

Inequality in Education -- an Overview of Rural Extra-budgetary Education

Funding in China

by

Lu Qin

Department of Political Science  
Duke University

Date: \_\_\_\_\_

Approved:

\_\_\_\_\_  
Emerson Niou, Supervisor

\_\_\_\_\_  
Erik Wibbels

\_\_\_\_\_  
Kristen Stephens

Thesis submitted in partial fulfillment of  
the requirements for the degree of Master of Arts in the Department of  
Political Science in the Graduate School  
of Duke University

2011

ABSTRACT

Inequality in Education -- an Overview of Rural Extra-budgetary Education

Funding in China

Lu Qin

Department of Political Science  
Duke University

Date: \_\_\_\_\_  
Approved:

\_\_\_\_\_  
Emerson Niou, Supervisor

\_\_\_\_\_  
Erik Wibbels

\_\_\_\_\_  
Kristen Stephens

An abstract of a thesis submitted in partial  
fulfillment of the requirements for the degree  
of Master of Arts in the Department of  
Political Science in the Graduate School  
of Duke University

2011

Copyright by  
Lu Qin  
2011

## **Abstract**

The purpose of this research was to analyze education inequality in rural China as reflected in government funding policy on education. Specifically, the research looks whether extra-budgetary income is a dis-equalizing factor in provincial level education spending or rather equalizes in education spending. Via analysis of existing data on education financing in more recent year, it was shown that the inequality of spending in total education expenditure per capita is greater than budgetary expenditure from government sources in the year 2006 and 2008 for elementary schools, and 2002 and 2006 for middle schools. More specific regression analysis has shown that extra-education levies exaggerate financial inequality between provinces. Gini coefficient calculations of education income per capita are slightly different from the expenditure calculations. Furthermore, regional comparison has shown that richer provinces would actually rely more of the share of their education revenue on extra-budgetary sources. This would suggest that extra-budgetary income is not used to compensate for the lack of budgetary funding and expectantly equalize education resources between regions, as assumed by the central government in China, rather, it actually sometimes widens the gap in financing education in rural China.

# Contents

Abstract.....	iv
List of Tables.....	vi
Acknowledgements .....	vii
1. Introduction .....	1
1.1 Research Problem .....	1
1.2 Theoretical Discussion .....	7
2. Inequality in education expenditure in different budgetary and extra-budgetary funding sources .....	17
2.1 Budgetary Income and Educational Income .....	19
2.2 Extra Budgetary Income Sources and Expenditure Per Student .....	24
2.3 Extra Budgetary Income Inequality .....	29
2.4 Regional Analysis .....	32
3. Discussion and Conclusion.....	35
References.....	41

## List of Tables

Table 1: Extra-budgetary Percentage of Education Expenditure Per Capita and Inequality for Rural Elementary Schools.....	19
Table 2: Extra-budgetary Percentage of Education Income and Inequality for Rural Middle Schools .....	21
Table 3: Provincial Inequality of Rural Middle Schools.....	22
Table 4: Provincial Inequality of Rural Elementary Schools.....	24
Table 5: Extra-budgetary Income Sources for Rural Middle School.....	26
Table 6: Extra-budgetary Income Sources for Rural Elementary School .....	28
Table 7: Gini Coefficients of Middle School Income Sources .....	29
Table 8: Gini Coefficients of Elementary School Income Sources.....	31
Table 9: Regional Comparison of Extra-budgetary Funding of Middle Schools.....	32
Table 10: Regional Comparison of Extra-budgetary Funding of Elementary Schools .....	32
Table 11: Rural Education Expenditure Per Pupil as a Percent of GDP Per Capita and Total Government Outlay Per Capita.....	34

## **Acknowledgements**

I would like to thank my advisor, Dr. Emerson Niou, for his professional guidance in the production of the paper; Dr. Erik Wibbels for providing me with very valuable comments and suggestions on conducting the research; Dr. Kristen Stephens for her strong support in this research; Jordan Marie Anderson for her active help and support; Dr. Meifang Zhang for her helpful suggestions and comments. Finally I would like to thank Thomas Gift for providing me with pertinent advice on the paper and research.

# 1. Introduction

## 1.1 Research Problem

Education is seen in China, as well as in all other countries of the world, as a “means of achieving social transformation”<sup>1</sup>. It is regarded as one of the most important factors related to modernization and globalization. The current leadership in China recognizes the importance and has made tremendous effort to “expand it more rapidly and reach out to more people of all ages than in any previous efforts in history.”<sup>2</sup> So accompanying the dramatic economic reform started around 1980 in China, government policy on financing education has also gone through some significant changes. Just as in the economic field, the education system has been increasingly decentralized and diversified in the past three decades. Many of the reforms such as those in administrative management, curriculum, pedagogy, and education quality, and literacy have been acknowledged as successful endeavors.<sup>3</sup> One area of the reform, the financial reform, however, has caused controversial results and public concern. Since 1985, the government fiscal policy for financing education has focused on mobilizing social resources by putting financial responsibility on provincial, county, even town and village level governments. The process of decentralization and diversification and the consequences of the changes have been studied by many scholars and researchers both in China and outside China. It has been found that the dilution of financial responsibility on various levels of local governments has actually increased education inequity

---

<sup>1</sup> Martin Carnoy and Joel Samoff, *Education and Social Transition in the Third World* (Princeton: Princeton University Press, 1990), 7.

<sup>2</sup> *ibid.*, 7

<sup>3</sup> UNESCO, *National Literacy Policies*, July 2002, <http://www.accu.or.jp/litdbase/policy/chn/index.htm> (accessed March 20, 2011).

across China.<sup>4</sup> First of all, because of the economic disparity existed across different regions of the country, the abilities of the provincial governments and even county governments to finance education by budget revenue vary greatly. This consequently leads to unequal access to education. Furthermore, rural and urban gap also adds another layer to education inequality<sup>5</sup> However, for provinces that are less developed, adequate financial income for education has to be increasingly met with extra-budgetary or non-government income sources, referring to sources from extra education levies, social contributions such as donations from enterprises and individuals, school generated funds, external sources and school fees. The local governments, especially county governments are expected to draw as much as they can from their localities to finance public education. Research that aimed to study fiscal policy on education has consistently shown that as a consequence of the diversification of resources, local governments increasingly depend on extra-budgetary revenues for funding basic education.<sup>6</sup> Such dependency on local revenue, not only adds to the financial burden of local communities the responsibility of maintaining schools, but also put public schools in financial vulnerable situations. This is especially true in weak tax-based regions, thus further exacerbating education inequalities.

The weakness and deficiencies caused by the decentralized/diversified sources in financing basic public education in China have been extensively discussed by scholars such as Mun C.Tsang, Albert Park, Wen Li, and Sangui Wang.<sup>7</sup> These researchers examined the higher level of dependency on extra-budgetary revenues for education and discussed its impact on the

---

<sup>4</sup> Wen Li, Albert Park, and Sangui Wang, "School equity in rural China," in *Education and Reform in China*, ed. Emily Hannum et. al. (New York: Routledge, 2007) 27-43.

<sup>5</sup> Xiaolei Qian and Russell Smyth, "Measuring Regional Inequality of Education in China: Widening Coast-Inland Gap or Widening Rural-Urban Gap," *Journal of International Development* 20 (2008): 132-144.

<sup>6</sup> Mun Tsang, "Financial Reform of Basic Education in China," in *Economics of Education* 15(1996): 423-444; Li, Park, and Wang, "School equity in rural China", 27-43.

<sup>7</sup> Tsang, "Financial Reform of Basic Education in China," 423-444; Wen Li, Albert Park, and Sangui Wang, "School equity in rural China," 27-43.

education structure of China. However the empirical discussions show some inconsistency in reporting the consequences of financing public school by the extra-budgetary revenue. Some scholars have suggested that extra-budgetary income has the effect of reducing provincial level inequality in rural primary education funding in China.<sup>8</sup> While others have argued that education disparities will likely to increase over time because of increasing economic disparities between the regions and heavy reliance on non-government funding.<sup>9</sup> What is the real nature of the relationship? Whether extra-budgetary or non-government funding is a dis-equalizing factor in per capita education expenditure or a necessary equalizing factor in providing equal education opportunity in China. This research project tries to address the issue by analyzing government data on education funding in recent years.

The Economic Behaviorism theory formulated by Richard H. Thaler and Cass R. Sunstein posits, in their book “Nudge: Improving Decisions about Health, Wealth, and Happiness”, that when people are facing multiple competing economic choices, they don’t make decisions based on what is rational, but based on what’s easiest or most popular.<sup>10</sup> In the case of Chinese education funding policy, local governments of the richer regions would not choose to invest less in basic education just because their schools are already better funded than schools in poorer regions. They would nevertheless accept or encourage other social contributions, as permitted by the central government new policy, for further improvement of their educational institutions for long term benefits of children. The demands on financial support on children’s education from local government would easily find an echo from the local communities as people in more developed regions well realized the importance of education. The consequence is that

---

<sup>8</sup> Li, Park, and Wang, “School equity in rural China”, 33.

<sup>9</sup> Tsang, “Financial Reform of Basic Education in China,” 439.

<sup>10</sup> Richard H. Thaler and Cass R. Sunstein, *Nudge: Improving Decisions About Health, Wealth, and Happiness* (New Haven, CT: Yale University Press, 2008).

richer regional governments are able to accumulate educational funds from extra-budgetary sources. Furthermore, based on the budget-maximizing model proposed by Niskanen, bureaucrats would always try to maximize their budget to increase their salaries, one way this can be done is through maximizing the budget of their bureau.<sup>11</sup> Since extra-budgetary education revenue is another source of income, generally easier to come by in richer provinces, local officials would try to increase their budget through extra-budgetary sources for education in addition to budgetary revenues. Based on these economic theories, the present research, after careful review of the research findings and arguments, proposes that extra-budgetary funding on education exacerbates rather than ameliorate financial inequalities in rural education in China. Research on this issue carries important policy implications: it is noted that in more recent years, government policy and actions are seen to develop towards reducing reliance on extra-budgetary funding, especially extra education levies, with the aim of reducing inequality in funding public education.<sup>12</sup> Some previous researches have pointed out that the trend in government spending since the year 2000 seems to be moving with the aim of reducing diversification.<sup>13</sup> The new policy states that the central government and the provincial government are to take a larger share of the responsibility for financing education rather than local governments.<sup>14</sup> It has been shown through theoretical models that central educational financing reduces inequality in school spending in relation to local financing.<sup>15</sup> Local funding might be more efficient at determining the local preference for spending, but central funding promotes greater equality in education

---

<sup>11</sup> Friedman Lee, *The Microeconomics of Public Policy Analysis* (Princeton, NJ: Princeton University Press, 2002), 429.

<sup>12</sup> Li, Park, and Wang, "School equity in rural China," 30-31.

<sup>13</sup> See Table 1

<sup>14</sup> *Educational Statistics Yearbook of China*. Beijing: China Statistics Press, 2009.

<sup>15</sup> Mark Gradstein, M. Justman and Volker Meier, *The Political Economy of Education: Implications for Growth and Inequality* (MA: The MIT Press, 2005), 86.

spending.<sup>16</sup> Politically, adequately financing education and redistributing resources might help alleviate social tensions and reduce political pressure.<sup>17</sup> This, arguably, would increase political stability and social solidarity for the government. The Chinese Communist Party sees ensuring social stability as paramount to its political survival. Creating a balance and achieving political equilibrium for education financing contribute to ensuring an optimum in keeping both the privileged and the poor content. On one hand, redistributing too much resource from the rich and privileged for the sake of equality might reduce crucial support of the affluent for the government. On the other, an increase in education inequality might further deepen the resentment of the poor rural populace towards the government, many of whom were felt left behind by the economic transformation of the coastal and richer regions.

Data collected by various government agencies suggests that the government intends to increase the percentage of budgetary income in education in order to reduce inequality among provinces. By reexamining the functions and dysfunctions of extra-budgetary revenue on education, the project hopes to add clarity to the nature of the relationship between extra-budgetary funding on education and education inequality. Most research on rural education inequality in China studied the early periods of economic reform and the 90s. Little research has been done on China's rural education structure in recent years, which has undergone drastic changes. The data used in this research comes from China Education Statistics Yearbook and China Educational Financial Statistics Yearbook in most recent publication. The first part of this research examines inequality levels by calculating Gini coefficients of both per capita education budgetary expenditure and total education expenditure of all the provinces and municipalities in year 2002, 2006, and 2008. It is argued that if the inequality in total per capita education

---

<sup>16</sup> *ibid.*, 89-90

<sup>17</sup> *ibid.*, 59

spending is less than that of the budgetary expenditure, then the data suggests that extra-budgetary funding has an equalizing effect on per capita spending.<sup>18</sup> The second part of this research looks at whether there is a negative correlation between per capita education expenditure and the percent of education income that comes from extra-budgetary sources. Theoretically, poor provinces with lower budgetary education spending would aim to seek out more financial resources from non-government incomes in order to meet adequate education needs. Thus if extra-budgetary incomes are used as an equalizing factor then there should be a negative correlation between budgetary spending and extra-budgetary income percentages. The third part of this paper looks at the inequality in budgetary and extra-budgetary income sources for all the provinces. Finally, this research tabulates the percent of extra budgetary incomes in Coastal, Central, Northeastern, and Western regions in China to determine whether there is a pattern in each region and how much of their education income comes from extra-budgetary sources. It also observes total education spending as a percentage of total government revenue. It is expected that by specifying in more rigorous manner the inequalities embodied in education financing system, and the effect of extra-budgetary source of education income, one can develop a more objective view of the nature of the Chinese school funding system.

The analysis would focus on whether extra-budgetary funding solely increases education funding or as it is aimed to be, maintains consistency in percentage of education spending. The years chosen: 2002, 2006, and 2008 are important in this analysis because 2002 immediately follows the reversal of government's policy of decentralization in education financing. The year 2006 immediately predates a 2007 drastic decrease in extra-budgetary funding percentage, and government's effort to reduce diversification and increase central funding towards compulsory

---

<sup>18</sup>Method adopted from Li, Park, and Wang, "School equity in rural China," 27-43.

education, especially for rural areas. 2008 is chosen because it follows this drastic increase. Hopefully the secondary analysis of official data on education expenditure could aid in our understanding of school financial structure of China's rural regions.

## **1.2 Theoretical Discussion: Overview and Research Propositions**

Throughout history, and like many other countries such as the United States, education in China has been a key equalizer by which people from disadvantaged position get a chance to move up in the hierarchical social system. However, educational opportunity has never been equal in the first place. Data on education opportunities across the world, whether national or international, do not in any way show equality of opportunity in education. Instead, in most cases, almost in every society, education performs the function of reinforcing the stratification system, and actually reproduces social class.<sup>19</sup> The inequality in access to education has been a major concern in all societies across the world. Governments in countries at different industrialization levels have adopted specific programs to reduce inequality in educational resources and have been trying to develop policies to promote education equality.

In China, for the past six decades, the Communist government has maintained a centralized socialist system, with a communist ideology for equality, and tried to create wide access to some form of education for all people. To achieve educational equality it set up a state-run system regulated by the central government in terms of funding, curriculum development, institute management, inner-instructional system such as syllabi and textbooks, and even recruitment and job placement of graduates. The policy was aimed to provide accessible

---

<sup>19</sup> J. Butler and K Robson, "Youth Inequalities," *Reassessing the Role of Education in Social Reproduction: The Impact of School Type on the Cultural and Social Capital of High School Students in the U.S.*, 2007, [http://youth-inequalities.org/html/working\\_papers/working\\_papers.html](http://youth-inequalities.org/html/working_papers/working_papers.html) (accessed March 15, 2011).

education for all citizen and opportunity extended to all classes or status groups. Various strategies had been adopted to expand education accessibility for all citizens. Although the doors to schools were ostensibly open to the masses regardless of social economic backgrounds, the chances of advancing in the educational world were still strongly affected by a person's socioeconomic status despite the government's efforts for more accessible education for the masses and centralized control of educational resources. There still existed significant differences in education opportunities between urban and rural areas, between more developed coastal regions and interior regions, caused by various political, economic and cultural factors.<sup>20</sup>

Starting from the last two decades of the 20<sup>th</sup> century, China launched its massive economic reform and has ever since rapidly raised the economic development level of the country. At the same time, it also witnessed a growing economic disparity across the country. While the urban and coastal regions have gained economic prosperity, the inland and rural areas are experiencing relative deprivation. On the micro level, because of the changed government policy for market economy and free competition, people who got opportunities for economic success achieved tremendous wealth, while others in disadvantaged social locations or lack opportunities stay behind. The influence of economic institutions and political institutions on educational organization and educational attainment has been shown by scholars as one of the major determinants.<sup>21</sup> The economic discrepancies created by the economic reform in China have also lead to growing educational inequalities throughout the country and in multiple levels. First of all, differences in the pre-existed economic development level between urban metropolitan

---

<sup>20</sup> Xuelan Rong and Tianjian Shi, "Inequality in Chinese Education," *Journal of Contemporary China* 10 (2001): 112-120.

<sup>21</sup> William H. Sewell, "Inequality of Opportunity for Higher Education," *American Sociological Review* 36 (1971): 793-808.

areas and rural areas have created different educational opportunities.<sup>22</sup> Secondly, the more open and industrialized coastal regions which benefited first from the economic reform is able to provide much more educational opportunities than the low industrialized interior regions.<sup>23</sup> Thirdly, the advantages of the children from relatively affluent families are shown to make enormous differences in educational performance.<sup>24</sup> Moreover, the Chinese unique household registration system, which tied many families to their place of birth, has created another layer of differences in educational opportunities for children of the respective families.<sup>25</sup>

Education inequality, seen as a demoralizing and potential inhibiting factor, is viewed by many as a major roadblock to a nation's modernization. There has been an ongoing debate over the growing disparity on education accessibility. Problems such as higher illiteracy rate among children of rural impoverished regions and lower educational attainment of migrant workers in cities present major problems for Chinese society.<sup>26</sup> Scholars have credited government commitment and social demand in tackling unfavorable circumstances, as two major factors for the tremendous progress that developing countries have made in the period of 1960s to 1980s, both in the number of people educated and enrollment rates.<sup>27</sup> China, in their great stride for modernization, in particular, aims to mobilize the entire population to expand and deliver

---

<sup>22</sup> Emily Hannum, "Political Change and the Urban-Rural Gap in Basic Education in China 1949-1990," *Comparative Education Review* 43 (1999): 193-211.

<sup>23</sup> Rong and Shi, "Inequality in Chinese Education," 120-121.

<sup>24</sup> Cecilia Elena Rouse and Lisa Barrow, "U.S. Elementary and Secondary Schools: Equalizing Opportunity or Replicating the Status Quo?", *Opportunity in America* 16 (2006).  
<http://futureofchildren.org/futureofchildren/publications/journals/article/index.xml?journalid=35&articleid=89&sectionid=541> (accessed April 15, 2011).

<sup>25</sup> Feiling Wang, *Organizing Through Division and Exclusion: China's Hukou System* (Stanford: Stanford University Press, 2005).

<sup>26</sup> Julia Kwong, "The Integration of Migrant Children in Beijing Schools," in *Education and Social Change in China: Inequality in a Market Economy*, ed. Gerard A. Postiglione (Armonk: M.E. Sharpe, 2006), 163-179.

<sup>27</sup> Jacques Hallak, *Investing in the Future: Setting Educational Priorities in the Developing World* (Oxford: Pergamon Press, 1990), 7, 23.

universal literacy at all levels.<sup>28</sup> Even prior to the economic reform started in the 1980s, and immediately after the chaotic “Cultural Revolution”, Chinese government, headed by the reformist group, made first reformative effort by restoring order in education and making it an open system for equal competition. It is realized by the leadership at that time that education, especially in a transitional society like China, has to undergo massive reforms in order to transform the basis of the economy and help “develop a new sense of nation and history.”<sup>29</sup> Since then, education in China has undergone remarkable changes to meet the needs of the society for modernization and globalization. A whole series of structural reforms have been carried out in various levels of education institutions that brought significant changes in the education structure of China. The state, as socialist in name, now provides general planning or macro-control, while giving up the micro-management approach adopted before the economic reform.

One of the most striking changes that have the most profound impacts on the education system is the public finance reform, adopted around mid-1980, which decentralized decision-making powers and financial responsibilities from the central government to provincial and local government.<sup>30</sup> In terms of education structure, the fiscal decentralization means that the underfunded nine-year compulsory education problem is going to be solved by local governments of various levels.<sup>31</sup> The reform is also aimed to establish a diversified revenue base for education and mobilize all possible education resources from the larger society.<sup>32</sup> The current situation is that within the tax policy of macro control of the central government, the provincial governments, the county governments, even down to the township and village governments, each is responsible

---

<sup>28</sup> *ibid.*, 10

<sup>29</sup> Carnoy and Samoff, *Education and Social Transformation in the Third World*, 63.

<sup>30</sup> Tsang, “Financial Reform of Basic Education in China,” 424-425.

<sup>31</sup> *ibid.*, 425

<sup>32</sup> *ibid.*, 426

to fund basic education (primary and general-secondary education) for its own citizenry. Although the state and higher level of governments such as provincial government finance higher education and certain key programs as they see necessary. The bulk of the money and control for basic education comes from local communities.

There are several problems with this emphasis on local financial responsibility and control of education. First, it has been confirmed that the amount of schooling one has is directly correlated with economic development in society. Tax base of the local communities is strong or weak has a pronounced effect on the quality of education received, and definitely on the accessibility of advanced education opportunities.<sup>33</sup> Second, local taxes are almost the only outlet for taxpayers' revolts as have been evidenced from American system.<sup>34</sup> Third, usually, in developing countries, governments and policymakers would choose spend more on university and tertiary education rather than basic education for the masses.<sup>35</sup> Since most universities and higher education facilities are located in urban rather than rural areas in most developing nations, the rural countryside does not benefit directly from this investment output. Recent fiscal investment trend has suggested that priority in resources allocation has changed from primary education to shifts toward secondary and higher education.<sup>36</sup> Sector choices and competition for limited funds further exacerbates this situation.<sup>37</sup> In order to engender economic growth and improve technology access, China has focused on expanding secondary and tertiary education during the last 30 years. Although expansion of educational opportunities creates greater access, it

---

<sup>33</sup> D. J. Treiman and K Terrel, "The process of status attainment in the United States and Great Britain," *American Journal of Sociology* 81 (1975): 563-683.; James S Coleman, et al., *Equality of Educational Opportunity*, Study (EEOS) (Washington D.C.: Government Printing Office, 1966).

<sup>34</sup> R. Hernandez, "New York Times," *Revolt Against School Spending Reaches the Wealthiest Suburbs*, Jan 18, 1995, <http://www.nytimes.com/1995/01/18/nyregion/revolt-against-school-spending-reaches-the-wealthiest-suburbs.html> (accessed March 22, 2011).

<sup>35</sup> Hallak, *Investing in the Future: Setting Education Priorities in the Developing World*, 56, 74.

<sup>36</sup> *ibid.*, 56

<sup>37</sup> *ibid.*, 74

nevertheless increases the disparities within the education system.<sup>38</sup> The last but not the least, as the higher level of governments such the provincial governments found that when financial resources were needed elsewhere, they would make spending decision at the cost of education and other public services. As pointed out by Carnoy and Samoff, since education is a long term investment which generates little short-term productivity and output, spending on the establishment of mass education runs in conflict with spending on direct investments such as energy, infrastructure...etc.<sup>39</sup> Furthermore, politicians and policymakers in local governments tend to focus on needs that satisfies short-term imperative for political purposes.<sup>40</sup> Governments that want to raise the level of economic development and emphasizes material growth would focus less on education expansion at lower levels, and more on investments that directly increases productivity. Even though in the long run, both education and growth is complementary, but chronic shortage of financial resources tend to reduce the investment priority in education equity and focus more on growth for policy makers.<sup>41</sup> Thus, especially for poorer and less developed regions of China, investment in education has been suffering the lack of adequate funding ever since. China during the past two decades, even though it invested more in rural primary education, it nevertheless focused much more on direct investments such as increasing agricultural output in the rural countryside, as well more on industrializing the economy, and on the defense industry. Because of the shortages in educational funds, seeking outside resources for educational purposes has become the natural result of China's opening and reform policy. Local governments (county and township levels) are encouraged to make up for the shortage in education funding through "extra-budgetary sources" derived from school fees, tuition fees, book

---

<sup>38</sup> Vittoria Cavicchioni and Albert Motivans, "Monitoring Educational Disparities in Less Developed Countries" in *In Pursuit of Equity in Education: Using International Indicators to Compare Equity Policies*, ed. Walo Hutmacher et. al. (Boston: Kluwer Academic, 2001), 220.

<sup>39</sup> Carnoy and Samoff, *Education and Social Transformation in the Third World*, 78.

<sup>40</sup> Hallak, *Investing in the Future: Setting Education Priorities in the Developing World*, 72-74.

<sup>41</sup> *ibid.*, 89

fees, and also from social contributions from enterprise and charity donations. As have been discussed by scholars who study the financing system of China, extra-budgetary source plays an increasingly more important role in finding basic education and fiscal revenue for education during the 1990s. It is reported to make up almost half of the education funding in 1997.<sup>42</sup> The education budget revenue thus becomes more diversified during those years. Education attainment is found to be linked not only to socioeconomic backgrounds of families, but educational opportunities are also more and more determined by the ability of local governments' ability to pay.<sup>43</sup>

Like all other industrializing societies, the problem of blocked educational opportunity is more severe in the interior rural regions in China, where people experience double deprivations. First of all, the economic disparities between the different regions of China contribute significantly to income inequality, which leads to unequal funding for the basic education of the localities from government budget. The decentralization policy adopted during the public finance reform does promote some incentives for local governments to generate revenues from extra-budgetary source/non-government revenues, and take responsibilities for local needs, but it also "hampers efforts to meet goals of distributional equity."<sup>44</sup> It has been shown that inequalities of education under centralized funding are comparatively slight.<sup>45</sup> Under a decentralized system, the local government might not be distributing enough funds for local schools. In some cases, county governments or township governments have even to delay paying the salaries of the teachers, which lead to loss of human resources and resultantly poor quality of education for local children. Richer regions and counties, on the other hand, will have more abundant resources and alternative

---

<sup>42</sup> Li, Park, and Wang, "School equity in rural China," 30.

<sup>43</sup> Treiman and Terrel, "The process of status attainment in the United States and Great Britain," 563-683; Janie E. Funkhouser and Miriam R. Gonzales, *Family Involvement in Children's Education: Successful Local Approaches* (Washington: U.S. Department of Education, 1997).

<sup>44</sup> Li, Park, Wang, "School equity in rural China," 27.

<sup>45</sup> Cavicchioni and Motivans, "Monitoring Educational Disparities in Less Developed Countries," 152.

ways to finance local schools and the salaries of the teachers. Thus it creates a pattern in which the richer parts of China will get better quality education.<sup>46</sup>

Another problem that could contribute to education discrepancy between regions is the priority that the provincial government places on financing higher and secondary education rather than primary education.<sup>47</sup> This can be seen in the serious lack of infrastructure or supply of textbooks for local primary students. Primary school students in many inland rural regions of China have to pay for textbooks and other school facility or activity fees. The financial decentralization created by the new market oriented approach to education can also be marred by other problems such as local corruption and inefficiencies.<sup>48</sup> Problems such as corruption, in which education officials sometimes withhold funds further complicates the problem of regional education inequality. This is especially true for elementary education in remote and rural areas, (since elementary schools receive more funds from the local government than middle schools).

Shi and Rong have argued that the disadvantaged groups in China have yet to enjoy the economic successes of China, and even in their access to education.<sup>49</sup> The decentralization and diversification of financial resources of education have created larger gap in educational accessibility. In sum, the extent of schooling in any society is tied to its level of economic development.

A more common problem in under developed countries is illiteracy, a consequence of limited economic development. Studies in the economics of education emphasize the importance of physical capital or financial capital, referring to physical resources such as finance, which can

---

<sup>46</sup> Li, Park, and Wang, "School equity in rural China," 27.

<sup>47</sup> Hallak, *Investing in the Future*, 28.

<sup>48</sup> Edward Fisk, *Decentralization of education: Politics and Consensus*. (Washington, D.C.: The World Bank, 2000), 9.

<sup>49</sup> Rong and Shi, "Inequality in Chinese Education," 107-124.

aid achievement, or creation of human capital.<sup>50</sup> Education to a significant degree depends on physical resources such as wealth and income. On a micro level, if family income or financial capital is high, family can provide a fixed home for studying, materials to aid learning, financial resources that smooth family problems. William Sewell found dramatic differences in educational attainments among people who have different socioeconomic backgrounds.<sup>51</sup> Those whose families had the highest socioeconomic status were more likely to attend college than groups in lower economic standing. Community's ability to pay is an imperative condition for long-term investment such as education. Extra-budgetary source for education has more to do with whether communities have extra economic resources. More developed regions (provinces) of China have far greater ways of obtaining extra-budgetary revenue set up from students fees, school-generated revenues, community contributions. Poorer regions are more likely to receive contributions from less dependable sources such as donations.

This paper, using data from Chinese Education Financial Statistics Yearbook, Chinese Education Statistics Yearbook, and Chinese Financial Yearbook attempts to provide empirical information on the unequal access to education based on regional economic differences, urban/rural differences. Data analysis tries to show the extent and degree of inequality, and more importantly, try to examine the impact of extra-budgetary on education expenditure of students in compulsory education. The propositions set up based on the above analysis are that decentralization of school financing in China, more specifically, shift of education responsibility from central government to local governments perpetuate educational inequalities, and diversification of education financial capital such as increased dependence on extra-budgetary

---

<sup>50</sup> Coleman, *Equality of Education Opportunity*, 1966.

<sup>51</sup> William Sewell, "Inequality of Opportunity for Higher Education," 793-808.

revenue widens the gaps in educational spending across rural schools in different regions with different level of economic development instead of narrowing it.

## 2. Inequality in education expenditure from budgetary and extra-budgetary funding sources

In their research on education funding in China, Li, Wang, and Park argued that diversification and extra-budgetary funding would exacerbate rather than ameliorate spending inequalities in rural China.<sup>1</sup> However, the data analysis, which looks at spending inequality in the year 1993, 1997 and 2000, showed that the inequality between total per capita education expenditure is lower than the inequality between per capita education expenditure from budgetary source, which suggests that extra-budgetary spending has an equalizing effect on education spending.<sup>2</sup> What's interesting in their research was that this period of education spending was characterized by an increase in diversification of education income and then a decrease in diversification. That means, by simply looking at inequality indexes would not be able to fully explain whether diversification of education income is equalizing or has the opposite effect of exacerbating the already unequal provincial level spending inequality. The first part of this research will use the method adopted by Li, Wang, and Park but examine education funding data in the year 2002, 2006, and 2008 to reveal the pattern of education expenditure in rural China. The second part of the analysis will examine whether there is a correlation between the percent of education income that comes from extra-budgetary sources and per capita education spending that's budgetary. It is assumed by some that poor provinces would compensate for lower government spending by raising a larger share of their revenue from extra-budgetary sources.<sup>3</sup> The hypothesis of the present research will argue that this is not the case. Poor provinces would have more difficulties to raise extra-budgetary sources because non-government income that can be used on education is also directly related to the level of economic development in the

---

<sup>1</sup> Li, Park, and Wang, "School equity in rural China," 27.

<sup>2</sup> *ibid.*, 33

<sup>3</sup> *ibid.*, 33

provinces. The third part of the empirical analysis looks at how inequality of education revenue varies across different provinces and which extra-budgetary revenue source has the most dis-equalizing effect. It is expected that the analyses will help to understand the nature of the fiscal reform on education in China and tell whether extra-budgetary revenue source exacerbates or ameliorates inequality. Scholars have argued that governments should encourage contributions from private sectors, industry, and diversify revenue sources, in order to ease pressure from public sources.<sup>4</sup> Then the last part of the research will estimate extra-budgetary revenue as a percent of total education revenue across different regions in China, namely Coastal, Northeastern, Central, and Western. It is assumed that there will be significant differences between the provinces on how much of their education spending consists of extra-budgetary funds. It is hypothesized that more economically developed regions/provinces would be able to collect higher “special education levies” from the local residents than remote provinces. It is also argued that schools in those “richer” provinces would be able to generate extra school related fees and other sources of income such as donations from individuals and enterprises. Thus, the percentage of extra-budgetary funds would be significantly higher in those provinces. Previous researches have shown that local individual rural income significantly influences the rural budgetary and extra-budgetary education income in China’s provinces.<sup>5</sup>

Most of the data gathered and used in this part of the research comes from China’s Education Financial Yearbook 2002-2008 and Chinese Statistical Yearbook 2002-2008. However, it should be kept in mind that some of these data lack reliability and credibility. National data collection occasionally suffers from data manipulation of individual provinces or

---

<sup>4</sup> Hallak, *Investing in the Future: Setting Educational Priorities in the Developing World*, 82.

<sup>5</sup> Guang Zhang and Yini Jiang, “Zhong guo sheng nei cai zheng fen quan de yan jin yu nong cun yi wu jiao yu tou ru” in *Education and Economics* 3 (2008), 59-63.

counties for political purposes.<sup>6</sup> Thus it is sometimes not feasible to gather data on direct educational attainment values such as graduation rates, or even literacy rates for that matter. Since the standards might differ for each province or each year. However, the overall trend in education spending and income does give us an idea of where and how extra-budgetary income affects rural expenditure.

## **2.1 Budgetary Income and Educational Income**

The following empirical analysis looks at the different sources of educational income from the 30 provinces and municipalities of China. Tibet is not included in the analysis since its income sources comes almost exclusively from the state, and extra-budgetary income are not reported. This research uses Gini coefficient to measure inequality of per capita education spending, the higher the Gini coefficient, the greater the inequality.

**Table 1: Extra-budgetary Percentage of Education Expenditure Per Capita and Inequality for Rural Elementary Schools**

	Percent Extra- Budgetary	Gini Coefficient of Total Education Spending per capita	Gini Coefficient of Budgetary Education Spending per capita
2002	26.50%	0.192	0.193
2006	19.00%	0.208	0.204
2008	14.00%	0.194	0.182

*Source:* State Statistical Bureau, *China Educational Finance Statistical Yearbook 2002-2008*

From Table 1, the percent of extra-budgetary expenditure for education has been decreasing in a significant way. Since the government announced its policy change of injecting

<sup>6</sup> Rong and Shi, "Inequality in Chinese Education," 112.

more central and provincial funding for education for more recent years. As the table shows, the percentage of education expenditure that comes from extra-budgetary sources has decreased down to 14 percent. The total (budgetary + extra-budgetary) per capita spending inequality for rural elementary schools, measured by the Gini coefficient, first increased from 2002 to 2006 despite a decrease in extra-budgetary expenditure share, and then decreased to 0.194 for 2008. This does not give indication that reducing the reliance of education spending on extra-budgetary funding ameliorates inequality. More importantly, by looking at the inequality of budgetary per capita spending vs. total per capita spending for all three years, we can see that the inequality is higher for total spending per capita than budgetary spending per capita for 2006 and 2008. This is the clearest indication that extra-budgetary funds exacerbates rather than ameliorate inequalities between provinces. The inequality between the total and budgetary spending is relatively the same in 2002 even though the share of extra-budgetary funding in total per capita expenditure is the highest of the three years.

The decrease in overall inequality between 2006 and 2008, nevertheless, gives a positive outlook. This is due to the fact that the central government began to increase its responsibility of supporting rural primary education in terms of financial investment, and it has met with some success in reducing overall inequality. In a way, it represents a reversal of diversification as the government aims to decrease education inequity by reducing the reliance of school on other non-government sources of income such as eliminating extra school fees, and refocusing government income as the main source of education expenditure. China's premier Wen Jiabao in 2006 has

vowed to eliminate rural schools fees for the compulsory 9-year education. However, until all the schools actually receive the funding allocated to them, it is still a major problem.<sup>7</sup>

**Table 2: Extra-budgetary Percentage of Education Income and Inequality for Rural Middle Schools**

	% Extra Budgetary Middle School	Gini Coefficient of Total Middle School	Gini Coefficient of Budgetary Middle School
2002	29.74%	0.165	0.162
2006	21.60%	0.202	0.188
2008	17.00%	0.184	0.204

*Source:* State Statistical Bureau, *China Educational Finance Statistical Yearbook 2002-2008*

Table 2 shows a similar pattern as that of Table 1. The government began to reduce reliance on extra-budgetary income as a share of total education income. The share of per capita total expenditure that comes from extra-budgetary sources has dropped almost 30 percent to 17 percent. The inequality has, however, increased from 0.165 to 0.184. This seems to suggest that extra-budgetary income have some minor ameliorating qualities in terms of reducing spending inequality. But, by comparing the total per capita inequality vs. the budgetary per capita inequality, it can be seen that the inequality is higher for total per capita spending for 2002 and 2006. This again, shows that extra-budgetary spending exacerbates rather than ameliorate inequalities in those two years.

---

<sup>7</sup> Wang Zhicheng, “Wen Jiabao pledges school reform to counter economic crisis,” Asia News, accessed March 23, 2011, <http://www.asianews.it/news-en/Wen-Jiabao-pledges-school-reform-to-counter-economic-crisis-14138.html>.

It is also important to look at the overall trend in spending inequalities between the provinces that spend the most on education per capita and the province that spends the least. It does seem to suggest that recent government policies of eliminating inequality by focusing more on budgetary spending and investing more in rural areas, especially poor rural areas have met with little success for middle schools.

**Table 3: Provincial Inequality of Rural Middle Schools**

	Lowest Per Capita Expenditure	Highest Per Capita Expenditure	Highest Per Capita Expenditure 2 *	Lowest/Highest ratio
2002	603.73	2367.64	4047.03	14.92%
2003	698.7	2483.74	4804.75	14.54%
2004	759.97	3217.75	5977.28	12.71%
2005	870.91	4256.21	7332.18	11.88%
2006	1065.78	4981.64	10217.47	10.43%
2007	1260.17	5551.01	12624.44	9.98%
2008	1704.46	6634.71	18193.61	9.37%

\* Data include Beijing, Shanghai *Source: State Statistical Bureau, China Educational Finance Statistical Yearbook 2002-2008*

It can be seen from Table 3 that there is a huge discrepancy in rural education spending for middle schools in China between the province that have the highest per capita education expenditure and the lowest. For example, in 2008 the province with the lowest per capita spending is Henan, with 1700 Yuan and the municipality (province) with the highest per capita spending is Shanghai with 18,000 Yuan. This discrepancy is huge by any standards. Yet this is only the average of the province. Actual spending discrepancy can be even higher because in some provinces the per capita expenditure of certain counties might be significantly lower than that of other counties. What's more important to note and alarming from this analysis is that this per capita spending inequality is widening rather than narrowing. In 2002, the ratio between the

lowest and highest per capita spending provinces is approximately 15%, while in 2008, that percentage dropped to 9.37%. Even though the overall per capita spending has increased significantly, the spending gap between the provinces increased. With the increase in commodity prices in China, the increase in overall spending might not be significant enough to counteract inflation and other price increase of everyday goods, and education needs such as textbooks...etc. Thus the real per capita expenditure increase might not be that high.

Furthermore, education expenditure does not reflect fully the costs of education. It not only includes the operating costs, structures equipment, land, but also family costs borne by the student and his/her family and other expenses.<sup>8</sup> Thus analyzing school costs purely on the basis of education expenditure does not fully capture the picture of education costs of rural families. In his study, Schultz have argued that the “real costs per unit of schooling rise markedly with economic growth.” A large increase in the quantity of schooling is followed by a marked rise in relative supply price of factors contributing to education.<sup>9</sup> China has experienced significant economic growth in the last 30 years. Even though the overall rural education spending has increased substantially from 2002 to 2008, the gap between the per capita education expenditure of the richest rural area of China and the poorest remain.

---

<sup>8</sup> Theodore W. Schultz, *The Economic Value of Education* (New York: Columbia University Press, 1963), 21.

<sup>9</sup> *ibid.*, 35

**Table 4: Provincial Inequality of Rural Elementary Schools**

	Lowest Per Capita Expenditure	Highest Per Capita Expenditure	Highest Per Capita Expenditure 2 *	Lowest/Highest ratio
2002	471.51	1674.18	3604.68	13.08%
2003	545.76	2001.82	4349.74	12.55%
2004	597.21	2513.16	5066.06	11.79%
2005	743.83	3340.03	6676.06	10.14%
2006	880.88	3692.38	8222.59	10.71%
2007	1067.75	4078.71	9560.69	11.17%
2008	1490.16	5000.98	12083.77	12.33%

\* Data include Beijing, Shanghai *Source: State Statistical Bureau, China Educational Finance Statistical Yearbook 2002-2008*

The analysis from the rural elementary school seems to show similar patterns. However, the lowest/highest per capita spending ratio decreased from 13 percent to 10 percent, and had risen again. It does show the effort of the government in recent years to try and tackle this increasing transparent and unequal discrepancy in primary education. But overall, the change has only been minimal.

## **2.2 Extra Budgetary Income Sources and Expenditure Per Student**

The Gini coefficients do support the idea that extra-budgetary education income increase inequalities in per capita education spending. However, it's been suggested in other research that provinces with lower education spending per capita would compensate for this by raising a larger share of their income from extra-budgetary sources.<sup>10</sup> Thus it is important to look at how extra-budgetary income correlates with per capita budgetary spending. If extra-budgetary spending

---

<sup>10</sup> Li, Park, and Wang, "School equity in rural China," 33.

were considered equalizing, then we would see a negative correlation between the budgetary spending and the percent of education income that comes from extra-budgetary sources. In other words, the higher the budgetary spending, the lower the share of extra-budgetary revenue is needed. Thus we should see an increase in share of extra-budgetary funds for provinces that spend lower on education.

The term extra-budgetary income describes educational budget sources outside of annual budget allocation of the state (central and provincial government). It includes special education taxes, school generated revenues and administrative fees, donations, and other sources of income not included in the government budget. The special education taxes come from special taxes levied from both urban and rural sources to fulfill the financial requirement of the local schools. School generated revenues, on the other hand, come from school sources that mostly comprises of extra school fees.

The first model regress per capita education expenditure by income variables such as education tax, school generated revenue and income, and other extra-budgetary incomes of rural middle schools in 2002, 2006, and 2008.

**Table 5: Extra-budgetary Income Sources for Rural Middle School**

	2002	2006	2008
Constant	1160.4(450.8)**	1190.0(849.5)	2030(1038)
Percent Extra-education tax	4609.2(2795.1)*	24202.9(6806.8)**	53017(18972)**
Percent School Fees and Income	-4422.9(2795.1)	22028.9(11228.7)*	-6121(16389)
Percent Extra-budgetary rest	4602.5(5553.0)	-9658.0(3850.9)**	-26020(22634)
N	30	30	30
Adjusted R <sup>2</sup>	0.016	0.482	0.234
Significance Level	* 0.1	**0.05	

*Source: State Statistical Bureau, China Educational Finance Statistical Yearbook 2002-2008*

By de-aggregating the extra-budgetary sources, we can see that there is a positive correlation between higher percentage of education revenue that comes from extra-education tax in 2002, 2006 and 2008. Furthermore, for 2006, school fees and administrative revenue is linked to higher per capita spending. However, donations and other extra-budgetary revenue do seem to be negatively correlated with increase in per capita spending. Despite this, it is only in 2006 do we see this correlation. Overall, the regression does not support the idea that provinces that spend less per capita on education will generate higher share of revenue from extra-budgetary sources. Indeed, the results show that the opposite is true for rural middle schools. Provinces that spend higher on education per capita will actually levy higher percentage of revenue from extra-budgetary income, specifically, extra-education levies. The higher coefficient in extra-education levies than other extra budgetary sources do suggest that the extra-education levies (which comprises the majority share of extra-budgetary income for some provinces) is a dis-equalizing

factor rather than an equalizing factor in per capita education spending. This is interesting because it seems that local government that encounters shortfalls in budgetary spending on education would need to levy higher education taxes.

However, literature review suggests that for poorer rural communities, additional education levies represent a significant burden on the local population.<sup>11</sup> Thus the local government might not want to inflict additional burden on them in order to increase education expenditure. Therefore the positive correlation of higher extra education levy and higher per capita expenditure might not be all that surprising. Extra budgetary income variables such as school generated revenue and administrative income and other extra-budgetary incomes (community donations...etc.) were not significant and did not affect the per capita education expenditure in 2002 or 2008.

---

<sup>11</sup> Keith Lewin, Angela Little, Xu Hui, and Zheng Jiwei, *Education Innovation in China* (Essex: Longman, 1994), 28.

**Table 6: Extra-budgetary Income Sources for Rural Elementary School**

	2002	2006	2008
Constant	1626.1(376.8)**	2480(647)**	2271.8(769.6)**
Percent Extra-education tax	295.2 (2816.2)	20770(7367)**	48925.0 (19377.8)**
Percent School Fees and Income	-6873.8(6404.9)	-5856(16906)	-9790.5(15939.3)
Percent Extra-budgetary rest	-1969.1(2835.9)	-9158(5984)	-8545.4(27796.2)
N	30	30	30
Adjusted R <sup>2</sup>	0.118	0.333	0.202
Significance Level	* 0.1	**0.05	

*Source: State Statistical Bureau, China Educational Finance Statistical Yearbook 2002-2008*

Table 6 gives us an overview of the extra-budgetary income sources for rural elementary school. Most of the data are not significant except for a positive correlation between extra-education levies and budgetary spending per capita in 2006 and 2008. Therefore this table is inconclusive in determining whether there is a negative correlation between extra-budgetary income and budgetary per capita spending. Despite the fact that most of the data is not significant, nevertheless, we can see that in provincial level inequality, extra-budgetary income does not help equalize spending. Increasing percentage of extra-education levies for elementary schools, like levies for rural middle schools, still positively correlates with per capita expenditure on education.

### 2.3 Extra Budgetary Income Inequality

The previous section certainly suggests that extra education levies correlates with the per capita education spending. Now it is important to see the overall inequality measured by the Gini index of the different extra-budgetary incomes. This will tell us whether the income sources; especially the extra-education levies are a dis-equalizing factor or an equalizing factor in education (Note: The income is the per capita income where the total revenue is divided by the total number of students). The inequality pattern of different extra-budgetary income sources can be more clearly observed using this method.

**Table 7: Gini Coefficients of Middle School Income Sources**

	2002	2006	2008
Budgetary	0.166	0.188	0.165
Extra-budgetary	0.240	0.331	0.422
(Extra Education tax)	0.289	0.580	0.482
(School Fees and Administrative Revenue)	0.270	0.304	0.431
(Other: including donations and enterprise)	0.276	0.345	0.494
Total Income	0.163	0.201	0.188

Source: State Statistical Bureau, *China Educational Finance Statistical Yearbook*, *China Educational Statistical Yearbook* (2002-2008)

It can be observed that in 2002, the extra budgetary income has a slightly equalizing effect. This is contrary to the inequality of the spending per capita, which shows that extra budgetary spending exacerbates inequality. However, when the data is de-aggregated in 2002, we

can see that extra education levy is a dis-equalizing factor. The inequality is higher than the budgetary inequality, total extra-budgetary inequality, and the total income inequality. The other extra-budgetary income that comprises of donations, school fees, and administrative revenue also has higher inequalities higher than the budgetary. One can argue that the extra-budgetary could be equalizing even though the inequality is higher because poor provinces would obtain a larger share of their revenue from extra education levies: the higher inequality simply means that the large disparity in budgetary income could be oppositely balanced out by a larger unequal collection of education levies, and consequently, the inequality will be reduced. However, as we have seen from the regression in the previous section, this is not true. Provinces that spend more on education also extract higher education levies. Therefore for middle school education, extra education levies reduce spending equality rather than increase it. In 2006 and 2008, the inequalities are higher for total per capita education revenue than budgetary per capita education revenue, which suggests that extra-budgetary funding exacerbates inequality. However, the budgetary income per capita inequality for 2008 less than the inequality for total income per capita. This, again, contradicts the inequality of the per capita spending. This does suggest that even though extra-budgetary income widens the education income gap between richer and poor provinces, not all of that extra money is being used on education.

Overall, the inequality in education income rose from 2002 to 2008. Even though the policy of the central government changed in 2006 to allow them to share more financial responsibility for compulsory education, the inequalities are still rising for rural middle school education. 2008, again exhibits similar pattern as that of 2002 and 2006. The inequalities of total extra-budgetary income, extra-education levies, school fees and other revenues are higher than that of the budgetary income. Nevertheless, allowing local government to obtain more extra-budgetary funding from education levies is still a dis-equalizing factor. Despite the inequality in

extra-budgetary income, the income source that creates the most inequality is still budgetary income. The central government's recent actions to tackle inequality in middle schools have not seen its intended effect for rural middle schools.

**Table 8: Gini Coefficients of Elementary School Income Sources**

	2002	2006	2008
Budgetary	0.203	0.202	0.180
Extra-budgetary	0.264	0.354	0.455
(Extra Education tax)	0.305	0.603	0.495
(School Fees and Administrative Revenue)	0.318	0.324	0.499
(Other: including donations and enterprise)	0.258	0.354	0.491
<b>Total Income</b>	<b>0.190</b>	<b>0.208</b>	<b>0.194</b>

*Source:* State Statistical Bureau, *China Educational Finance Statistical Yearbook, China Educational Statistical Yearbook (2002-2008)*

The inequality in education income of elementary schools exhibits a similar pattern from that of middle schools. First of all, the total education income inequality rose from 2002 to 2006 and then drops to 0.194. This indeed reflects the government's intention of reducing inequality in primary education by allocating more central funding to poor provinces. The lower coefficient in total income in 2002 than the coefficient for budgetary income suggests that extra-budgetary revenue does indeed have equalizing effects. Yet, when looking at the expenditure inequality, the difference between the total and budgetary spending per capita is small. Nevertheless, in 2006 and 2008, that income equalization by extra-budgetary income has largely been neutralized by the inequality in extra-education levies. This is consistent with the inequality for education expenditure per capita.

## 2.4 Regional Analysis

This part of the research is similar to Section 2.2. By grouping provinces into regions such as Coastal, Northeastern, Central, and Western, we could see a better tabulated comparison between each region and how much education funding does each region obtains from extra-budgetary sources. The Northeastern provinces are usually not counted as one with some provinces considered central, and another coastal. However, since the early 2000s, the central government has carried out policies to rejuvenate the Northeast. This would inherently mean more budgetary funding, and thus more budgetary education funding.

**Table 9: Regional Comparison of Extra-budgetary Funding of Middle Schools**

	2002	2006	2008
Coastal	34.60%	26.41%	17.20%
North Eastern	25.72%	12.62%	5.49%
Central	34.96%	20.75%	8.09%
Western	22.89%	19.94%	6.83%

*Source:* State Statistical Bureau, *China Educational Finance Statistical Yearbook 2002-2008*

**Table 10: Regional Comparison of Extra-budgetary Funding of Elementary Schools**

	2002	2006	2008
Coastal	28.00%	20.40%	12.80%
North Eastern	20.40%	9.10%	3.90%
Central	29.50%	15.20%	5.10%
Western	18.90%	12.50%	4.40%

*Source: State Statistical Bureau, China Educational Finance Statistical Yearbook 2002-2008*

It can be easily seen from Table 7 and Table 8 that the Northeastern provinces have the lowest extra-budgetary income sources for 2006 and 2008. The coastal regions, to no surprise, have the highest extra-budgetary education revenue from 2006 and 2008. What is surprising is that the extra-budgetary revenue percentages for Central and Coastal regions are very similar in 2002. If extra-budgetary revenue is considered to be equalizing for provincial level spending inequality, then the share of extra-budgetary income for relatively poor provinces should be higher. The share of extra-budgetary income in Central provinces certainly exhibits that pattern in 2002. Central provinces are generally considered to be poor and low income. Nevertheless, the regions have lower budgetary income sources. This is probably due to the priority of the central government to focus more on the Western regions and the Northeastern regions. Table 9 and Table 10 gave us another indication that richer provinces indeed have a higher share of extra-budgetary revenue, and thus extra-budgetary cannot be considered equalizing.

**Table 11: Rural Education Expenditure Per Pupil as a Percent of GDP Per Capita and Total Government Outlay Per Capita**

	Middle School		Elementary School	
	Percent of GDP Per Capita	Percent of Government Spending Per Capita	Percent of GDP Per Capita	Percent of Government Spending Per Capita
2002	11.53%	6.31%	9.35%	5.12%
2003	11.70%	6.46%	10.12%	5.59%
2004	10.64%	5.99%	9.54%	5.37%
2005	11.09%	6.03%	10.31%	5.60%
2006	11.79%	6.17%	10.76%	5.63%

*Source:* State Statistical Bureau, *China Statistical Yearbook 2002-2006*

Table 11 takes the average of the per capita education spending of all the provinces and divides it by the percent of GDP spent per capita for year 2002 to 2006. It is easily seen that despite the rise in overall expenditure, the percent of education spending stays relatively constant with respect to expenditure per capita. Thus the decrease in extra-budgetary does not seem to correlate with overall decrease in percent of GDP per capita spent on education. This indicates that government policy is to compensate budgetary income with extra-budgetary income and vice versa to maintain a similar level of GDP spending per capita on education. Thus it suggests that extra-budgetary income does not necessarily become an equalizer, but rather in the sense to maintain a consistent level of education spending.

### **3. Discussion and Conclusion**

The purpose of this research is to examine the effect of extra-budgetary educational income on education inequality existed in Chinese public education of rural regions. Specifically it tries to determine whether extra-budgetary source of education income, as a result of the government's decentralizing and diversifying efforts in funding education, exacerbates or reduce provincial level inequality in rural primary and middle school education in China. The first section of the analysis has shown that extra-budgetary income exacerbates inequality in terms of provincial level per capita spending in rural education for year 2006 and 2008 in elementary, 2002 and 2006 for middle schools. This result contradicts the findings by Li, Park, and Wang, which claim an effect of reducing inequality in the provincial level. Similar Gini calculations on the education income analysis on more recent data confirmed that more decentralized and diversified education funding policy lead to increased inequality level in public education in 2006 and 2008 for both middle and elementary schools. Data analyses from different parts of this research have shown some inconsistencies on indicating that extra-budgetary funding exacerbates inequality rather than ameliorate it. The research also indicates that a larger portion of extra-budgetary financing comes from the extra-education levies, and that it is positively correlated with per capita spending. It was found that provinces that have the financial ability or adequate economic resources to spend on education per capita would also be able to levy higher percentage of extra-education taxes. This further indicates that extra-budgetary income is not an equalizing factor but rather, has a dis-equalizing characteristic to it, contrary to idealistic view on local revenue for education.

The research results reveal that rural primary education inequity in China is widening in the past few years. Regional economic inequity seems to be the primary cause for this discrepancy between education spending. The government's effort to tackle this inequity in

recent years has met with little success. This is due to the fact that inherent economic inequality that exists throughout China across different regions. Provinces vary greatly in the amount of money they spend on education, either budgetary or extra-budgetary. On one hand, provinces in coastal areas and economically well developed are able to obtain more education funding but also are able to obtain additional sources of revenue for primary education. The pattern is consistent with the economic behaviorist theory, which posits economic decision-making as based on popularity and easiness of choices, rather than on rational needs.<sup>1</sup> Extra-budgetary sources then become a dis-equalizing factor for public education in China. The unequal funding system will expectantly increase education inequality in terms of opportunities for students in the interior region of China for advanced education and college attendance.

Based on the empirical analysis, one can conclude that despite the centralized nature of the Chinese political system, the funding system of education in rural China shows perpetuated inequality and unequal access to education resources. Differences in economic development level between regions of the country are substantially reflected in the education funding system. Compared with the beginning stage of the People's Republic of China, and also with the period prior to economic reform, the economic structure of China today can be seen as more stratified and more unequal. Government organization and social policy makers should tackle the problems by reexamining the funding system to provide equal access to education for the people and reconstruct the structure of the public school.

To reduce spending inequality, it is necessary for the central government to shoulder more responsibility rather than delegate the main financial responsibility to each individual province. It has been pointed out earlier a pure centralized funding scheme would result in equal

---

<sup>1</sup> Thaler and Sunstein, *Nudge: Improving Decisions About Health, Wealth, and Happiness*.

spending, but at the cost of efficiency since local financing means control of the school is in the hands of the local governments who know better what is best for what their children needs, and can run it more effectively.<sup>2</sup> However, as argued based on the economic behaviorist theory and budget maximizing theory, even though education expenditure varies across different communities, allowing each province to generate higher revenue share from extra-budgetary funding to meet the adequate need of education spending only further contributes to inequalities in provincial level spending. It is implied that redistribution of funds from an area that has a surplus in funds to an area that does not have the means to spend an adequate amount on education could be a possible solution.<sup>3</sup> However whether the present leadership in Chinese government could accomplish it within the political environment would constitute a major challenge when China is advancing to more local control.

It is important to tackle this inequality problem for basic education in China. First of all, primary and early secondary education is especially crucial for education attainment level of a community. In the case of China, when interior regions and less developed rural areas are facing fiscal crisis for economic ventures, local governments often choose to sacrifice education expenditure. The result, as been noticed by many in China, colleges, especially those are considered prestigious and high ranked, see a shortage of students from inner rural areas. Students from more developed areas generally have higher scores, and lower admission requirements in the national college entrance exams and other scholarly competition.<sup>4</sup>

---

<sup>2</sup> Mark Gradstein, M. Justman and Volker Meier, *The Political Economy of Education: Implications for Growth and Inequality* (MA: The MIT Press, 2005).

<sup>3</sup> Zhang and Jiang, “Zhong guo sheng nei cai zheng fen quan de yan jin yu nong cun yi wu jiao yu de tou ru”, 59-63.

<sup>4</sup> Hongbin Li and Binzhen Wu, *China`s Educational Inequality: Evidence from College Entrance Exams and Admissions*, March 21, 2011, <http://china.usc.edu/ShowArticle.aspx?articleID=2390&AspxAutoDetectCookieSupport=1> (accessed April 1, 2011).

Besides the huge differences in economic development between different regions in China, there also exists an obvious gap in cultural environment between rural and metropolitan areas. For the past 3 decades, there appears an increasing trend for people of all trade to move from rural countryside region to urban cities. Big cities in the coastal regions are seeing a rapid flow of low skill, low educated workers from inner lands. As a result of the migration, the rural regions of the country therefore become further deserted; more children of the transient workers drop out from school in early age and start to work with their parents in cities.<sup>5</sup> That will increase illiteracy rate among the young people.

Furthermore, it is not a rare phenomenon to see existed gap between the incomes of teachers from different regions of China. The lower development level and cultural facilities would make it more difficult to keep trained professional teachers in the profession and in the rural areas.<sup>6</sup> Thus rural schools are more susceptible to problems resulting from lack of qualified teachers, plus inadequacy in school infrastructure. Another problem with respect to equity has been the devotion in disproportionate amount of resources to “key” schools due to the lack of adequate resources for all schools. In the eye of many policy makers, especially for rural areas, devoting resources to a particular school would concentrate meager resources into bringing high quality education for a selected few.<sup>7</sup> This favorable treatment of “key” schools attracts more qualified teachers, as well as students to leave the poor villages and consequently creates a multiple disadvantages for children from poor communities.

---

<sup>5</sup> Yiu Por Chen and Zai Liang, “Education attainment of migrant children: The forgotten story of China’s urbanization,” in *Education and Reform in China*, ed. Emily Hannum et. al. (New York: Routledge, 2007), 117-130.

<sup>6</sup> Hallak, *Investing in the Future: Setting Education Priorities in the Developing World*, 37; Lewin, Little, Xu Hui, and Zheng Jiwei, *Education Innovation in China*, 97-111.

<sup>7</sup> China Daily, *Harmful 'Key School' System Must Be Ended*, Feb 27, 2006, <http://www.china.org.cn/english/China/159391.htm> (accessed March 1, 2011).

The introduction of policies such as decentralization and diversification in public services help widen the education disparity.<sup>8</sup> As pointed out by Weiler, education decentralization helps government maintain legitimacy at the expense of state control. Finding a balance is important in managing the conflict between the effectiveness of control and legitimacy.<sup>9</sup> Ensuring quality education for all is not only a way to ensure the future successes of modernization, but more schooling theoretically also promotes more income equality and democracy.<sup>10</sup> Overall, policymakers need to correct imbalances, reduce inequalities in access to education, improve quality, expand coverage, and focus on the efficient use of resources.<sup>11</sup> To achieve that goal, centralized control on education financing should be a more rational option, as shown by the above empirical analysis. Education, which is considered the most basic “public” service, is one of the central areas Chinese government should focus on<sup>12</sup>. Politicians, educators, as well as concerned citizens, are noticing the problems of lacking access to quality education in poor regions of China, and developing various solutions to the problem. One possible solution is for the central government to assume more responsibility for school financing, and a more effective control on education expenditure of the local governments. China, as socialist state, is well known for its effective centralized control of economic and political activities, and should be able to exert strong control on education resources and education management, as long as its leadership acknowledge the importance of educational equity and improvement of conditions of its disadvantaged citizen.<sup>13</sup> For any society, education is not only a channel to equalize social opportunity for people, and also a determinant of human civilization, and economic development.

---

<sup>8</sup> Cavicchioni and Motivans, “Monitoring Educational Disparities in Less Developed Countries”, 218.

<sup>9</sup> Weiler, H. “*Education and power: The politics of educational decentralization in comparative perspective*,” in *Educational Policy*, 3 (1989): 31–43.

<sup>10</sup> Carnoy and Samoff, *Education and Social Transformation in the Third World*, 69.

<sup>11</sup> Hallak, *Investing in the Future: Setting Educational Priorities in the Developing World*, 64.

<sup>12</sup> *ibid.*, 78-81

<sup>13</sup> Carnoy and Samoff, *Education and Social Transformation in the Third World*, 362.

If a government, as power machine, does not address adequately the needs of people for education, due to claimed limited economic resources, consequently would unable to catch up with the pace of modernization and in the case of rural China, with the industrialization endeavor of the society. In all, in order to increase the material productivity of its citizens, and to promote economic development, the government should adequately manage the investment in the creation of human capital of its citizen. <sup>14</sup> The development of an equalized, universal education system rests upon the development of the state itself.<sup>15</sup>

---

<sup>14</sup> *ibid.*, 374

<sup>15</sup> *ibid.*, 378-379

## References

- Butler, J. and K. Robson. "Youth Inequalities." *Reassessing the Role of Education in Social Reproduction: The Impact of School Type on the Cultural and Social Capital of High School Students in the U.S.* Accessed March 15, 2011. [http://youth-inequalities.org/html/working\\_papers/working\\_papers.html](http://youth-inequalities.org/html/working_papers/working_papers.html).
- Carnoy, Martin and Joel Samoff, *Education and Social Transition in the Third World*. Princeton: Princeton University Press, 1990.
- Cavicchioni, Vittoria and Albert Motivans. "Monitoring Educational Disparities in Less Developed Countries," *In Pursuit of Equity in Education: Using International Indicators to Compare Equity Policies*, edited by Walo Hutmacher, Douglas Cochrane, and Norberto Bottani, 217-242. Boston: Kluwer Academic, 2001.
- Chen, Yiu Po, and Zai Liang. "Education attainment of migrant children: The forgotten story of China's urbanization." *In Education and Reform in China*, edited by Emily Hannum and Albert Park, 117-130. New York: Routledge, 2007.
- China Daily. "Harmful 'Key School' System Must Be Ended." Accessed March 1, 2010. <http://www.china.org.cn/english/China/159391.htm>.
- China Educational Financial Statistics Yearbook*. Beijing: China Statistics Press, 2002-2008.
- China Population Statistics Yearbook*. Beijing: China Statistics Press. 2002-2008.
- China Statistical Yearbook*. Beijing: China Statistics Press. 2002-2008.
- Coleman, James. *Equality of Educational Opportunity*, Study (EEOS). Washington D.C.: Government Printing Office, 1966.
- Curran, Daniel, and Claire M. Renzetti. *Social Problems: Society in Crisis*, 5<sup>th</sup>. Boston: Allyn and Bacon, 2000.
- Educational Statistics Yearbook of China*. Beijing: China Statistics Press. 2002-2008.
- Eitzen, Stanley, Baca Eitzin and Maxine Zinn, *Social Problems*. Boston: Allyn and Bacon, 2005.
- Fisk, Edward. *Decentralization of education: Politics and Consensus*. Washington, D.C: The World Bank, 1996.
- Funkhouser, Janie and Miriam R. Gonzales. *Family Involvement in Children's Education: Successful Local Approaches*. Washington: U.S. Department of Education, 1997.

- Gradstein, Mark, M. Justman and Volker Meier. *The Political Economy of Education: Implications for Growth and Inequality*. MA: The MIT Press, 2005.
- Hallak, Jacques. *Investing in the Future: Setting Educational Priorities in the Developing World*. Paris: Unesco, International Institute for Educational Planning. Oxford: Pergamon Press, 1990.
- Hannum, Emily. "Political Change and the Urban-Rural Gap in Basic Education in China 1949-1990." *Comparative Education Review* 43 (1999): 193-211.
- Hernandez, R. "New York Times," *Revolt Against School Spending Reaches the Wealthiest Suburbs.*" Accessed March 22, 2011.  
<http://www.nytimes.com/1995/01/18/nyregion/revolt-against-school-spending-reaches-the-wealthiest-suburbs.htm>
- Kwong, Julia. "The Integration of Migrant Children in Beijing Schools." In *Education and Social Change in China: Inequality in a Market Economy*, edited by Gerard A. Postiglione, 163-179. Armonk: M.E. Sharpe, 2006.
- Lewin, Keith, Angela Little, Xu Hui, and Zheng Jiwei. *Education Innovation in China*. Essex: Longman, 1994.
- Lee, Friedman. *The Microeconomics of Public Policy Analysis*. Princeton. NJ: Princeton University Press, 2002.
- Li, Hongbin, and Binzhen Wu, *Educational Inequality: Evidence from college Entrance Exams and Admissions*. Last modified March 21, 2011.  
<http://china.usc.edu/ShowArticle.aspx?articleID=2390&AspxAutoDetectCookieSupport=1>
- Li, Wen, Albert Park, and Sangui Wang. "School equity in rural China." In *Education and Reform in China*, edited by Emily Hannum and Albert Park, 27-43. New York: Routledge, 2007.
- Olson, Marcur. *The Rise and Decline of Nations: Economic Growth, Stagflation, and Social Rigidities*. New Haven: Yale University Press, 1982.
- Qian, Xiaolei and Russell Smyth. "Measuring Regional Inequality of Education in China: Widening Coast-Inland Gap or Widening Rural-Urban Gap." *Journal of International Development* 20 (2008): 132-144.
- Rong, Xue Lan and Tianjin Shi. "Inequality in Chinese Education." *Journal of Contemporary China* 10 (2001): 107-124.
- Rouse, Cecilia, and Lisa Barrow. "U.S. Elementary and Secondary Schools: Equalizing Opportunity or Replicating the Status Quo?." *Opportunity in America* 16 (2006). Accessed April 15, 2011.  
<http://futureofchildren.org/futureofchildren/publications/journals/article/index.xml?journalid=35&articleid=89&sectionid=541>.

- Sewell, William. "Inequality of Opportunity for Higher Education." *American Sociological Review* 36 (1971): 793-809.
- Schultz, Theodore W. *The Economic Value of Education*. New York: Columbia University Press, 1963.
- Sunstein, Cass, Richard Thaler. *Nudge: Improving Decisions About Health, Wealth, and Happiness*. New Haven, CT: Yale University Press, 2008.
- Treiman, D.J. and K Terrel. "The process of status attainment in the United States and Great Britain." *American Journal of Sociology* 81 (1975): 563-683.
- Tsang, Mun. "Financial Reform of Basic Education in China." *Economics of Education* 15 (1996): 423-444.
- UNESCO, *National Literacy Policies*, July 2002. Accessed March 20 , 2011.  
<http://www.accu.or.jp/litdbase/policy/chn/index.htm>.
- Wang, Feiling. *Organizing Through Division and Exclusion: China's Hukou System*. Stanford: Stanford University Press, 2005.
- Wang, Zhicheng. "Wen Jiabao pledges school reform to counter economic crisis." *Asia News*. January 5, 2009. <http://www.asianews.it/news-en/Wen-Jiabao-pledges-school-reform-to-counter-economic-crisis-14138.html>.
- Weiler, H. "Education and power: The politics of educational decentralization in comparative perspective." *Educational Policy* 3 (1989): 31-43.
- Zhang, Guang and Yini Jiang. "Zhong guo sheng nei cai zheng fen quan de yan jin yu nong cun yi wu jiao yu tou ru." *Education and Economics* 3 (2008): 59-63.