



Inequalities in the financing of compulsory education in China: A comparative study of Gansu and Jiangsu Provinces with spatial analysis



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ABSTRACT

In 1993 China made a decision to achieve universal 9-year compulsory education by 2000, but equity and adequacy of public financing of education have been questioned ever since. The core issue rests on resource allocation. During the same period, China implemented fiscal reform and introduced socialist market economy reform in the uncharted water, which then exacerbated regional disparities. At the same time, intra-province inequalities have been rising in the last two decades, which has been masked by national aggregated data. By using county-level data from 1994 to 2001, GIS mapping and spatial analysis, this study examines patterns of inequalities in school expenditure, and their association with government expenditure and economic growth in a poverty-stricken province, Gansu and in the wealthiest province, Jiangsu. The purpose is to examine how inequalities have evolved over time in different provinces and what factors have triggered rising inequalities in the transition. The findings show that the rising inequalities are due to: (1) the ever widening gap among spatially stratified counties, particularly between the top 25% and the lower 75% of the counties in both provinces; and, (2) little diffusion over 8 years in spatial structure of educational financing, government resource allocation or economic growth. Issues of localized financing but centralized administration as developmental strategy across China and their impact on perpetuating and rising inequalities are discussed.

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1. Introduction

In 1993 China decided to achieve universal 9-year compulsory education (CE), with 6 years of primary school education and 3 years of middle school education, throughout its prodigious landscape by Year 2000 (China CCSC, 1993). The globalization in more or less the same time had transformed the post-war economy in the western countries, which is defined as the knowledge-based and learning economy (Nordtveit, 2009). It therefore has redefined the relationship of education with development as to enable the educated population with skills and knowledge and then to create job opportunities in the changing market. In addition,

education is articulated as a means of reducing poverty (Tarabini, 2010: 205; World Bank, 2002a). China embraces the global trend and makes CE a national priority because an educated workforce is seen as a determinant factor to consider in the fields of science and technology (Nordtveit, 2009).

In order to mobilize resources, the State localized the financing of CE to county government and its subordinate township administration (China CCSC, 1993). In addition, the decade of the 1990s also saw such national projects as fiscal reform in 1994 and the introduction of socialist market economy reform since 1993. The fiscal reform recentralized government revenue. As a result, the shares of the central fiscal pool increased from a holding of 21% of the total national revenue in 1993 to 55% in 1994, after accounting for all transfers, and such pattern has remained ever since (see China FJP, 2000: 381; Xiao, 2004). The subordinate governments are nevertheless charged with the responsibility to implement the Central-government designated projects and have to enlist resources from the local. While the economy experiences a rapid growth, gaps in national wealth and per capita income among China's three regions are widening (Hu et al., 1995; Cai et al., 2002: 199–200; Wang and Fan, 2004). Prevailing regional

Abbreviations: CE, Compulsory education; PS, primary school; MS, middle school; GIS, geographical information system; PSBRE, per student budgetary recurrent expenditures; PCGE, per capita government expenditure; PCGDP, per capita GDP; TG, the top group; UMG, the upper-middle group; LMG, the lower-middle group; BG, the bottom group.

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disparities in school spending are also documented (Tsang, 1994, 1996; Tsang and Ding, 2005; Wang, 2001; Li et al., 2007). Such disparity has continued into the first decade of the twenty-first century (Zhao, 2009); and the issue is perpetuating that educational finance counts only up to 2.8% of GDP in China while the average is 4.7% across the world in 2005 (People's Web, 2008). Inequality across China is listed as a most outstanding issue in educational development for the period from 2010 to 2020 (Ministry of Education of PRC, 2010). Both education and economic projects require huge investment. Questions are raised on recentralized fiscal arrangement and decentralized responsibilities for development projects and their impact on rising inequalities (Qian and Xu, 1993; Tsang, 1996; Jiang et al., 1997; World Bank, 2002b; Xiao, 2004; Li et al., 2007; Zhao, 2009).

A study of provincial data of the early time (1988–1996) finds increased disparities in both primary and middle school per student recurrent expenditures among provinces (Du, 2000). A study of county-level data (1997 and 1999) finds demarcation in disparities actually is in the first region versus and the second and the third regions (Tsang and Ding, 2005). Still another study of 1999 county-level data indicates that 70–80% of variance of inequalities in primary and middle school per student total spending is embedded within the province (Tsang and Ding, 2003, p.89). Government transfer does not help to improve per student spending, but contributes to increased intra-province inequalities (Pan, 2000).

Most studies of inequalities in the financing of CE use province-level data or county-level data for only a couple of years. Few studies have been able to use county-level data for a length of time, either to study the evolution of inequalities or to examine patterns of inequalities among development projects. Intra-province inequalities are under-studied.

In addition to conventional quantitative analysis, this study employ spatial analysis. Human activities vary across landscapes due to distance, localities and historically evolved regional centers, which are in connection to geographic features and resources available (Skinner et al., 2000; Healey and Stamp, 2000). With newly developed GIS, spatial analysis helps reveal the connection of developmental activities in abstract statistics to chosen locations.

By using temporal county-level data from 1994 to 2001 for conventional inequality analysis and geographic information system (GIS) mapping, this study attempts to capture the development indicators into a geographical socio-economic structure and compare patterns of intra-province inequalities. The objective is to examine where resources are allocated and how inequalities have evolved in development projects during China's transformation era. This study compares patterns of government financing of CE to those of government spending and economic growth, taking Gansu and Jiangsu Provinces as a comparison. In the next section, literature on the issues of development projects is reviewed. Followed is a discussion of data and methods. Section 4 presents findings. Finally, Section 5 is a discussion of implications of our findings for development projects and suggestions for future studies.

2. Debates on inequalities in development

The public financing of 9-year CE in China has been questioned for its equity and adequacy of providing schooling to school-aged cohorts across its prodigious landscape. The core issue rests on resource allocation. Since the late 1970s, China has faced the dilemma of scarcity of government revenue and rapidly increased demands on development projects. The Central Government's decision on educational reform in 1985 mandated that each locality under the governance of the province and municipality

(i.e., county, township and village) should shoulder the obligation of the financing of CE (China Central Committee, 1985). Even before that, it was decided that each locality would “eat in their own kitchen” (*fenzao chifan*) in terms of revenue income and expenditure, as a tactic to resolve the resource shortage from the central pool and to relieve local dependency on the central government (China State Council, 1980). These strategies or reforms are referred to as the fiscal decentralization or market preserving federalism (Qian and Weingast, 1997). The local government becomes responsible to enlist the resources to finance development projects.

Several major studies have documented rising inequalities associated with decentralized school finance. With province-level data from 1989, Tsang (1994) first finds that the ratio of per student total spending of primary school at the high end to that at the low end among 29 provinces is 5.2 times; and the ratio of per student total spending of middle schools is 4.5 times. The later studies (Tsang and Ding, 2003; Li et al., 2007) find that inequalities in school spending among three regions have continued to rise. A study with 1999 county level data finds that between-group (urban vs. rural) inequality accounts from zero (i.e., Qinghai Province) up to 38.4% (i.e., Guangxi Province) of the overall inequality of per student total spending (Tsang and Ding, 2005, Table 10). This may indicate different spending policy in different provinces. Though universal enrolment seems to have been achieved in rural China, the completion rate of middle school nationwide is 58.3% by 2002 (Zhang and Zhao, 2006); and it is found that primary schools and middle schools in non-poverty affected counties can afford more spending, respectively about 1.37 and 1.34 times over their counterparts in the western regions. GINI coefficients of per student budgetary recurrent expenditure are above 0.5 for the year of 2000–2001; and the ratio of maximum to minimum across provinces in 2003 is 58 for primary schools and 35 for middle schools (Yang, 2006: 265).

There have been debates on de/centralization of the financing of school education and rising inequalities. On the one hand, international scholars argue for decentralization pro federalism, populist localism, participatory democracy, and pro professional control of education quality and efficiency (Lauglo, 1995; World Bank, 2002a). This neo-liberal model, in line with the global agenda, postulates that market mechanisms would determine the needs and potential economic growth. However, a Chinese scholar (Jiang, 1995) argues that the merits of decentralization may engage the local government and schools in order to mobilize local resources. However, this could be offset in adversity if the local government lacks the capacity in terms of revenue and organization, to make schools sustain their basic requirements (pp. 15–16). Further, the market could send misleading signals to the education sector, but may not be able to provide all the resources as required for education.

Mixed results are found as de/centralization is adopted in different countries when they incorporate into the global trend. In South Africa, autonomy for the school governing body has brought additional private resources to areas where the state has traditionally been responsible for, and in fact, they benefit the middle class (Spren and Vally, 2006, p. 356–7). In contrast, in post-1990 Chile, private funding has driven the expansion of private schools to the extent that they have enrolled half of the student population, but perform no better than municipal schools (Matear, 2007). The remedial suggestion is for the state to bring resources to subsidize underperforming private schools in order to correct the inequitable situation.

In the case of China, inequalities in primary school and middle school spending have continued to rise into 2005 (Zhao, 2009), and even after the State has started to directly subsidize schools at or under county-level for costs of fees, textbooks and boarding from

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