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China's Investments in Human Capital and Long-Term Development

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Abstract

The paper discusses issues regarding China's investments in human capital, focusing on investments in education and health care. China has very high saving/investment rates, nevertheless, public expenditures on education and health care have been rather low by international standard. The paper argues that the government should give higher priority to basic education, increase funding for education in rural areas, and in the meantime, reduce barriers to higher education by non-government investments. China's health sector is facing the problems of narrow coverage, increasing costs, declining equity and efficiency. The critical issue for urban health care is to restructure the financial incentives of providers by introducing cost-containing payment methods, and promoting fair competition among providers of different ownership. The government should also increase public funding for health care in rural townships, institute some risk-sharing scheme for rural households. The study proposes a new community health scheme based on the integration of resources available at the county/township health institutions. China's demographic transition will necessarily lead to significant changes in the comparative advantages of the economy in the next 30-50 years. Increased investments in human capital will make China better prepared for such changes, and promote its long-term sustainable growth.

INTRODUCTION

The past two decades have evidenced a dramatic growth of China's economy, accompanied by significant improvement in the people's standard of living. This achievement can to a large extent be attributed to the better utilization of the country's abundant labor resources through their transfer from agriculture to manufacturing, and the consequent improvement in agricultural productivity and the expansion of manufacturing sector, which has enjoyed its comparative advantage in labor intensive industries in the international market.

In more recent years, or more precisely, since the 1997 Asian financial crisis, the newly emerging problem of significant over capacity of manufacturing and the sluggish aggregate demand, especially the consumption demand, manifested the transfer of the economy from supply-driven to demand-driven. The growth of the economy becomes dependent more on aggregate demand than supply. In order to stimulate the aggregate demand and hence the growth of the economy, the government has

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carried out expansionary fiscal policies through issuance of additional government bonds to mainly banks to finance public construction projects.[1] Physical investments in general, and government investments in particular, were the fastest growing components of GDP relative to household consumption.

China's saving/investment rates have been very high by international standard.[2] In the meantime, however, China's investments in human capital, if measured by such investments/ expenditures relative to GNP/GDP, have been very low. This pattern of investments biased toward physical capital at the costs of human capital may have adverse impact on the country's long-term development.

The importance of human capital as a source of economic growth was first acknowledged by T. W. Schultz (1961), who argues that the concept of capital should be extended to include knowledge and skills. Later literature on endogenous growth model argues that the source of growth lies in the technological progress resulted from the accumulation of knowledge or human capital (Lucas 1988). In the new era of rapid technological progress and the so-called "knowledge-based economy," investments in human capital have become even more important for sustainable growth than investments in physical capital. China has some more specific reasons to invest more in human capital. These reasons can be listed as follows:

It is likely that in China investments in human capital have higher rates of return than investments in physical capital. Given the general over capacity of manufacturing, returns to the investment in physical capital, as approximated by rate of return in the capital market, have been declining. Some studies argue (e.g. Liu Guoguang 2002) after several years of expansionary fiscal policy, the efficiency of government investments will inevitably deteriorate, and the multiplier effect of these investments will diminish. In addition, the increased government intervention as a result of expansionary fiscal policy contradicts the goal of the reform.

Returns to individual investments in human capital have increased during the reform era. Recent urban household survey finds that Children's education is the important reason for urban households to save (Fang Yan 2002). In addition to the Confucian believes that give high virtue to education and intellectuals, the behavior is also justified by the fact that investments in education have become more rewarding in terms of better job opportunities and higher incomes, even if the social benefits of education are not taken into account by individuals.

Investments in human capital can contribute to a more equal pattern of growth. Johnson (2000) argues that unequal access to primary education and basic health care represents one important source of urban-rural income inequality. Therefore, more government funding to basic education and health care in poor rural areas can serve as an important tool to reduce urban-rural inequality and absolute poverty.

Due to the limited space of this paper, the discussion of investments in human capital will focus on

education and health care. After the introduction of this section, Section 2 will discuss issues on education, focusing on the financing of the sector. Section 3 will discuss the issues on health care, addressing major issues in urban health care and rural health care separately. Section 4 will conclude the paper with some concluding remarks.

EDUCATION

Government Target and Inadequate Funding of Education

The target to achieve universal nine-year compulsory education by Year 2000 was first announced by the central government in 1985, and was formally adopted in the Compulsory Education Law in the next year. In 1994, the government promised that by the end of year 2000, government expenditures on education would reach 4 percent of GNP. However, in 2000 the actual government expenditures on education are merely 2.5 percent, a shortfall of 1.5 percentage of GNP, or more than Y130 billion.[3] The figure of 2.5 percent of GNP is even lower than the figures in many other developing countries. Moreover, the unequal allocation of the scarce education funds between rural and urban areas, and between basic education[4] and higher education, has made inadequate funding a more severe problem in rural basic education.

In order to mobilize local governments and non-government resources to speed up the development of basic education, reform initiatives were made by the central government in 1985 to decentralize the administration and financing of basic education. The principles of decentralization require that "the local governments be responsible for basic education, with a division of administrative duties between different levels of government" *(difang fuze, fenji guangli)*. In the later development, this principle has evolved to "two-level administration and three-level funding" *(liangji guanli, sanji banxue)*, meaning that basic education is administered by counties and townships, and financed by, counties, townships and villages.[5]

The emphasis on the decentralization of basic education has played some positive role in the mobilization of the resources and rapid development of basic education, nevertheless, it has contributed to the increased inter-regional inequality in China's basic education system. Although such decentralized education system is common in many countries, it has produced more inequality in China due to some of its characteristic features: the abnormally large inter-regional and urban-rural income disparities, the lack of need-based inter-governmental transfers, and the government restrictions on population and labor mobility. As the better-off rural townships/villages in the prosperous coastal provinces can draw much of their funding from the township and village enterprises (TVEs),[6] poor townships/villages have little local revenue base to finance basic education. The under-funding of basic education in poor areas has resulted in poor physical conditions and inadequate staffing of schools there, and heavy financial burden falling on rural households (Zuo

1997).

In poor areas, low level (county and township) governments tend to have severe financial difficulties. It is quite common there that the government can hardly pay the salaries of teachers,[7] whereas overhead operation costs have to be collected from students in the form of "miscellaneous fees" *(zafei)* and the financing of reparation/construction of school buildings heavily depends on self-raised funds by the rural communities. Many children from poor households cannot attend school, as their parents are not able to pay the miscellaneous fees. Empirical studies find that financial difficulties in paying the miscellaneous fees represent the most important obstacles for children from the poor households to attend school. The World Bank (2001) reports that as many as half of the boys in many of China's poorest villages and, particularly in some minority areas, nearly all of the girls do not attend school and will not achieve literacy.

Poor counties have their own problems in the allocation of scarce fiscal funds, in the sense that basic education has received lower priority as compared with competing uses. In the presence of the national wage scheme for civil servants, the differences between the salaries of civil workers and earnings of alternative local jobs in poor townships are extremely large.[8] This provides local governments of poor counties/townships with strong incentives to expand the government body to provide more government jobs. As a result, many low level governments are over-staffed, and most of their fiscal funds are exhausted by the labor costs of the civil workers, sometimes are heavily indebted. In her case study of a county in Gansu Province, Wang Rong (2002) provides a vivid description of the budgeting process there and how the labor costs of over-staffed governments "crowd out" fiscal funds available for education and other services.

There are also some other resources available to the poor counties, unfortunately, very little were spent on basic education and health care. For instance, according to China's "8-7 Poverty Reduction Plan" (8-7 Plan), China allocate more than US$2 billion (about half in the form of grants and the other half in the form of subsidized loans) in annual funding for poverty alleviation programs, however, a major share of the funds were wasted in the investments in many township and village enterprises (TVEs), which were later found not competitive in the market, and hence were losing money or went bankrupt. Unfortunately, little were spent on basic education and other investments in human capital such as basic health care.

For most education and health care services provided, profound urban-rural differentials in the quantity (coverage) and quality of such services were commonly observed. The problem is not the disparity itself, but rather the abnormality in the scale of such disparity by international standard. Based on the 1990 Census data, the illiterate and semi-illiterate accounted for about 12 percent of the adult (15 years and older) population in urban areas (cities and towns), while accounting for over 26 percent of the adult population in rural areas (counties), more than double the urban figure. The

illiterate/semi-illiterate rate is as high as over 37 percent of the female rural adult population (Population Census Office 1991). The same source reports that about 60 percent of urban population attained secondary education, and only 38 percent of rural population attained the same level. Even sharper contrast can be found for higher education: over 7 percent of the city adult population, and 3.8 percent of the town population attained higher education, while merely 0.24 percent of the rural adult population attained the same level.

Intra-Sector Allocation of Funds

The intrasector allocation of education funds demonstrates a pattern of strong bias toward higher education. In 1998, for instance, the per student budgetary expenditures on general higher education is Y8,365, while that on general primary education is only Y342 (State Education Commission and State Statistical Bureau 1998), the ratio of the former to the latter is as high as nearly 25.[9] By comparison, this ratio is lower than 1 in Japan, Korea and Canada, between 1 and 2 in USA and France, in the neighborhood of 4 in Singapore and Mexico, and 6.7 in India. Brazil is an outlier as it has a very high ratio of 10.4.[10] But no country has a ratio comparable to China.

In most countries the governments give higher priority to the financing of basic education to ensure easy access by all children, including the poor, while leaving more rooms to non-government funding for higher education. In China, however, we see exactly the opposite: the government has spent very little on basic education; in the meantime, it is more generous to fund higher education, and is very restrictive to the entry to higher education by non-government sector.

Higher education has been heavily regulated by the government, based on the believes that education is a "course of public interests," and hence should not be delivered by the profit-seeking private institutions, and the pricing of education should be regulated by the government to ensure its welfare nature. In recent years, there has been a national debate on whether higher education can be regarded as an industry, and whether the government should deregulate higher education and relax its micro control over higher education institutions.

The total enrolment of higher education institutions increased faster in recent years. The number of total enrollment at higher education institutions increased from 2.91 million to 5.56 million over five-year period of 1995-2000. By comparison, total enrollment increased only from 2.06 million to 2.91 million over 1990-95 (SSB 2001). The expansion of higher education is clearly reflected in the new recruitments. The new recruitments of the regular higher education institutions more than doubled from 0.93 million in 1995 to 2.21 million in 2000.

However, the expansion is dominated by the 3-year vocational higher education program (*gaozhi ban*) of the public universities as required by the government. For instance, the enrollment of the 3-year program account for 33 percent of the total enrollment of higher education institutions in 1999, it

increased to 38 percent in 2000 (SSB 2001, p. 653). This government-directed expansion might be incompatible to the demand in the labor market.

Direction of Future Reforms

China's fiscal expenditures on education have been very low by international standard. The unequal allocation of the fiscal education funds make inadequate funding a more severe problem of basic education in poor rural areas. As unequal access to basic education is also an important source of income inequality, in order to promote sustainable and more equitable growth, the government should start with ensuring universal and more equal access to basic education.

The government should show stronger political will and commitment to achieve the unfulfilled target set for Year 2000; that is, the government expenditures on education equal to 4 percent of GDP. If the government decides to achieve this target in the near future, say, in 2004, then the total fiscal funds available for education will be more than Y460 billion,[11] more than double the current expenditures. If the government spends most of the incremental funds on basic education, especially rural basic education, then most of the funding problems in poor villages and townships will be resolved. The government should set a new target on education expenditures in longer term, say, to spend 6 percent of GDP by year 2015.

It is imperative to ensure the highest priority given to basic education, especially rural basic education in the allocation of fiscal funds. A criterion for per student expenditures should be made, so that it can serve to determine the minimum fiscal expenditures on education in each township. For those poor townships that do have financial difficulties to meet the standard, the inter-governmental fiscal transfers should be available to fill the gap. It is also an essential task to prevent the county/township governments from diverting the education funds for other purposes. A close monitoring/supervision on the actual use of the funds by the Ministry of Education and its local agencies, and the democratic monitoring by the public and the local people's congress should be instituted and strictly implemented.

The government's restrictive regulation on higher education, a legacy of the past planning regime, has made higher education heavily dependent on government funding and hence has restrained its development potential. With China's access to WTO and the foreign investments' entry into higher education as agreed by the Chinese government, the government should move quickly to deregulate higher education to mobilize more non-government resources, and to promote a faster development of the sector.

HEALTH CARE

Financing, Coverage and Efficiency of Health Care

China's health care sector is facing some problems similar to those of education: inadequate funding, deteriorated equity and efficiency. In 1998, the total expenditures on health care amounted to Y377.6 billion, accounting for nearly 5 percent of GDP in the same year.[12] But rural share was only below 25 percent of the expenditures, despite that rural population accounted for about 70 percent of the total population. This rural share was even 10-percentage lower than the figure in 1993. Somewhat surprisingly, government expenditures on health care show a stronger urban bias. Of the Y58.7 billion government expenditures, only Y9.3 billion, or 16 percent were spent on rural population (Li Changming 2000). In the recent WHO (2000) evaluation of fairness of financial contribution to the financing of health system among the 191 countries, China was ranked the 188th. [13]

The coverage of China's public health insurance has been very narrow. The old labor insurance and government insurance together covered only urban formal employees and partially their dependents.[14] Although the new urban health insurance claimed "broader coverage" as one of its targets, by the end of year 2000, the new insurance covers only about 43 million urban workers, accounting for less than 4 percent of the total population of the country *(DRC Net 2001)*.

An international comparison on health care expenditures and the coverage of health insurance indicates that China's health system is not cost-effective. China spent nearly 5 percent of GDP, but the old and the new health insurance schemes together cover only a small proportion of the total population.[15] By comparison, China's Taiwan Province achieved universal health insurance with only 5 percent of GDP, the United Kingdom accomplished free health care with about 5.8 percent of GDP; and Singapore and Japan instituted health insurance of broad coverage and low co-payment with, respectively, 6.1 percent and 7.4 percent of GDP. [16]

Moreover, the past division of labor among the three-level health care providers was broken up, since all three levels of providers are competing in the market for revenue-generating curative care, while neglecting preventive care, which are more cost-effective for the society but cannot generate revenues for the hospitals.

It seems that urban and rural areas are facing different sets of problems. For urban areas, the critical issue is how to contain the costs, and how to allocate the scarce health resources more efficiently. For rural areas, on the other hand, the critical issue is how to increase the funding to health care, and to establish an affordable and sustainable health scheme for rural households. The following sections will discuss the urban and rural health issues respectively.

Urban Health Care

Since the reform in late 1970s, the health care providers in China have experiences a process of "marketization." Fees derived from services and drug sales replaced the fiscal appropriations to become the main sources of revenues. Nevertheless, due to the lack of cost-containment mechanism for both providers and consumers, the escalating health care expenditures placed some enterprises and local governments in serious financial difficulties. The reform of the urban health care system intensified since 1990s. Based on the pilot programs in Zhenjiang City of Jiangsu Province and Jiujiang City of Jiangxi Province, the State Council (1999) issued its "Resolution on the Establishment of Basic Health Insurance for Urban Workers and Staff" in 1998, which provides a guideline for the new reform initiatives.

The resolution mandates locality (prefectures, cities or counties) pooling of health insurance funds. Both employers and employees are required to contribute a certain percent of their total payroll/individual wage rates to the funds. Cost-containment measures are introduced, primarily on the demand side.[17] The resolution also calls for the simultaneous reforms of health insurance, health care provision and the distribution of drugs.

The reforms so far have achieved some successes. Compared with the old, enterprise-based system, the locality-pooling of health insurance funds enhances its capacity of risk sharing, and makes the financial burden of health care more even across enterprises of different age structure. The cost-containment measures on the demand side prevent the insurees from over-using health care services and drugs.

Nevertheless, the cost-containment measures on the demand side have not been very effective in curbing the escalating health care expenditures. The average costs per outpatient visit and per inpatient treatment increased by more than 10 percent in 2000. The incremental expenditures were mainly born by the patients.[18] The reform in the distribution of the pharmaceutical products has not produced satisfactory outcomes, as it is in odds with financial incentives of the providers.

Therefore, the critical issue in urban health insurance and provision of services is how to overcome its low efficiency. Before we can propose some measures to enhance efficiency, let us first investigate where the low efficiency comes from.

Obviously, one explanation for the low efficiency lies in the providers' financial incentives derived from the "fee-for-services" payment method (FFP), which is the prevailing payment method used in China. FFS means an ex post payment by health insurers to providers based on the services provided. By associating a hospital's revenue with the amount of services provided, it invites hospitals to over-provide services. In economics, this is called "supply-induced demand."

Furthermore, in order to finance the operation of the health institutions, the government allows

providers to charge 15 percent profit margin on their drug sales. Another "gray" revenue related to the drug sales is the "kick-backs" providers receive when they buy drugs from distributors. The "kick-backs" can be as high as 30 percent of the total purchase. These practices have led to serious over prescription of drugs in China. In 2000, expenditures on drugs accounted for 62.1 percent of the expenditures on outpatient services, and 49.2 percent of the inpatient services (Hu Xiaomeng 2000). These figures are much higher than the average 5-20 percent of the OECD countries and 15-40 percent for developing countries (World Bank 1996).

In fact, there are several alternative payment methods, which can encourage providers to contain costs and use health resources more efficiently. The basic strategy of these alternative methods is to de-link the payment to providers from the amount of services provided. Therefore, the predetermined payment standard can be made based on capitation, per diem, or diagnostic related group (DRG), or a mixture of these approaches. Capitation, in particular, can also encourage the providers to pay more attention on preventive care, since the best way to save is to make the insurees healthy.

Some people are concerned with the possibility that under the new payment methods, the providers may save their costs by lower the quality of services provided. This can be avoided through two measures. The government and the public should supervise closely the quality of services, and disclose the information about their performance to the public. In addition, maybe more importantly, the government should allow the insurees to choose among different health care providers and different payment methods. Those providers which offer poor services would eventually lose their customers (contracts), and hence fail in the market competition.

Another explanation for the low efficiency of urban health sector is the government's micromanagement of the providers and the lack of competition among them. As a legacy of the past planning system, the government is still conducting micromanagement of the public hospitals. For instance, the government pricing of most health care services has led to serious price distortion and related inefficient behavior. As many physicians are underpaid, the "immoral" practice to get "gray incomes" is very common. Due to the lack of autonomy, most public hospitals are poorly managed, over-staffed and not competitive in the market, the situation very similar to the pre-reform state-owned enterprises.

The concerns over the possible "market failure" in the health sector, and over equity in the utilization of heath care facilities, justify government intervention into the sector. However, there are various models of government interventions in fund-raising and service provision. For instance, in the UK public sector takes full responsibility in both fund-raising and service provision. On the other extreme, say, in the US, the private sector provides both health insurance and health care services for most employees. Health system in many other countries are in the between, in that the governments are responsible for fund-raising, but providers of different ownership deliver services. This is the case

of Germany, and the US Medicare and Medicaid programs. In order to enhance efficiency in health system, many countries introduce more market mechanism to health care provision.

In China the government is responsible for fund-raising, and the public hospitals provide services. One direction for future reform is to let the government raise funds, and let providers of different ownership to deliver services. The government should encourage the fair competition among different providers. The public health insurance scheme can purchase services from different providers based on their performance through contracting with them.

Rural Health Care

In early 1980s, the dismantling of the commune system terminated the cooperative medical scheme (CMS), which had been proved cost-effective in the countryside for more than a decade. It is argued that, however, even the commune system had survived during the reform, CMS would have had financial difficulties to sustain for long given the macroeconomic setting of the "marketization" of the health care providers and the escalating health care costs.

Since early 1990s, there have been many efforts to restructure the CMS in the countryside. The common practice of re-structuring is to pool the insurance funds collected from the rural households/rural enterprises by the township governments, then part of the household health care expenditures can be reimbursed by the insurance scheme. Apparently, the scheme is of primitive form, in the sense that the risk pools are too small (a township in China on average has about 15,000 population) to function effectively, the benefits offered by the insurance tend to be inadequate, and the insurance scheme has no control over the providers' expenditures. Moreover, even if the restructure of CMS succeeded in some wealthy coastal areas, it deemed to fail in poor townships, simply because such CMS based on "fee for services" is not affordable in poor hinterland townships.

In the absence of any health insurance, rural households are vulnerable to health risks. Their access to health services has deteriorated since 1980s. While in urban areas the major diseases and the causes of death have shifted from infectious diseases to non-communicable chronic diseases, the process called "epidemiological transition," rural population continue to have much higher morbidity of infectious diseases such as hepatitis, pulmonary tuberculosis, malaria and etc. Empirical evidences show that about 30 percent - 40 percent of the incidences of rural poverty are related to the poor health of the household heads or other household members (World Bank 1992, 2001; Gu, Tang and et al. 1994).

Inadequate funding is not the only problem in poor rural townships. Most fiscal funding for public health is spent on the labor costs of health workers in the county and township health institutions. These institutions tend to be repetitive, overstaffed, and with low workload.[19] Although all these

public health institutions receive government funding, they have no obligation to provide free or low-price services to rural households. In contrast, they charge patients with full market prices on the basis of "fee for services." In most cases, providers are so merciless that they will not give any treatment to the patients who are not able to pay required deposits ahead of the treatment.

Nevertheless, many township health stations have fallen into financial difficulties, as the high costs of services tend to discourage rural households from using their services. Rural households turn to "informal institutions," namely private village doctors, when the illness is not severe. These village doctors often are not well trained and not qualified, but deliver services at lower, affordable prices. Once the illness is so severe that the village doctors cannot handle, and the patients can afford to seek for care outside the village, they are more likely to go to the county hospitals rather than township health station. As a result, many township health stations complained for their very light workload and the consequent financial difficulties. Some township health stations are contracted to private physicians or even privatized.

Therefore, to improve rural households access to health facilities, the government needs to increase funding for health care in poor townships. In the meantime, efforts should be made to enhance the efficiency of the rural health system. Some risk-sharing insurance scheme should be established to provide universal coverage to rural households, and facilitate their access to both curative and preventive care, free or at the affordable costs for rural households.

As discussed earlier, the government has spent some funds on the operation of county and township health institutions. Since the government funding is not adequate, the county and township health institutions have to seek for additional revenues by charging the patients with full market prices. The high prices in turn discourage the utilization of the services by rural households. With the limited number of patient visits, the providers have to charge these patients with even higher prices. Hence there is a vicious circle facing the providers.

One strategy to break down this vicious circle is to allocate some additional funds to township health stations so that the total funding will be adequate for their operation, in exchange, township health stations have to provide preventive and curative care to all rural households in the township. This new medical scheme proposed here can be called "Community Medical Scheme on the Basis of Resource Integration," or New CMS. One feature of the new CMS is to pool the health care resources available at the township and village together, and use these integrated resources to serve the rural households.

Now the question is, where to get the additional funds to finance the new scheme. It should not be difficult in the better-off townships. The additional funds for the new CMS there can be collected from the rural households and enterprises. However, external assistance would be needed in those poor townships to subsidize the new scheme. Some earmarked government funds, such as the poverty

alleviation grants, can be used for this purpose.

Under the new CMS, the network of services providers will include the qualified/authorized village doctors, the township health station, and advisors/consultants invited from county hospitals or other health institutions. Village doctors will work as general practitioners (GP) in the scheme. They provide the basic preventive and curative care to the households in the village, and refer patients to township health stations when it is necessary. The village doctors are salaried and administered by the township health station. The township health station should also train the village doctors and monitor/evaluate their performance. With the help of the outside advisors, the township station should be able to provide more sophisticated care to the insurees. In cases of very severe illness, the township should refer patients to county hospitals, bargain a good price with the hospital and cover part of the expenditures with the scheme.

CONCLUDING REMARKS

In the next 20-50 years, as a result of dramatic fertility decline since 1970s and the prolonged life expectancy, the continued progressive aging of the population will significantly alter the comparative advantage of the Chinese economy. China will inevitably lose its competitiveness in labor-intensive manufacturing to other developing countries with younger population, say, South Asian countries. The industrial structure of the Chinese economy will be forced to upgrade to more capital/technology-intensive production. As knowledge and human capital are becoming more important for sustainable growth than the traditional factors of production, the best strategy to prepare for such structural change is to invest more in human capital, first of all, in education and health care.

Although China has a very high investment rate, public expenditures on education accounted for only 2.5 percent of GNP. It is very low by international standard. Inadequate funding of education is more severe in rural villages and townships. As the first step, the government should increase the fiscal expenditures on education to 4 percent of GNP in near future, say, by 2004. This will build a solid foundation for achieving the government target of universal 9-year compulsory education.

In the allocation of government funds for education, higher priority should be given to the financing of rural basic education. A criterion for per student expenditures should be made to calculate the minimum fiscal expenditures on education for each township. External assistance in the form of inter-government transfer should be available to the poor townships which have financial difficulties to meet the criterion. Measures should be taken to prevent low-level governments divert the funds for other uses.

In 2000, only 3.6 percent of the adult population had higher education attainment. The excess demand for higher education has continued to exist. In addition to the very high income elasticity of consumption on higher education services, the government's regulations and controls over higher

education institutions have restricted the development of the sector. In order to speed up the sector's development, the government should de-regulate higher education and encourage the investments of non-government sector into higher education.

In recent years, China's health system underwent several important reforms. But so far the new urban health insurance scheme covers only a small proportion of the population. China's allocation of health expenditures, just like that of education expenditures, has been characterized by strong urban bias, high-degree of inequality, and low cost-effectiveness.

The critical task of the further reform of urban health system in future is to contain costs, enhance efficiency and enlarge its coverage. To fulfill this task, initiatives should be made to re-structure the financial incentives of health care providers by replacing the fee-for-services payment method with new, cost-containing payment method such as capitation, and de-regulate the sector by encouraging fair competition among providers of different ownership.

The critical task of the further reform of rural health system in future is to increase funding in poor rural townships. The government funding to county and township health institutions has not turned effectively into provision of services to the rural households. As the funding is not adequate, all the institutions charge patients with full market prices, and hence discourage the utilization of health facilities by the rural households. With some additional funding collected from rural households, or with financial assistance from the government, it is possible to restructure a community health scheme based no the integration of resources available in the present rural health network.

NOTES

1) The term "additional bonds" (*zengliang guozai*) here means the bonds issued in addition to the bonds for the financing of the government deficits. Since 1998, these additional bonds have amounted to more than Y500 billion.

2) In 1997, China's investment rate was 38.2 percent, and saving rate 42.7 percent (Liu Hong 1999).

3) In 2000, China's GNP is Y8,819 billion, and GDP Y8,940 billion (*China Statistical Yearbook* 2001).

4) Here the term "basic education" is used interchangeable with "nine-year compulsory education."

5) Here Chinese word "banxue" means both financing and management. Villages are not regarded as a level of administration, partly because they are not a level of the government hierarchy.

6) In 1990s, most of the TVE's in the country were privatized into cooperative share-holding firms (*gufen hezuo zhi qiye*).

7) For many years, many poor counties/townships are not able to pay the salaries of their primary school teachers. The problem has attracted attention from the central government and the public, however, it has not been effectively resolved yet.

8) According to the national wage scheme for civil servants, the lowest annual salary can be in the range of

Y6000. This is not high compared to the per capita rural household income in prosperous coastal areas. Nevertheless, it is very high compared to the per capita income in poor townships. It is worth noting here that the official rural poverty line was only Y635 per capita in 1998.

9) The per student expenditures of all sources for general higher education is Y10,666, while that on general primary education is Y591. The ratio of the former to the latter is about 18, lower that the ratio of per student budgetary expenditures. This indicates that the budgetary expenditures have even stronger bias toward higher education than general expenditures.

10) Calculated based on the data in Liu Hong (1998). *The Yearbook of International Statistics*.

11) China's GNP in 2000 is Y8819 billion, and GDP Y8940 billion. Assuming that the economy will grow at 7 percent per annum, then in 2004, the country's GNP and GDP will be, respectively, Y11560 billion and Y11719 billion, implying that 4 percent of GNP or GDP will be more than Y460 billion.

12) China's GNPand GDP in 1998 were respectively, Y7696.72 billion and Y7834.52 billion (China Statistical Yearbook, 2001), and hence total expenditures on health care accounting for 4.9 percent of GNPand 4.8 percent of GDP.

13) The indicator measures the ratio of the households expenditures on the financing of health care (including taxes/fees for health insurance) relative to the total expenditures excluding expenditures on food. A low ranking of the fairness implies that the low-income households spend higher proportion of their incomes on the financing of health care as compared with the better-off households.

14) Labor insurance covered the employees of state-owned enterprises and urban collective enterprises. Government insurance covered the employees of general government and public institutions, and college students. Both could cover, partially their employees' dependents by allowing them to reimburse 50 percent of their health care expenditures. Labor insurance was funded by individual enterprises, while government insurance was funded by various level of governments.

15) In 2000, the total urban employment was 212.74 million, among which 96.01 million were employed by state sector and urban collective enterprises. Even if we assume rather optimistically that all the 212 million were covered by labor insurance or government insurance, then the total coverage of the two insurance schemes was about one-sixth of the total population. But in fact, employment of private sector are rarely covered by any insurance.

16) WHO, 2000 World Health Report for UK data, the World Bank reports and OECD health data for the remaiing data, as cited by Hu Dewei (2000).

17) These measures include: 1) to classify the health insurance fund into individual account and social pooling account, the former is to be used primarily for payment for outpatient services, and the latter primarily for inpatient services; 2) to introduce the deductible equal to 10 percent of the patient's annual wage rate; 3) to introduce the ceiling equal to four times of the average annual wage rate of the locality, any expenditure beyond the ceiling cannot be recovered by the social pooling account, and; 4) to require users to pay a cer-

tain percent of their expenditures (co-payment) when their expenditures are between the deductible and the ceiling.

18) Two surveys conducted by the Ministry of Public Health (MPOH) reveal that the share of users' out-of-pocket expenditures increased from 70 percent in 1993 to 76.4 percent in 1998 (MoPH 1999).

19) A typical county seat has a concentration of many repetitive county health institutions, including the county hospital, county hospital of traditional Chinese medicine, county station of epidemic prevention, county station for maternal and child health, county family planning station, and in some cases, more specialized health institutions such as TB prevention station, schistosomiasis prevention station, leprocy prevention station, and etc.. In addition, almost every township has a township station, with more than 10 health workers and staff salaried by the township government.

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