seeks to uncover how the spending decisions or plans were formed and whether they were subject to fiscal constraints or other considerations. Most of the time-series fiscal data cover the whole province, while some of the interviews took place at the municipal

level.

Fujian is a medium size province (by population) in southeast China (See Table 7.1 for the basic indictors of Fujian in 1998 and 2006). It has nine municipalities, of which eight are prefecture-level city and one is vice-provincial municipality—Xiamen. Between 1998 and 2006, the number of county-level units (city, county and urban district) slightly increased from 84 to 85. The county-level units were managed by their respective municipalities; in recent years, a Province Managing County model has been introduced, which aimed to reduce the fiscal links between municipalities and their subordinate counties and county-level cities (Interview 7). Like other provinces, Fujian has become more urbanized. Its income (Regional GDP), budgetary revenue, budgetary expenditure, extra-budgetary revenue and extra-budgetary expenditure in per capita term have all experienced substantial real growth. But in terms of the ranking among 31 provincial units, Fujian's per capita GDP, budgeted revenue and budged expenditure have declined. In 2006, its per capita GDP (21401 CNY) ranks 9th out of the 31 provincial units, but is still much higher than the population weighted average per capita GDP of the provinces (which was about 17893 CNY in 2006). Its per capita fiscal revenue (1521 CNY) also ranks 9th and higher than the population weighted average per capita fiscal revenue of the provinces (which was about 1417 CNY in 2006). In terms of the expenditure-to-GDP ratio, Fujian's government size has been among the smallest (Table 12, Chapter 6). But in terms of extra-budgetary revenue and expenditure, Fujian has become the second

largest collector and spender in 2006, right behind Zhejiang province. As a coastal province, Fujian engages more actively in international trade than many other provinces and its openness level has also increased between 1998 and 2006. Fujian has a vibrant private sector that has experienced fast development since the 1980s. In 1998, the state sector's (state owned and controlled) share in gross industrial output of Fujian was only 33 percent. By the end of 2006, the state sector's share of gross industrial output in Fujian declined to merely 17 percent, much lower than the 47 percent provincial average.

A smaller SOE sector prior to the SOE reform (initiated in late 1990s) did give an edge to Fujian, as it tended to require a lower level of fiscal subsidies on SOE restructuring. However, the spending in social security sector has not just tied to SOE restructuring, especially in more recent years. In order to have a thorough understanding, we follow a step-by-step approach to decompose the social security sector to sub-sectors and analyze the changes in each sector and in-between sub-sectors.

Table 7.1 Basic Indicators of Fujian Province

Year	1998	2006
Number of		
Municipality	9	9
County	46	45
County-level city	15	14
District	23	26
Population (10000 person)	3299	3558
as share of national population	2.76%	2.68%
Urbanization rate	20.00%	32.00%
Regional GDP per capita (Yuan)	9578	21401
ranking among provinces	7	9
Regional GDP as share of national GDP	3.83%	3.30%
Regional GDP by sector		
share of Primary Industry	19.3%	11.8%
share of Secondary Industry	42.3%	49.1%
share of Tertiary Industry	38.4%	39.1%
Budgeted revenue per capita (Yuan)	570	1521
ranking among provinces	6	9
Budgeted expenditure per capita (Yuan)	773	2048
ranking among provinces	11	19
Extra-budgetary revenue per capita (Yuan)	451	1102
ranking among provinces	4	2
Extra-budgetary expenditure per capita (Yuan)	413	934
ranking among provinces	4	2
Level of state control in industrial output	33.33%	17.10%
provincial average	n/a	47.20%
Openess level	43.43%	66.00%
provincial average	21.60%	38.90%

Note: urbanization rate is the share of non-agricultural population, not the "true" percentage of urban resident; so it is an underestimated figure. Level of state control in gross industrial output is calculated as the gross industrial output of SOE and state-controlled enterprises as share of total gross industrial output. Openness level is computed as the sum value of import and export divided by Regional GDP. All prices are nominal price.

Source: calculated from Fujian Finance Yearbooks 1999-2008, Fujian Statistics Yearbooks 1999-2008, China Statistics Yearbooks 1999 and 2007 and China Finance Statistics Yearbook 2006

7.2 The Changing Composition of the Budgetary Expenditure

The analysis starts by examining the budgetary expenditure. Table 7.2 reports the relative size of each expenditure item between 1998 and 2006. Health Subsidy for public sector workers (gongfei yiliao jingfei, item 22) is taken out from the operating expenditure of Health (item 12), since the health subsidy is recognized as a social security expense by Finance Statistics Yearbook of China and Fujian Finance Yearbooks. Apart from item 22, the items in Table 7.2 are standardized expenditure items that are presented in China Statistics Yearbooks or Finance Statistics Yearbooks under the section of "government general budgetary expenditure". After spinning-off, the operating expenditure for health becomes much smaller. There are a few features worth pointing out. First, the operating expenditure of a sector (e.g. education) may not be the total budgeted spending on this sector. The capital spending of most sectors are grouped in "Expenditure for capital construction" (item 1). The exception is capital spending on agricultural projects (Interview 7), which are counted as "Expenditure for supporting agriculture"(item 23). Second, the boundary between "expenditure for government administration" (item 14) and operating expenditure of many departments is actually not so clear-cut. Government administration expenditure covers the expenses of most government agencies and organizations (xingzheng danwei), while the operating expenditure of individual sector refers to the operating expense of the government institutions, also called public services units (shiye

danwei). For instance, the expenditure of departments of health and education are grouped under government administration expenditure but the budgeted expenses of public hospitals and schools are entered as operating expenditure of health and education respectively. The functions between department of education and public schools are distinguishable. This may not always be the case in many other departments. For example, the statistics department and its subordinate public service unit often perform the same task (such as conducting survey) and the employees from both departments may even sit in the same office (Interview 11). This raises the issue of the nature of the public services units (not addressed in this thesis). The spectrum of public service units ranged from those fully financed by the budgets to those self-financed. A small number of self-financed units such as newspaper publishing firms have been converted to public enterprises (SOEs) in recent years (Interview 8). We reclassify and simplify the 27 spending items to 5 major expenditure items in Table 7.3 for better comparison.

Table 7.2 Expenditure Items as Share of Total Budgeted Expenditure

	Year	1998	2000	2002	2004	2006
	Total Budgeted Expenditure (Bn Yuan)	25.49	32.42	39.76	51.67	72.87
1	Expd for capital construction	0.098	0.090	0.090	0.079	0.076
2	Enterprise innovation funds	0.029	0.034	0.024	0.037	0.031
3	Geological prospecting expenses	0.000	0.003	0.003	0.002	0.002
4	S&T promotion funds	0.012	0.016	0.012	0.013	0.013
5	Urban maintenance expenses	0.038	0.032	0.028	0.028	0.032
6	Circulating funds for enterprises	0.001	0.000	0.000	0.000	0.000
7	Expd for Dept of Industry and Transportation	0.012	0.011	0.014	0.017	0.020
8	Expd for Commerce Dept	0.002	0.002	0.003	0.003	0.002
9	Expd for Dept of Culture, Sports and Broadcasting	0.034	0.031	0.031	0.031	0.033
10	Operating expd of Education	0.180	0.191	0.204	0.195	0.187
11	Expd for Dept of Science	0.009	0.010	0.009	0.008	0.007
12	Operating expd of Health (adjusted)	0.030	0.026	0.025	0.024	0.028
13	Expd of other Depts	0.044	0.046	0.058	0.055	0.050
14	Expd for Government Administration	0.093	0.083	0.083	0.082	0.081
15	Expd for Foreign Affairs	0.001	0.001	0.001	0.000	0.000
16	Expd for Armed Police Troops	0.002	0.003	0.003	0.003	0.003
17	Expd for Public Security,Court of Justice and Procuratorial Agency	0.067	0.066	0.074	0.076	0.074
18	Price Subsidies	0.035	0.038	0.017	0.013	0.018
19	Pension and Social Relief	0.019	0.018	0.020	0.026	0.031
20	Pension for Public Sector Retirees	0.022	0.049	0.063	0.062	0.057
21	Social Security Subsidiary Expenses	0.011	0.021	0.021	0.018	0.019
22	Health subsidy for public workers	0.024	0.024	0.021	0.021	0.019
23	Expd for supporting agriculture,forestory etc	0.072	0.067	0.063	0.058	0.053
24	Expd for supporting less developed areas	0.006	0.011	0.009	0.007	0.006
25	Expd for National Defense	0.002	0.002	0.002	0.003	0.003
26	Expd for special items	0.018	0.017	0.015	0.016	0.021
27	Other Expenditrue	0.137	0.108	0.106	0.120	0.131

Source: Calculated from Fujian Finance Yearbooks 1999-2008 and Fujian Statistics Yearbooks 1999-2008

Items 1 to 6 are summed into “constructive expenditure”, which is often considered as productive investment. Items 7 to 18 are grouped as general “government operating expenditure”, because of their recurrent nature. Items 19 to 22 are assembled to total

"social security expenditure". Items 24 to 27 become "other expenditure" in Table 6.3. It is now quite clear that general government operating expenditure occupies around half of the budgeted expenditure and this portion has been rather stable throughout 1998 to 2006. The ratio of both "constructive expenditure" and "expenditure on agriculture" in total budgeted expenditure experienced real decrease. Given the strong growth in total budgeted expenditure (average annual growth rate around 14 percent), the amounts of these two spending items have also increased (though the speed of growth is lower than average). The only sizable expansion is social security expenditure, which increased from 7.5 percent of budgeted expenditure in 1998 to 12.6 percent in 2006 (13.2 percent in 2007, as reported in Finance Yearbook of Fujian, 2008).

Table 7.3 Major Spending Items as Share of Total Budgeted Expenditure

	Year	1998	2000	2002	2004	2006	Annual Growth AriMean	Annual Growth GeoMean
	Total Budgeted Expd (Bn Yuan)	25.49	32.42	39.76	51.67	72.87	0.141	0.140
1	Constructive Expd	0.179	0.175	0.158	0.160	0.155	-0.015	-0.018
2	Gov Operating Expd	0.510	0.507	0.522	0.508	0.504	-0.001	-0.001
3	Social Security Expd	0.075	0.113	0.124	0.128	0.126	0.071	0.067
4	Expd on Agriculture etc	0.072	0.067	0.063	0.058	0.053	-0.037	-0.037
5	Other Expenditure	0.163	0.138	0.133	0.146	0.161	0.001	-0.002

Note: Arimean stands for arithmetic average and GeoMean is geometric average
Source: Calculated from Fujian Finance Yearbooks 1999-2008 and Fujian Statistics Yearbooks 1999-2008

The single largest source of increase comes from "pension for public sector retirees" (item 20 in Table 7.2; item 1 in Table 6.4), which jumped from 2.2 percent of the total budgeted spending in 1998 to 6.3 percent in 2002 (in just four year's time) then retreated to 5.7 percent in 2006. The astonishing expansion in pension payment for

public sector retirees stems from the growing number of public sector pensioners in Fujian and several rounds of upward adjustment in pension standards (Interview 7). Between 1998 and 2006, the number of retirees in Fujian's government departments grew at 6.4 percent per annual, while the number of employees in the government department only increased at 1 percent per annual (author's calculation from Fujian Finance Yearbooks 1999-2007). Government officials of Fujian's Finance Department informed us that the lowest pension standard was set by the central government and the actual pension standards were decided by each province, where several factors such as fiscal capacity and cost of living were considered (Interview 6). But in terms of the incremental adjustment for pension of government employees, the precise amounts of increase were determined by the central government and the central government only provided subsidies to those provinces with lower fiscal capacity; Fujian, along with six or seven other provinces did not receive this kind of subsidy from the central government (ibid). "Health subsidy for public workers", the largest expenditure item within social security spending in 1998, experienced a less-than-average growth during the same period. These two sectors together accounted for 7.6 percent of the budget in 2006, up from 4.6 percent in 1998. The other two sectors "pension and social relief" and "social security subsidiary expenses" jointly made up 5 percent of the budget in 2006, a 2 percent increase since 1998. Unlike "pension for public sector retirees" and "health subsidy for public workers", whose compositions have been constant, "pension and social relief" and "social security subsidiary expenses" cover a range of different sub-sectors. It is the changing

spending patterns in these sub-sectors that explain the impacts from market transition on local budget. The budgeting decisions on these sub-sectors in part reflect the fiscal strength or constraints Fujian's government faced.

7.3 Analyzing the Development of the Social Security Sector

Table 7.4 The Subcategories of Social Security Spending (10000 Yuan)

Year	1998	2000	2002	2004	2006	2007
Social Security Spending as Share of Total Budgeted Expenditure	0.075	0.113	0.124	0.128	0.126	0.132
Total Social Security Spending	191475	365749	494107	659275	920489	1199950
1. Pension for Public Sector Retirees	55443	158782	248774	321619	417831	N/A
2. Health Subsidy for Public Workers	60827	78002	83537	109092	139530	N/A
3. Social Security Subsidiary Expenses	27232	69452	82365	94099	136960	N/A
Subsidies on Social Security Funds	973	20605	20044	22227	22778	N/A
Living Subsidy and Reemployment Subsidy for the SOE Laid-Offs	9716	29827	19722	15403	0	N/A
Subsidy on Closure of non-performing SOEs			11253	6624	9357	N/A
Subsidy on Urban Employment Services	2247	3628	3018	17811	29338	N/A
Other Subsidies	14296	15392	28328	32034	75487	N/A
4. Pension and Social Relief Expenses	47973	59513	79431	134465	226168	N/A
Expenses on Military Retirees	7887	14749	18079	24864	38970	N/A
Expenses on Social Assitance	11487	16894	25976	39037	64143	N/A
Urban Minimun Living Standard Assistance	n/a	4182	9673	13910	17319	N/A
Other Expenses	28599	23688	25703	56654	105736	N/A

Note: All the prices are nominal price (not ajusted for inflation)

Source: Adapted from Fujian Finance Yearbooks 1999-2008

A more detailed social security spending picture is found from Fujian Finance Yearbooks 1999-2008 (Table 7.4). A new categorization method was introduced for China's fiscal statistics in 2007, therefore only the total amount could be reported for

2007. The “subsidies on social security funds” refer to the subsidies on the six state-mandated contribution based social insurance funds (summarized in Table 7.5). These six insurances are co-financed by employers and employees. In Fujian, for pension insurance, the employers contribute 14 percent of the wage while the individuals contribute 8 percent; for health insurance, employers contribute 8 percent and employees contribute 2 percent; for unemployment insurance, employers contribute 2 percent and employees contribute 1 percent; the contributions to work injury insurance and maternity insurance are exclusively made by the employers with 0.5 percent and 0.7 percent of the wage respectively (Interview 7). In Fujian province, pension insurance for enterprise workers and the unemployment insurance are pooled at the provincial level, the newly introduced pension insurance for public sector staff and workers is pooled at the county level and the remaining three insurances are pooled at municipal (city) level (ibid). Pooling at the provincial level has prevented some municipalities in Fujian such as Sanming and Ningde from running deficits in their enterprise pension insurances (ibid). Both pension insurance and health insurance have personal accounts, which are separated from the social pooling portion. Though in some provinces such as Shanghai and Guangdong, enterprise pension insurance has been open to employees from township enterprises, in Fujian province to date, only the employed persons in urban areas are eligible to participate (Interview 7). Municipal and provincial government shoulder a very large portion of the financial and managerial responsibilities in social security. Throughout the period, all of the six accounts had operating surplus (see Table 7.5). Of course,

some had much higher safety margin (the balance divided by the annual payment) than the others. For instance, the work injury insurance ran a 976 million yuan surplus in 2006 and its 2006 payout was only 118 million yuan, which means that the risk of not meeting the payment requirement could be very low. In contrast, the balance for public sector pension insurance was 2050 million but its payment in 2006 was 3173 million. This may indicate a higher chance of funding shortfall in future.

Table 7.5 Fujian's Social Security Statistics(100 million Yuan, and ratio)

Year		1998	2000	2002	2004	2006	2006 Balance
Urban Basic Pension Insurance for Enterprise Workers	Income	25.78	35.62	46.31	54.62	89.07	77.72
	Payout	23.76	30.37	43.57	49.34	72.45	
	P.R1	0.50	0.55	0.57	0.58	0.60	
	P.R2	0.19	0.20	0.21	0.23	0.25	
Pension Insurance for Public Sector Staff and Workers	Income	11.96	16.79	21.30	27.01	33.78	20.5
	Payout	12.10	15.17	19.48	24.48	31.73	
	P.R3	0.45	0.56	0.55	0.56	0.74	
Urban Unemployment Insurance	Income	1.52	3.13	5.13	7.03	9.31	21.22
	Payout	1.08	2.35	4.25	4.23	4.40	
	P.R4	0.33	0.46	0.61	0.56	0.50	
Urban Health Insurance	Income		5.27	20.56	31.82	47.28	72.25
	Payout		3.35	12.25	20.58	30.84	
	P.R5				0.43	0.47	
Urban Maternity Insurance	Income	0.31	0.40	0.47	1.15	1.73	1.89
	Payout	0.25	0.34	0.41	0.65	1.02	
Urban Work Injury Insurance	Income	0.82	1.14	1.47	1.93	3.26	9.76
	Payout	0.29	0.41	0.61	0.76	1.18	

Note: P.R1(Participation Rate 1) excludes township enterprise workers, while P.R2 takes into account township enterprise workers. P.R4 excludes staff and workers in government organizations (xingzheng danwei). P.R1 to P.R5 do not consider those participants who are retired.
Source: author's calculation from Fujian Finance Yearbooks 1999-2008 and Fujian Statistics Yearbooks 1999-2008

So why subsidizing the social insurance funds given that there were surplus and where did these subsidies go? The government officials in Fujian's Finance Department and Quanzhou's Finance Bureau offered the answers. The subsidies were mainly made to social security accounts of those non-performing SOEs,

collective-enterprises and a few self-financed public services units that were having financial difficulty in making social security contributions (Interview 7 & 8). The employers' share of social security contribution totals 25.2 percent of the wage bills, which could be an extra hefty burden for most enterprises. Around 75 percent of the fiscal subsidies on social security went to Urban Basic Enterprise Pension Insurance. Because of the budget constraints, subsidies made to urban enterprise pension insurance have to be carefully planned and it has not been possible to increase the number of participants from those non-performing SOEs at one time (Interview 8 & 11). That is why there have still been subsidies to urban enterprise pension insurance in more recent years. The "subsidies on closure of non-performing SOEs" were payments made to clear-up the wage arrears of those terminating SOEs and in some cases those SOEs also used the subsidies to pay-off the arrears of social security contributions for their employees. The government of Fujian did not make social insurance subsides (in terms of the insurances depicted in Table 7.5) for private enterprise workers, who are becoming a dominating group in the workforce (the government made subsides toward some collective-owned enterprises; Interview 8). In Fujian province, a large amount of enterprise employees works in the township enterprises and they are not yet covered by any social insurance. That is why the participation rate (P.R2) is so much lower than (P.R1), when the number of township enterprises workers is taken into account. Since the data on the number of retirees is not available, the calculation of participation rates is restricted to those who are at work. The true participation rate for employees and retirees as a whole could be even

lower, given the fact that social insurances only started to expand in the late 1990s to include the non-state sector workers. Note that the participation rate for unemployment insurance dropped between 2002 and 2006; this is due to the higher speed of the expansion of non-state sector workforce than the growth in the number of participants (Interview 8). The participation rate for public sector pension insurance is not an indicator of social exclusion. Almost all the staff and workers in public agencies, organizations and institutions have long been fully protected with pension and medical care since the founding of the People's Republic of China. The introduction of pension insurance and urban health insurance for public sector workers was simply a step to establish a socially managed insurance scheme, where some of the public sector workers are asked to make contributions (to bear part of the cost). Despite the increasing participation rate (which means more contributions collected from employees), the pension payment for public sector retirees grew the fastest among the four major social security sub-sectors.

When questioned about the much lower coverage rates of various forms of urban social insurances in Fujian (comparing to other provinces), the government officials in Fujian's Finance Department and Finance Bureau of Quanzhou replied that the main reason was that Fujian had a smaller SOE sector (comparing to other provinces) and it had been very difficult to persuade employed persons from non-state sector to participate (Interview 6, 8 and 9) (the obstacles are discussed later in this chapter). The officials also emphasized that social security issues could be very costly and the

government could only provide limited fiscal support for the collective-enterprise sector as a result of fiscal constraints; subsidizing the private sector at large would be totally impossible (Interview 8 &9). A case study on SOE privatization in Quanzhou, the second richest municipality in Fujian by per capita income in 2006 (second to Xiamen), helps us deepen the understanding of the impact of social security reform on local budget as well as the "creative" response from the government (several government officials in Fujian referred this case as one of the examples that demonstrate the immense cost of social security; the case presented here is the only case for which the complete government internal report was acquired). The basic statistics of Quanzhou city is presented in Table 7.6 for reference.

Table 7.6 Basic Indicators of Quanzhou Municipality

Year	1995	1998	2006
Number of County-level units	8	11	11
Registered Permanent Resident (10000 person)	626	654	670
Resident Population (10000 person)	n/a	n/a	769
as share of Fujian's population	n/a	n/a	0.216
Urbanization rate	n/a	n/a	0.48
Share of Non-Agricultural Population	0.12	0.135	0.288
GDP per capita (Yuan)	7995	11843	24847
ranking among the 9 cities	3	3	2
GDP as share of Fujian's GDP	0.237	0.245	0.250
GDP by sector			
share of Primary Industry	0.120	0.102	0.051
share of Secondary Industry	0.527	0.561	0.586
share of Tertiary Industry	0.353	0.337	0.362
Budgeted revenue per capita (Yuan)	323	428	1388
ranking among the 9 cities	4	3	3
Budgeted expenditure per capita (Yuan)	268	443	1563
ranking among provinces	4	3	3
Level of state control in industrial output of Quanzhou	0.26	0.20	0.11
Level of state control in industrial output of Fujian	n/a	0.33	0.17

Note: urbanization rate is the true percentage of urban resident; Level of state control in gross industrial output is calculated as the gross industrial output of SOE and state-controlled enterprises as share of total gross industrial output. All prices are nominal
Source: calculated from Fujian Finance Yearbooks 1999-2008, Fujian Statistics Yearbooks 1999-2008, Quanzhou Statistics Yearbooks 1996-2007

The nationwide SOE reform began in the mid-late 1990s. Yet in Quanzhou city, SOE reform started as early as in 1992. By the time of 1992, the number of manufacturing SOEs controlled by Quanzhou's municipal government had dropped to 37, because of the fierce market competitions and the fact that these manufacturing SOEs operated in non-monopolized sectors such as food processing, manufacture of food, textile, leather and transport equipment (Interview 11). The municipal government made a very bold decision in 1992, which was to reform (privatize) all the 37 firms at one time in order to "spin-off the non-performing SOEs". Thus a sharing-holding limited company called Zhongqiao Corporation was incorporated in 1992, with the Hong Kong based foreign company (Zhongce group) controlling 60 percent of the shares and Quanzhou's Public Investment Corporation controlling the remaining 40 percent. The corporation was established to reform (take over) the 37 non-performing manufacturing enterprises owned by Quanzhou municipal government. This was essentially a privatization of all the 37 local SOEs, since the government handed over the controlling position to the foreign company.

After 1996, the company had started to incur losses and this situation deteriorated year by year, however. By the end of 2005, Zhongqiao was on the brink of bankruptcy and unable to pay back the loans borrowed from commercial banks (around 150 millions yuan; worth almost 50 percent of Zhongqiao's net asset). Zhongqiao had around 13000 employees in 1992 and most of these employees were still treated as SOE workers despite the privatization (there were no formal laws and regulations on

SOE privatization in 1992) (Interview 12). Since 1995, Zhongqiao has started to lay-off the redundant workers and by 2006 only around 2000 workers were at work. None of Zhongqiao's employees, retired workers or those laid-offs had been covered by any social insurances or minimum living stipends. For the last ten years, the tension between Zhongqiao's employees and the company has escalated and the organized employees have made several appeals to Quanzhou's Public Investment Corporation, and several petitions to the municipal government and provincial government. After being turned down by their company, the employees demanded the fiscal subsidies (to cover their social insurances and living stipends) from the government, on the basis that they were still counted as SOE workers. But with so many years' of non-payments, the amount of contributions required had grown to a huge figure by 2002 and the municipal government was totally unable to meet such demand using the fiscal revenue. Fearing the potential consequence of social instability, the State-owned Assets Supervision and Administration Commission (SASAC) of Quanzhou stepped in to negotiate with the foreign investors in 2003 in order to find a viable solution. After many rounds of negotiation, in 2007 the government bought back the firm from the foreign investors at a deep discount, sold off the assets and completely terminated the operation of Zhongqiao Corporation. With one billion loan from China Development Bank, an urban regeneration project was also launched to convert the Zhongqiao's factory sites to commercial estate. In 2007, a total amount of around 0.55 billion yuan (in part raised from the asset sales and in part came from the loan) was spent to settle the social insurances and the

minimum living stipends issues for all the 13000 workers. From Quanzhou's Department of Finance, we learnt that Quanzhou's budgetary expenditure for 2006 was 10.48 billion yuan, of which around 0.67 billion yuan was devoted to social security (not including health subsidies for public sector workers). If the 0.55 billion yuan were included in the 2006 budget, the social security spending would have gone up by 82.1 percent and the total spending would have gone up by 5.2 percent (Interview 12). Also note that in provincial consolidated budgetary expenditure, the "subsidies on social security funds" for 2006 was only around 0.23 billion yuan (Table 6.4), less than half of the 0.55 billion yuan.

Two government officials from SASAC of Quanzhou told us that if the workers were recognized as non-SOE workers, the government may not have been liable for the issue; but if the firms were not privatized in 1992, then the social security spending for the past ten years would have been considerably more (the average number of employed person working in state-owned enterprise of Quanzhou city was only around 26000 for the past ten years) (Interview 11, 12 & 13). From Table 7.6, one could see that the share of SOE and state-controlled enterprise in total gross industrial output was only about 26 percent in 1995, 20 percent in 1998 and 11 percent in 2006. The government expected the urban regeneration project to make a small profit, otherwise it would be very difficult to pay off the one billion loan. The role of SASAC in the process was very important. It is revealed that many options were considered between 2001 and 2003 but most of them became dead ended because of

inadequate fiscal resource to make the payment demanded by the workers (Interview 12 &13). The pressure from the municipal government on SASAC was considerable, due much to the petitions and protests. In 2003, the final plan won full approval from both the municipal government and the provincial government. The strong government intervention in the negotiation finally made the investors give up their shares at a deep discount (the discount was a result of recognizing the cost of social security). “If the government did not step in, the corporation would never be able or be willing to pay the social insurance contributions for its employees” said one of the government officials in SASAC (Interview 13).

The government officials in SASAC were confident that the one billion loan could be paid back in a few years' time, because "the property market has been on an upward trend"(Interview 13). However, property business could be very risky and using bank loans to cover the social security issues has essentially shifted some of the risks to the state-owned banking system from the government of Quanzhou. The Zhongqiao case is special because of the dual-identity of its employees. But it is not uncommon that the government would force SOEs to raise the funds from other sources (to make up the social security requirements) before offering fiscal subsidies (Interview 11). Apart from budgetary subsides (which acts as the last resort), there have been two other major methods used by Fujian’s local governments to raise the funds to cover social security issues, namely, the income from sale of SOE assets and the revenue from the sale of land lease (part of the off-budgetary revenue) (ibid). It was emphasized in

several government internal reports that in Fujian province these multiple channels of fund-raising had greatly increased the number of participants from SOEs and mitigated the fiscal burden.

There are still quite a lot of employees or retirees from non-performing SOEs and collective-enterprises, who are not covered by the new urban health insurance (trial in two cities of Fujian in 1998 and formally adapted in Fujian in 2000). One internal report of Fujian's Finance Department issued in March 2009 (obtained during my second fieldwork in 2009) revealed that the number of employees or retirees from SOEs and collective-enterprises not yet covered by the urban health insurance had been around 300800 (by the end of 2008), which was around 5 percent of Fujian's total employed persons by 2008. A number of solutions were planned in the report. First, multiple channels of fund-raising were proposed to help alleviate the problem. In addition, the report recommended that the social insurance contribution rates for these enterprises to be reduced. It was also suggested that employees of these enterprise participate in Urban Resident Health Insurance (formally established in 2008) or New Rural-Cooperative Health Insurance (both insurances require lower contribution rates than the Urban Health Insurance but also have lower reimbursement). It was estimated that at least a total amount of 0.994 billion CNY would be required from the budget to make all the 300800 workers covered with health insurances. The provincial government alone would have to spend 0.395 billion CNY and the remaining 0.599 billion would have to be shouldered by municipal and

county-level governments. The government planed to fully solve this issue within five years (it was not possible for the government raise the funds and make all the payment at once) (Interview 14 &15).

7.4 The rising fiscal requirements from the non-SOE sectors

We notice that the "living subsidies and reemployment subsidies for the SOE laid-offs" peaked in 2000 and reduced to zero in 2006 (Table 7.4). It may be incorrect to say that the SOE reform in Fujian was fully complete in 2004, but from 2004 there has no further laid-offs from the SOEs (Interview 14). The budgetary spending on employment and reemployment services after 2004 has continued to grow at a fast pace, however. Former training and employment services for the laid-offs have become available for the general public and the demand for these services has been enormous, most of which sourced from the migrant peasant workers who are searching for jobs in urban areas (ibid). The major employment services include job introduction, skill verification, (re)employment training and low-interest personal loans (part of the interests paid by the government). In Fujian, the number of persons benefited from these services has increased from 0.214 million in 2003 to 0.499 million in 2005 and to 1.57 million in 2007; in 2007, around 0.57 million beneficiaries were peasant workers (Interviews 14). Correspondingly, the "subsidies on urban employment services" surged near ten times between 2002 (0.03 billion yuan) and 2006 (0.29 billion yuan). This does not cover all the subsidies in

employment services; for instance, the subsidies to private-ran employment training services are entered into "other subsidies" of Table 7.4 (Interview 6 & 7). Local governments have long been aware of the demands for urban employment training and services from the peasant labour (who are desperate to acquire or upgrade new skills to seize the emerging job opportunities), but budget constraints meant that they could only expand the services on a gradual basis. There were few employment services in Fujian before 1998, although by that time Fujian had already have a sizeable job market outside the state sector (Interview 14). The formal SOE reform made reemployment training imperative for those laid-offs, who were in their mid-ages and were less-skilled, thus following the Shanghai's experience, municipalities in Fujian built Reemployment Services Centres to coach the laid-off workers and offer them job information (for free). The Reemployment Service Centres for SOE laid-offs were closed in 2002 but the government still subsidized general employment training and services (ibid). It is revealed that the migrant workers had been in the greatest needs of employment coaching. Like the ways in gathering funds for social security accounts, the governments also raise funds from local enterprises (known as donation from the society) to run these employment training activities in order to mitigate the fiscal burden (Interview 14).

From Table 7.4, one could also spot that "Pension and Social Relief Expenses" more than quadrupled between 1998 and 2006. This expenditure item covers a wide range of social security functions. "Expenses on military retirees" refers to pension and

medical care subsidies paid to retired soldiers as well as the operating expenses of the related public services units. Higher pension standard has been the driving force of the growth in this expenditure item. “Expenses on social assistance” includes all the spending on natural disaster reliefs, the operating expenses for adopting institutions and urban and rural medical care assistance. Most spending went to natural disaster reliefs; less than 40 million yuan went to urban medical care assistance in 2006 (Interview 7). Both urban and rural medical assistance were established in 2003 to complement the Urban Health Insurance scheme and the New Rural Co-operative Health Insurance (NRCHI) program. The intention is to build a medical safety net for those who not covered by any kind of health insurance and to help boost the participation rates of health insurances. But our interviews find that in Fujian only those who are registered permanent residents (those with local hukou) are eligible for the assistance, migrant workers from other provinces who are only considered as residence population (not permanent population) are excluded for medical assistance. To some extent, the reason has still been under-funding. The governments of Fujian fear that once migrant workers are included, the medical bills would immediately become unaffordable, as there is a large number of migrant workers in Fujian. The government officials in Quanzhou's Finance Bureau admitted that the amount of medical assistance expense was far from adequate, as many hospitals reported that they required much more funding to keep the program going, otherwise the medical assistance requests from the eligible local residents (with local hukou) would have to be turned down (Interview 15). In a recent article published by Financial Times (the

Chinese version, date of publication 25/06/2009), the journalist revealed a paradox in medical assistance program: local governments set up strict eligibility thresholds and maximum level of payment to prevent the funds from running out too quickly and the result was that the funds ended up with large amount of surplus, and those in need have been excluded from the services (http://www.ftchinese.com/story/001027196, accessed: 26/06/2009). The central government, in response to this phenomenon, issued a new proposal on 22nd June, 2009, requiring higher level of governments to stop subsidizing the medical assistance funds of lower level governments if there are large amount surplus. The intention of this proposal was to urge local governments to remove the barriers and support those who are in need of assistance. As the author reported, the central problem is still the inadequacy of funding. The article also cited an estimated figure of 35.6 billion yuan requirement for rural medical assistance alone (not including the urban medical assistance needs) in China and compared it with the 7.12 billion yuan spent in both urban and rural medical care by all levels of government in China in 2007, to illustrate the severe inadequacy of funding problem.

The fiscal inadequacy is also evidenced in the way in which Fujian implements urban and rural Minimum Living Standard (MLS) scheme. The MLS scheme is a means-tested income support benefits program aiming to provide subsidies to those families or individual living below an approved minimum living standard line. The minimum living standard lines are set by each municipal government, normally 50 to 60 percent of the local minimum wages (Interview 9). Like the medical assistance

program, the MLS scheme covers only the registered permanent residents. The MLS scheme was firstly experimented in Shanghai in 1993 and then introduced to other cities in China. After three years' trials, Fujian formally adopted the MLS scheme for urban residents in 1998 and in 2004 a separated MLS scheme was initiated for rural residents (ibid). The amount of spending for urban MLS is reported as an independent item in Table 7.4, while the amount of spending for rural MLS is included in "other expenses" in the same table. Interview 9 reveals that in 2006, Fujian devoted 0.23 billion yuan to rural MLS, higher than the 0.173 billion yuan of urban MLS. Comparing to other social security items, the expenditure size of urban MLS has been quite small. This is in no way an indication of low demand, however. A report from Fujian's Finance Department claimed that since 2003 all eligible individuals and families for urban MLS have received the benefit payments (yingbao jinbao) and the payment standards have become higher in more recent years to provide a better support for those poor families. In other words, before 2003, at least some of the eligible persons or urban households were unable to receive the benefits from the government (not to mention those who have been excluded from this scheme). It was estimated that around 50 percent of claimants for urban MLS were former laid-off employees (Interview 9 & 14). The laid-off employees could receive basic living stipends for up to five years and if they are still unable to find a job, they would become eligible for the urban MLS, which offers a lower benefit level than the basic living stipends.

Table 7.7 Basic Statistics of Fujian's New Rural Cooperative Health Insurance (NRCHI) unit: 10000 Yuan, 10000 pernson

	2003	2004	2005	2006	2007
Income	1368	4362	9990	45043	132315
Fiscal subsidy	386	2702	6865	33493	99457
Personal contribution	532	1272	2645	10637	30552
Collective-economy subsidy	420	220	372	306	54
Others	30	168	108	607	2252
Payout	1195	1907	8582	19179	87114
Number of Participants	39	138	233	999	2247

Source: Fujian's Department of Finance (author's interview in 2008 & 2009)

Perhaps, Fujian's most costly social security investment in more recent years is the New Rural Cooperative Health Insurance (NRCHI) scheme (established in 2003). Again, this item was not reported separately in Fujian Finance Yearbooks but bundled in the "other expenses" (see Table 7.4). The "other expenses" also comprises the operating expenses of certain social security service units. As its name implies, the NRCHI scheme is a health insurance program for rural residents (in fact a small number of urban residents also participate in this program because they are unable to pay the higher contribution fees required by urban health insurance) and is jointly financed by the rural collective-economy, individuals and the government. The old rural cooperative medical insurance was solely based on rural collective-economy and started to demise when privatization of rural-collective enterprises began in the 1980s. For the past two or three decades, most rural residents have to pay for the growing medical expenses in full, despite that their real income has also increased. The establishment of NRCHI scheme thus signals that the government has finally started to take up the health responsibility for the rural population. Thanks to the subsidy, the number of participants lifts to 22.52 millions in 2007 (around 87 percent of the total

rural residents, author's estimation) from merely 0.3 million in 2003 (see Table 7.6). Indeed, the fiscal subsidy has become the most significant source of finance for NRCHI since 2004. The rural resident contributes 10 to 15 yuan per person, per annual to the program (depends on their levels of income, 15 yuan for relative well-off families and 10 yuan for poorer household) , which would then entitle them the access to subsidized or free medical treatments (operated in designated hospitals and clinics). The governments on the other hand, allocated 50 yuan to each of the participants in 2007 and increased it to 80 yuan per person in 2009. Most of this responsibility rests on the provincial level government, as required by the central government. The central government also made some subsidies toward Fujian's NRCHI. The central government did not make subsidy to support Fujian's SOE restructuring process, as Fujian has a much smaller SOE sector. The central and provincial level governments accounts for around 70 percent of the total fiscal spending on NRCHI in Fujian and the remaining 30 percent is the responsibility of municipal and county-level governments. The growing fiscal subsidy for NRCHI may explain much of the increase in social security spending since 2006. In 2008, the provincial level alone invested 1.12 billion yuan in NRCHI (Interview 15, the consolidated figures not yet released), which was already larger than the total investments made by all three layers' of government in 2007. The demand for medical treatment by rural residents is noticeable in the large payment of NRCHI (Table 7.7). Without the governments' subsidy (in particular the subsidy from central and provincial governments), the NRCHI program could not be operated at all, because

the subsidies from collective-economy and the funds from donations ("others" in Table 7.7) have been far too small.

7.5 Social Security—the Managerial Issues

We have discussed the fiscal challenges of social security reforms in Fujian during the last decade. The managerial challenges are not to be ignored, however. The social security system in China has been fragmented since the founding of PRC and it has been decentralized since the 1980s. Local Departments of Labour and Social Security manage the six major insurances depicted in Table 7.5. Local Departments of Civil Affairs are in charge of the welfare of military retirees, disaster reliefs, social welfare institutions (such as adopting institutions) and all social assistance programs (such as urban and rural MLS schemes). Local Finance Departments coordinated with these social security departments in the areas of account-keeping, treasury management and financial planning. In recent years, local tax bureaus have also been involved to collect social insurance contributions (in some provinces).

In Fujian province, the collection of pension and unemployment insurance contributions were handed over to local tax bureaus from the Department of Human Resources and Social Security in 2001, as it had been very difficult to collect social insurance contributions from the employers and employees, and non-compliance in making contributions had significantly increased the risks of funding shortfalls

(Interview 9). Local tax offices have informational advantage over local business entities, so after 2001, the chances of non-compliance have been reduced. But the collection of social insurance contributions could be an extra burden for the tax offices. The officials in Quanzhou's Finance Bureau mentioned that private enterprises were reluctant to make contributions for their "non-core" workers and on the other hand, peasant workers were equally reluctant to participate if they do not plan to stay in Fujian for long (when moving to other provinces, the participants could only withdraw a small fraction of the accumulated contributions, which means most of the contributions would be confiscated); thus individual companies tended to under-report the number of their full-time employees to reduce the social insurance payments. The tax collector would therefore need further efforts in making investigation and making enforcement, which have been a challenging job, given the vast number of small family-based enterprises.

7.6 Conclusions

In this chapter, we analyse the recent development of the social security sector, using Fujian province as a case. The findings in this chapter corroborate the findings in section 6.3 of Chapter 6 and they firmly support Hypothesis 1: In the post TSS period (1994-2008), even certain relatively affluent locality has not been able to fully meet the emerging social security needs, resulting in under-provision of social security.

In Chapter 6, it is spotted that there have been serious social exclusions in social insurances across the 31 provincial units. The case study on Fujian confirms that low levels of social insurance coverage could be largely attributable to local fiscal inadequacy problem. It is demonstrated that the social security could be very costly for the government: even with such a small SOE sector and several years after the SOE restructuring, the social security needs of many SOE employees or former SOE employees in Fujian province have yet to be met. By examining the allocation of resources in each of the social security sub-sectors as well as the development of those social security sub-sectors, this case study generates a few additional insights. It is found that current social security system in Fujian creates a pecking order of meeting the fiscal needs associated with different social groups (intra-locality interpersonal inequality in access to social security). The employees of government agency, organization and institutions are best protected, as the government fully assume their welfare responsibility. This small population section consumes a very large proportion of social security expenditure in Fujian and is often the first to

benefit from the upward adjustment in welfare payment standards. This group's welfare interest has been guaranteed by the state ever since the founding of People's Republic of China and has not been affected by marketization. Their participation in various social insurances has simply been a managerial change, though some of the employees are required to make social insurance contributions to bear part of the cost. The SOE employees and ex-employees are also protected: although there are risks that their social security needs could not be met immediately or in the short term; the government makes commitment to cover their needs in a number of years' time. Fiscal inadequacy dictates that the government's help only comes after other possible means have been attempted (the emphasis of multiple channel fund-raising). The more extreme case of Zhongqiao clearly illustrates that in the face of hefty social security burdens (and the potential threat to social stability), the government could be forced to adopt measures that may create detrimental effects (such as shifting part of the risk to the state-owned banking system).

The governments could only assume very limited responsibility for the welfare of the non-state workers, individuals and households, despite the enormous demand from these large groups of population as a result of market transition. First, the governments did not assist non-state enterprise workers in participating in the social insurances by providing subsidies (they did provide some support to workers of collective-owned enterprises), but act as the mediator between the labour and the capitalist to encourage and enforce the participation of social insurances. Secondly,

the social assistance programs (such as minimum living standard lines and medical assistance) are restricted to registered permanent population only and are restrictive in making payments in order to curb the expenditure growth. Comparing the amount of investment made to the public sector employees, the expenditure on social assistances was very small (and inadequate). The migrant workers, arguably the weakest social group in urban areas, receive little or no fiscal supports from the government (in terms of social security).Thirdly, the implementation of many social security programs for these population sections have to come in stages; such a gradual approach is needed because there has inadequate fiscal resources to carry out these schemes at one time.

The implication from the analysis in Chapter 6 and from this chapter is that there has been vertical fiscal imbalance problem in China (the expenditure needs of the subnational governments exceed their fiscal capacity) and such problem has not yet been properly tackled via central-local transfers or via the reassignment of tax bases to the local governments. Market transition has provided a context in which the social security needs could grow in a very fast pace and could be underestimated. By devolving the social security responsibility to subnational governments, the central government could have under-estimated the magnitude of the fiscal impact. While the conventional reasoning from the first generation theory of fiscal federalism (see Oates, 1972, 1999, 2005) is that redistribution at the local levels would lead to loss/exodus of tax bases and would ultimate make the policy unsuccessful, in the Chinese case, redistribution at the local levels contributed to interpersonal inequality in access to

social insurances and social assistance. This is because, in the face of fiscal constraints and growing social security needs, local governments tended to under-provide the services for those who need them most or restrict the access to those services in order to curb the expenditure growth. Redistribution at the national level could mitigate this interpersonal inequality problem if a more uniform level of services is provided by the central government (as suggested by the first generation theory of fiscal federalism).

The evidence of mismanagement of social insurance funds at the local levels further suggest that while fiscal decentralization facilitates preference-matching and policy innovations, it may not necessarily lead to effective management of public services. This is because highly decentralized management of social insurance funds could greatly increase the cost of monitoring by the government and increase the risks of funding shortfall (which could also be the result of inadequate social pooling).

Chapter 8 Concluding Remarks

This dissertation investigates the fiscal impact of market transition on local social security sector and verifies fiscal inadequacy and unmet social security needs in China's relatively affluent areas during the post Tax-Sharing reform era (1994-2008). It also applies statistical analysis to ascertain a few inconclusive issues raised by the literature. In this concluding chapter, we recap the research background and the hypotheses, then discuss the major research findings, policy implications and limitation of this research.

8.1 From Research Background to Hypotheses, a Summary

There are ample evidences from developing and transition countries that fiscal decentralization could result in unmet fiscal needs in poorer local areas, if a proper intergovernmental fiscal transfer system is not in place. The problem of unmet fiscal needs at the local levels may also be the outcome of poor local governance (when the institutions of local democracy are weak or absent), where local resources are captured by the local elites or interest groups. In the case of China, the problem of unmet fiscal needs has been observed and extensively studied in poor areas of China, with a special focus on the education and health sector. In an over-simplified reading, scholars using first generation theory of fiscal federalism expect the adoption of a rule-based and more redistributive intergovernmental fiscal transfer system to support poor areas (so that they would be able to provide a minimum level of education and

health services). Scholars using political economy approach (the second generation theories of fiscal federalism) offer two different lines of reasoning. One of the approach (Tsui and Wang, 2004) contends that local governments favour capital investment at the expense of education and health services because economic construction has been assigned a much larger weight in the top-down cadre management system. Another approach (Liu et al, 2006) claims that to some extent, government staff expansion in poorer areas as a result of central mandates such as birth control and grain procurement leads to fiscal inadequacy and unmet fiscal needs problem in poor areas (staff expansion consumes too much fiscal resource which may otherwise be available for the provision of public services).

This research argues that existing studies while contributing enormously to the understanding of fiscal inadequacy and unmet fiscal needs in poor areas of China, tend to under-estimate or even neglect (the political economy approaches) one of the very important fiscal needs induced by market transition—the expenditure need of the widespread introduction of social security since the mid-late 1990s. The social security needs induced by market transition is an insight from the regulation theory. Although social security is a conventional central government responsibility (from fiscal federalism perspective and in practice), in China it has largely been devolved to the subnational governments during the fiscal reforms. While a few authors such as Wong (2005), Wong and Bird (2005) raise the concern that decentralized provision of social security could be a serious problem for local public finance and find that

sizeable amount of the central-local transfers were used to cover the social security issues of the SOE sector, there is no systematic enquiry on the magnitude of fiscal needs in the social security sector at the local levels. This research is designed to fill this gap by examining the issue in more affluent areas of China, as it believes that decentralization of social security is excess, especially in the context of market transition and it may create heavy fiscal burden and unmet social security needs even for relatively affluent areas. In other words, from the first generation theory of fiscal federalism perspective and the insights of regulation theory, this research believes that the problem of unmet fiscal needs at the local levels of China is not only an issue of horizontal fiscal imbalance, but more likely to be a vertical fiscal imbalance issue, where the expenditure side of the subnational governments as a whole has been impacted by the increased social security responsibility induced by market transition. Therefore, the central hypothesis (Hypothesis 1) of this research is "In the post TSS period (1994-2008), even certain relatively affluent locality has not been able to fully meet the emerging social security needs, resulting in under-provision of social security".

This research also recognizes that while the two political economy approaches are relevant to the problem of unmet fiscal needs at the local levels, especially in poorer areas, they have neglected other important variables such as market transition, income growth and urbanization. An alternative explanation to the reasoning of government staff expansion might be that market transition, urbanization and income growth have

created demand for various forms of public services and investments that require additional administrative capacity (more staff). Likewise, an alternative explanation to the investment-education and investment-health trade-off proposition may be that the pressure to cover social security issue bid away resources that would otherwise be available for education and health. Thus two hypotheses (Hypothesis 2 and 3) are proposed to complement existing political economy perspectives. Finally, Hypothesis 4 is used to test to what extent the variation of central-provincial transfers could be explained by the variation of relative sizes of the local SOE sector. This test is used to ascertain an untested proposition from Wong and Bird (2005), where they argue that the aim of fiscal equalization via central-local fiscal transfers may have been compromised by sizable transfers that went to social security subsides in the SOE sector. Hypothesis 2, 3 4 are listed as follows:

H2: In the post TSS period (1994-2008), there have been negative correlations between the share of consolidated provincial budgetary spending on social security and health sector, and between the share of consolidated provincial budgetary spending on social security and education sector.

H3: In the post TSS period (1994-2008), holding other factors constant, larger sizes of provincial governments (expressed as higher levels of consolidated budgetary expenditure-to-GDP ratios across provinces) could be in part explained by higher degrees of market transition and higher levels of urbanization and income.

H4: In the post TSS period (1994-2008), holding other factors constant, higher amount of per capita central-provincial fiscal transfers could be in part explained by

lower level of market transition.

8.2 Discussions of the Findings, Implications and Limitations of this Research

At the national level, two salient trends are spotted: the first is that the social security sector has grown to a sizeable budgetary sector in more recent years and most of the expenditure of social security has been absorbed by the local governments; secondly, though the social insurance coverage has expanded very fast in the past two decades, the overall coverage ratios are still quite low (which indicate the social exclusion problem). The hypotheses are not addressed at the national analysis but tackled in cross-provincial analysis and the case study of Fujian province. Hypothesis 1, our core hypothesis is firmly supported. The results of the statistical analyses (testing Hypothesis 2, 3 and 4) are mixed. In what follows, the statistical results (and their implications) for Hypothesis 2, 3 and 4 are discussed first. We then examine the results of hypothesis 1 and the important policy implications.

Hypothesis 2 is partially supported. There were negative correlations between the share of consolidated provincial budgetary spending on social security and health sector, and between the share of consolidated provincial budgetary spending on social security and education sector. However, the correlation between spending on social security and education was only statistically significant at the 0.1 level. The result suggests that to some extent, the growth in social security spending may have crowded-out the budgeted spending on health at the local levels. This may have

created further challenge in poorer areas, as under-provision of health services has already been the case in many poor areas. Additional research is needed to compare the trade-off effects in poor areas and rich areas to reach a more affirmative conclusion. The research could be conducted by collecting prefecture-level data and divide the observations to sub-groups for statistical testing. Alternatively, one could conduct comparative case studies in poor areas and rich areas.

Hypothesis 3 is firmly rejected. The result shows that holding other factors constant, larger sizes of provincial governments (higher levels of consolidated budgetary expenditure-GDP ratios across provinces) could be in part explained by lower (rather than higher) degrees of market transition; and they could not be confidently explained by the levels of urbanisation (the relation is not significant, which may be attributable to measurement errors of urbanization, where the share of non-agricultural population is used as a proxy). To a small extent, larger sizes of the governments could be explained by lower level of per capita GDP, but when any other independent variable is controlled for, the beta coefficient becomes insignificant, which suggests that this relation is not robust at all. Based on these unexpected results, one may argue that market transition tends to constraint the sizes of provincial governments. But why this is the case remains an unanswered question and would call for additional research. The government staff expansion hypothesis, as originally raised by Liu et al (2006) has not been addressed because the staff number data in many provinces are not available. Even if the size of government (measured by the levels of consolidated

budgetary expenditure-to-GDP ratio) is perfectly and positively correlated with the relative staffing level of the government, one could not confidently state that government staff expansion is more serious in low income areas (as the explanatory power of per capita GDP is not robust at all).

Hypothesis 4 could not be firmly supported. It is found that higher amount of per capita central-provincial fiscal transfers may be in part explained by lower degree of market transition (higher share of SOE sector). However, when the factor of population density is taken into account, the effect of market transition becomes insignificant. This suggests that although part of the central-local transfers may have been devoted to social security subsidies in the SOE sector (as discovered by Wong and Bird 2005), the allocation basis of central-local transfers seems to be more determined by population density. It is also found that the equalization transfer has not played an influencing role and the effect of tax-rebates may have been neutralized by other kinds of transfers. In any case, there is still a large amount of variation in central-local transfer unexplained by our models. It is further discovered that the size of central-local transfers could explain much of the variation of the sizes of provincial governments. Therefore, exploring the other possible determinants of central-provincial fiscal transfers could help shed light on the size differences of provincial governments. This is another direction for future research. In a nutshell, though the results from these statistic analyses are mixed, they do generate several unexpected but interesting findings and could provide directions for future research.

Hypothesis 1, our core hypothesis, is firmly supported with the evidences from cross-provincial analysis, the Shanghai mini-case and the case study of Fujian province. The cross-provincial analysis shows that all the provinces have adjusted their budgetary expenditure structure to accommodate the growing levels of social security needs induced by market transition. However, there has still been serious social exclusions in social insurances across the 31 provincial units. The case study on Fujian confirms that low levels of social insurance coverage could largely be attributable to local fiscal inadequacy problem. Social security could be very costly for the government: even with a small SOE sector and several years after the SOE restructuring, the social security needs of many SOE employees or former SOE employees in Fujian province (a relatively affluent province) have yet to be met. It is found that current social security system in Fujian creates a pecking order of meeting the fiscal needs associated with different social groups (intra-locality interpersonal inequality in access to social security). The employees of government agency, organization and institutions are best protected, as the government fully assume their welfare responsibility. This small population section consumes a very large proportion of social security expenditure in Fujian and is often the first to benefit from the upward adjustment in welfare payment standards. This group's welfare interest has been guaranteed by the state ever since the founding of People's Republic of China and has not been affected by marketization. The SOE employees and ex-employees are also protected: although there are risks that their social security needs could not be met immediately or in the short term; the government makes commitment to cover

their needs in a number of years' time. Fiscal inadequacy dictates that the government's help only comes after other possible means have been attempted (the emphasis of multiple channel fund-raising). The more extreme case of Zhongqiao illustrates that in the face of hefty social security burdens, the government could be forced to adopt measures that may create detrimental effect (shifting part of the risk to the state-owned banking system).

The governments could only assume very limited responsibility for the welfare of the non-state workers, individuals and households, despite the enormous demand from these large groups of population as a result of market transition. The governments did not assist non-state enterprise workers in participating in the social insurances by providing subsidies (they did provide some support to workers of collective-owned enterprises), but act as the mediator between the labour and the capitalist to encourage and enforce the participation of social insurances. Moreover, the social assistance programs (such as minimum living standard lines and medical assistance) are restricted to registered permanent population only and are restrictive in making payments in order to curb the expenditure growth. Comparing the amount of investment made to the public sector employees, the expenditure on social assistances was very small (and inadequate). The migrant workers, arguably the weakest social group in urban areas, receive little or no fiscal supports from the government (in terms of social security).

The Shanghai mini-case illustrates that the substantial fiscal requirements from the social security sector could even go beyond the capacity of China's richest provincial unit. Population aging contributed to the problem. The social security fund scandals in Shanghai and in other areas show that mismanagement of social insurance funds at the subnational levels (partly as a result of ineffective monitoring) have become a serious problem as it could significantly increase the risks of funding shortfall and may create unexpected fiscal pressure for the government.

The findings from cross-provincial analysis, the Shanghai mini-case and the case study of Fujian province demonstrate that there has been vertical fiscal imbalance problem in China (the expenditure needs of the subnational governments exceed their fiscal capacity) and such problem has not yet been fully tackled via central-local transfers or via the reassignment of tax bases to the local governments. Market transition has provided a context in which the social security needs could grow in a very fast pace and could be underestimated. By devolving the social security responsibility to subnational governments, the central government may have under-estimated the magnitude of the fiscal impact from market transition, thus allocating inadequate resources for the local governments to cover the social security issues. While the conventional reasoning from the first generation theory of fiscal federalism (see Oates, 1972, 1999, 2005) is that redistribution at the local levels would lead to loss/exodus of tax bases and would ultimate make the policy unsuccessful, in the Chinese case, redistribution at the local levels contributed to

interpersonal inequality problem in access to social insurances and social assistance. This is because, in the face of fiscal constraints and growing social security needs, local governments tended to under-provide the services for those who need them most or restrict the access to those services in order to curb the expenditure growth (the interests of the stronger social groups would be protected first). Redistribution at the national level could mitigate this interpersonal inequality problem if a more uniform level of services is provided by the central government (as suggested by the first generation theory of fiscal federalism).

There are three additional reasons for reassigning the social security function to the central government of China. First, as reviewed in Chapter 3, the central government has recentralized much of the productive tax base since the 1994 Tax-Sharing reform, thus it tends to have stronger fiscal capacity than the local governments. Secondly, since the mid-1980s, most of the profitable and monopolistic SOEs have been transferred to the central government (also briefly discussed in Chapter 3). Until the end of 2007, none of these giant corporations had paid dividends to the government, despite the fact that they generated billions of profits. It is reported that the profits of all the SOEs controlled by the central government reached 754.7 billion Yuan in 2006 (Xinhua, http://news.xinhuanet.com/comments/2007-09/15/content_6724787.htm released on 15th September 2007, accessed on 24 November 2007). Thus there has been serious structural imbalance, where the central SOE sector has accumulated huge surplus while the social security sector suffers from serious fiscal inadequacy problem.

Thirdly, the shortfall problem of social security funds may call for centralized management of social security funds. On one hand, higher level of social pooling is desirable as it could utilize the payments from contributors to cover the withdrawing needs to a greater extent. In Fujian, pooling the enterprise pension insurance at the provincial level rather than at the prefecture-level (still a popular practice in several provinces and still the practice for other social insurances) has prevented two municipalities from running deficits in their pension funds. On the other hand, centralized management of social insurance funds may reduce the chance of mismanagement as it could be easier and much more cost-effective to monitor and manage a few social insurance funds than hundreds of funds.

This research has a number of limitations. First, constrained by time and availability of data, it is not possible for us to conduct another case study in a rich province with larger SOE sector (such as Liaoning) for comparison. Comparative case studies may help deepen the understanding of local fiscal inadequacy problem arising from market transition. Secondly, this research relies extensively on statistical data, therefore, it provides no description/analysis of the consequence of social security exclusion from the perspective of those marginal groups. Thirdly, this research bypasses the neo-Marxist theory (such as O'Connor 1973) on the fiscal crisis of the advanced capitalistic state (see Block 1973 for the extensive review). In other words, while this research recognises the inevitability of introducing social security by the state in a market economy, it has not been able to explore whether this will give rise to fiscal

crisis for the Chinese state, and whether (and to what extent) the devolution of social security function in China has been devised as a strategy to constrain the social security expenditure and/or to prevent the fiscal crisis of the state. These important questions merit further research.

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List of Interviews

I interviewed nine government officials in Fujian's Department of Finance and Bureau of Statistics as well as Quanzhou's Finance Bureau, Statistics Bureau and State-owned Assets Supervision and Administration Commission. The names of the government officials and the places where individual interviews took place are not provided here, as requested by all the interviewees.

Interview 1: telephone 10 minutes January 2008
Interview 2: face-to-face 45 minutes January 2008
Interview 3: face-to-face 40 minutes January 2008
Interview 4: face-to-face 50 minutes January 2008
Interview 5: face-to-face 60 minutes February 2008
Interview 6: face-to-face 50 minutes February 2008
Interview 7: face-to-face 50 minutes March 2008
Interview 8: face-to-face 45 minutes March 2008
Interview 9: face-to-face 40 minutes March 2008
Interview 10: telephone 15 minutes August 2008
Interview 11: face-to-face 60 minutes August 2008
Interview 12: face-to-face 30 minutes April 2009
Interview 13: face-to-face 55 minutes April 2009
Interview 14: face-to-face 75 minutes April 2009
Interview 15: face-to-face 30 minutes April 2009