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7 Who receives subsidies?

A look at the county level in two time periods[1]

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Introduction

The 1994 tax reform brought about momentous changes to the Chinese tax system. Instead of individually negotiated tax contracts with the central government, local governments were forced to share lucrative categories of taxes, including value-added tax (VAT) and resource tax, with the central government. In the case of the VAT, the four layers of local government – provincial, prefectural/city, county, and township – together share only 25 percent of VAT intake (Brean 1998; Wong et al. 1995). To compensate for the sudden decrease in local income, the central government introduced a complicated transfer payment system. Whereas the pre-reform fiscal system only contained two main categories of transfer payments – fixed subsidies and earmarked subsidies – the 1994 reform saw the introduction of at least four new categories of subsidies.

This paper first clarifies the characteristics of these various types of subsidies both before and after the 1994 tax reform. The heart of this paper explores the determinants of subsidies allocation in both 1995 – just after the tax sharing reform – and in 2000. One clear, yet disturbing, finding from our analysis of county-level subsidies data is that the tax sharing system (TSS) shows a strong tendency to allocate resources away from poor counties to affluent counties in both 1995 and in 2000. Despite official rhetoric stating that the tax reform would increase the center's ability to allocate to poor regions, our data suggest the opposite. Second, we show a strong causal relationship between the number of fiscal dependents and subsidies allocation at the county level. This finding answers an important question concerning local finance: Why do local governments continue to expand despite the fact that they lack the revenue to pay for wages? Somewhat surprisingly our results reveal that expanding payroll constitutes a sure way of increasing subsidies remittance to the county. The following first provides an outline of the structure of state subsidies to the county level both before and after the 1994 tax reform, followed by a discussion of the data and methodology used in this paper. Using regression analysis, the remainder of the paper explores the various determinants of subsidies allocation in China.

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The structure of subsidies to county governments

In the economic literature on fiscal federalism, the central government ideally distributes transfers to local governments to enhance the overall welfare. In a welfare maximizing fiscal federal system, local governments would provide public goods that mainly benefit a given locality, while the central government would provide public goods that affect the entire country (Oates 1999). Because some public goods have spillovers, i.e. a welfare effect on neighboring localities, local governments under-provide them, thus diminishing the overall welfare. For example, local governments might under-regulate clean air since they hope to free-ride on the clean air of neighboring regions. To encourage local governments to provide public goods with spillovers, the central government would encourage them via fiscal transfers (Besley and Coate 1999).

Another goal of transfers is to effect a regional redistribution of fiscal resources. Although economically inefficient, equalizing transfers can ensure long-term political stability (Barro 1999; Smart 1998). Since the mid-1990s, the Chinese government has consistently claimed equalization as the main goal of concentrating fiscal resources at the center and redistributing them through subsidies. As a Ministry of Finance (MOF) decree states, "transfer payments are aimed at reversing the trend of increasing budgetary divergence between regions and at gradually effecting the equalization of local governments' ability to provide public services in order to realize the goal of comprehensively building the small prosperity society" (Ministry of Finance 2003a: 32–6).

Yet, transfers in China, even according to official policies, did not mainly aim at welfare maximization or at regional equality. Rather, official transfer policies both before and after the 1994 tax restructuring had the mixed objectives of appeasing vested interests, encouraging local investment, and redistributing fiscal capabilities across regions. Empirical findings presented in the latter part of this paper reveal that transfers in reality were not equalizing on the whole.

Before the 1994 tax reform, subsidies to the county government broke down into fixed subsidies (*ding'e butie*) and earmarked subsidies (*zhuanxiang butie*). Fixed subsidies were the main mechanism whereby both central and provincial governments transferred money to poor and minority counties (Ahmad 1998; Park et al. 1996). At the local level, provinces negotiated with individual counties to determine the amount of fixed subsidies counties would receive over a given period of time. Counties, once they had agreed to an arrangement, could expect to receive this amount of subsidies automatically on a yearly basis (Park et al. 1996). Although originally equalizing in nature, fixed subsidies have become a mechanism for appeasing vested interests, since fixed subsidies do not change according to fluctuating economic circumstances but are provided on the basis of past subsidies level.

Earmarked subsidies, on the other hand, took the form of numerous individual grants from either the center or the provincial government to the county governments. These grants were designated for specific purposes, which ranged from construction, education, flood prevention to administration and even public security

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(Ministry of Finance 2001b). Furthermore, these grants almost always require matching funds (*peitao zijin*) from the county government (Ahmad 1998; He 2003; Park et al. 1996). Application for earmarked grants typically entails an arduous two-step process, in which counties first receive the approval of the provincial financial department and other relevant provincial agencies, followed by a review by the MOF and relevant central agencies (Ministry of Finance 2001b).

Earmarked subsidies from the central state to local governments are by no means unique in China, and some earmarked grants encourage local governments to provide public goods with spillovers. Nonetheless, its overall orientation is clearly not toward welfare-maximization or equalization. First, the central and provincial governments continue to exercise highly discretionary and *ad hoc* control over earmarked subsidies (Wong 2005b). Besides providing funding to the stated purposes of these grants, the discretionary nature of earmarked subsidies also affords higher tiers of government an additional means of political control (Wedeman 1999). Furthermore, many of these grants prod local governments to provide public goods, which typically are provided by the central authorities in other countries (Mountfield and Wong 2005). Some earmarked grants even go toward resolving problems of national significance, such as bailing out distressed financial institutions to prevent bank runs (People's Bank of China and Ministry of Finance 2000). Moreover, the matching funds requirement furnishes affluent counties with a major advantage in winning earmarked subsidies. At the same time, earmarked grants which traditionally targeted disadvantaged populations in minority areas have faced continuous decline since the late 1980s (Wong 2003). The arduous application process also means that the right political connections can speed up the approval process considerably. Despite these drawbacks, Table 7.1 reveals that both in 1995 and in 2000, earmarked subsidies made up a large share of the total per capita subsidies in the average county.

The 1994 tax reform saw the introduction of a host of new subsidies categories at the county level. New categories of subsidies include tax rebate subsidies (*shuishou fanhuan butie*), original systems subsidies (*yuantizhi butie*) transfer payment subsidies (*zhuanyi zhifu butie*) bond issuance subsidies (*zengfa guozhai buzhu*) and wage increase subsidies (*zengfa gongzi buzhu*) (Budgetary Division of the Ministry of Finance 2001). After 1994, earmarked subsidies remained a major category of subsidies, while fixed subsidies were transformed into original system subsidies. According to a State Council document, original system subsidies were created to ensure that local governments continued to receive the same amount of subsidies as they had under the previous fiscal system (State Council 2003b). This category thus subsumed fixed subsidies and some items of earmarked subsidies (Lou 2002). As seen in Table 7.1, the two traditional categories of subsidies continued to make up the bulk of subsidies to the average county in both 1995 and 2000.

Among the new categories of transfers introduced in 1994, the tax rebate subsidies are transfers that a higher-tier government gives to the lower level after taxes have been successfully collected by the higher-tier government. Between the center and the provinces, the center distributed tax rebates to provinces according

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Table 7.1 Mean and standard deviation of per capita subsidies to counties in various categories: 1995, 2000

	Mean 1995	*SD 1995*	*Mean 2000*	*SD 2000*
Total subsidies	42.96	41.87	40.14	47.54
Fixed/Original system subsidies	20.24	34.08	14.08	19.14
Earmarked subsidies	10.49	13.34	14.3	19.7
Tax rebate subsidies	12.23	28.80	8.04	13.67
Transfer payment subsidies	–	–	3.67	6.6

Note: All figures denominated in Chinese *yuan*. Bond subsidies and wage subsidies are not included because these two subsidies only applied to a minority of counties

Source: Budgetary Division of the Ministry of Finance (2001)

to the loss in revenue suffered by the provinces after 1994 (World Bank 2002). The tax rebate is then set to increase annually based on the increase in VAT and consumption tax (*xiaofeishui*) collected in the province. Provincial governments, however, do not seem to follow any fixed formula in providing tax rebates to prefectures and counties.[2] Specifically, tax rebates grow at 0.3 times the growth rate of VAT and consumption tax collection *kept by the central government* (World Bank 2002).[3] By design, tax rebate transfers as a share of total VAT and consumption tax collection would shrink over time (World Bank 2002). By tying the growth of tax rebate transfers to the growth of local collection of VAT and consumption tax, richer counties with a more robust tax base would enjoy faster growth in tax rebates than poorer localities. Thus, a large element of the new transfer system is inherently regressive (World Bank 2002).

In 1995 another category of subsidies, transfer payment subsidies, was introduced to redress regional imbalance by implementing an objective formula for redistribution (Lou 2002).[4] Unlike the other categories of subsidies, which sought mostly to pay off vested interests, this new transfer aimed at redistributing tax capabilities across regions (Budgetary Division of the Ministry of Finance 2002). Instead of referring to "base figures" (*jishu*) to calculate transfer amounts, a complex system with numerous components was introduced to peg transfer payments. The overall aim was to truly effect equalization transfers in the fiscal system.

The basic concept behind transfer payment subsidies is that subsidies are distributed to localities where "standard expenses"(*biaozhun caizheng zhichu*) exceed "standard income"(*biaozhun caizheng shouru*) (Lou 2002).[5] In Anhui province, for example, standard income is a function of standard VAT collection, standard commercial tax collection, tax rebate subsidies, standard income and subsidies from penalties and fees, as well as fixed and earmarked payments to higher levels (Finance Department of Anhui Province 2000b). The "standard" tax collection figures are in turn the average of the "obligatory tax"(*yingshou shui*) and actual collection from the previous year. For example, standard VAT collection is calculated as follows:

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$$\text{Standard VAT}_t = 0.5\ (\text{Obligatory VAT})_t + 0.5\ (\text{Actual VAT collection})_{t-1}$$

The obligatory VAT is, further, a function of industrial value added from the previous year multiplied by the effective tax rate. Approximately the same algorithm is used to calculate standard commercial tax (Finance Department of Anhui Province 2000b). "Standard" tax collection figures are used alongside actual collection figures in order to discourage local officials from under-collecting taxes in an attempt to boost subsidies in the subsequent year.

"Standard expenditure" is the sum of standard wage expenses, standard administrative expenses, agricultural expenses, and other expenses (World Bank 2002). The largest category on the expenditure side is of course wages, bonuses, and retirement benefits for fiscal dependents (*caizheng gongyang renkou*), which broadly include current state employees, teachers, decommissioned military officers, and government retirees. Fiscal dependent figures are not the actual number of current state employees, teachers, decommissioned military officers, and retirees in a given place, but the number of such personnel allowed by the state rosters offices (*bianzhi weiyuanhui*) at various levels.[6] Again, part of the equation to calculate standard expenditure is the "standard number of fiscal dependents." The standard number of fiscal dependents is the fitted value Y generated from a regression equation that takes into account population density, the number of township organizations, the number of primary and middle school students, and the number of health workers, among other variables (Finance Department of Anhui Province 2000b). By using standard expenditure and fiscal personnel figures, the central government discourages local officials from gaining the perverse incentive to expand the number of workers to obtain more subsidies. However, as the analysis below reveals, these efforts to control the number of fiscal dependents do not seem to be effective.

Clearly the Ministry of Finance went to great lengths to ensure that the transfer payment subsidies would go to truly needy localities and have an equalizing effect on fiscal capabilities. This system, however, still leaves some room for manipulation, especially by provincial governments. First, transfer payment subsidies to the counties involve a two-step process whereby the central government applies the standard calculations to determine transfer subsidies to the provinces and provinces apply essentially the same criteria to transfer to the counties (Finance Department of Anhui Province 2000b; Ministry of Finance 2003a). As is the case with all two-step transfers, the provinces can easily keep the lion's share of central transfers for provincial use. Even if provinces strictly apply the formulas, they can determine the overall amount to transfer to lower-level governments.

Furthermore, although the method of calculating various "standard" figures is known to both county and provincial officials, county officials only have data on their own county, not overall data from all the counties in a province. Since many "standard" figures are calculated on the basis of data aggregated from the other counties, provincial finance bureaux have an information advantage vis-à-vis the individual county governments. Finally, even if the transfer payment subsidies are given out strictly according to the formulas outlined above, Table 7.1 reveals that

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five years after its implementation, the formulaic transfer scheme remained a relatively small portion of the per capita subsidies received by the average county. Transfer payment subsidies did not appear to be an important element of the TSS and constituted only 3.1 percent of all central transfer payments in 2001 (World Bank 2002).

Besides these two major categories of new subsidies (tax rebate, transfer payment), bond subsidies and wage subsidies were also added on the county budgetary balance, but these two categories of subsidies only applied to a small number of counties in 2000. They essentially operated as another kind of earmarked transfers. In 1999, the central government ordered provincial governments to distribute additional wage subsidies to poor counties. Essentially, the higher share the wage bill took up in total county expenditure, the more wage subsidies a county received (Finance Department of Anhui Province 2000a). In subsequent years, however, wage subsidies became a significant category of transfers (Wong 2005a).

The 1994 tax reform greatly bolstered the fiscal clout of the central government. Examining the specific mechanisms of these subsidies, however, it remains doubtful that these new subsidies would effect a significant fiscal redistribution. By 2000, the center collected over half of all fiscal income, while it only spent one third of total government expenditure. In contrast, county and township government shared only 20 percent of total government collection. Yet, these grassroots levels of government were burdened with a disproportionate share of the expenditure needs (Mountfield and Wong 2005; Su 2003). Granted, with bolstered financial resources, the center can serve as the great equalizer and redistribute to needy localities. Yet, the analysis below reveals that subsidies allocation is probably not driven by this benign process.

Data and methodology

The analysis below seeks to clarify the economic factors that drive the distribution of overall subsidies at the county level. Our data come from the *Statistical Material for Prefectures, Cities, and Counties Nationwide* (*Quanguo Dishixian Caizheng Tongji Ziliao*) published by the Ministry of Finance. This data-set covers county-level finance for every county-level administrative unit, including counties, county-level cities, and urban districts in 1995 and in 2000. We further enhance this data with economic reports and data on the poverty designation of counties (State Council Poverty Relief Leading Group 2003).[7] We chose to examine county-level data in these two years in order to gauge whether the TSS had succeeded in shifting the underlying logic of transfer payments in the first five years following its initial implementation.

We further cleaned the data by eliminating all county-level urban districts embedded in major cities. Ahmad's work on Beijing suggests that districts in large cities have much less fiscal independence than their county counterparts (Ahmad 1998). We do, however, include rural counties in directly administered cities, including Beijing, Shanghai, and Tianjin. The relationship between these muni-

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cipal governments and their rural counties is akin to the relationship between provincial governments and counties. In any event, these minor adjustments are marginal, and we still have over 2,000 observations for each of the two years.[8]

With two years of data, we are left with two choices on how to approach our data analysis. First, we can combine the two years of data into a single data-set. This would allow us to take the first difference of both the dependent and the independent variables. Pooling the data from the two years, however, creates a serious problem: counties in China changed a great deal between 1995 and 2000. For some provinces or directly administered cities, the number of counties has actually shrunk by 50 percent. Even in primarily agrarian provinces like Anhui, the number of counties has decreased significantly. Only Xinjiang, Qinghai, Neimenggu, Hainan, and Liaoning had the same number of counties in 2000 as they did in 1995. The changing number of counties is only the first problem one encounters when comparing counties over time. Many counties merged with one another, split apart, were elevated to higher administrative status, expanded, or contracted in size. Without a better sense about how widespread these administrative changes actually were, it would be difficult to claim that counties in 1995 and 2000 are generally comparable. Given the comparability problem, we take a second, less optimal strategy of analyzing the 1995 and 2000 data separately. However, for the sake of robustness and to establish a firmer causal relationship, we do combine data from the two years in our last regression in order to instrumentalize variables in 1995.

Because the Ministry of Finance data provide only basic economic and demographic information about these counties, in addition to the fiscal variables, we mainly explore the impact of economic factors on subsidies distribution. More information is needed to construct a political-economy explanatory model. With the data at hand, however, we have more than enough information to find out whether subsidies are allocated to poor, needy counties.

We employ a gridlock approach in our empirical investigation. That is, we regress total subsidies for both 1995 and 2000 on a host of economic variables, including output per capita, fiscal shortfall, structure of the local economy, the State Council designation of a county, and the size of the fiscal dependents with and without provincial dummies. We estimate coefficients for both years in order to uncover any change in the correlation between various economic indicators and total subsidies between the two years. Second, we run the regressions both with and without provincial dummies because they represent two different approaches to understanding fiscal allocation. When the equation is estimated without provincial dummies, we examine how the fiscal system as a whole, including both central remittance to the provinces and provincial remittance to the counties, allocates subsidies. When we include provincial dummies, however, we examine how the fiscal system, when controlling for central remittance to the provinces and other provincial fixed effects, allocates subsidies. Another way to interpret our equation when provincial dummies are included is as illustrating how the average province allocates subsidies to the average county.

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Analysis and findings

The analysis below mainly aims at discovering whether "reversing the trend of increasing budgetary divergence" (Ministry of Finance 2003a) is indeed driving subsidies allocation in China both in 1995 and in 2000. If not, what other factors might be driving subsidies allocation? In our basic model, the dependent variable is total per capita subsidies received by a county in a given year, while the independent variables are county agricultural and industrial output, county fiscal shortfall, the ratio of agricultural output to total output at the county level, a dummy for nationally designated poverty counties, and the ratio of fiscal dependents to total population in a county.

Each of the explanatory variables constitutes a major algorithm whereby the fiscal system allocates subsidies to the counties. First, fiscal shortfall, or the difference between local collection and local spending, serves as an important control variable. Since counties are by law prohibited from running a deficit, provincial and central governments might just be sending funds to counties simply to prevent rampant deficits. After controlling for fiscal shortfall, we are more certain that money is transferred to a county net of the need to ensure budgetary balance in that locality. It is, however, important to note that allocating subsidies to deficit counties is not the same as allocating to poor counties, although the two phenomena are correlated.

If the fiscal system progressively allocates subsidies to poor places, then output per capita should be negatively correlated with subsidies per capita. On the other hand, it would not be surprising to find output per capita to be positively correlated with subsidies, since richer counties are more able to obtain earmarked subsidies due to their greater ability to meet matching funds requirements (Wong and West 1997). It is thus an important empirical question to uncover whether the TSS transfers progressively or regressively to counties.

In addition to output and fiscal balance, economic structure of the local economy can also play a role in determining transfers. In the progressive case, the higher the proportion of agricultural output, the more the center and the province would subsidize a county. However, as Fan points out, the reverse might well be true. Agrarian counties have less access to revenue streams from TVEs and thus less money available to pay for matching funds (Fan 1998). Moreover, over time, the relative difficulty of collecting revenue from the multitude of farming households might make local officials in agrarian counties increasingly predatory toward farmers, which further decreases an agrarian county's ability to provide for matching funds.

Finally, both Western and Chinese scholars point out that the ballooning of local fiscal personnel has rapidly increased local fiscal demand (Fan 1998; Park et al. 1996). Thus, if central and provincial governments are fearful of rampant wage arrears at the grassroots level, they would be inclined to increase subsidies with the surge in fiscal dependents. What remains unclear is the direction of causality between fiscal dependents and subsidies. According to Chinese accounts, a rising number of fiscal dependents leads to increases in government subsidies for several reasons. First, the central government raised wage standards for government

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employees, including teachers, several times since the mid-1990s (Wang 2002). This increased the local government budget's sensitivity to the rising number of employees. To compensate local governments for the increased expenses, the center allocated subsidies for the increased wage bill (Finance Department of Anhui Province 2000a). Second, with more and more functional bureaux being vertically managed by either the province or the central government, county-level bureaux, including tax bureaux, the administration for industry and commerce, and various product supervision bureaux, needed more specialized personnel and received grants from higher-level departments in the same functional system to fulfill these hiring demands (He 2003; Mertha 2005). Finally, county governments might simply be blackmailing higher levels with the possibility of rampant wage arrears and social stability. Given this perverse incentive, county governments would expand local fiscal dependents in the hope of attracting more central or provincial wage subsidies.

However, increasing subsidies might also be driving the growth of fiscal dependents. First, a surge in subsidies would allow local officials to hire more cadres to fill the ranks. With a higher number of employees, local officials can then ask central and provincial governments for more wage subsidies in subsequent years. Moreover, the increase in earmarked grants might also lead to higher numbers of fiscal dependents since earmarked grants at times demand specialized personnel, which forces the county to hire more people to administer the programs funded by these earmarked grants (Wang 2002). The last section of the paper seeks to clarify the causation issue related to the size of fiscal dependents.

Subsidies (SUB) and output (OUTPUT) are recorded on a per capita basis and deflated by provincial level GDP deflator (1980=100). Fiscal shortfall (FISSHORT), which is the difference between local collection and local fiscal expenditure, is calculated as local collection-local expenditure/local collection. Strictly speaking, this variable records the fiscal balance at the county level, although with very few exceptions, counties generally run a pre-transfer deficit. The ratio of agricultural output to total output (ECONSTR) simply divides agricultural output by total output. The nationally designated poverty county dummy (NDP) records a one for every county designated by the State Council as especially needy (State Council Poverty Relief Leading Group 2003). Finally, the size of fiscal dependents (FISDEP) is the number of fiscal dependents per capita in the county.

These equations are estimated with generalized least-squares (GLS) because the assumption that counties are independent units of observations is unsustainable, thus causing a heteroskedasticity problem. Given this condition, estimation with ordinary least-squares (OLS) would produce inefficient estimates with high variance. GLS takes heteroskedasticity into account and produces more efficient estimators. Furthermore, the coefficients on Table 7.2 are recorded as standardized coefficients. Standardized coefficients inform the impact of a one-standard deviation shift in the independent variable on the dependent variable. Standardized coefficients are used in this case because the units of the independent variables are so different from each other. For example, because FISSHORT, ECONSTR, and

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Table 7.2 Effect of fiscal shortfall, output, economic structure, and fiscal dependents on total subsidies in 1995 and 2000

	1995 GLS	*1995 GLS with fixed effects*	*2000 GLS*	*2000 GLS with fixed effects*
FISSHORT	–0.199***	–0.119***	–0.309***	–0.187***
OUTPUT	0.211***	0.140***	0.138***	0.090***
ECONSTR	0.114***	–0.051**	0.182***	0.010
FISDEP	0.435***	0.324***	0.432***	0.352***
NDP	–0.014	0.029**	0.097***	0.098***
Tianjin		–0.086***		–0.119***
Hebei		–0.364***		–0.717***
Shanxi		–0.213***		–0.463***
Inner Mongolia		–0.133***		–0.364***
Liaoning		–0.101***		–0.276***
Jilin		–0.120***		–0.292***
Heilongjiang		–0.051*		–0.250***
Shanghai		0.012		–0.031***
Jiangsu		–0.246***		–0.512***
Zhejiang		–0.171***		–0.360***
Anhui		–0.387***		–0.541***
Fujian		–0.276***		–0.562***
Jiangxi		–0.299***		–0.457***
Shandong		–0.317***		–0.638***
Henan		–0.785***		–0.717***
Hubei		–0.277***		–0.477***
Hunan		–0.245***		–0.531***
Guangdong	–	–0.265***		–0.664***
Guangxi	–	–0.229***		–0.517***
Sichuan	–	–0.306***		–0.483***
Guizhou	–	–0.307***		–0.436***
Yunnan	–	–0.195***		–0.379***
Shaanxi	–	–0.244***		–0.503***
Gansu	–	–0.192***		–0.347***
Qinghai	–	–0.025		–0.133***
Ningxia	–	–0.045***		–0.148***
Xinjiang	–	–0.158***		–0.395***
Hainan	–	–0.105***		–0.213***
Xizang	–	–0.099***		–0.183***
OBS	2104		1991	1991
F Value	63.87		141.64	297.57
Adj-R2	0.35		0.46	0.79

Note:
The coefficients are reported as standardized coefficients. Standard errors are not reported because they are irrelevant in interpreting standardized coefficients.
*, **, *** indicate significance at 10%, 5%, 1% level respectively

FISDEP are all ratios, they can only fluctuate between zero and one. It would not make sense to interpret how much a one-unit shift in these variables would affect the dependent variable; that is impossible in the real world. Rather, it makes much more sense to ask how a one-standard deviation shift in these variables would affect the dependent variables.

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The findings presented in Table 7.2 suggest some progressive and some regressive elements in the fiscal transfer system. They also reveal that the 1994 reform did not address the regressive nature of the transfer system which allocated more to richer, industrial counties and less to poor, agrarian counties. Finally, the clearest result from all four equations is that there is a high correlation between the size of a county's fiscal dependents and subsidies per capita, even when other economic characteristics are held constant. This relationship remains robust in both 1995 and 2000.

The coefficients of FISSHORT are consistently negative, suggesting that as a whole, counties with bigger fiscal shortfall received more transfer payments. This finding, however, does not mean that subsidies were allocated to poorer counties. It just means that subsidies tended to flow to counties with higher pre-transfer deficits. In fact, even affluent counties might suffer from high pre-transfer deficits. In our data-set, nearly 99 percent of counties in both 1995 and 2000 reported pre-transfer fiscal deficit. Moreover, provincial and central governments also provided deficit counties with more transfers as a matter of routine policy to constrain local-level government deficits. Provincial governments, in particular, might provide county governments with deficit reduction transfers in order to fulfill central demands to have essentially no deficit at the local level (Ministry of Finance 2001a). By including this variable in our equations, we can discern how higher tiers of government made transfers to the county net of the concern for maintaining the legally mandated budgetary balance. Of course, this concern for deficit reduction does not include latent deficit in the forms of debt and wage arrears.[9]

In terms of the most direct measure of economic well-being, per capita output (OUTPUT), the fiscal system as a whole, including both transfers from central to provincial and from provincial to county level, systematically allocated more money to richer counties in both 1995 and in 2000. Moreover, once provincial fixed effects are taken into account in the two years, the positive, systematic relationship remains, albeit with a lesser magnitude. The positive coefficients of output per capita in 1995 suggest that the fiscal system as a whole and the average province both allocated subsidies to richer counties. Similarly, in 2000, both the fiscal system as a whole and fiscal allocation in the average province remitted more subsidies to richer counties, all else being equal. In this respect, the post-1994 remittance system did not lead to a significantly less regressive transfer system. Granted, the coefficients for OUTPUT declined somewhat in 2000, but they remain positive and significant. In 1995, a standard deviation increase in county output per capita led to 0.21 yuan more in transfer per capita overall. In 2000, a one-standard deviation increase in per capita output brought the average county 0.138 yuan in additional subsidies per capita. For a county with a million people, a standard deviation increase in income would have brought an additional 210,000 yuan in transfers in 1995, while in 2000 it would have brought an additional 138,000 yuan in subsidies.

The coefficients of economic structure (ECONSTR) in 1995 suggest that the fiscal system as a whole was allocating more subsidies to agrarian counties. However, the average province transferred systematically less funds to the average

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counties. Clearly, central transfers to the provinces were responsible for much of the transfers received by agrarian counties, while at the provincial level rural counties were the subject of discrimination in receiving transfer payments. In 2000, while the system as a whole still transferred significantly more money to agrarian counties, the average province did not favor or discriminate against agrarian counties systematically. Again, this finding suggests that almost all of the subsidies allocated to agrarian counties stemmed from central policies to disburse subsidies to primarily agrarian provinces.

Preferential policies also extended systematically to nationally designated poverty counties (NDPs) in most of our equations, although the magnitude of the effect is surprisingly small. Although NDPs are designated by the State Council, our regression shows that the fiscal system as a whole did not systematically allocate more subsidies to NDPs in 1995. When central subsidies to the provinces and other provincial fixed effects are taken into account, however, the average province seemed to have allocated more funds to NDPs. In other words, special transfer payments to nationally designated poverty counties seemed primarily to be a provincial initiative in 1995. In 2000, however, nationally designated poverty counties received around 0.1 yuan extra subsidies per capita. This effect is robust both with and without provincial dummies, suggesting that both the central and provincial governments applied essentially the same algorithm in allocating to these counties. It is unclear whether this represents a progressive allocation of subsidies to truly needy counties, since the designation of NDP counties is a political process involving several central agencies, including the State Council Poverty Relief and Development Leading Group, the Ministry of Finance, and the State Planning Commission. Cadres in the Ministry of Finance freely admitted that counties with a high minority representation received special considerations for receiving NDP status (Agriculture Department of the Ministry of Finance 2002).

The strongest coefficient in this set of equations is the size of the fiscal personnel per capita (FISDEP). In both 1995 and 2000, both the GLS and fixed effect equations generate positive, significant coefficients for FISDEP. Moreover, the magnitude of this coefficient is larger than that of all the other variables, suggesting a strong correlation. In 1995, a county with one million residents received 435,000 yuan in additional subsidies for a standard deviation increase in fiscal dependents from the fiscal system as a whole and 324,000 yuan in additional subsidies from the average province. In 2000, a one-standard deviation increase in fiscal dependents in the same county drew an additional 430,000 yuan in subsidies from the fiscal system as a whole. Even controlling for provincial effect, the same one-million resident county obtained an additional 352,000 yuan in additional subsidies. More than the other factors in the equations, the size of fiscal dependents in a county is closely tied with the amount of subsidies received by the county. In the next section, we seek to clarify the causal relationship between fiscal dependents and subsidies allocation.

In general, the results presented in Table 7.2 do not suggest that concerns of economic equity underlie the allocation of subsidies to counties after the imple-

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mentation of the TSS. Viewing our results alongside Wong and West's (1997) earlier findings, we come to the pessimistic conclusion that the Chinese fiscal system has allocated regressively away from poor localities for much of the reform. The TSS did not change the regressive nature of the fiscal system. Furthermore, although central policies effected substantial transfers to agrarian provinces, provinces themselves did not seem eager to undertake similar redistribution to agrarian counties. This speaks volumes to the urban bias at the provincial level. Although there was a tendency to allocate subsidies to deficit counties, deficit counties were not necessarily poor. Moreover, the tendency to allocate to deficit counties says more about provincial anxiety about explicit, local deficits than economic equity. Finally, fear of wage arrears and potential instability drove higher-tier governments to allocate subsidies based on the fiscal dependents in a county.

Clarifying the causal role of fiscal dependents

Our preliminary investigation makes it clear that the size of fiscal dependents is strongly related to subsidies remittance. However, the direction of causality remains unclear. Theoretically, the causal arrow can go either way, from dependents to subsidies and vice versa. With this endogeneity problem, the estimated coefficients of the explanatory variables are no longer statistically consistent. Thus, this remains an issue to be settled with further statistical tests.

Fortunately, we have two years of data, which allows us to conduct a two-stage least squares estimation (2SLS). This procedure enables us to exogenize the main variable of interest, the size of the fiscal dependents, in estimating its effect on subsidies in 2000. The instruments should be exogenous and should be correlated with the main explanatory variable, which is FISDEP in 2000. Here, we use fiscal shortfall in 1995 (FISSHORT95) and fiscal dependents in 1995 (FISDEP95) as instruments to generate predicted values for fiscal dependents in 2000 (PFISDEP00).[10] By construction, since PFISDEP00 is predicted using variables from 1995, endogeneity is no longer a problem.The first-stage results are reported in Panel B of Table 7.3.

Because of the changing number of counties since 1995, combining the data from both years results in the deletion of a significant number of observations. We have to delete both abolished counties and newly created counties from our sample. However, given our need to clarify the causal relationship between fiscal dependents and subsidies, we are required to make this tradeoff. After combining data from the two years, we are left with a little under 1,800 observations. If jurisdiction changes were not an issue, we would have over 1,900 observations. Thus, combining the data from these two years results in the loss of 5 percent of our sample.

In our 2SLS estimation, we estimate essentially the same equations as we did on Table 7.2. In the second stage, the dependent variable is subsidies in 2000, while the independent variables are fiscal shortfall, per capita output, the NDP county dummy, and economic structure in 2000, as well as the predicted values

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of fiscal dependents in 2000. We also add a lag of the dependent variable, subsidies in 1995 (SUB95) in the equation. In Panel A of Table 7.3, we display the coefficients of the second-stage estimation.

When we use instrumental variables to estimate fiscal dependents in 2000, we find that most of the explanatory variables have the same impact on the dependent variables as they do on Table 7.2. Most significantly we find that fiscal dependents have the same, enormous impact on subsidies allocation. A standard deviation surge in fiscal dependents still brought around 0.45 yuan in per capita subsidies. Because we use the 2SLS procedure, we can say more confidently that the relationship between fiscal dependents and subsidies is a causal one. In other words, rising numbers of fiscal dependents indeed drove the allocation of subsidies at the county level. Politically, this suggests a curious process of subsidies remittance. While higher-level governments were less willing or unwilling to allocate subsidies based on criteria of income and structural inequality, they were more than willing to remit subsidies to county governments to pay for rising wage bills.

This phenomenon suggests three possible processes. First, provincial and central governments might be happy to increase subsidies to pay for new government workers in the various vertically integrated bureaucracies. Second, because grassroots government officials constitute the frontline in the state's daily struggle to regulate and to control society, both provincial and central governments are willing to bolster the capabilities of grassroots government. Indeed, the central government issued several decrees urging local governments to first pay for wage bills before considering construction (Ministry of Finance 2003b). As suggested earlier, central concern for local wage arrears leaves room for local governments to opportunistically bolster cadre ranks in order to blackmail provincial and central governments for more subsidies. However, doing so is not without cost, since central and local transfers are not sufficient for the entire wage bill. Local governments that expand fiscal dependents recklessly would receive more subsidies, but would face an even greater wage bill and higher deficits.

When we consider both local deficits and fiscal dependents, a coherent strategy of bargaining with, if not blackmailing, higher levels of government emerges. Although grassroots government officials are at the mercy of their superiors at the provincial and central level, they can threaten higher authorities with the prospects for social instability. Again, since the provincial government and the center need grassroots governments to handle most mandates (such as compulsory primary education) and the "dirty work" (such as birth control), grassroots governments can expand both fiscal personnel and expenditure opportunistically to wrest more subsidies from the provinces and from the center. Although this may lead to bigger fiscal shortfalls, our findings suggest that grassroots governments are willing to expand fiscal dependents and local fiscal shortfalls to obtain more subsidies.

Conclusions and implications of recent changes

How the Chinese government distributes its subsidies has important implications both for future growth trajectory and for political stability in China. If the state

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Table 7.3 Effect of past subsidies, fiscal shortfall, output, economic structure, and fiscal dependents on total subsidies in 2000

	SLS without dummies	*2SLS with dummies*
Panel A		
SUB95	0.499***	0.499***
FISSHORT00	–0.156***	–0.151***
OUTPUT00	0.029*	0.030***
ECONSTR00	0.086***	0.026**
PFISDEP00	0.456***	0.290***
NDP	0.13***	0.085***
Tianjin		–0.080***
Hebei		–0.465***
Shanxi		–0.306***
Inner Mongolia		–0.256***
Liaoning		–0.199***
Jilin		–0.174***
Heilongjiang		–0.176***
Shanghai		–0.031***
Jiangsu		–0.343***
Zhejiang		–0.218***
Anhui		–0.302***
Fujian		–0.368***
Jiangxi		–0.258***
Shandong		–0.443***
Henan		–0.255***
Hubei		–0.280***
Hunan		–0.338***
Guangdong		–0.490***
Guangxi		–0.336***
Sichuan		–0.277***
Guizhou		–0.219***
Yunnan		–0.278***
Shaanxi		–0.247***
Gansu		–0.216***
Qinghai		–0.090***
Ningxia		–0.109***
Xinjiang		–0.295***
Hainan		–0.138***
Xizang		–0.159***
OBS	1798	1798
F Value	369.91	584.13
Adj-R2	0.7	0.88
Panel B		
FISSHORT95	0.028**	–0.026**
FISDEP95	0.338***	0.415***
Adj-R^2	0.34	0.49

Note:
The coefficients are reported as standardized coefficients. Standard errors are not reported because they are irrelevant in interpreting standardized coefficients.
*, **, *** indicate significance at 10%, 5%, 1% level respectively

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actively undertakes to redistribute from richer regions to poorer regions, comparative research suggests that China would benefit from a higher likelihood of sustainable growth and political stability (Barro 1999; Easterly 2003).[11] Our findings, however, suggest that other factors underlie the distribution of subsidies in China. First, the pervasiveness of earmarked grants still provides more affluent localities with an advantage in applying for earmarked grants. Second, subsidies distribution seems to be driven by central and provincial efforts to prevent social instability and the collapse of grassroots governments. Instead of allocating to poor places, the central and provincial governments reward counties that most aggressively expand their personnel and expenditure. Over time, this allocation logic can only drive local governments to compete with each other to expand. Thus, a major reason why county-level dependents grew by an average of 4.5 percent between 1994 and 1999 is that local governments knew that they could benefit from central subsidies with an expanded workforce (Wang 2002).

In 2001 and 2002 further fiscal reform was carried out, which will have additional impact on the fiscal situation at the grassroots level. First, the past few years saw the expansion of the tax-for-fee reform (*feigaishui*), which seeks to replace the myriad fees at the local level with a standard agricultural tax (Gao 2002). Because many local governments at the county level or below had relied on fees for a large part of their expenditure, the tax-for-fee reform will significantly reduce their revenue sources. To compensate these local governments, the central government has once again concocted another scheme. As with transfer payment subsidies, the new tax-for-fee reform subsidies (*feishui gaige butie*) are calculated based on "standard expenditure" and the difference in pre- and post-reform revenue collection (Ministry of Finance 2003d).

Not only is local government completely at the mercy of "standard" estimates from the central government, they are also at the mercy of provincial governments, which distribute central and provincial transfers to the county and township governments (Ministry of Finance 2003c). Provincial governments are also supposed to provide a substantial share of the transfers to grassroots governments to support the reform (Ministry of Finance 2003c). Given our findings that provincial governments have a considerable urban bias, it remains unclear how much provincial governments will actually transfer to needy rural counties undergoing the tax-for-fees reform. Grassroots governments' only recourse may be to extract more subsidies from the center and the provinces by further expanding fiscal dependents and local deficits.

Another major recent development in the fiscal system is the tax sharing scheme for enterprise and personal income tax instituted in 2002. The tax sharing scheme in 1994 gave local governments exclusive claims over enterprise and personal income tax. However, with the rise of income tax, the central government doubtless wanted to secure a share of this dynamic income stream. Thus local governments were ordered to give 50 percent of the new increases in personal and enterprise income tax over to the central government in 2002 and 60 percent thereafter (Yang 2004: 80). Local governments, including provincial, city, and county-level governments, would share the remaining portion. As in 1994, this

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tax-sharing scheme will undoubtedly increase local governments' dependence on central subsidies. According to our findings, the strongest leverage local governments have to bargain for higher subsidies is an expanding workforce.

Due to central and provincial concerns for wage arrears and social instability, as well as their dependence on grassroots-level governments to implement various policies, provincial and central governments' commitment to freeze wage subsidies in accordance with "standard" expenditure lacks credibility. Thus, local governments opportunistically increase the size of the local workforce to blackmail higher levels of government for more subsidies. As a consequence, although the new tax sharing scheme and the tax-for-fees reform will decrease local revenue sources, local governments might have an even *higher* incentive to expand their workforce, since an expanding workforce and fiscal shortfall, rather than poverty, constitutes the surest way to increase subsidies allocation. As both Western and Chinese scholars have pointed out, the expansion of local government workforce produces undesirable consequences, from more fee collection, wage arrears, to even the disintegration of local level governments (Wong 1998; Yu 2003b). In other words, the expansion of local government only serves to increase the thirst and the capacities for rent-seeking at the grassroots level (Bernstein and Lu 2003; Yao and Yang 2003; Yu 2003a). While local officials everywhere are tempted to predate on the resources in their territories, Chinese officials are further free from bottom-up accountability mechanisms like elections.

Notes

1 We gratefully acknowledge Liu Mingxing for generously providing the county-level data that made this study possible. We also would like to thank Zhang Xiaobo for the NDP county data. Last but not least, we are grateful to Christine Wong, Vivienne Shue and other members of the "Paying for Progress" Workshop for their invaluable comments.

2 From available regulations, it seems that provincial governments have the discretion to devise schemes for distributing tax-rebate subsidies to the prefectures and counties. See, for example, Henan People's Government (2004).

3 In the original State Council document issued in 1993, tax rebates are set to grow at 0.3 times the average national growth rate of VAT and consumption tax combined. However, the State Council modified the rule in 1994 to peg tax rebate increases to the growth in local VAT and consumption tax collection, not the national growth. Christine Wong at the World Bank then further found that in fact the MOF was only rebating the portion of the growth in VAT and consumption tax collection kept by the center. See State Council (2003a).

4 Lou Jiwei, the vice-minister of finance in that period, was likely a major champion of the transfer payment subsidies. In a speech given in January 2000, Lou praised the new system extensively for its scientific precision and criticized the old system of subsidies allocation for its arbitrary nature. See Lou (2002).

5 Besides this formula-based portion of the transfer payment subsidies, there is also a "priority" transfer category which provides transfers to poverty counties, minority counties, counties near border regions, counties affected by major dam projects, and counties in military restriction areas. The amount disbursed for priority transfers seems to be minimal. See Finance Department of Anhui Province (2000b).

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6 For an excellent discussion of how rosters are set see Mertha (2005).
7 We would like to thank Dr. Zhang Xiaobo at the International Food Policy Research Institute for generously sharing the poverty county data with us.
8 A small number of these observations were dropped through list-wise deletion in our regressions due to missing information.
9 Bonuses and some categories of subsidies are not included in the official budget, even if bonuses at times make up a large portion of a government employee's salary. Salaries of employees not on the state roster are also not listed in the formal budget. See Gansu People's Government (2002).
10 These two variables are not the perfect instruments, since they are slightly correlated with the main dependent variable. However, they have the lowest correlation with the dependent variable out of all of the variables in our data-set.
11 Barro finds that inequality only retards growth at low levels of development.

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