

*Fiscal Transfer and Local Public Expenditure in China: A Case Study of Shanxi Province**

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Abstract

Given the vertical fiscal imbalance between the Chinese central and local governments and the overwhelming tasks imposed on local governments after the 1994 tax reform, intergovernmental fiscal transfer has become crucial for alleviating local fiscal shortages and funding local public services. Then how does fiscal transfer affect local

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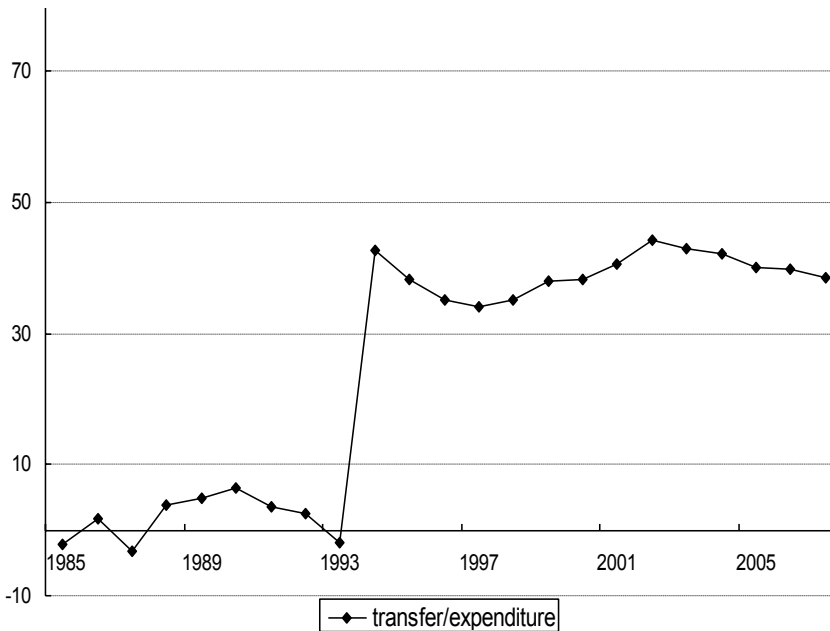
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public expenditure? Does it facilitate better public services? This article answers these questions by examining the spending behavior of county-level governments in Shanxi Province. The data analysis reveals that fiscal transfer does not necessarily motivate the recipients to provide better public services but rather encourages spending on economic construction. The findings suggest that to improve local provision of public goods and services, the management of fiscal transfers must be strengthened so as to prevent the diversion of funds to unintended uses, the transmission of fiscal transfers must be streamlined to guarantee timely payment, and local officials must be motivated to invest more in public services.

Countries with multiple levels of government invariably rely on inter-governmental fiscal transfer to coordinate the fiscal resources and responsibilities of different levels of government.¹ China, a country with a vast territory and an extensive governmental hierarchy, has seen centralized revenue collection but decentralized fiscal spending following

Figure 1 Share of Transfer in Subnational Government Expenditure (1985–2007) (%)



Source: Figure compiled using data from *China Statistical Yearbook 2006*.

the 1994 tax reform. With the central government claiming over 50 percent of national budgetary revenue but shouldering only about 30 percent of the expenditure, there exists an obvious vertical fiscal imbalance which, in turn, necessitates intergovernmental fiscal transfer. Thus the Chinese central government established a transfer system in 1994 which has injected increasing funds to subnational treasuries and funded about 40 percent of subnational government expenditure (Figure 1).

However, intergovernmental fiscal transfer does not necessarily ensure the effective distribution and use of grants to sponsor public services by local governments. Comparative studies suggest that the actual effects of transfer on local government expenditure depend on the specific design of the transfers and the implementation mechanisms, the nature of political and fiscal institutions that guide public spending, and the nature of the political competition within and across jurisdictions, both horizontally and vertically.²

With the increasing downward transfer to local governments, the Chinese central government has intended to address vertical and horizontal fiscal imbalances, strengthen local fiscal capacity, and ensure equalized basic public services across the nation.³ However, as to how the increasing transfer actually influences local public finance and whether it has achieved the stated objectives, empirical studies have generated disparate answers. Whereas some localities in Guangdong Province were found to have given priority to expenditure on education instead of government administration because of their particular cadre promotion system,⁴ local officials elsewhere are politically motivated to invest more on economic construction instead of public goods provision.⁵ Others find that fiscal transfer often does not result in better services at the periphery,⁶ and, even worse, that the current fiscal system has significantly impaired the capacity of local governments in less developed regions to provide decent public goods.⁷

Given the divergent views on the impacts of intergovernmental transfers on local public finance, this research joins the discussion and intends to answer the following questions. First, how exactly does the fiscal transfer from higher levels influence the spending behavior of local governments? Second, does fiscal transfer encourage local governments to devote more resources to public goods and services to the citizens, or do they follow other preferences and priorities?

This research explores these questions from the perspective of county-level governments. As the primary providers of public services

(except for foreign affairs and national defense), local governments in China, especially at the county and township levels, shoulder the majority of the responsibilities of providing compulsory education, health care, and social security.⁸ Under China's current fiscal system where counties administer township-level finance, an examination of the impacts that fiscal transfer exerts on county-level governments' expenditure is essential for understanding and evaluating local public goods provision. Whether county-level governments have sufficient fiscal resources and motivation to deliver these services determines the basic social welfare and security provided for citizens.

Existing studies on China's intergovernmental fiscal relations and local fiscal practices have often been focused on cross-provincial comparisons. Indeed, there are vast disparities across provinces in China, but the disparities within provinces are no less protruding, especially considering the glaring urban-rural divide in China. And the post-1994 tax-sharing system and intergovernmental transfers have been found to further increase fiscal disparities within provinces.⁹ In terms of public goods and services, the variations across counties are even larger than those across provinces.¹⁰ Given the growing accessibility of systematic county-level data, there have recently been increasing efforts to understand the county-level fiscal arrangements.¹¹ This study also joins this course of county-level analysis, aiming to find out how fiscal transfer affects county governments' spending behavior and whether it motivates them to devote more resources to public services.

Instead of examining all the counties across China, this article is based on a case study of counties in Shanxi Province. Focusing on one single province admittedly sacrifices comprehensiveness and generalizability, but it allows us to investigate the issues in more depth by combining quantitative cross-county comparison and qualitative field research to better appreciate the intricacy and complexity of local public finance. In comparison to other provinces in China, Shanxi is an average province in terms of its economic development level and fiscal capacity. The nominal GDP of Shanxi was 474.7 billion yuan in 2006, and it ranked 18th among the 31 provinces. Although heavy industries are the main source of Shanxi's economic income and fiscal revenue, more than 60 percent of Shanxi's population remains rural. Fiscally, Shanxi's per capita fiscal capacity was 1,686 yuan, likewise ranking 18th nationwide.¹² Like other provinces in central China, Shanxi receives fewer central subsidies than the western and the eastern

provinces. Overall, Shanxi is representative of the provinces located in central China that enjoy neither the economic head start of coastal areas nor the favorable policies for western development. Although the findings of this study may not be applicable to all other provinces in China, they can nevertheless shed some light on the patterns of local public finance in these average provinces in terms of economic development and fiscal capacity.

The rest of this article is organized as follows. The second section reviews China's fiscal transfer system and delineates different categories of transfers as well as their functions. The third section discusses the various expenditure responsibilities of county governments, which have to struggle between limited resources and the contending needs for money. The fourth section statistically analyzes how different types of fiscal transfers affect the structure of expenditure in Shanxi counties. The fifth section discusses the statistical results in conjunction with the information collected from the authors' fieldwork in Shanxi and explains the sometimes counterintuitive findings. The sixth section concludes.

Fiscal Transfers in China: Categories and Dynamics

Intergovernmental fiscal transfers play important roles in public finance, especially at subnational levels. Both in developing and developed countries, fiscal transfers finance considerable shares of subnational expenditure. Beyond financing expenditure, these transfers create incentives and accountability mechanisms that affect the recipient governments' spending behavior. Thus fiscal transfers can become a policy tool to induce efficiency and equity in public service provision.¹³

With centralized revenue collection and decentralized expenditure after the 1994 tax reform, local governments widely complained about fiscal shortage, especially at the bottom levels.¹⁴ Moreover, the series of rural tax reforms in the early 2000s reduced exactions on the peasants and abolished agricultural taxes, and thus further deprived the local governments of their funding sources and undermined local public services.¹⁵ The central government introduced an increasingly institutionalized fiscal transfer system that aims to address local fiscal inadequacy and to sustain sufficient and equitable public services.¹⁶ Various transfers fall into three broad categories: tax returns (*shuishou fanhuan* 稅收返還), financial-capacity subsidies (*cailixing zhuanyi zhifu* 財力性轉移支付), and earmarked subsidies (*zhuanxiang zhuanyi zhifu* 專項轉移支付). There

are also miscellaneous minor transfers that are grouped together as “other transfers.” These transfers serve very different purposes and follow divergent distributive mechanisms.

Tax returns from the central government mainly include the returns of value-added taxes, consumption taxes, and individual and company income taxes as well as export rebates. Because the provinces enjoy rather high autonomy in allocating and using tax returns, they essentially function as local governments’ own-source revenue. Thus in this research we focus only on the other two categories and examine their impacts on local public spending.

Financial-capacity subsidies are designed to increase the financial capacity of local governments, especially in fiscally starved areas, with the main goal of alleviating regional disparities and equalizing the provision of public services nationwide.¹⁷ These subsidies include general transfer, subsidy for minority areas, subsidy and reward for the alleviation of county and township fiscal deficiency,¹⁸ wage-increase subsidy,¹⁹ subsidy for rural tax reform,²⁰ and so on. Because new subsidies are continuously being created, the national total of financial-capacity subsidies has expanded rapidly, rising from a mere 13.6 billion yuan in 1994 to 709.3 billion in 2007.²¹ In 2007, general transfer was the largest type, amounting to 250.5 billion yuan and taking up 35.3 percent of total financial-capacity subsidies. It was followed by the wage-increase subsidy, which took up 31.5 percent, while the subsidies for minority areas, alleviation of fiscal deficiency, and rural tax reform constituted 2.4 percent, 4.8 percent, and 10.7 percent, respectively.²² These subsidies are distributed according to the grantee’s fiscal capacity, with the poorer ones receiving more favorable treatment. A major feature of financial-capacity subsidies is that they do not require a matching fund from the grantee or have conditions attached for fund usage. Although some subsidies, such as wage increase and tax-for-fee reform subsidies, support generally specified courses, local governments enjoy autonomy in using the funds.²³

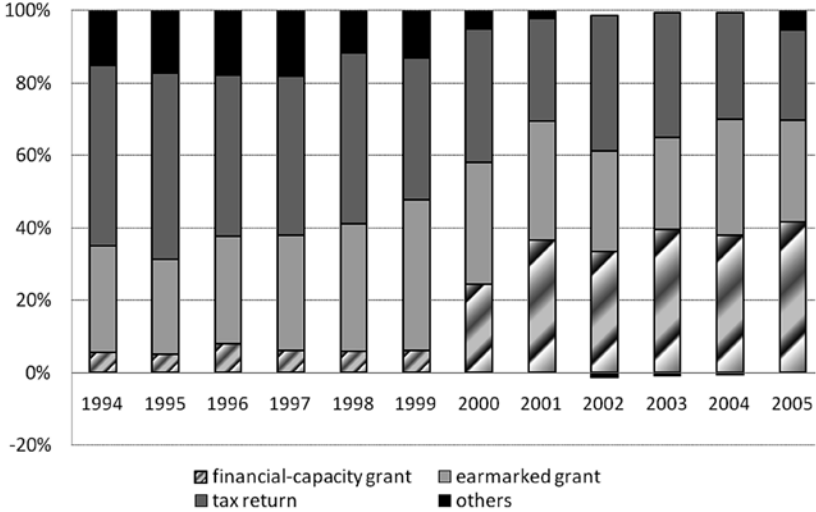
Earmarked subsidies are created to support clearly specified projects for public goods and services, such as education, health care, social security, and support for agriculture.²⁴ The national total increased rapidly in the past decade, rising from 36.1 billion yuan in 1994 to 689.8 billion in 2007.²⁵ In 2007, social security received the highest subsidy, amounting to 196.1 billion yuan and taking up 28.4 percent of total earmarked subsidies, while education took up 5.7 percent, science

and technology 1.1 percent, health care 9.1 percent, environmental protection 10.8 percent, agricultural support 13.9 percent, and other miscellaneous subsidies 30.9 percent.²⁶ In contrast to financial-capacity subsidies, earmarked subsidies attach conditions to their usage, and some require a matching fund. Similar to conditional grants in other countries, they are the instrument that encourages local governments to provide public goods with spillovers as well as to enforce the central authority's control on the macro economy.²⁷ Compared to tax return and financial-capacity grants, earmarked subsidies are more strictly managed by the granting central ministries, and local governments enjoy less discretion in using them.

Although financial-capacity subsidies and earmarked subsidies all inject funds into local treasuries and support local bureaucracy and public services, they serve different purposes: financial-capacity transfers aim for the equalization of regional fiscal resources and public services, whereas earmarked subsidies often require a matching fund and have been found to aggravate regional disparities.²⁸ Meanwhile, local grantees enjoy more discretion in using financial-capacity subsidies, which are general transfers with no strings attached. In contrast, earmarked subsidies must be used for clearly specified projects.²⁹ Therefore, earmarked subsidies should be more effective in prompting local governments to spend money on public goods and services or on any other projects that the granter permits. So the two categories of transfers are likely to induce significantly different types of spending behavior by local governments.

In the case of Shanxi, the counties largely follow the national pattern and receive fiscal transfers accordingly. As Figure 2 shows, tax returns started off as the largest subsidy after 1994. But when more items were added to the package of financial-capacity subsidies, such as the wage-increase subsidy and the subsidy for poor and remote regions, financial-capacity subsidies quickly caught up and became the largest transfer category as of 2001 (see Table 1). The proportion of earmarked subsidies remained relatively stable at around 30 percent of overall transfers. Other transfers took only a small part of the fiscal transfer with decreasing weight, which suggests the gradual institutionalization of the fiscal transfer system.³⁰ These transfers play a crucial role in the finance of Shanxi counties, sustaining more than 50 percent of their expenditure since 2001.³¹

Figure 2 Composition of Fiscal Transfer to Counties in Shanxi (1994–2005)



Source: Figure compiled using statistics from *National Prefecture, City, and County Fiscal Statistics, 1994–2005*.

Local Public Expenditure: Contending Needs for Money

The Chinese government has been known to spend heavily on economic construction, which constituted the largest expenditure category in the national budget between 1978 and 2005.³² But with the increase of public services and government administration expenses, their shares of the total expenditure have gradually caught up. In 2006, public goods expenditure for the first time exceeded economic construction, and government administration was the third largest expenditure item.³³ This change reflects the Chinese government’s retreat from economic planning and its move toward macroeconomic management and redistribution. However, compared to other countries, China’s economic expenditure as a share of total budgetary expenditure and GDP is still rather high.³⁴ And it is worth noting that if off-budget funds are taken into consideration, the share of resources invested in promoting economic development will be even higher.³⁵

Although in some theories and research government administration and economic construction are also counted as a provision of services to citizens,³⁶ this study distinguishes them from public goods and services,

Table 1 Composition of Financial Capacity Subsidies to Shanxi Counties (1994–2005)
(Unit: 10,000 yuan)

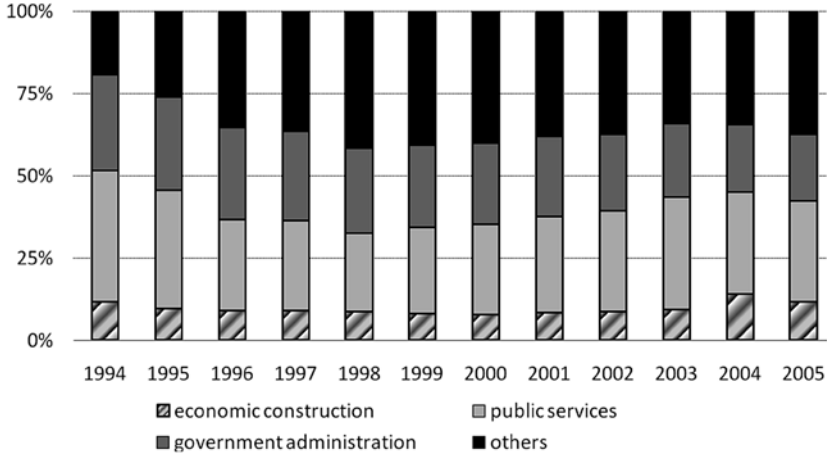
Year	Fixed subsidy	General transfer	Subsidy for wage increase	Subsidy for rural tax reform	Subsidy for repeal of special agricultural products tax and lowering of agricultural tax rates	Subsidy and reward for alleviation of county and township fiscal deficiency	Subsidy for disaster relief and for enterprises and public institutions
1994	18,861	0	0	0	0	0	0
1995	18,861	0	0	0	0	0	0
1996	35,937	0	0	0	0	0	0
1997	29,016	0	0	0	0	0	0
1998	25,626	0	0	0	0	0	0
1999	32,011	0	0	0	0	0	0
2000	25,373	32,081	82,935	0	0	0	0
2001	23,102	40,780	207,761	0	0	0	0
2002	23,293	91,769	263,573	29,387	0	0	0
2003	23,203	129,933	289,181	101,772	0	0	11,054
2004	24,220	227,243	314,789	102,033	12,744	0	8,434
2005	23,952	403,846	314,789	115,740	48,573	42,834	0

Source: National Prefecture, City, and County Fiscal Statistics, 1994–2005.

which, in this analysis, narrowly refer to services provided to citizens regarding education, science, health care, social security, and culture that are oriented toward human capital and social development.³⁷ We make this distinction because, in China, administrative and economic expenditure follows a very different logic and incentive structure from public services. First, although governments are established to “serve the people,” we cannot ignore the self-interests of government and bureaucracy, who, according to Niskanen, want to maximize their budget and hence the salary and prestige of the bureaucrats involved.³⁸ Like those in many other countries, officials in China are found to secure and even expand administrative expenditure, which is often the priority of local governments.³⁹ Second, because the Chinese cadre management system places a heavy emphasis on economic growth,⁴⁰ and at the same time there are strong local needs for economic and fiscal resources, especially for less developed provinces like Shanxi, local governments enthusiastically spend on projects that can potentially boost their GDP. Public goods and services, in comparison, are never a prioritized criterion in cadre performance evaluation, and neither are local officials motivated for such services by democratic elections. Although at the grassroots level village cadres may be motivated to provide public goods when they are embedded in some solidary groups and bound by social norms and obligations,⁴¹ at the county level and above there is no obviously powerful reason for local governments to spend funds on public goods and services without external stimulus. Therefore, we regard expenditure on government administration, economic construction, and public goods and services as three different categories of expenditure that follow divergent logics and patterns.

According to their functions, we divide the reported expenditures of Shanxi counties into four categories: public goods and services,⁴² administrative expenditure,⁴³ economic expenditure,⁴⁴ and other unspecified expenditure. As Figure 3 indicates, administrative expenditure, as a major component, accounted for about a quarter of total county expenditure between 1994 and 2005, although the proportion shrank slightly over the years. But for economic expenditure, which composes the largest expenditure nationwide, counties in Shanxi spend a surprisingly small share (on average 11 percent) of their overall expenditure. In comparison, Shanxi counties spend around 30 percent of their total expenditure on public goods and services, which is slightly higher than the average level nationally. Interestingly, other expenses account for the

Figure 3 Composition of County Government Expenditure, Shanxi Province (1994–2005)



Source: Figure compiled using statistics from *National Prefecture, City, and County Fiscal Statistics, 1994–2005*.

largest share (more than 30 percent) of total expenditure. This suggests the rather low level of institutionalization and transparency of county public finance in the sense that too much expenditure is made on an ad hoc basis and is thus not clearly labeled and categorized.⁴⁵

Given the contending needs and limited resources, counties are conflicted by the objectives of “insuring payment of wages” (*bao chifan* 保吃飯), “maintaining administrative operation” (*bao yunzhuang* 保運轉), “keeping up services” (*bao fuwu* 保服務), and “supporting development” (*bao jianshe* 保建設). As the fiscal capacities vary widely across localities, county governments demonstrate divergent patterns of spending behavior. As some local officials have complained, counties with relatively sufficient self-generated revenue also tend to attract more fiscal transfers that require matching funds, and thus they can afford more development projects or public services. By contrast, localities lacking fiscal resources often cannot attract many transfers, and they can only ensure the basic operation of the government but cannot even pay full salaries to their employees.⁴⁶ Under such circumstances, a well-designed fiscal transfer system is crucial for equitable local public expenditure, especially on those public goods and services that are not necessarily prioritized on the county governments’ expenditure list.

Impacts of Fiscal Transfers on County Expenditures: Data Analysis

In this section, we examine the empirical effects of different fiscal transfers on county expenditures in Shanxi and see how they influence the pattern of county spending behavior. We statistically analyze the fiscal transfers' impacts on government expenditures in all the 114 county-level units in Shanxi province between 1994 and 2005.⁴⁷

Statistical data were collected from official sources, including *National Prefecture, City, and County Fiscal Statistics*;⁴⁸ *Shanxi Statistical Yearbook*;⁴⁹ *Finance Yearbook of China*;⁵⁰ *China Statistical Yearbook*;⁵¹ and the gazetteers of three prefectures, Taiyuan, Datong, and Yangquan.⁵² Statistical data are supplemented by policy documents from the Ministry of Finance, interviews, and local official documents and information collected from fieldwork in two county units (district A and county B) in Shanxi. District A is a relatively developed urban unit with more fiscal resources. County B represents the average economic and fiscal condition of most rural counties in Shanxi.

As discussed earlier, different types of fiscal transfers serve disparate purposes and generate divergent impacts on recipients' spending behavior. In this analysis, we exclude tax return from total fiscal transfer, because it functions almost in the same way as does the local tiers' own-source revenue in terms of either the rules of allocation or the requirement on usage. So the fiscal transfer in the data analysis consists only of financial-capacity subsidies, earmarked subsidies, and other unspecified transfers, which in combination play a major role in supporting Shanxi counties financially.

Earmarked subsidies are designed to promote specific projects in the areas of education, culture, science, health care, social security, agricultural support, and so on.⁵³ Because of their conditionality, earmarked subsidies presumably encourage spending on the provision of public goods more effectively than do general subsidies, which do not require specific usage. Earmarked subsidies may also enhance economic expenditure because agricultural production and rural development, which are a major recipient of earmarked subsidies in China, compose the majority of economic expenditure in Shanxi counties. But earmarked subsidies should have a limited impact on administrative expenditure. Therefore, we derive the following hypothesis:

Hypothesis 1: A higher share of county revenue coming from earmarked subsidies will lead county governments to spend more heavily on public goods and services as well as on economic development, but should not increase the share of expenditure on government administration.

Financial-capacity subsidies are distributed downward from various central ministries to compensate for the local inadequacy of fiscal resources and to alleviate cross-regional disparities. Without much constraint on the usage, these subsidies are supposedly less likely to change county governments' existing spending patterns. According to the logic of budget-maximizing bureaucracy⁵⁴ and field research in Shanxi Province,⁵⁵ county governments tend to prioritize public administration expenses, especially the operational expenses of bureaucracies and the salary payments to state employees. At the same time, local officials may be driven by the cadre management system that places heavy emphasis on economic growth to invest in development projects.⁵⁶ Thus, financial-capacity subsidies will probably encourage higher administrative and economic expenditure, whereas they will not stimulate expenditure on public goods and services. Based on this logic, we derive the following hypothesis:

Hypothesis 2: A higher share of financial-capacity subsidies in county revenue will strengthen a county's expenditure on government administration and economic development, but not on public goods and services.

Besides the key explanatory variables of fiscal transfers, we also need to take into account other control variables which may affect counties' spending behavior. Counties' own-source revenue, which is determined by the localities' economic strength and fiscal extractive capacities, should allow county governments to follow their own spending preferences. The commonly used indicators for economic and fiscal capacities are GDP per capita and fiscal resource per capita. To avoid the multicollinearity problem between these two indicators, we use fiscal revenue per capita in our estimation because it has been found to be a more prominent explanatory variable in a number of tested models. Besides, because of the urban-rural disparity in China, governments in urban and rural areas may have different patterns of expenditure preference. Thus we include the degree of urbanization, which is measured by the ratio of the urban population to the total population, and we control for the total county population as a measure of the county size and its need for public services. Last, China's budgeting system decides that

budgetary revenue and expenditure are both path dependent. Thus we include the expenditure of the previous year as a control variable.

As discussed above, county governments' expenditure contains three major categories—namely, economic expenditure, administrative expenditure, and public goods and services. Because these three functions are competing for the limited amount of fiscal resources, comparing their weight in the total expenditure allows us to appreciate the county governments' expenditure preferences on and the perceived importance attached to these functions. Hence the shares of different functions in the total expenditure become the dependent variables we are attempting to explain.

We adopt the following model to explain the county governments' spending structure, $E_{it} = \gamma T_{it} + X'_{it}\pi + \lambda_i + \zeta_t + \varepsilon_{it}$, where i ($i = 1, 2, \dots, 114$) indicates counties and t ($t = 1, 2, \dots, 12$) indicates years. The dependent variable E represents the proportion of county expenditure on the function of our interest, namely, public goods and services, economic development, and government administration, respectively. T is a vector of predictors of interest, which include the weight of total fiscal transfer (excluding tax return), earmarked transfer, and financial-capacity transfer. We use their shares in the recipient's total revenue and their volumes to measure the relative and absolute weight of these transfers, respectively. X is a vector of control variables, including self-generated revenue per capita, the ratio of urban population, the total population, and the lagged corresponding dependent variable in the previous year. The variable λ is the time-invariant and county-specific effect for county i ; and ζ is the county-invariant and time-specific effect of the year t . The error term ε captures the effects of other disturbances on the dependent variable.⁵⁷

The summary statistics of the dependent and explanatory variables are presented in Table 2.⁵⁸ Among the three categories of county government expenditure, the share of public goods and services is the largest, which averages 30 percent, while its variation among cases is also the largest. In comparison, government administration expenses account on average for 25 percent of county government expenditure; and the share of economic construction is barely above 10 percent. The standard deviation of the administrative spending share is 6.08 percent, and that of the economic expenditure share is the smallest, at 4.36 percent. Total fiscal transfer on average accounts for 40 percent of overall county budgetary revenue, but there exists a high degree of variation across counties, with a standard deviation of 23 percent. On average, 20 percent of county

budgetary revenue comes from earmarked subsidies, whereas 16 percent comes from financial-capacity subsidies.

Among the three functions of expenditure, those of public services and economic development are slightly positively correlated, but both are negatively correlated with government administration, thereby suggesting that there is a competitive relationship between the first two and the third. In terms of fiscal transfers, neither the total transfer nor the earmarked subsidies are positively correlated with public service expenditure. But both earmarked subsidies and financial-capacity subsidies (and hence the total transfer) are positively correlated with economic expenditure, whereas all transfers are negatively correlated with administrative expenditure. The preliminary result suggests that fiscal transfers favor economic expenditure the most and government administration the least.

Table 2 Summary Statistics of Variables

Variables	Obs.	Mean	Std. Dev.	Min	Max
Dependent Variables					
Share of expenditure on public goods and services	1,368	30.16	7.04	6.05	52.89
Share of economic expenditure	1,368	10.04	4.36	0	33.61
Share of administrative expenditure	1,368	25.54	6.08	11.93	59.50
Predictors of Interest					
Share of total fiscal transfer in total revenue	1,368	39.95	23.00	-34.20	95.69
Share of earmarked subsidies in total revenue	1,368	20.39	11.30	2.68	94.35
Share of financial-capacity subsidy in total revenue	1,368	16.26	16.93	0.00	69.55
Total fiscal transfer per capita	1,368	241.93	289.38	-164.65	2545.62
Earmarked subsidies per capita	1,368	107.95	105.86	4.93	1246.66
Financial-capacity subsidies per capita	1,368	112.69	166.46	0.00	1401.66
Control Variables					
Self-generated revenue per capita	1,368	199.82	149.18	11.36	1299.06
Ratio of urban population	1,368	22.54	20.70	4.01	100.00
Population (thousand)	1,368	261.17	138.05	56.09	782.08



Discussion of Findings

We conduct three sets of multivariate panel data analysis, with the share of county expenditure on public services, on economic development, and on government administration as the dependent variable separately. The estimates are presented in Tables 3, 4, and 5.

Fiscal Transfers on Public Goods and Services

The impacts of fiscal transfers on public goods and services are presented in Table 3. Against the prediction in our Hypothesis 1, earmarked subsidies do not prompt county governments to spend a higher share of expenditures on education, science, culture, health care, and social security. Both the share and absolute value of earmarked subsidies are negatively correlated with the dependent variable, and the coefficients are highly significant. It suggests that earmarked subsidies fail to encourage county governments to invest more on public services in Shanxi,⁵⁹ which is a deviation from the original objective and design. In contrast, financial-capacity transfers, which are predicted to not help much with public services, tend to significantly increase the expenditure share on public goods and services. As a combined result of the two contradictory effects, fiscal transfer overall has some positive impact on public goods provision, but the effect is not robust.

Why does the general-purpose financial-capacity transfer promote expenditure on public services, whereas the earmarked transfer that targets public services does not? How do we explain these counterintuitive results? A closer look at the composition and use of the subsidies and the expenses on public goods suggests two possible explanations.

First, two types of financial-capacity subsidies have financed public service departments in the form of personnel expenditure, namely the subsidies for wage increase and for rural tax reform. Since its inception in 2000, the subsidy for wage increase has been by far the largest component of financial-capacity transfer in Shanxi counties, approaching or even surpassing the sum of all other financial-capacity subsidies (see Table 1).⁶⁰ The wage increase subsidy finances the salaries of public employees, including those working in the departments of education, science, culture, health care, and social security. According to the *Financial Yearbook of Shanxi*, the employees in the abovementioned departments account for around 60 percent of public employees in Shanxi.

Table 3 Impact of Fiscal Transfers on Public Goods and Service Expenditure

Share of expenditure on public goods and services (%)	Model 1	Model 2	Model 3	Model 4
Predictors of Interest				
Share of earmarked subsidies (ln)	-2.444*** (0.44)			
Earmarked subsidies per capita (ln)		-1.874*** (0.34)		
Share of financial-capacity subsidies (ln)	0.982 *** (0.18)			
Financial-capacity subsidies per capita (ln)		1.227*** (0.18)		
Share of fiscal transfer (ln)			0.346 (0.28)	
Fiscal transfer per capita (ln)				0.401** (0.169)
Control Variables				
County government self-generated revenue per capita (ln)	-2.337*** (0.32)	-1.763*** (0.36)	-1.703*** (0.32)	-2.060*** (0.356)
Ratio of urban population (ln)	4.942*** (0.59)	5.124*** (0.60)	5.850*** (0.55)	5.567*** (0.567)
Population (ln)	3.791* (2.67)	4.069 (2.72)	12.476*** (2.29)	11.486*** (2.334)
Lagged share of expenditure on public goods and services (%)	0.417 *** (0.02)	0.414*** (0.02)	0.484*** (0.02)	0.481*** (0.019)
Constant	-0.543 (14.16)	-6.702 (14.59)	-62.241*** (12.03)	-54.952*** (12.535)
R2	0.3828	0.3773	0.2252	0.2417
Number of observations	944	944	1,241	1,241
Groups	114	114	114	114
County fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes

The numbers in the parentheses are the standard errors of the estimates.

Significance codes: *p<0.1; ** p<0.05; *** p<0.01.



Therefore, a majority of the wage-increase subsidy goes to employees in the public service departments. Similarly, the subsidy for rural tax reform also helps to fund public services, although it is targeted more specifically at teachers in the rural areas. Because the fiscal responsibilities of education fall heavily on rural county and township governments, a major purpose of this financial-capacity subsidy is to make up for the fiscal shortfall of county and township governments and to guarantee the timely payment of salaries to rural teachers.⁶¹

Meanwhile, personnel salaries are the main item of expenditure in the corresponding departments, especially in poor regions. For instance, the expenditure on education, which is the largest item in the public service expenditure at county level, is devoted mainly to the salaries of state-sponsored teachers (*gongban jiaoshi* 公辦教師). Given the prominence of wage expenses of public service departments, both in financial-capacity transfer and in public goods expenditure, it is not hard to understand the significant positive correlation between the two variables.

Although substantial financial-capacity transfer has been channeled to public service departments, the funds are mainly used to pay their employees, such as teachers, who enjoyed four rounds of pay raises between 1999 and 2003.⁶² Whereas rising salaries may potentially motivate the employees to work harder, the injected funds have not evidently expanded the quantity or improved the quality of public services in Shanxi, at least according to the statistics provided by *Shanxi Statistical Yearbook* and *China Statistical Yearbook*. In terms of education, the number of elementary and secondary school teachers increased only moderately and the student-to-teacher ratio remained largely unchanged from 1995 to 2006. In the area of health care, hospital beds and doctors per capita even declined slightly from 1994 to 2006. Taking science as another example, the number of natural science research and development institutes and their employees both declined steadily. These common indicators of the quality of public services suggest that the increased funds channeled to public service departments are largely consumed by the rising wages of employees, but fail to provide more services to citizens.

Second, an important reason why the earmarked subsidies do not promote public service expenditure in Shanxi is that a certain amount of earmarked subsidies may not have been used for their designated projects. Studies suggest that the leakage of earmarked subsidies is far from being a rare event in China. For instance, in the audit of 20 provincial

governments' budgets in 2005, among all the fiscal transfers of 773.3 billion yuan, only 44 percent was listed in the local budget and supervised by local People's Congress and the central authority. In the earmarked education transfers from central to local government between 1998 and 2001, a considerable leakage occurred in the implementation process.⁶³ Although we do not have detailed statistics on the allocation of earmarked subsidies in Shanxi, the fieldwork reveals similar problems. As a local official confessed, the earmarked subsidies allocated to certain projects may be used for other purposes, such as the fuel bills of government cars and bonuses for officials.⁶⁴ While it is difficult to ascertain the degree of such leakage, it has undoubtedly contributed to the diversion of funds from public services.

Besides the predictors of interest, the data analysis shows that the share of spending on public goods decreases along with the strengthening of a county's self-generated revenue. The negative correlation is statistically significant and consistent across models. The finding implies that even with more disposable own-source revenue, counties do not tend to invest more on public goods compared to other functions. Hence public goods provision is rather low on the county governments' expenditure priority list.

The structure and size of population significantly influence county governments' spending on public services: a higher percentage of urban population increases the input on public goods. It shows that urban areas spend more heavily on the development of culture, education, health care, social security, and so on, which again confirms the undeniable urban-rural disparity in public goods and services in China. At the same time, a larger population size prompts county governments to spend more on public services.

Last, the analysis exhibits that spending on public goods is highly path dependent. The positive relationship between a one-year lag and the dependent variable indicates that the arrangement of the previous year has an important impact on that of the current year. Hence the county governments' spending behavior follows a fairly stable pattern.

Fiscal Transfers on Economic Expenditure

Table 4 shows the impact of fiscal transfers on economic expenditure. As Hypothesis 1 predicts, both the absolute value and the share of earmarked subsidies are highly positively correlated with the share of

Table 4 Impact of Fiscal Transfers on Economic Expenditure

Share of expenditure on economic construction (%)	Model 1	Model 2	Model 3	Model 4
Predictors of Interest				
Share of earmarked subsidies (ln)	4.157*** (0.427)			
Earmarked subsidies per capita (ln)		4.072*** (0.312)		
Share of financial-capacity subsidies (ln)	0.691*** (0.169)			
Financial-capacity subsidies per capita (ln)		-0.410** (0.161)		
Share of fiscal transfer (ln)			1.164*** (0.244)	
Fiscal transfer per capita (ln)				1.335*** (0.144)
Control Variables				
County government self-generated revenue per capita (ln)	2.243*** (0.313)	-0.481 (0.318)	1.266*** (0.270)	0.143 (0.292)
Ratio of urban population (ln)	-0.317 (0.570)	-1.447*** (0.540)	0.049 (0.477)	-0.878* (0.477)
Population (ln)	9.083*** (2.575)	4.718** (2.446)	5.231*** (1.977)	1.965 (1.963)
Lagged share of economic expenditure (%)	0.320*** (0.030)	0.230*** (0.029)	0.371*** (0.027)	0.339*** (0.027)
Constant	-66.573*** (13.621)	-27.915** (13.065)	-32.891*** (10.283)	-9.089 (10.455)
R2	0.0007	0.2522	0.0137	0.3894
Number of observations	944	944	1,241	1,241
Groups	114	114	114	114
County fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes

The numbers in the parentheses are the standard errors of the estimates.

Significance codes: *p<0.1; ** p<0.05; *** p<0.01.

economic expenditure, and the correlations are statistically significant. Recalling the negative correlation between earmarked subsidies and public service expenditure, we can see that earmarked subsidies support economic development rather than public goods provision, although both functions should benefit from earmarked subsidies.

How do we account for the fact that earmarked subsidies promote economic expenditure but not public services in Shanxi, especially considering that the distribution of earmarked subsidies at the national level targets public services more than economic development?⁶⁵ Although detailed fiscal data on how exactly earmarked subsidies were distributed among different projects in Shanxi are lacking, field research sheds some light on the spending preference of local governments. The interviews with local officials in Shanxi reveal that they have more incentive to apply for subsidies related to construction projects instead of those to be distributed to the residents through the departments of education, health care, social security, and so on because subsidized construction projects are more attractive for county and township governments, especially in rural areas.⁶⁶ There are both economic and political reasons for such a bias toward economic construction projects. On the one hand, such projects can potentially generate economic and fiscal benefits to the local treasury, whereas public services like education and health care can hardly generate direct and instant benefits. On the other hand, economic projects are easily detectable and can more effectively demonstrate the “achievements” of local officials to their superiors and increase their chances of promotion. Under the current cadre promotion system that crudely evaluates cadre performances on only a narrow range of criteria, such as economic growth, political stability, and birth control, local officials surely would pay more attention to economic construction than public services because the former can more easily showcase their personal achievements.

The flawed budgeting and distribution process of earmarked transfers creates an added reason for favoring economic projects over public services. The fieldwork in Shanxi reveals that a considerable portion of fiscal transfers, especially those earmarked subsidies, reaches the county level rather late. In the extreme cases, almost half of the grants cannot reach county recipients until the end of the year. According to an Audit Bureau official, this is because the upper levels, including the corresponding central ministries in charge of the earmarked grants, are inclined to hold the funds for as long as possible to earn bank interest.

In that case, the county government has to either fall behind in paying for its programs, which is known as the “veiled debts” (*yinxing zhaiwu* 隱性債務), or temporarily borrow fiscal resources from other channels, such as budgetary funds and extra-budget revenue, for the earmarked projects that ought to be paid before the subsidies reach the county level. The county government has more flexibility when the delayed grants are used for economic projects, such as road and bridge construction, than for either government administration or public goods provision because construction companies, which eagerly compete for government contracts, are more tolerant of delayed payment than are government and citizen recipients of the subsidies.⁶⁷ The flexibility of fund manipulation and payment arrears provides local officials with more incentives to attract earmarked subsidies that are targeted at economic construction projects in preference to the public service ones.

In terms of financial-capacity transfer, the effect on economic construction is somewhat unclear. The share of financial-capacity transfer in the total revenue is highly positively correlated with the share of economic construction expenditure; however, the absolute value of financial-capacity transfer is negatively correlated with the dependent variable. Thus we are unable to confirm the impact of financial-capacity subsidy on economic expenditure. Anyhow, both the absolute value and share of total transfer, which is composed of earmarked subsidies and financial-capacity subsidies, are positively correlated with economic construction spending. This implies that fiscal transfer overall favors economic construction spending. A large part of the positive relationship between fiscal transfer and expenditure on economic construction may be contributed by earmarked subsidies.

For the control variables, a county’s own-source revenue in general tends to increase with the share of economic expenditure, indicating that the more disposable revenue a county has, the more it invests in economic development projects. The ratio of the urban population is negatively correlated with the share of economic expenditure in most models, which reveals that rural areas tend to invest more in economic development than do urban areas. This is hardly surprising: given the emphasis on the “three rural problems” (*sannong wenti* 三農問題) in recent years, the Chinese government has paid increasing attention to rural development. And given the backward infrastructure, such as road and electricity networks, there is certainly more scope for construction in rural than urban areas. Population size also increases economic

expenditure. Like public service expenditure, economic expenditure is also highly path dependent in the sense that the one-year lag has a crucial positive impact on the dependent variable.

Fiscal Transfers on Administrative Expenditure

As to the effect of fiscal transfers on administrative expenditure (see Table 5), the estimates suggest that financial-capacity transfer, which Hypothesis 2 predicts will increase administrative expenses, has a mixed effect empirically. The absolute value of financial-capacity transfer increases the input on government administration; yet its share in the county revenue decreases the proportion of expenditure on government administration. By contrast, earmarked subsidies, in both absolute and relative terms, are significantly negatively correlated with administrative expenditure, as Hypothesis 1 predicts. It confirms that earmarked subsidies, which are supposed to help with public services and economic development, do not finance government administration, at least on the surface. As a result, fiscal transfer as a whole negatively influences the share of administrative expenditure, and the impact is statistically significant and robust.

Table 5 Impact of Fiscal Transfers on Administrative Expenditure

Share of expenditure on government administration (%)	Model 1	Model 2	Model 3	Model 4
Predictors of Interest				
Share of financial-capacity subsidies (ln)	-0.431*** (0.144)			
Financial-capacity subsidies per capita (ln)		0.368*** (0.131)		
Share of earmarked subsidies (ln)	-3.378*** (0.357)			
Earmarked subsidies per capita (ln)		-3.798*** (0.267)		
Share of fiscal transfer (ln)			-1.350*** (0.223)	
Fiscal transfer per capita (ln)				-1.362*** (0.139)



Share of expenditure on government administration (%)	Model 1	Model 2	Model 3	Model 4
Control Variables				
County government self-generated revenue per capita (ln)	-1.716*** (0.269)	0.436* (0.258)	-1.162*** (0.250)	-0.225 (0.261)
Ratio of urban population (ln)	-1.193** (0.473)	-0.365 (0.440)	-0.270 (0.424)	0.407 (0.423)
Population (ln)	-7.134*** (2.144)	-4.192** (1.996)	-8.692*** (1.781)	-6.916*** (1.751)
Lagged share of administrative expenditure (%)	0.557*** (0.027)	0.397*** (0.028)	0.592*** (0.024)	0.527*** (0.025)
Constant	72.081*** (11.662)	51.743*** (10.825)	68.417*** (9.640)	55.855*** (9.537)
R2	0.5767	0.7073	0.4492	0.5544
Number of observations	944	944	1,241	1,241
Groups	114	114	114	114
County fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes

The numbers in the parentheses are the standard errors of the estimates.

Significance codes: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

For the control variables, a county's own-source revenue in general is negatively correlated with the share of administrative expenditure, implying that after meeting the basic operational needs of local bureaucracies and officials, county governments will invest their money elsewhere. But the ratio of the urban population does not have a significant impact on administrative expenditure. Apparently, urban and rural areas do not differ much in their preference for administrative expenses. Population size tends to decrease the share of administrative expenditure. Similar to the other two categories of expenditure, government administration is also highly path dependent.

It is interesting that although generally county governments have a high level of autonomy and flexibility in using the financial-capacity grants and own-source revenue, the ratio of administrative expenditure does not increase along with the enhancement of these flexible resources. However, we should interpret this finding with caution. As discussed

earlier, a large portion of financial-capacity subsidies in Shanxi subsidizes wage increases for state employees and is distributed largely to public institutions, which is counted as public service expenditure rather than administrative expenditure. In this sense, the large number of fiscal dependents in public institutions, such as schools, research institutes, and hospitals, absorbs considerable financial-capacity grants and dwarfs administrative expenditure. Meanwhile, the diversion of fiscal transfer into local governments' operating expenses or even bureaucrats' pockets is not necessarily reflected in the budget. Local officials tend to take advantage of economic projects, such as the construction of roads, bridges, and irrigation facilities, which are not listed as government administration expenditure, but they nevertheless provide funds at the disposal of local governments and officials. Especially in poor rural regions, the earmarked grants allocated to such projects compose a main extra source of financial income for the government and officials.⁶⁸ Such funds siphoned from the earmarked subsidies are never documented in government administration expenditure, but local governments and officials do benefit from them to a certain degree.

Conclusion

China's post-1994 fiscal transfer system was established to alleviate the vertical fiscal imbalance between the central and local governments and the horizontal imbalance across regions, with a major purpose of providing decent and equalized public goods and services to citizens. Under this system, different kinds of subsidies have been created that fall into two broad categories: unconditional subsidies that intend to increase local fiscal capacity in general and conditional earmarked subsidies that intend to encourage local spending on targeted areas.

Earmarked subsidies are expected to induce more local spending on public services. However, the panel data analysis of Shanxi's 114 county units from 1994 to 2005 indicates that earmarked transfers do not help to increase local government's investment in public services. It suggests that earmarked subsidies, at least in Shanxi, contradict their original objectives and that the distribution and use of earmarked subsidies are problematic and need to be better managed.

Some scholars attribute the failure of fiscal transfer to result in better services to the expansion of local governments and their employees.⁶⁹ This study identifies additional reasons for the inefficacy

of earmarked transfers. First, it is attributable to the low degree of institutionalization of the fiscal transfer system and budgetary management. Evidence shows that some earmarked subsidies have not been used for the designated projects but are siphoned off to other uses such as financing local governments and officials. Comparative studies suggest that leakage is inevitable when loose management and inadequate monitoring of transferred funds exist.⁷⁰ Therefore, for earmarked subsidies to improve local public services, fiscal transfers must be managed and used in a transparent fashion and subject to close monitoring by both the allocators and end users of the funds so that they will not be diverted to unintended uses.

Second, under the current cadre management system that highly emphasizes economic development and driven by the local needs for economic and fiscal resources, local officials have a strong incentive to pursue earmarked grants for economic projects instead of those for public services. To promote the quality and quantity of local public goods and services, an incentive mechanism should be built into the cadre management system to reward the provision of public services, especially those directly related to citizens' daily needs such as health care, education, and social security.

Third, the flawed distribution process of fiscal transfers must be improved. The delay of transfers forces local governments to delay their payments to projects. However, because economic construction projects are more easily manipulable and more tolerant of payment arrears than are public service projects, local governments naturally prefer subsidies for economic purposes than public services. To correct such biased preference, the fiscal transfer process needs to be expedited by simplifying administrative procedures and decreasing bureaucratic hurdles for the transmission of funds.

On the other hand, financial-capacity subsidies, which allow recipients autonomy in the usage of funds, work as the key factor to increase county expenditure on public services in Shanxi. However, we should not be too optimistic about the positive effect of financial-capacity transfers on public service expenditure because this is largely caused by the concurrent prominence of wage subsidy in financial-capacity transfers and staff costs in public service departments. Although increased salaries to public service personnel may motivate them to provide better services, the quantity and quality of public services in Shanxi have not been evidently improved. Moreover, the rising personnel costs not only

constantly consume fiscal resources on a large scale but also may undermine government spending on the nonpersonnel expenses for the development of education, health care, culture, and science as well as the provision of social welfare to citizens. Therefore, to truly improve local public services, simply raising the wage standards of public service personnel is not sufficient; more subsidies need to be established that specifically promote the quality and quantity of public services to citizens, such as upgrading the facilities in schools and purchasing better medical equipments in hospitals.

In conclusion, fiscal transfers to counties in Shanxi Province have largely promoted economic construction and personnel expenditure in public institutions but have not encouraged as effectively the provision of public services. Although the findings may not apply to all other provinces due to different local conditions, such as development level and ideologies of local leaders, policy makers in China should be alarmed that, if not properly guided and monitored, the use of fiscal transfers on the ground may defeat their original purposes. To provide sufficient and equalized public goods and services to citizens that overcome the urban–rural divide and cross-regional disparities, local officials need to be motivated to pay more attention to public services other than economic construction, the management of fiscal transfers needs to be strengthened to prevent the diversion and leakage of funds, and the transmission of fiscal transfers needs to be streamlined to ensure timely payment to projects.

Notes

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16. Jin, "Guowuyuan guanyu guifan caizheng zhuanyi zhifu de baogao."
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18. In addition to the subsidies to counties and townships suffering fiscal difficulty, rewards have been granted since 2005 to those counties and townships successfully alleviating their difficulty by increasing incomes and/or economizing on expenditures. See Ministry of Finance, ed., *Finance Yearbook of China 2005*, p. 19.
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20. These subsidies are to make up for the fiscal shortfalls caused by the tax-for-fee reform and abolition of agricultural taxes in rural areas. They are allocated according to local fiscal needs and difficulties and favor grain-producing, minority, and poor areas. See Li, *Zhongguo zhengfujian caizheng guanxi tujie*, pp. 76–77.
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27. Shah, "Practitioner's Guide."
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29. Jin, "Guowuyuan guanyu guifan caizheng zhuanyi zhifu de baogao."
30. The negative values of other transfers in some years mean a net outflow of revenue from county to upper levels, which resulted from the fiscal experiments that put some counties under the direct administration by the

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 37. OECD, *Challenges for China’s Public Spending*, pp. 46–58.
 38. William A. Niskanen, *Bureaucracy and Public Economics* (Aldershot, UK: Edward Elgar, 1994).
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 40. Maria Edin, “State Capacity and Local Agent Control in China: CCP Cadre Management from a Township Perspective,” *The China Quarterly*, Vol. 173 (2003), pp. 35–52.
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 42. Public goods and service expenditures include social security subsidies distributed to citizens and the operating expenses of the public service departments, including culture, education, science, health care, and social security.
 43. Administrative expenditures include the administrative expenses of the government and the police, procurator, and court.
 44. Economic expenditures include expenditure on infrastructure and support for rural production as well as the operating expenditures of the agriculture, forestry, meteorology, and water conservancy departments.
 45. It would be interesting to investigate where these other expenses went

because they took up a nonnegligible portion of county expenditure in Shanxi. Unfortunately, there is a lack systematic data on these expenditures. We speculate that they are not for public goods and services, economic construction, or government administration, because if these unspecified expenditures were used for such legitimate functions, they would be documented and classified so instead of staying in the murky “other” category.

46. Interview, Shanxi, October 2008.
47. The administrative division of Shanxi altered slightly: From 1994 to 1997, Shanxi was divided into 118 county-level units. In 1998, the number of county-level units was changed to 119 because the urban area of Taiyuan was reorganized from 5 districts to 6. To keep the panel data consistent, the whole urban area of Taiyuan is divided into 5 units equally and the average value is used as one unit in the data set.
48. Budgetary Division of the Ministry of Finance, *Quanguo dishixian caizheng tongji ziliao*.
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52. Part of the data set comes from the Barometer of China’s Development (BOCD) data set under construction by the Universities Service Centre at the Chinese University of Hong Kong. The authors are grateful for the generous sharing of the data set.
53. Jin, “Guowuyuan guanyu guifan caizheng zhuanyi zhifu de baogao.”
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57. Statistically, fixed effects are always a reasonable thing to do with panel data but may not be the most efficient. Random effects are more efficient to deliver better p values, so they should be chosen if statistically justifiable. However, because random-effect models do not pass the Hausman test, we adopt the two-way fixed-effect model for the estimation.
58. All the explanatory variables follow a highly skewed distribution. To satisfy the normal distribution assumption, they are log transformed (natural log) in the estimation.
59. Yep arrives at similar findings through his study of county finance in Shanxi from 1994 to 2002. Yep, “Enhancing the Redistributive Capacity.”
60. The only exception was in 2005, when general transfers exceeded the subsidy for wage increase for the first time.
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 65. Li, *Zhongguo Zhengfujian caizheng guanxi tujie*, p. 53.
 66. Interview, Shanxi, October 2008.
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