2 SCHOOL EQUITY IN RURAL CHINA

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INTRODUCTION

Fiscal decentralization has been a key feature of China's economic reforms, leading to

the devolution of responsibilities over both revenue collection and public expenditures to

lower levels of government—the province, county, township, and village. While a

decentralized system improves incentives for local governments to generate revenues and

to be responsive to local needs, it can hamper efforts to meet goals of distributional

equity. Given overall budget scarcity, it is not surprising that in China decentralization

led to greater inequity in the provision of public goods and services across regions. Many

poor areas confronted a lack of local government revenues or subsidies from upper levels

of government, leading to fiscal crises which prevented local governments even from

meeting salary obligations to government officials and teachers, let alone enabling them

to finance high quality public services (Park et al. 1996, Wong 1997).

These changes have had a pronounced effect on the equity of public educational

expenditures, typically one of the largest budgetary items of local governments (Tsang

1994, Tsang 1996, West 1997). Along with decentralization, in order to ensure the

adequacy of resources, the government also endorsed greater diversification of the

sources of educational finance.[1] However, richer regions generally have more alternative

financing options than poorer regions, so diversification may exacerbate rather than

ameliorate disparities. By the early 2000s, the highest provincial primary educational expenditures per student, in Shanghai, were more than ten times greater than the lowest, with this ratio roughly doubling during the 1990s (Tsang, 2002). Case studies in specific regions have found very large differences in educational expenditures within provinces, and even within counties (West 1997).

Regional differences in educational spending levels translate into differences in the quality of educational services. Quality differences, in turn, may increase disparities in educational attainment, thereby setting the stage for greater income inequality in the future. Zhang and Kanbur (2005) document rising provincial inequality in teacher-student ratios and illiteracy rates during the economic reform period. Connelly and Zheng's chapters describe significant urban-rural and regional differences in school enrollment rates persisting to the year 2000. Heckman (2005) interprets these large spatial disparities in attainment as evidence of substantial inefficiencies in China's public educational investments.

By the mid-1990s, the government itself had recognized the policy importance of reversing the trend of widening disparities, and began allocating targeted funds to reduce inequities in the public financing of education. Major changes to the fiscal system in 1994 led to increases in both the amount of revenues mobilized and greater control by the center over budgetary allocations, presumably reducing budgetary pressures at all levels and increasing the center's ability to redistribute resources. Concerns over widening disparities and excessive fees led the government to provide greater central financing

support for educational costs in poor areas. As early as 1995, the Ministry of Finance and the National Education Commission announced the launching of the Compulsory Education Project in Poor Areas to help mobilize national and local resources to educate the poor. Minority regions also were targeted for special assistance. Also, by the early 2000s, the government announced the reduction and eventual elimination of rural education surcharges.

Although there have been significant changes in local public finance, and educational finance in particular, since the early 1990s, there is a glaring lack of quantitative evidence on the extent of inequality in educational spending and how this has changed over time. This paper makes several new contributions to the understanding of patterns of school equity in rural China. We focus particular attention on the financing of primary education, the most basic level of education, which involves nearly all children and nearly every local community in the country, most located in rural areas.[2]

First, we examine for the first time inequities at each level of public expenditures, including differences among regions, provinces, counties, and villages. These comparisons are facilitated by published provincial and county-level educational expenditure data, and primary survey data collected by the authors from primary schools in 20 different counties in one of China's poorest provinces, Gansu, in the years 2000 and 2004. This is also the first study of which we are aware that looks at national county-level data or school-level data over an extended period of time to systematically assess trends in inequality.

Second, the school-level data enable us to look separately at all of the sources and uses of funds in rural schools. Of particular importance, we are able to examine village-level financing of education. Official educational statistics do not provide detail down to the individual school level, and other studies based on budgetary data only go down to the township level, the lowest administrative level for which budgetary data is available, or exclude non-governmental sources of financing.

Our analytic approach focuses on calculating inequality measures for all available measures of rural primary school expenditures per student, including specific sources and uses of funds, for each level of analysis (region, province, county, village) and for different years of available data. At the village level, because of limited sample sizes, we focus on mean differences in educational expenditures across relative income groups. When appropriate and data are available, we also report inequality measures for other relevant educational spending or economic variables for purposes of comparison. At each level of analysis, we also investigate the extent to which economic differences measured by rural income per capita lead to differences in educational spending levels.

The rest of the chapter is organized as follows. The next section introduces the data and definitions of education income and expenditure categories. The third section describes changes in the composition of the sources and uses of primary school educational funds, including an inter-regional comparison. The fourth section examines regional and

provincial inequality, the fifth section analyzes county-level inequality, and the sixth

section analyzes school-level inequality. A final section concludes.

DATA AND THE DEFINITIONS OF SOURCES AND USES OF FUNDS

For easy reference, in Table 2.1 we list the standard categories of sources and uses of

funds according to China's official educational statistics, including the Chinese terms.

The sources of funds are divided into five categories: 1) government finance, 2) funds

from schools established by social groups or individuals, 3) collective or community

contributions, 4) administrative revenue, mainly from school fees, and 5) other sources.

Government finance is divided between budgetary and extra-budgetary sources, with the

latter including special educational fees assessed on rural households, enterprise funds

used for enterprise-run schools, and school-generated revenues. Expenditures include

administrative expenditures and infrastructure investment, with the former divided

between wages (and bonuses) and operating expenses.

[Insert Table 2.1 about here]

In this chapter, our analytical focus is on the funding of rural primary education. We

draw primarily upon two data sources. One is provincial and county-level data published

annually in the China Educational Finance Yearbook (*zhongguo jiaoyu jingfei nianjian*).

At the provincial level, there is a relatively complete breakdown of sources and uses of

rural primary school expenditures. At the county level, four educational finance variables

are available in both years: government finance for administrative expenditures on

education for all schooling levels, within-budget government administrative expenditures on all schooling levels, within-budget administrative expenditures on rural primary education, and within-budget administrative expenditures on operating expenses of rural primary schools. We examine three years of data, 1993, 1997, and 2000. We also look at the earliest and latest years for which the county data can be linked to data from other sources on county rural income per capita, 1993 and 1999, to study how inequality in spending is related to differences in the level of economic development. The year 1993 is a good base year, because it precedes new fiscal reforms in 1994 that tried to centralize budgetary authority and coincides with the rapid period of growth and economic liberalization that followed Deng's southern tour in 1992.

The second dataset is two waves of primary school data on the sources and uses of funds from a survey we conducted in 20 counties in Gansu Province in 2000 and 2004 as part of the Gansu Survey of Children and Families. The school income and expenditure categories are similar but not identical to the official statistical categories described above. Many primary school principals did not distinguish clearly between within budget government spending (source 1A in Table 2.1) and funds from extra-budgetary educational fees assessed by local township governments (source 1B1), since both types of funds flow to schools from township governments. In our primary school data, these two categories are lumped together in a category labeled "government spending."[3] We also collected data on funds generated by school commercial activities (source 1B3), from collective or social contributions (source 3), student contributions (source 4), and other sources (source 5). The school data does not contain information on some

categories (sources 1B2 and 2) because the sample does not include any schools that are not village-run or enterprise-run schools.

We also calculate mean rural income per capita in the villages where schools are located based on completed questionnaires from surveys of 20 households in each village conducted as part of the Gansu Survey of Children and Families in both 2000 and 2004.

CHANGES IN THE COMPOSITION OF RURAL PRIMARY SCHOOL FINANCING

Since the distribution of educational resources is related to the specific types of sources and uses of funds, we begin by providing a breakdown of the main sources and uses of primary school funds nationally in 1993, 1997, and 2000 (Table 2.2). The share trends for many items are not unidirectional from 1993 to 2000 but rather show reversals after 1997.

[Insert Table 2.2 about here]

Most significantly, the share of the government budget in total financing decreased from 0.60 in 1993 to 0.56 in 1997, but then increased to 0.67 by 2000 (Table 2.1). At the same time, the share of local taxes and fees showed the opposite pattern, increasing from 0.14 in 1993 to 0.17 in 1997, then falling to 0.12 in 2000. This pattern is consistent with reforms that first encouraged diversification of financing sources to complement public financing, followed by a reversal in response to growing alarm about widening disparities

and irresponsible fee-levying which led the government to re-emphasize the primary role of government in financing educational costs. The much smaller shares of revenues from school-generated funds and community funds in 2000 compared with previous years also is consistent with a backlash against diversification of financing sources in the late 1990s, or less need for such financing with more budgetary resources available. However, the share of revenue from student fees increased slightly from 1997 to 2000, reaching 10.4 percent of revenues, and the share of revenue from "other sources" nearly doubled from 3 to 6 percent (Table 2.1).

Turning to the expenditure side, not surprisingly most educational expenditures were spent on teachers' wages. However, the share of wages and bonuses in all uses of funds changed over time, declining from 0.67 in 1993 to 0.60 in 1997, then increasing to 0.73 by 2000 (Table 2.1). Offsetting these changes was an increase and decline of infrastructure spending of similar magnitudes. These changes could reflect a shift in spending priorities from infrastructure investment to raising teachers' salaries, or reflect changes in the sources of school financing if government financing privelges teachers salaries and infrastructure is financed from non-government revenue.

REGIONAL AND PROVINCIAL INEQUALITY IN RURAL PRIMARY SCHOOL FINANCING

We compare education spending levels in different regions of the country, broken down by year and type of expenditure (Table 2.3). Mean per capita spending levels in central and western provinces are presented as a share of mean spending levels in coastal

provinces. First, we note that the level of disparities is substantial; in 2000 total

expenditures in central and western China were 57.6 and 62.9 percent of that in coastal

China. Interestingly, western China spends slightly more than central China, even though

it is poorer; this may be partly explained by fewer economies of scale in remote,

mountainous areas where class sizes are relatively small. Second, for both central and

western regions the overall degree of disparity with the coastal regions decreased from

1993 to 1997, but increased from 1997 to 2000 to slightly surpass the 1993 levels. Given

the changes in the composition of fund sources described above, this suggests that

increasing regional disparities are associated with increases in the share of financing

coming from government budgets. Although the level of regional disparities in budgetary

expenditures is less than in total expenditures, the gaps with coastal China are increasing

at a faster rate for budgetary expenditures than non-budgetary expenditures. Perhaps

richer areas can finance an increasing share of their education costs from budgetary

revenues and so do not need to increase alternative financing.

[Insert Table 2.3 about here]

If we examine regional disparities in specific types of spending, we find interesting

differences. First, in general regional disparities are greatest for school operating

expenses, followed by wage expenditures, followed by construction expenditures. The

greater disparities in operating costs is not surprising given that governments in poor

regions often focus their efforts on paying teachers' salaries and ask local communities to

finance operating costs. The relatively small disparities in construction expenditures

could reflect special programs to fund school construction in poor regions, including by non-governmental organizations, or greater economies of scale of school infrastructure in richer areas where population density is much higher. Table 2.2 also reveals that trends in regional disparities in operating expenditures and infrastructure costs follow the same nonlinear pattern as overall expenditures while regional disparities in personnel expenditures widen continuously over time.

In Table 2.4, we present two commonly used inequality measures, the gini coefficient and Theil index, to measure provincial inequality for different categories of primary school expenditures for 1993, 1997, and 2000. For both measures, higher values correspond to greater inequality. We are interested in both differences in the levels of inequality across categories and trends in inequality over time. With respect to the former, first we find that inequality in total expenditures is slightly less than inequality in budgetary expenditures, suggesting that extra-budgetary and non-government expenditures are equalizing rather than disequalizing with respect to county-level inequality. This makes sense if relatively poorer provinces compensate for lower spending by raising a larger share of their revenue from non-budgetary sources. Second, we find that among the three mutually exclusive expenditure categories, the order in descending level of inequality is infrastructure, operating expenditures, and wages.

[Insert Table 2.4 about here]

In examining inequality trends, we find different trends for different expenditure categories. Using either measure, inequality in total primary school expenditures per student decreased from 1993 to 1997, but increased from 1997 to 2000 to slightly surpass the initial level of inequality. The results are similar to the trends in regional disparities. Inequality in budgetary expenditures changes very little over time, with the different measures showing different trends. Meanwhile, among the three fund use categories we find that inequality in administrative wages increases over time, inequality in administrative operating expenses decreases over time, and inequality in infrastructure investments decline then rise, with an overall net decline. If government budgets focus on payment of teachers wages and operating expenses are financed more by nonbudgetary and extrabudgetary sources, then the patterns are consistent with rising inequality in budget-financed wage spending, from a lower starting point, and falling inequality in nonbudgetary and extrabudgetary financing, from a higher starting point. Overall, there is no evidence of significant changes in provincial inequality in primary school financing.

COUNTY INEQUALITY IN RURAL PRIMARY SCHOOL FINANCING

In Table 2.5, we present gini coefficients and Theil indices of inequality over time for the available county-level educational expenditure measures. Recall that these categories differ from those used to examine provincial inequality. The only available rural primary school expenditure variables at the county level are budgetary administrative expenditures per student and budgetary administrative operating expenditures per capita, a subcategory of the former. In addition to reporting results for the set of counties for which we can match data in all three years (1993, 1997, and 2000), we also report results

for the larger sample of counties that can be matched in 1997 and 2000. As before, spending on operating expenditures is much more unequal than overall administrative expenditures (including wages). We find that inequality in budgetary administrative expenditures did not change appreciably over time, but that inequality in budgetary operating expenditures increased significantly, with the gini coefficient increasing from 0.492 in 1993 to 0.555 in 2000 and the Theil index increasing from 0.422 to 0.541 over the same period (Table 2.5). The former result is the same as for provincial inequality, but the latter result appears at odds with the earlier finding that provincial inequality in operating expenditures declined over time. However, this latter difference may be entirely due to the fact that the county measure of operating expenditures excludes extra-budgetary and non-government expenditures while the provincial measure does not. Budgetary spending on operating expenses are likely to increase at a slower pace in poorer regions that struggle to meet teacher wage bills, and richer communities may not perceive a need to raise as much additional funds from alternative sources.

[Insert Table 2.5 about here]

For purposes of comparison, Table 2.5 also reports changes in inequality measures for all administrative expenditures on education (not just rural primary schools) as well as for the budgetary component of administrative expenditures. Overall, both declined substantially from 1993 to 2000, with only budgetary administrative expenditures showing an increase in inequality in any sub-period (from 1997 to 2000). These results suggest that county-level budget expenditures on primary schools have become relatively

more unequal than similar expenditures on higher levels of education. Also, changes in extra-budgetary and non-government expenditures seem to have been equalizing from 1997 to 2000.

Next, we link the county educational expenditure data to other county data on total government revenues and expenditures per capita and rural income per capita in order to examine the relationship between inequality in educational expenditures and inequality in basic economic conditions. The earliest and latest years for which we can successfully match the county data are 1993 and 1999. In all cases, we maintain an identical sample of counties in the two years to ensure that the comparisons are meaningful. In Table 2.6, we first report the Gini coefficient and Theil index for the three county educational expenditure variables, just as in Table 2.5. In addition, we report inequality measures for county total budgetary expenditures per capita, total budgetary revenues per capita, and rural income per capita.[4] All indices are calculated using appropriate population weights. In addition, using a subset of counties in provinces for which we have data on at least 20 counties per province, we calculate the share of the Theil index accounted for by between-province inequality, with remaining variation attributable to within-province inequality.

[Insert Table 2.6 about here]

Similar to the results reported in Table 2.5, we find little change in inequality in administrative budget expenditures per student on rural primary schools, but a clear

reduction in inequality in administrative budget expenditures per student for all schools. One reason for falling inequality may be that inequality in economic conditions of the sample counties also fell, which is verified by the trends reported in Table 2.5. Also, for total educational spending, the share of inequality due to between-province differences increased sharply from 40 percent to 55 percent, even though there is much less change, and in some cases even change in the opposite direction, for total budget expenditures, total budget revenues, and rural income per capita. Given declines in overall inequality, this suggests that the allocation of budgetary dollars to education within provinces became more equalizing over time than between provinces. Finally, rural budgetary expenditure inequality is about equally divided into within-province and between-province components in both years, and this inequality is larger than for total administrative educational expenditures in 1999 but less in 1993. This implies that the falling inequality in total educational expenditures is due to changes in allocations of secondary and higher education and in urban education.

We next examine how administrative budgetary expenditures per student in rural primary schools are related to differences in community wealth (e.g., poverty), versus other factors. To examine this question, we regress the log of the expenditure measure on the log of county rural income per capita. We estimate the relationship across all counties, within provinces (by including provincial dummy variables) and between provinces (by regressing provincial means). Our results presented in Table 2.7 show that the effect of income levels on rural primary school administrative budgetary expenditures was less in 1999 than in 1993 (elasticities of 0.406 and 0.384 in 1993 and 1999). This was true both

within provinces and between provinces. Regressivity, however, remains much greater across provinces than within provinces, suggesting that redistribution is more easily realized within provinces.

[Insert Table 2.7 about here]

SCHOOL-LEVEL INEQUALITY IN RURAL PRIMARY SCHOOL FINANCING IN GANSU PROVINCE

In Table 2.8, we summarize the primary school finance data from the Gansu Survey of Children and Families, broken down by equally sized relative income groups (low income, medium income, and high income) for 2000 and 2004. Gansu is one of China's poorest provinces ranking second to last in rural income per capita in 2004. The sample contains the primary schools attended by children in a randomly drawn sample of 100 villages. In 2000, there were large differences in spending levels across primary schools in the province; per student administrative expenditures were 474 yuan in the rich income group and only 294 in the low income group. Data for the rich group also differs sharply from the others in the composition of both sources and uses of funds. Richer areas have far greater amounts of non-government revenue, especially from student fees, school-generated revenues, and collective or community contributions. Meanwhile government spending is relatively equal, with schools in the three income groups getting 238, 287, and 295 yuan per student. Richer areas also have considerably more funds available for operating expenses (172 yuan per student on average, compared to middle income and poor income areas (49 and 43 yuan per student). This suggests that non-budgetary finance

and local village finance, for which data is not often systematically collected, are disequalizing.

[Insert Table 2.8 about here]

In 2004, real school spending per student has increased in all income groups.[5] For the full sample, administrative expenditures per student increased from 380 yuan in 2000 to 469 yuan in 2004, a 23 percent increase. The increase was highest in percentage terms in the low income group, but much smaller in absolute terms. There are several important changes in the composition of educational financing in 2004 in comparison to 2000.[6] First government spending increased much faster in the high income group than in other groups, creating significant differences in government support per student that had not existed previously. Second, perhaps relatedly, student fees fell in the high income villages but increased significantly (by more than 50 percent) in the low and medium income villages. Third, school-generated revenues nearly disappeared, likely in response to new concerns about exploiting children's work and providing a safe environment for children following a highly publicized explosion in a workshop of a rural school. Fourth, financing from the collective or local community was disequalizing, with almost no such funds in low and medium income villages. Finally, the data show that spending on wages increased significantly from 2000 to 2004, but spending on operating expenses fell, especially for the high income group.

Next, we estimate the relationship between educational spending and community per capita income levels. Table 2.9 presents elasticities estimated from linear and log-log specifications of primary school spending overall and broken down by sources and uses. An important finding is that none of the expenditure categories have a statistically significant relationship with village income levels when comparing schools within the same county, with the one exception of operating expenditures in 2004. However the between-county elasticities are uniformly higher than the overall elasticities, in most cases about double, suggesting that much of income-related rural inequality in educational spending in Gansu is associated with between-county differences rather than within county differences.

[Insert Table 2.9 about here]

The findings for specific types of sources and uses largely verify the patterns seen in the cross-tabulations presented in Table 2.8. In both years, government spending has a much lower elasticity with respect to rural income per capita than overall spending, while other sources of funds have higher elasticities. Similarly, among expenditure categories, wage expenditures are much less associated with income differences (elasticity of 0.213) than are operating expenses (elasticity of 0.715). The magnitudes of the overall elasticities (columns 1 and 4) are nearly all greater in 2004 than in 2000, suggesting that the relationship between spending and local income levels increased over time. This is especially true for funds from collective or community sources, and operating expenditures. Two categories of funding, school-generated revenue and other revenue,

are no longer correlated in a statistically significant way with rural income per capita. The between-county effects of income levels, however, do not show any clear change compared to 2000, suggesting that it is the impact of within-county income differences that has increased.

CONCLUSION

In this chapter, we have analyzed inequality in rural primary school educational expenditures at different administrative levels (region, province, county, and village) at different points in time. Unlike earlier research from the 1980s and early 1990s that finds rising inequality in school spending associated with China's fiscal decentralization, one main finding of our analysis is that overall, there was little change in inequality in rural primary school spending during the period 1993 to 2000, and there is evidence of reductions in educational spending for other schooling levels. The lack of an increase in inequality of rural primary school spending at the provincial or county levels holds whether one looks at total expenditures or focuses on the government component of expenditures. At the same time, the mean expenditures per student have increased significantly over time in real terms.

This by no means implies that the Chinese government should be complacent about attacking the large disparities that remain, especially across regions and between urban and rural areas. Unequal access to quality education undermines the social objective of providing equal opportunity to all citizens as well as the economic development goal of increasing the level of human capital of the entire labor force.

A second main finding of this chapter is that inequality in educational spending associated with differences in income levels is greater at higher levels of aggregation. Differences in spending of primary schools within the same county are not very different regardless of village income levels, but differences across counties with different income levels are substantial, and across provinces even greater. We do find that between province and between-county differences in income had less of an effect on within-budget primary school expenditures from 1993 to 1999, and some suggestive evidence that within-county differences in income may have become more important from 2000 to 2004 in Gansu. Overall, our results suggest that equalization efforts through redistributive transfers is failing the most between higher levels of government, and suggests that efforts to increase redistribution should focus on higher levels of government.

Finally, we find significant differences in the level of inequality of different sources and uses of funds. According to our analysis of the county-level data, inequality in wage spending is much less than inequality in operational expenses, although there is evidence from both the county and school data that inequality in wage spending is increasing while inequality in operational expenses is decreasing (although not the budgetary component of such expenses). Perhaps in accordance with government policy, schools are reducing the importance of extrabudgetary and non-government financing sources over time. According to the Gansu data, in recent years, poor villages spent less real *yuan* per student on operational expenses over time, which is not surprising given the priority given to paying salaries and the lack of non-budgetary revenue sources in such areas.

These results suggest that providing greater financing for the operating expenses of

schools in poor areas merits attention.

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Table 2.1 China's Educational Funding: Source and Use Categories

Sources	Chinese
1. Government finance	*guojia caizhengxing jiaoyu jingfei*
A. Budgetary	*yusuannei*
B. Extra-budgetary	*yusuanwai*
1. Special educational fees assessed on rural households	*jiaoyu shuifei fujia*
2. Enterprise funds used for enterprise-run schools	*qiye ban xue*
3. School-generated revenues	*xuexiao chuangshou*
2. Funds from schools established by Social groups or individuals	*shehui tuanti he gongmin geren banxue jingfei*
3. Collective or community contributions	*shehui juanzu he jizi banxue jingfei*
4. School fees and other administrative Revenue	*shiye shouru: zhuyao wei xuezafei*
5. Other sources	*qita jiaoyu jingfei*
Uses	
1. Administrative expenditures	*jiaoyu shiyefei zhichu*
A. Wages	*geren bufen*
B. Operating	*gongyong bufen*
2. Infrastructure investment.	*jijian feiyong zhichu*

Table 2.2. Sources and Uses of Rural Primary School Funds, 1993, 1997, and 2000

	1993	1997	2000
Sources			
Government budget	0.604	0.558	0.665
Local taxes and fees	0.141	0.168	0.124
School-generated	0.028	0.027	0.014
Other budgetary	0.003	0.003	0.000
Community	0.117	0.113	0.035
Student fees	0.090	0.101	0.104
Other	0.016	0.030	0.058
Uses			
Administrative: wages	0.667	0.602	0.731
Administrative: operating	0.215	0.250	0.229
Infrastructure	0.110	0.140	0.040
Budget balance	0.008	0.009	0.000
Uses of budgeted funds			
Administrative: wages	0.935	0.900	0.932
Administrative: operating	0.055	0.078	0.058
Infrastructure	0.011	0.022	0.011

Note: Units are share of total sources, uses, and uses of budgeted funds.

Table 2.3 Regional Rural Primary School Expenditures Per Student
(as share of coastal expenditures)

	1993	1997	2000
Central provinces			
Total	0.600	0.702	0.576
Budgetary	0.614	0.635	0.583
Administrative: wages	0.622	0.616	0.587
Administrative: operating	0.496	0.740	0.535
Infrastructure	0.716	1.171	0.645
Western provinces			
Total	0.639	0.667	0.629
Budgetary	0.824	0.789	0.696
Administrative: wages	0.717	0.655	0.656
Administrative: operating	0.442	0.537	0.514
Infrastructure	0.645	1.089	0.911

Notes: Regional classifications based on those used by the Ministry of Education. Coastal provinces include Beijing, Guangdong, Jiangsu, Jilin, Liaoning, Shandong, Shanghai, Tianjin, Zhejiang; central provinces include Anhui, Fujian, Hainan, Hebei, Heilongjiang, Henan, Hubei, Hunan, Jiangxi, and Shanxi; and western provinces include Chongqing, Gansu, Guangxi, Guizhou, Inner Mongolia, Ningxia, Qinghai, Shaanxi, Sichuan, Tibet, Xinjiang, and Yunnan. Ratios calculated from regional means that weight provincial data by student population.

Table 2.4 Provincial Inequality in Rural Primary School Expenditures Per Capita

		1993 estimate	s. e.	1997 estimate	s. e.	2000 estimate	s. e.
Total	Gini	0.190	0.024	0.171	0.027	0.198	0.024
	Theil	0.060	0.014	0.055	0.015	0.069	0.017
Budgetary	Gini	0.219	0.025	0.217	0.025	0.210	0.020
	Theil	0.080	0.019	0.090	0.023	0.084	0.017
Administrative:	Gini	0.184	0.022	0.193	0.022	0.200	0.023
Wages	Theil	0.056	0.012	0.066	0.018	0.073	0.019
Administrative:	Gini	0.275	0.053	0.233	0.041	0.232	0.044
Operating	Theil	0.139	0.044	0.098	0.029	0.104	0.032
Infrastructure	Gini	0.318	0.045	0.244	0.040	0.273	0.028
	Theil	0.168	0.045	0.105	0.029	0.122	0.023

Notes: Standard errors are estimated by boostrapping. Inequality measures weight provincial data by student population. Data for Chongqing in 1997 and 1999 are included in Sichuan totals.

Table 2.5 Inequality in County Educational Expenditures Per Student, 1993, 1997, and 2000

		1993		1997		2000	
		Coef	S.E.	Coef	S.E.	Coef	S.E.
Administrative	Gini	0.330	0.022	0.257	0.033	0.243	0.010
(all schools)	Theil	0.257	0.047	0.239	0.147	0.108	0.013
	N	1113		1113		1113	
	Gini			0.236	0.019	0.228	0.008
	Theil			0.185	0.089	0.094	0.009
	N			1578		1578	
Administrative	Gini	0.320	0.020	0.230	0.006	0.249	0.009
Budgetary	Theil	0.244	0.040	0.089	0.006	0.112	0.014
(all schools)	N	1113		1113		1113	
	Gini			0.221	0.005	0.236	0.008
	Theil			0.082	0.004	0.099	0.011
	N			1578		1578	
Administrative	Gini	0.310	0.008	0.309	0.009	0.309	0.007
Budgetary	Theil	0.154	0.008	0.164	0.014	0.158	0.009
(rural primary schools)	N	1113		1113		1113	
	Gini			0.307	0.009	0.304	0.006
	Theil			0.168	0.014	0.153	0.007
	N			1578		1578	
Administrative	Gini	0.492	0.012	0.505	0.011	0.555	0.011
Budgetary: operating	Theil	0.422	0.023	0.434	0.020	0.541	0.026
(rural primary schools)	N	898		898		898	
	Gini			0.513	0.011	0.575	0.010
	Theil			0.446	0.020	0.582	0.023
	N			1378		1378	

Table 2.6 Inequality in County Educational Expenditures Per Student and Economic Indicators, 1993 and 1999

	1993			1999		
	Gini	Theil	Theil bw/ prov. share	Gini	Theil	Theil bw/ prov. share
Administrative budgetary (rural primary schools)	0.304 (0.0064)	0.150 (0.0062)	52%	0.305 (0.0082)	0.160 (0.0097)	52%
Administrative budgetary (all schools)	0.325 (0.0181)	0.245 (0.0361)	38%	0.278 (0.0091)	0.139 (0.0100)	62%
Administrative (all schools)	0.334 (0.0181)	0.255 (0.0365)	40%	0.247 (0.00924)	0.111 (0.0105)	55%
Total govt. budgetary expenditure per capita	0.299 (0.0088)	0.168 (0.0132)	34%	0.277 (0.0123)	0.154 (0.0172)	29%
Total govt. budgetary revenues per capita	0.406 (0.0119)	0.312 (0.0252)	25%	0.341 (0.0149)	0.218 (0.0262)	18%
Rural income per capita	0.246 (0.0073)	0.103 (0.0073)	55%	0.223 (0.0051)	0.0806 (0.0037)	63%

Note: The sample of 1343 counties with complete data for both years. Numbers in parentheses are bootstrapped standard errors. Theil decompositions based on results for counties in provinces with data points for at least 20 counties.

Table 2.7 Elasticity of County Rural Within-Budget Administrative Expenditures Per Primary School Student with Respect to Rural Income Per Capita

	All	Within Provinces	Between Provinces
1993	0.406***	0.205***	0.522***
1999	0.384***	0.161***	0.409***

Note: *** denotes that the coefficient is statistically significant at the 1 percent significance level. Elasticities are coefficients from log-log regressions.

Table 2.8 Gansu Primary School Administrative Expenditures Per Student by Income Group and by Sources and Uses of Funds, 2000 and 2004

Rural income per capita in village with School (A)	2000				2004			
	Low Income	Medium Income	High Income	All	Low Income	Medium Income	High Income	All
Number of schools	40	40	39	119	36	34	34	104
Admin. income per student	293.50	343.88	473.96	379.96	394.64	407.59	607.78	468.55
Of which:								
Government spending	238.34	287.00	295.49	277.78	325.20	341.39	485.73	382.97
Collective/community	7.18	3.23	14.32	8.41	3.47	0.87	35.14	12.97
Student fees	38.13	41.13	115.01	68.16	63.27	65.34	85.95	71.36
School-generated revenue	7.21	8.20	41.25	20.38	2.70	0.00	0.44	1.08
Other	2.63	4.33	7.88	5.23	0.00	0.00	0.53	0.17
Admin. spending per student	293.50	343.88	473.96	379.96	364.21	382.52	565.45	436.51
Of which:								
Wages	250.79	294.71	302.03	286.26	325.03	342.14	487.08	383.60
Operating expenses	42.71	49.17	171.93	93.70	39.19	46.41	78.37	54.44

Source: Gansu Survey of Children and Families, 2000 and 2004

Table 2.9 Elasticities of Gansu Primary School Expenditures and Revenues Per Student with Respect to Village Income Per Capita, 2000 and 2004

	Dependent Variables	2000			2004		
		All	Within-county	Between-county	All	Within-county	Between-county
Linear	Admin. income per student	0.336***	-0.048	0.670***	0.444***	0.038	0.652***
	Government spending	0.249***	-0.098	0.549***	0.388***	0.085	0.522***
	Collective and community cont.	0.747**	-0.4608	1.794***	3.885***	-0.707	7.296***
	Student fees	0.283	0.287	0.280	0.143	-0.037	0.158
	School-generated revenue	1.25***	-0.178	2.491***	-1.026	-2.621	-0.305
	Other	0.880**	0.776	0.971*	0.968	0.305	0.728
	Admin. exp. per student	0.336***	-0.048	0.670***	0.483***	0.152	0.648***
	Wages	0.238***	-0.0936	0.525***	0.389***	0.086	0.522***
	Operating expenses	0.715***	0.1286	1.224***	1.138***	0.612**	1.522***
Logs	Admin. income per student	0.314***	-0.0796	0.601***	0.402**	0.172	0.534***
	Government spending	0.249***	-0.0206	0.490***	0.489**	0.189	0.598
	Admin. exp. per student	0.314***	-0.0796	0.601***	0.448***	0.214	0.562*
	Wages	0.2139**	-0.1476	0.481***	0.432*	0.109	0.573
	Operating expenses	0.729***	0.2016	1.130***	0.711***	0.409**	0.966***

Notes: *, **, and *** denote that coefficient is statistically significant at the 10, 5, and 1 percent significance levels. For linear specifications, elasticities are calculated at sample means.

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ENDNOTES

[1] Efforts to promote diversification began as early as 1988 and were codified in the Education Law of 1995, Article 53, which stated that the State should institute a system of educational finance in which fiscal allocations constitute the main source, to be supplemented by funds through a variety of avenues in order to gradually increase the input of financial resources directed to education and ensure that state-run educational institutions had stable sources of funding (Wang, 2000).

[2] Using county data for 1997, Pan (2000) finds that inequality in primary school financing is greater than inequality in secondary school financing.

[3] Note that this definition is not the same as source 1 in Table 1.

[4] County budgetary data are available from *China County Socioeconomic Statistics Compendium 2000*. Rural income per capita are National Statistical Bureau data.

[5] All 2004 variables are deflated to 2000 real values using the province-specific rural consumer price index.

[6] One difference in the school questionnaires used in 2000 and 2004 was that total sources and uses of funds were forced to balance in 2000, but not in 2004.