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Working Paper

Transfers, and the Challenges for Social Protection Systems in the People's Republic of China

ADB Economics Working Paper Series, No. 291

Provided in Cooperation with:

Asian Development Bank (ADB), Manila

Suggested Citation: Chen, Qiulin; Eggleston, Karen; Li, Ling (2011) : Transfers, and the Challenges for Social Protection Systems in the People's Republic of China, ADB Economics Working Paper Series, No. 291, Asian Development Bank (ADB), Manila, <https://hdl.handle.net/11540/1994>

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ADB Economics Working Paper Series



Demographic Change, Intergenerational Transfers, and the Challenges for Social Protection Systems in the People's Republic of China

Qiulin Chen, Karen Eggleston, and Ling Li

No. 291 | November 2011



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Asian Development Bank

Asian Development Bank
6 ADB Avenue, Mandaluyong City
1550 Metro Manila, Philippines
www.adb.org/economics

©2011 by Asian Development Bank
November 2011
ISSN 1655-5252
Publication Stock No. WPS124298

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Abstract

The transition in the People's Republic of China from a centrally planned economy to a market-based economy is widely acclaimed for leading to unprecedented economic growth, but there is a growing awareness of the social strains accompanying that growth such as the lagging development of the social protection system as the population ages. Using estimates from the National Transfer Accounts database, we describe changes in life cycle public transfers; interhousehold transfers; and intrahousehold transfers for education, health care, and other support; and discuss the main challenges that demographic change poses for the pension and health care systems. Demographic change and its interaction with family behavior and social policies will strongly shape both future economic growth—through savings and investment decisions, labor supply and productivity—and the sustainability of social support systems.

I. Introduction

The People's Republic of China (PRC) is going through a remarkable economic transition and a rapid demographic transition at the same time. The transition from a centrally planned economy to a market-based economy is widely acclaimed for recent unprecedented economic growth, but the social strains accompanying that growth have become more widely recognized such as the lagging development of the social protection system as the population ages. Demographic change and its interaction with family behavior and social policies will strongly shape both future economic growth and the sustainability of social support systems.

We analyzed the main challenges for the social protection system posed by the demographic transition in the PRC using the pension and health care systems as examples. Using estimates from the National Transfer Accounts (NTA) database for 1995 and 2002, we describe changes in economic life cycle public transfers, interhousehold transfers, and intrahousehold transfers. We discuss the three-way system of contributory basic pensions, individual accounts, and voluntary supplementary pensions in urban areas and the recently piloted pensions in rural areas; describe changing patterns in health expenditures using three waves of national health service survey data; and discuss the relationship between those expenditures and health care systems compared with other NTA economies. We also explore some technical issues regarding how NTA health expenditure estimates compare with World Health Organization (WHO) estimates.

II. Demographic Change and Economic Transition

In 1949, the population of the PRC totaled 450 million; at just over 1.3 billion, it is currently the world's most populous nation. Demographic change has been rapid. The total fertility rate (TFR) declined from around 6 in 1950–1955 to 2 in 1990–1995 (Banister, Bloom, and Rosenberg 2010) with a rapid decline in the 1970s prior to the beginning of the one-child policy (when government policy switched from encouraging children to encouraging later marriage and fewer children). The TFR is now below replacement level at about 1.7 births per woman.¹ The total dependency ratio declined by 38% during the past 30 years, primarily because of a reduction in the youth dependency ratio from

¹ According to the United States (US) Census Bureau, fertility was estimated to have been 2.2 in 1990, 1.8 in 1995, and less than 1.6 since 2000 (US Census Bureau 2009).

72.5% in 1965 to 30.2% by 2005 (Wei and Hao 2010). Health improved substantially with dramatic declines in mortality even prior to the economic reforms that contributed to the improvement of public health conditions, the control of communicable diseases, and improvements in living standards and education (Banister 1987; Miller, Eggleston, and Zhang 2011). Life expectancy increased from 69.9 in 1990 to 76.7 in 2010 for women and from 66.9 to 72.5 for men.²

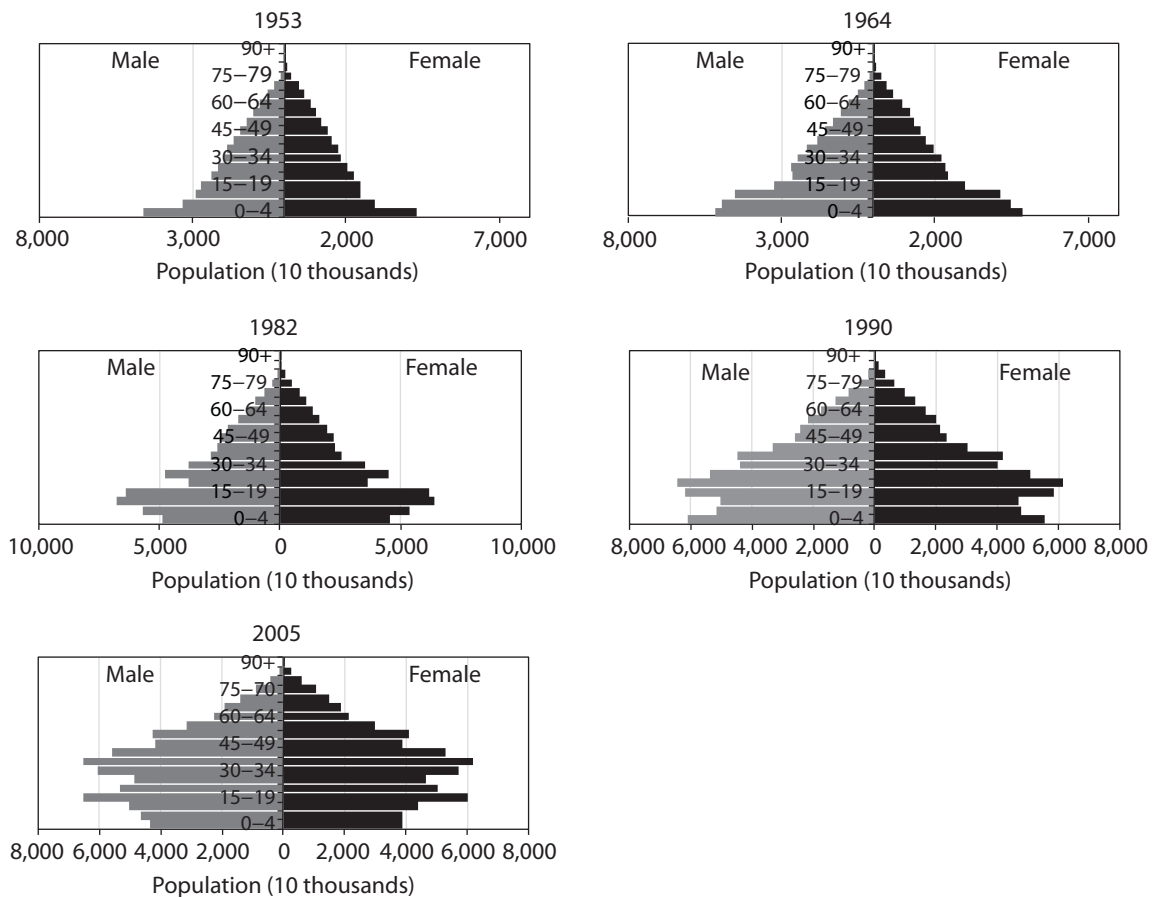
The PRC thus has undergone a rapid demographic transition from high mortality and high fertility to relatively low mortality and low fertility.³ As a result, the age structure of the population has changed significantly in line with the commonly observed pattern of a decrease in the population of nonworking young and a decrease in total dependency followed by an increase in the population of nonworking old that leads to an eventual increase in total dependency. This was the sequence in Japan and the Republic of Korea and then in the PRC (Eggleston and Tuljapurkar 2011).

The demographic challenges in the PRC include not only an increase in the proportion of elderly but also an uneven pace of change both temporally (Figures 1a–1e) and geographically. There have been two baby booms. One followed the civil war and the establishment of the PRC in 1949 as reflected in the large 0–4-year-old base of the 1953 population pyramid (Figure 1a). The second boom came in the early 1960s after recovery from the Great Leap Famine (Banister 1987, Lu 2009). The echoes of these large cohorts as they matured into child-bearing years are reflected in the 2005 population pyramid (Figure 1e). Tuljapurkar, Pool, and Prachuabmoh (2005) and Tuljapurkar (2011) note that population cohorts of different sizes can lead to large annual changes in the labor pool (representing 8–10 million people) that can challenge the stability of programs for training young workers and for providing pensions. Furthermore, spatial variations will amplify temporal variations (Eggleston and Tuljapurkar 2011). An additional challenge that we do not focus on is the large gender imbalance in the population with the sex ratio at birth starkly favoring boys over girls leading to the prospect of millions of “forced bachelors” in coming decades.

² The figures are from the US Census Bureau (retrieved from life tables on April 2011).

³ For a more detailed discussion on the transition of PRC demography, see Banister (1987), Mason (2002), and Wang (2010).

Figure 1: Population Age Structure in the People's Republic of China in 1953, 1964, 1982, 1990, and 2005



Sources: PRC National Population Census in 1953, 1964, 1982, 1990 and 1% National Population Sample Survey in 2005.

Figure 2 shows projections of the age structure from 1995 to 2050 based on data from the 2000 census assuming a TFR of 1.65. The shift toward greater numbers in older age cohorts is salient. In contrast, the total population will level off and the cohorts in the younger working ages will shrink. According to the United States (US) Census Bureau projections, the population in the PRC will reach its maximum in 2026 at slightly less than 1.4 billion. The 20–24 age cohort is peaking now while the population aged 20–59 is expected to peak at 831 million in 2016 (US Census Bureau 2009).

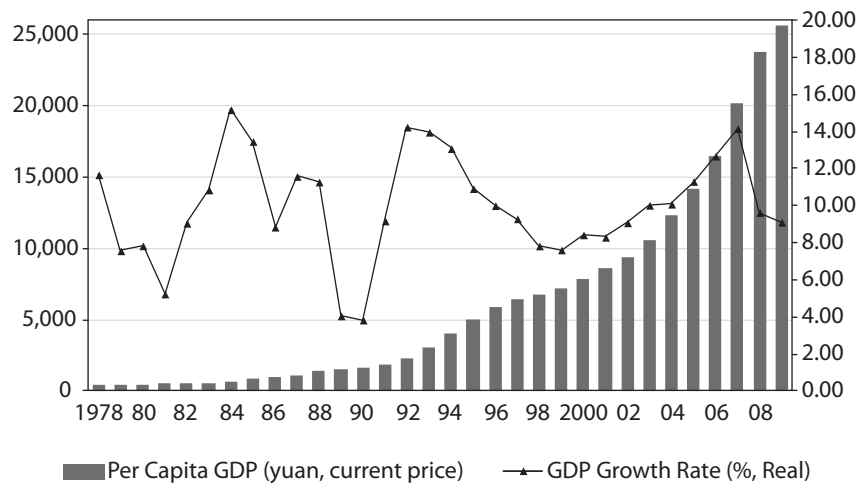
Figure 2: Projections of the Age Structure from 1995 to 2050

Sources: PRC National Bureau of Statistics projected from 2000 census data assuming a total fertility rate of 1.65.

The dramatic decline in fertility in recent generations has left an imprint on family structure in the PRC. Like many developing Asian countries, the PRC was once a nation of large families and multigenerational households. Now, especially in urban areas, the family structure is often characterized as “4–2v1”: four grandparents, two parents, and one child. Several researchers have examined these changes in family structure and their implications for supporting the burgeoning elderly population (Zimmer and Kwong 2003, Y. Wang 2006).

During this demographic transition (and partly spurred by it), the PRC has achieved unprecedented economic growth with an average real gross domestic product (GDP) growth rate of 9.8% annually during the last 3 decades (National Bureau of Statistics 2008). This has lifted millions out of poverty and made the PRC the second largest economy in the world in 2010, although per capita income has remained at middle-income levels (Figure 3).

Figure 3: Per Capita Gross Domestic Product and Growth Rate from 1978 to 2008



Source: [The People's Republic of] China Statistical Yearbook 2010 (NBS 2010).

The demographic transition has contributed to the recent rapid economic development in the PRC. The declining total dependency ratio in the early phase of the transition has led to what has been called the demographic dividend (Bloom and Williamson 1998). Research has shown that this first demographic dividend contributed from 25% to 33% of the dramatic economic growth during the “East Asian miracle” (Bloom, Canning, and Malaney 2000) and has significantly spurred recent economic growth in the PRC and India (Bloom et al. 2006). Wang and Mason (2008) estimate that between 1982 and 2000, about 15% of the unprecedented rapid growth in output per capita in the PRC stemmed from the first demographic dividend. Using 1989–2004 provincial data, Wei and Hao (2010) confirmed that economic growth was boosted significantly by changes in the demographic structure, especially the lower youth dependency ratio due to fertility declines, and that this effect was most prominent in provinces more open to market forces.

Both Banister, Bloom, and Rosenberg (2010) and Eichengreen et al. (2011) argue that the economic growth rate will soon slow to a less than break-neck speed primarily because the PRC has reached middle-income status and to only a smaller extent because of its demographic transition. Effective policies could dampen the potentially negative impact of population aging on economic growth and could foster what Mason and Lee (2006) term a second demographic dividend.

Some scholars have argued that the development of social protection systems has lagged behind that of the economy (Wang 2003, World Bank 2004, Wang 2008) as new systems have not smoothly replaced the old mechanisms for redistribution and dependent support as the economy has changed. Institutional economic changes have included

dismantling the collectives in rural communes, fiscal decentralization, reductions in public services provided by the state, the privatization of most public service units, and charging fees for basic services that were previously provided without out-of-pocket payments from consumers.

While the country's phenomenal economic growth has lifted millions out of absolute poverty, there has also been a rapid increase in income inequality (Gini coefficient rising to 0.497 by 2007 according to [the People's Republic of] China Household Income Project [CHIP] data; Li 2011). This has exposed many households to macroeconomic fluctuations as they struggle to pay for basic needs like health care and education. To address these problems, the government has put in place an expanding set of social protection systems including the *dibao* minimum income support system; social insurance for unemployment, work-related injuries, and maternity care; contributory pensions for workers in the formal sector expanded to rural areas; and social health insurance in both urban and rural areas.

III. Changing Intergenerational Transfers

A. The National Transfer Accounts Database

The NTA database offers a systematic approach to introducing age into national income and product accounts (NIPA) to describe intergenerational flows of resources in an economy. In NTA estimates, behavior over the economic life cycle is summarized by the amount consumed at each age and by the amount earned through labor at each age. They describe how the young and the elderly support themselves in those periods when their consumption exceeds production and how sharing among different age groups allows families and societies to support people without current labor earnings. By capturing the flows that support children and the elderly as well as the public and private transfers that working-age individuals make, the NTA provides an empirical framework for studying how age structure impacts income, savings, and investments as well as intergenerational equity and poverty alleviation through asset-based reallocations and transfers.

In the NTA estimates, life cycle inflows for each age, a , consist of labor income, $Y^l(a)$; returns on capital, $Y^a(a)$; and transfer inflows from the public sector, $\tau_g^+(a)$ and the private sector, $\tau_f^+(a)$. Labor income includes wages and salaries earned by employees along with their fringe benefits as well as the value of labor of the self-employed. Labor income does not include the value of time in home production that is not market-based such as child care; therefore, the contributions of women and the elderly (who often care for children and grandchildren) are underestimated. Labor force

participation rates for women in the PRC are relatively high, but labor force participation is higher among men than among women at all ages, reflecting traditional gender roles.

Outflows consist of consumption, $C(a)$; savings, $S(a)$; and transfer outflows to the government, $\tau_g^-(a)$ and the private sector, $\tau_f^-(a)$. Consumption includes both private consumption and public consumption allocated to individuals. For every age group, the inflow and outflow should be balanced as shown in equation (1).

$$\underbrace{Y^l(a) + Y^a(a) + \tau_g^+(a) + \tau_f^+(a)}_{\text{Inflows}} = \underbrace{C(a) + S(a) + \tau_g^-(a) + \tau_f^-(a)}_{\text{Outflows}} \quad (1)$$

The difference between consumption and production at a given age—the life cycle deficit—must be matched by asset-based reallocations, private transfers, and/or public transfers as shown in equation (2).

$$\underbrace{C(a) - Y^l(a)}_{\text{Lifecycle Deficit}} = \underbrace{Y^a(a) - S(a)}_{\text{Asset-based Reallocations}} + \underbrace{\tau_f^+(a) - \tau_f^-(a)}_{\text{Net Family Transfers}} + \underbrace{\tau_g^+(a) - \tau_g^-(a)}_{\text{Net Public Transfers}} \quad (2)$$

Age Reallocations

With age profiles and information on the population age distribution, $N(a)$, we can generate levels of aggregate consumption and labor earnings for different age groups and the total population for a specific year. The aggregate values are adjusted to equal their counterparts in NIPA, X_{NIPA}^p . We estimate age profiles from household survey data and specific statistical data, $\bar{X}^p(a)$, using an adjustment coefficient, β , as in equation (3).⁴

$$X^p(a) = \beta \bar{X}^p(a) N(a), \text{ where } \beta = X_{NIPA}^p / \sum_a \bar{X}^p(a) N(a) \quad (3)$$

We used nationally representative cross-sectional survey data from the 1995 and 2002 CHIP (Li et al. 2008) to construct age profiles for the NTA estimates (except the age profiles of public consumption). The project was conducted by the Chinese Academy for Social Sciences in rural and urban areas. Because their economic and social protection systems differ significantly, the samples were collected separately with distinct albeit similar survey instruments. The households sampled (Table 1) were systematically selected to be representative of official household surveys conducted by the National Bureau of Statistics (Li et al. 2008). The data include information on general household and individual characteristics, individual income, household savings and assets, and household expenditures.

⁴ For more details on NTA estimation methodology, please see Lee, Lee, and Mason (2008) and Mason, Lee et al. (2009).

Table 1: CHIP Data: 1995 and 2002 Samples

Year	Rural		Urban	
	Individuals	Households	Individuals	Households
1995	34,728	6,931	21,689	7,996
2002	37,969	9,200	20,548	6,835

Source: Authors calculations based on Li et al. (2008).

In the CHIP data, private health expenditures and education expenditures are available only for households and not for each household member. To overcome this limitation, we used the regression estimation methodology previously used by Mason et al. (2009) to allocate a household's private health and education expenditures among members.

For public education and health expenditures, we constructed age profiles using administrative data and other specific survey results. Specifically, we generated government education expenditures per student by allocating government expenditures to different levels of schools (based on data from *[the People's Republic of] China Educational Finance Statistical Yearbook* [Department of Finance and Department of Population, Society, Science and Technology 1997 and 2004]) according to the number of students enrolled in each level by age (using data from the *Educational Statistics Yearbook of [the People's Republic of] China* [Department of Development and Planning 1996 and 2003]). We generated government health expenditures per capita for each age group by first allocating total government expenditures to different health sectors—hospitals, preventive services, maternal and child health care—based on data from the *Chinese Health Statistical Yearbook* and then allocating that spending according to patient age as deduced from the National Health Service Survey Report (Ministry of Health 1994 and 2004). For other, more general government health expenditures, we assumed they were consumed equally by all age groups.

Table 2 shows the source of data used for each component of NTA estimates for 1995 and 2002 to make them consistent with the aggregate national accounts in the PRC (i.e., aggregate controls). Our primary sources for data on NIPA include *[the People's Republic of] China Statistical Yearbooks* for the relevant years. To this we added data from the financial statistical yearbooks, the educational funds statistical yearbooks, labor statistical yearbooks, and *[the People's Republic of] China National Health Account Report* ([The People's Republic of] China National Health Economics Institute 2009). For detailed information on population size and age structure we used data from population statistical yearbooks that contain the age structure of the population in both rural and urban areas based on nationally representative sample surveys.

Table 2: Data Sources Used for National Transfer Accounts 1995 and 2002 Estimates in the People's Republic of China

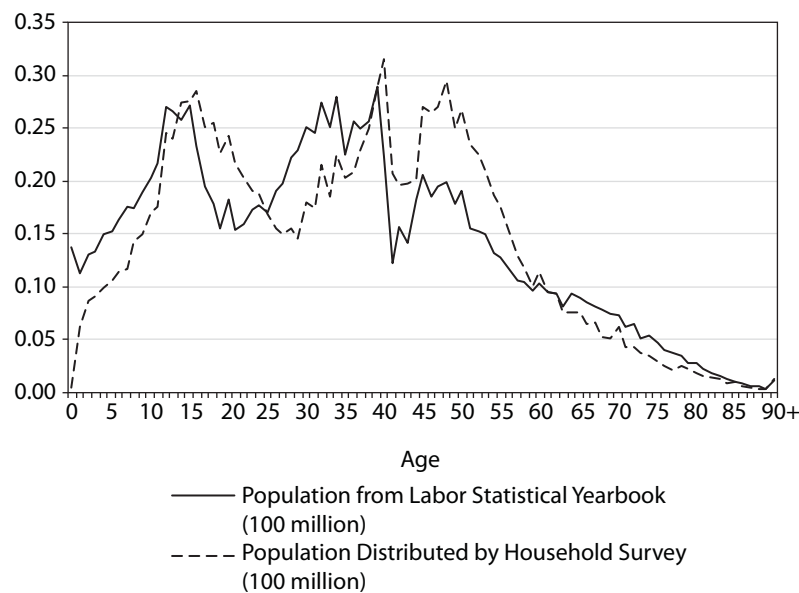
NTA Component	Content	Source
Population	Age structure for rural and urban populations	[The People's Republic of] China Population Statistics Yearbook
Public consumption	NIPA	[The People's Republic of] China Statistical Yearbook
Public education	Government expenditure on education	Finance Yearbook of [the People's Republic of] China
Public health	Government expenditure on health	[The People's Republic of] China National Health Account Report; Global Health Observatory Database
Private consumption	NIPA	[The People's Republic of] China Statistical Yearbook
Private education, private housing, others	Ratio to total individual consumption	CHIP data
Private health	Private health expenditure	[The People's Republic of] China National Health Account Report, Global Health Observatory Database
Labor income	NIPA	[The People's Republic of] China Statistical Yearbook
Wages, self-employment income	Ratio to total labor income	CHIP data
Benefit	Social security fund	[The People's Republic of] China Labor Statistical Yearbook
Tax	Tax revenue by classification	Finance Yearbook of [the People's Republic of] China

CHIP = [The People's Republic of] China Household Income Project, NIPA = national income and product accounts, NTA = National Transfer Accounts.

Sources: Department of Population, Society, Science and Technology (various years); NBS (various years); Ministry of Finance (various years); CHEI (2009); Li et al. (2008); World Health Organization database, available: www.who.int/gho/en/.

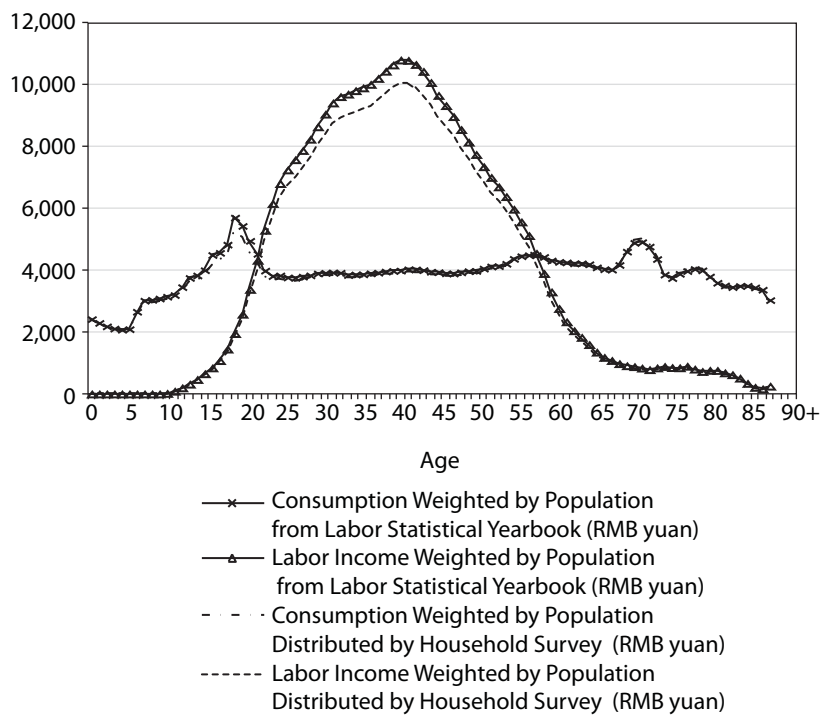
As mentioned previously, because of the large socioeconomic and institutional differences between urban and rural areas, the CHIP used separate surveys in rural and urban areas, but current NTA estimates are national. Therefore to complete the NTA estimates, we combined those from rural and urban areas in the following way. First, we individually estimated the urban and rural age profiles of NTA components based on separate urban and rural survey samples. Second, we generated national age profiles for each NTA component as weighted averages of the rural and urban profiles, where the weights were the rural and urban populations in each age group according to the relevant population statistical yearbook. In analyzing these results, one should keep in mind that there are differences between the household survey data and the aggregate national data. For example, the age structure of the CHIP data differs slightly from that of the overall population based on the statistical yearbooks (Figure 4a) in that young children and the elderly are slightly underrepresented. The age profiles for consumption and income weighted by these two age structures do not, however, show significant differences (Figure 4b).

Figure 4a: Difference in Age Structures between CHIP Data and Labor Statistical Yearbook Data



CHIP = [The People's Republic of] China Household Income Project.
 Source: Authors' National Transfer Accounts estimates.

Figure 4b: Effects on Estimated Life Cycle Deficit Using Different Population Weights by Age Group

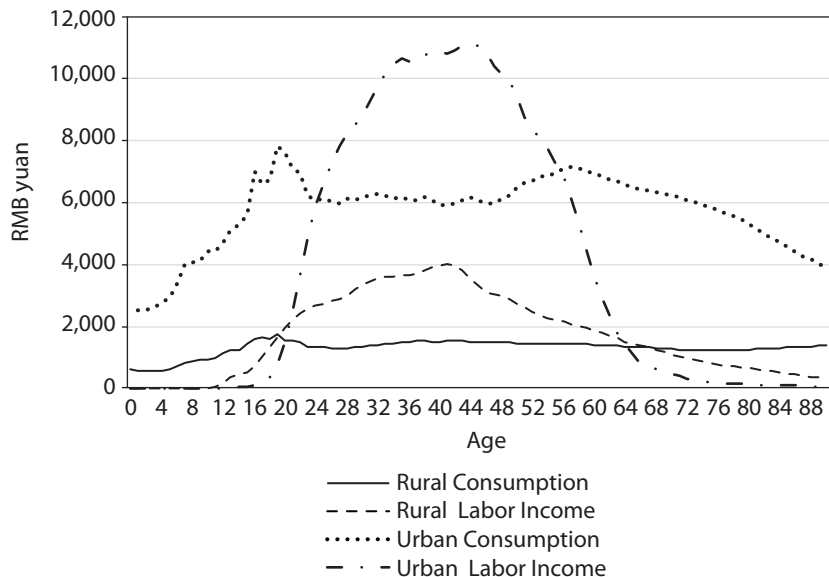


Source: Authors' National Transfer Accounts estimates.

B. Rural and Urban Differences in Estimated National Transfer Accounts Age Profiles

The huge rural–urban inequalities in the PRC are widely known; the rural and urban age profiles for consumption and income show these differences in stark detail (Figure 5). For both consumption and labor income, levels in rural areas are only about one-third of those of urban Chinese in similar age ranges. Working life—the age range in which income surpasses consumption—in rural areas is from 20 to 67 years, which is much longer than that in urban PRC (25–55 years). As a result, young people and the elderly in rural areas have higher labor incomes than those in urban areas.

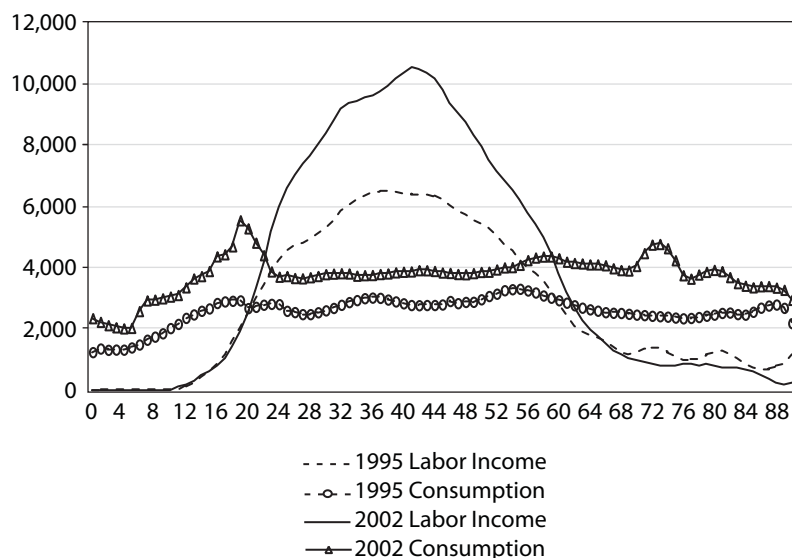
Figure 5: Difference between Rural and Urban Age Profiles of Income and Consumption, 2002



Source: Authors' National Transfer Accounts estimates.

C. Private and Public Intergenerational Transfers

Figure 6 graphs the distribution of labor income and consumption by age groups in 1995 and 2002 using constant prices in yuan in the year 2000. We see that consumption is relatively flat and is comparatively low relative to income, reflecting the high savings rate in the PRC. The peak labor income increased substantially between 1995 and 2002 as high economic growth would suggest. There also was greater expenditure in the 18–24 age range compared to 1995, reflecting an increase in tertiary education expenditures. Lower labor income for the elderly in 2002 suggests that they are relying more on transfers and asset-based reallocations.

Figure 6: Labor Income and Consumption, 1995 and 2002

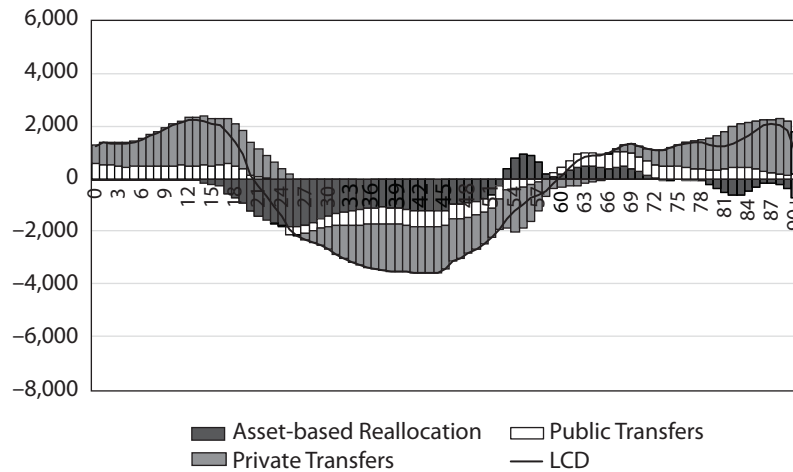
Source: Authors' National Transfer Accounts estimates.

Figures 7a and 7b show the financing of the life cycle deficit in 1995 and 2002, respectively. A comparison of the two panels shows several patterns of change. First and perhaps most obviously, the values of consumption and income (in 2000 constant prices) increased substantially between 1995 and 2002, reflecting the rapid economic growth in the PRC. Also evident is the rather substantial gap between consumption and income in the peak earning years and the fact that the increase in labor earnings between 1995 and 2002 outpaced the increase in consumption. As noted above, these patterns clearly reveal the high savings rate in the PRC, an important foundation of economic growth and a prominent factor in global macroeconomic imbalances. Some of this is precautionary savings against a need for health care and old age support that the fledgling social protection system is still developing to meet.

Figures 7a and 7b also show the decomposition of the life cycle deficit into its three components: asset-based reallocations (a negative number indicates savings in excess of asset income), net public transfers, and net private transfers (negative values indicate that a given age group is giving more than it is receiving). Private transfers played a large role in funding the life cycle deficit in both 1995 and 2002. Asset-based reallocations also played a nontrivial role, mostly in the form of savings that start at a relatively young age on a per capita basis.

Public transfers were relatively modest in 1995 (Figure 7a). They reflect public education and other public services such as immunizations and infrastructure allocated for children; negative transfers among the working-age population (who pay taxes and social security contributions); and modest support for the elderly in the form of pensions and other public transfers (such as subsidized health care, which expanded greatly after 2002).

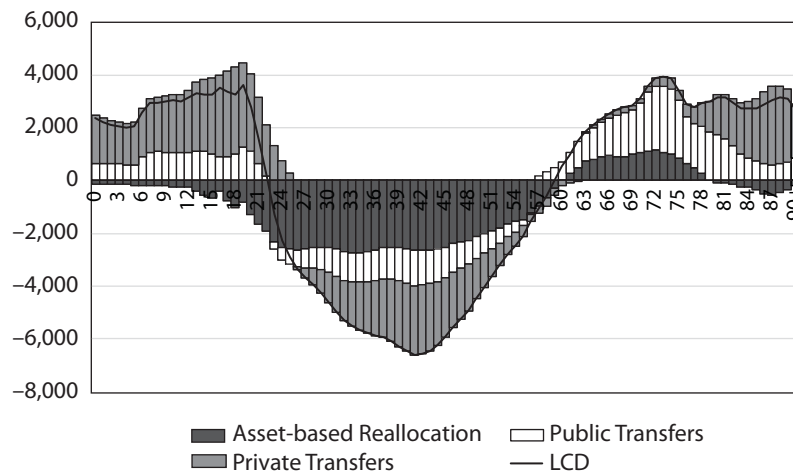
Figure 7a: Financing the Life Cycle Deficit, 1995



LCD = life cycle deficit.

Source: Authors' National Transfer Accounts estimates.

Figure 7b: Financing the Life Cycle Deficit, 2002



LCD = life cycle deficit.

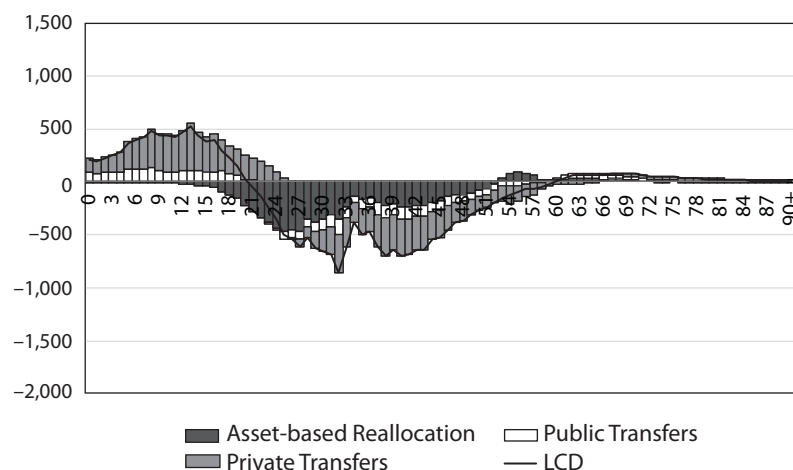
Source: Authors' National Transfer Accounts estimates.

Between 1995 and 2002, private transfers to support children increased substantially (Figure 7b). The age pattern of support shifted slightly as well, reflecting in part greater investment in higher levels of education. Compared with transfers to support children, growth between 1995 and 2002 in private transfers to support the elderly was more modest. Public transfers had also grown substantially by 2002, especially in support for the elderly, while private transfers did not play a large role in supporting the elderly until quite advanced ages. This pattern reflects the fact that while familial transfers to support the elderly are still important, they are becoming less so while the prominence of public transfers in supporting retirement is growing. This is a pattern common to many countries

around the world with similar experiences of economic development and population aging such as Japan between 1984 and 1994 (Ogawa, Matsukura, and Maliki 2009).

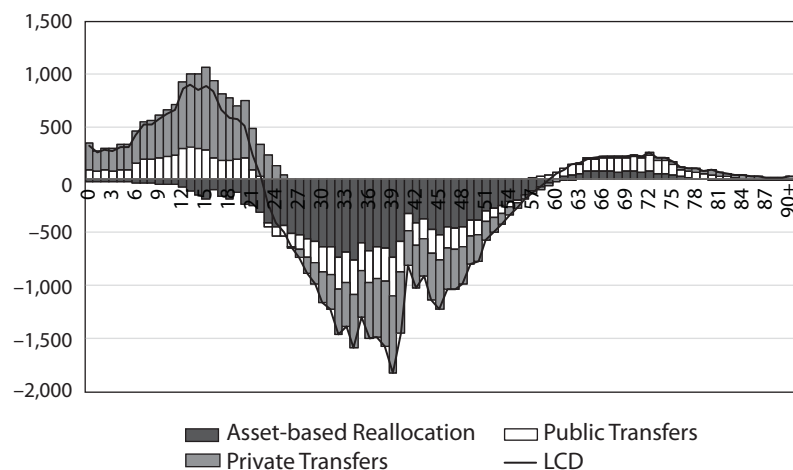
Figures 8a and 8b adjust the life cycle deficit to reflect the total population and show the much higher proportion currently in the younger ages relative to retirement years although this pattern will change with continued population aging. Quite prominent as well are the dips in peak earnings reflecting the smaller total population born during, and surviving, the Great Leap Famine (1958–1961) relative to the large cohort born after the famine, i.e., those aged 34–37 in 1995 and aged 41–44 in 2002. These differences in cohort size were also evident in the age pyramids in Figures 1a–1e.

Figure 8a: Aggregate Population Life Cycle Deficit, 1995



LCD = life cycle deficit.
Source: Authors' National Transfer Accounts estimates.

Figure 8b: Aggregate Population Life Cycle Deficit, 2002

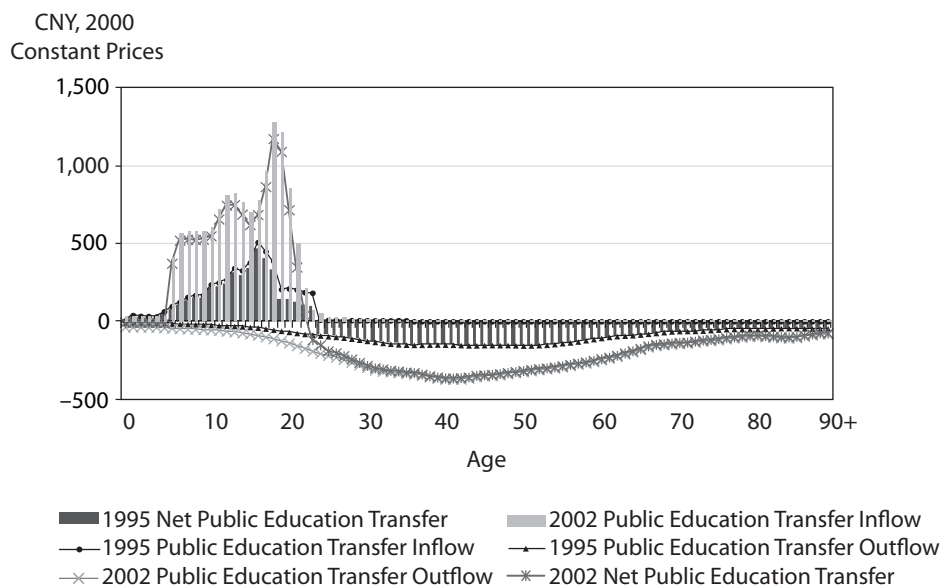


LCD = life cycle deficit.
Source: Authors' NTA estimates.

1. Life Cycle Transfers for Education, Health, and Other Support

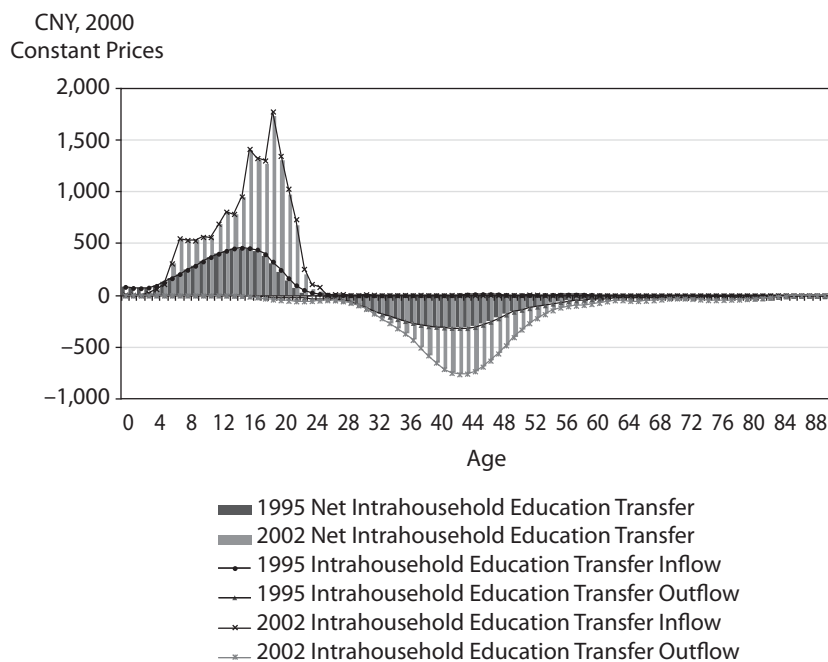
Economic theory (Becker and Barro 1988) suggests that investment in human capital can offset reduced fertility rates to maintain a productive workforce. Chinese society traditionally places a high value on children's education. Expenditures on education, including both public transfers (Figure 9a) and private transfers (Figure 9b), have clearly increased recently, especially in the senior high school and college ages.

Figure 9a: Life Cycle Public Transfers for Education, 1995 and 2002



Source: Authors' National Transfer Accounts estimates.

Figure 9b: Life Cycle Private Transfers for Education, 1995 and 2002

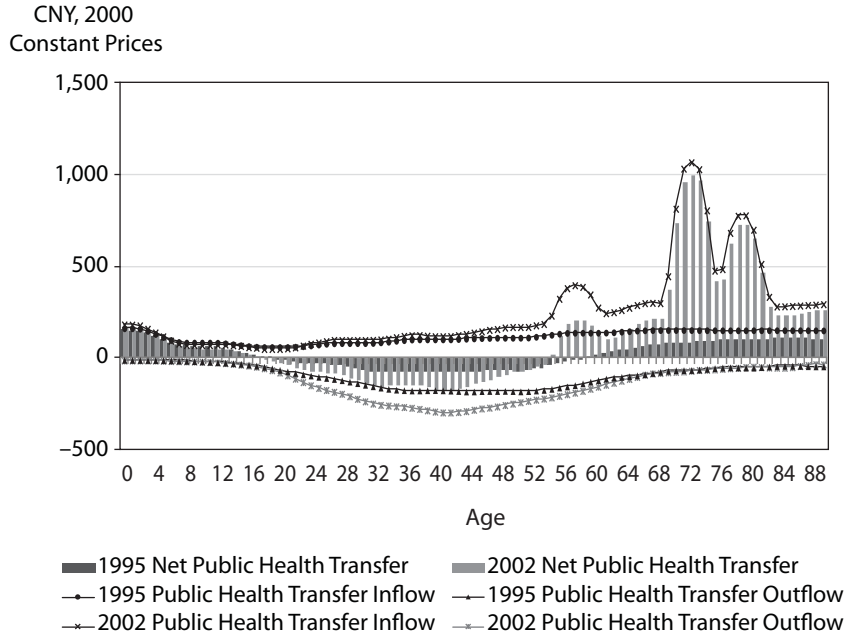


Source: Authors' National Transfer Accounts estimates.

However, NTA data indicate that the overall investment in education relative to other middle- and high-income countries remains modest. Addressing the urban–rural and rich–poor disparities in educational access in the PRC will no doubt be a key challenge for sustaining economic growth and addressing social inequalities that could undermine social stability.

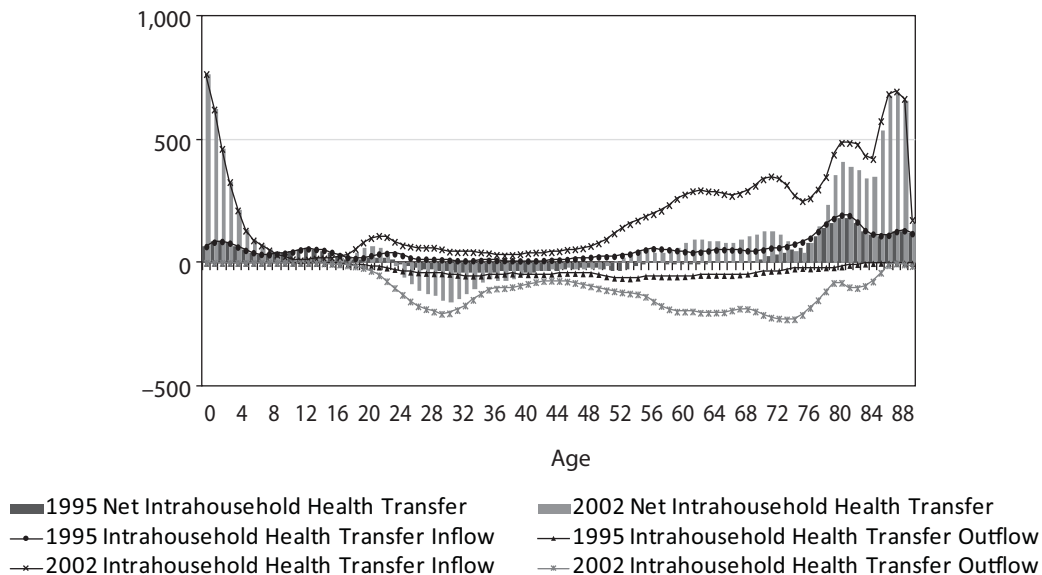
Age profiles for expenditures on health and medical care, in contrast, show that public transfers have grown most for the elderly, as reflected in Figure 10a (for public transfers), while private transfers have also increased substantially for children and adolescents (Figure 10b). Later NTA survey estimates no doubt will show a substantial increase in public transfers for health care since government-subsidized health insurance began for rural residents in 2003 and for nonworking urban residents in 2007 along with substantial supply-side investments in clinics and hospitals as part of the 2009 national health reforms.

Figure 10a: Life Cycle Public Transfers for Health Care in 1995 and 2002



Source: Authors’ NTA estimates.

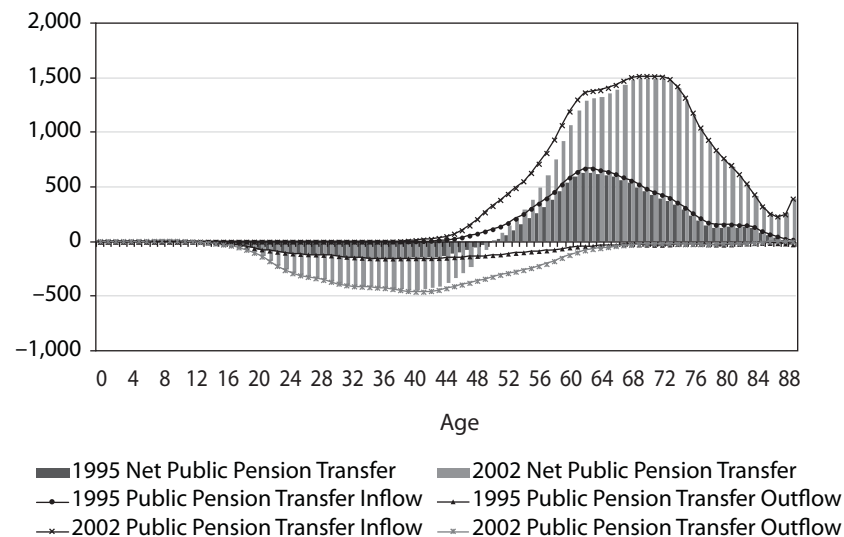
Figure 10b: Life Cycle Private Transfers for Health Care



Source: Authors' National Transfer Accounts estimates.

Figure 11 shows the age profile of public transfers for pensions in 2000 constant prices and reveals a substantial increase by 2002. Nevertheless, pensions remain a modest form of financial support for the majority of the elderly, as demonstrated in Figure 12.

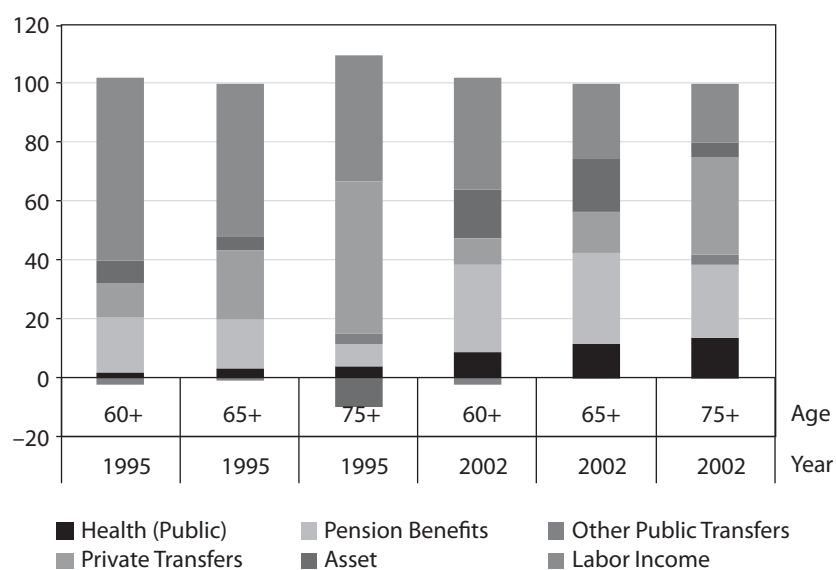
Figure 11: Life Cycle Public Transfers for Pensions, 1995 and 2002



Source: Authors' National Transfer Accounts estimates.

As one would expect, Figure 12 shows that the share of support from labor income decreases with age and is higher in each age group in 1995 than in 2002. This pattern in part reflects the continuing urbanization of the population and the decreasing prevalence of people working in agriculture to quite advanced ages—although population aging still is proceeding more rapidly in many rural areas given the outflow of young people to seek work in urban areas. Reliance on private transfers to support the elderly is quite prominent and increases with age, while asset-based income is modest and decreases with age. Since many of the elderly had little opportunity to accumulate private assets during their peak working years in the previous centrally planned economy, it is not surprising that few rely heavily on asset-based income for old age support, especially the older elderly. Public pensions and publicly financed health care accounted for only 20% of support for those aged 60 or older in 1995 but increased to 40% by 2002. Overall, assets and public transfers are growing as sources of support for the elderly, allowing them to rely less on labor income, while familial support remains an important albeit declining source.

Figure 12: Financial Support for Old-Age Consumption at Various Ages, 1995 and 2002



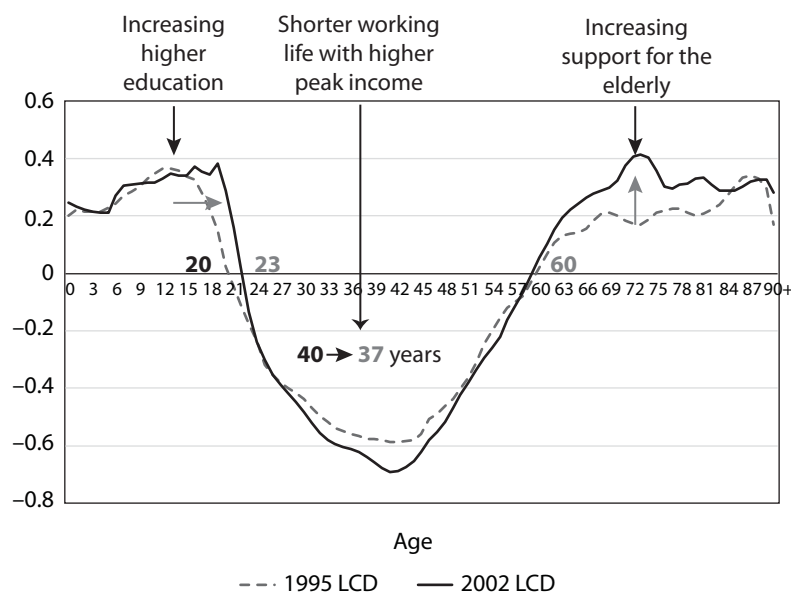
Source: Authors' National Transfer Accounts estimates.

2. Changes in the Life Cycle Deficit in the People's Republic of China and Some Asian Economies

By examining the ages during which an individual's labor earnings exceed consumption, NTA estimates provide an economically compelling way of measuring working life in various countries and how it changes over time. The "cutting age" for becoming a net producer increases with increases in educational attainment. The corresponding cutting age for "retirement" depends on the labor force participation of the elderly, on formal

retirement policies, and on incentives embedded in the pension and familial support systems of each country. Figure 13 shows that between 1995 and 2002, the cutting age for becoming a net producer in the PRC increased from 20 to 23, which is consistent with the preceding figures showing increased investment in higher education. The age for turning from a net producer to a net consumer remained 60 years; therefore, the average working life span decreased from 40 years to 37 years.

Figure 13: Changes in the Life Cycle Deficit between 1995 and 2002



LCD = life cycle deficit.

Source: Authors' National Transfer Accounts estimates.

This tendency to shorter working lives (despite increasing longevity) is far from unique to the PRC, as is shown in Table 3. The years of working life (as defined by the cutting ages in the NTA) have decreased in Indonesia and Thailand as well. In fact, the working life of 37 years in the PRC is longer than that of many other countries including India, Indonesia, Japan, the Republic of Korea, Thailand, and the US.

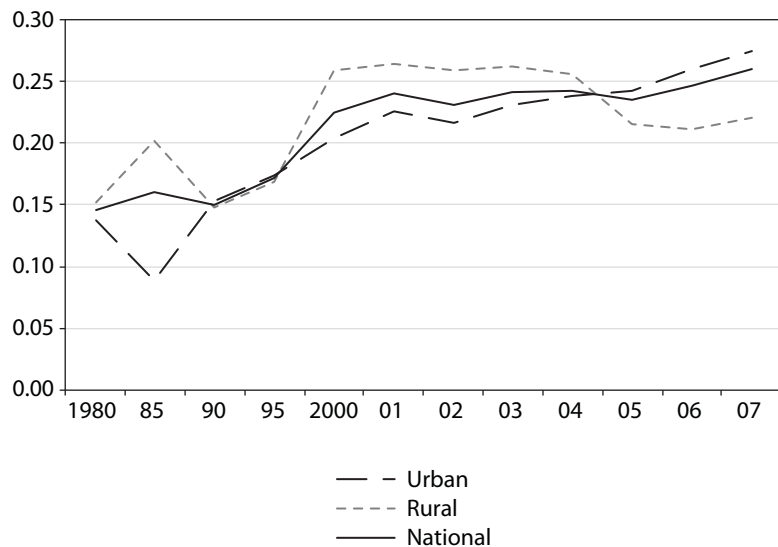
Table 3: Life Cycle Deficit Cutting Ages for Working Life in Selected Countries

Life Cycle Deficit	Cutting Ages		Working Life (years)	Life Cycle Deficit	Cutting Ages		Working Life (years)
PRC, 1995	20	60	40	Thailand, 1996	25	59	34
PRC, 2002	23	60	37	Thailand, 2004	26	58	32
Japan 2004	26	60	34	Indonesia, 1999	28	59	31
Republic of Korea 2000	24	56	32	Indonesia, 2005	29	58	29
United States 2003	26	59	33	India, 1999	27	63	36
Philippines 1999	27	60	33	India, 2004	27	59	32

Source: Data from National Transfer Accounts website accessed 20 March 2011.

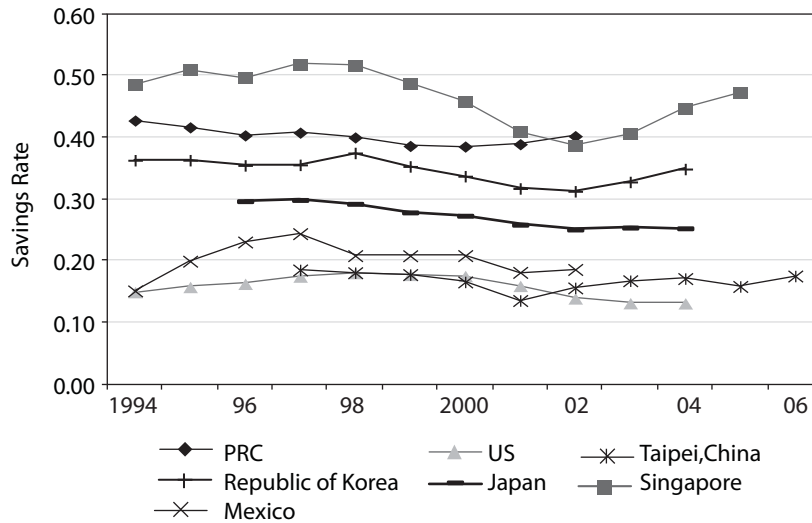
Although we acknowledge that there are many limitations to the data upon which the NTA estimates are based, we think it unlikely that data refinements would substantially increase estimates of per capita consumption by age in the PRC. Indeed, the PRC is well known for having very high savings rates that have increased during the reform era (Figure 14) and remain at extremely high levels compared with most other middle- and high-income countries (Figure 15). These high savings rates have contributed to rapid capital formation and figure prominently in any discussion of future economic growth and the development of the country's social protection system.

Figure 14: Savings Rates Nationwide and for Urban and Rural Areas, 1980–2007



Source: Li (2011a).

Figure 15: International Comparisons of Savings Rates



Source: United Nations System of National Accounts website, unstats.un.org/unsd/snaama/Introduction.asp, accessed 20 June 2008.

IV. Challenges for the Social Protection System: Pension and Health Care Policies

A. Pensions

Old-age support systems differ across countries, but there are some regional patterns such as a larger role for net familial transfers in Asia compared with Europe, Latin America, or the US (Mason and Lee 2011). In the PRC, the elderly have long relied on familial support especially in rural areas, which is one of the factors behind the desire for male heirs and the large and growing gender imbalance (Li 2007). The government has attempted to establish pension systems to supplement if not eventually supplant reliance on offspring for old-age support, but this effort is in many ways still nascent, especially in rural areas, and familial support remains paramount. Clearly there is much room for improvement as the system develops to meet the core objectives of any pension system: consumption smoothing, insurance, income redistribution, and poverty relief (Barr and Diamond 2010).

1. The Basic Pension System in Urban Areas

As in other social security systems, old-age insurance in the PRC consists of multiple levels and features large disparities across sectors and geographic areas. In urban areas, the government-run “basic old-age insurance system for enterprise employees” dominates. Enterprise employees who have reached retirement age and who have paid their share of the premiums for 15 years or more are entitled to collect a monthly stipend consisting of two parts: a basic pension and a personal account. Although there are regional variations, the basic pension is typically about 20% of average monthly wages in the previous year and the personal account is 1/120 of the total accumulated (11% of an employee’s wage is deposited every month). In 2003, the monthly basic pension for enterprise retirees was 621 yuan on average, and the number of people participating in the scheme reached 155.06 million. In addition to the basic pension (which addresses poverty alleviation and insurance goals) and individual accounts (that link pensions to earnings and thus support replacement rates), urban residents can purchase voluntary pensions. This three-part system provides a good basis for continued pension reform and is lauded by experts as “a major accomplishment” (Barr and Diamond 2010).

The retirement and pension system for employees of government agencies and public institutions was originally funded directly from the government budget as a defined benefit based on earnings at the end of the career. Ever since the 1990s, some localities have begun experimenting with reforms to finance pensions through a contributory system similar to that for other urban employees in the formal sector. By the end of 2003, some 11.99 million employees and 2.58 million retirees had participated in such pilot programs.

2. Financing Pension Obligations

As the aging of the population accelerates, the government is using multiple channels to finance pension obligations. Generally contributions are required from both enterprises and employees, but it is important to remember that this is a nominal distinction only. Formal economic analyses of the true incidence of contributions both for pensions and for health insurance unfortunately are virtually nonexistent.⁵ Generally the premiums nominally paid by enterprises do not exceed 20% of the total wage bill of the enterprise with the specific proportions determined by local governments. Individual employees generally pay 8% of their wages as pension contributions, while self-employed individuals pay about 18% of the average wage in their localities. In 2003, the basic pension contribution paid by enterprises nationwide totaled 259.5 billion yuan.

In addition to contributions by employers and employees, government subsidies play a role. In 2003, state budgets at all levels contributed 54.4 billion yuan to basic old-age insurance funds representing 17.33% of the total contributions paid by the enterprises.

⁵ “In a market economy, it is inappropriate to attach too much importance to whether pension contributions are paid by the employer or the worker, because mandatory social security contributions or payroll taxes imposed on employers have the effect of reducing the wages they offer workers” (Barr and Diamond 2010, 8).

The national social security fund the government decided to create in 2000 manages funds acquired from state shareholding, from stock assets, funds from the central budget, funds raised by other means approved by the State Council, and investment returns. By the end of 2003, it had accumulated over 130 billion yuan; however, most localities are running deficits so individual accounts are “empty” in the sense that current contributions are used to finance current benefits as a pay-as-you-go-system despite the original intent to fund individual accounts.

There is much debate about “empty accounts” in the PRC (Wang 2006) and how they undermine the credibility of the original pension benefit design. It is important to realize, however, that notional individual accounts with proper actuarial accounting are not inherently bad and indeed have been adopted as a supplement to basic pensions in several countries. Barr and Diamond (2010) recommend retaining individual accounts in the PRC but implementing them as notional, defined-contribution accounts rather than fully-funded accounts or empty accounts. As such, workers would receive statements of the contributions and interest accumulated in their accounts guaranteed as a government obligation. The pensions paid from individual accounts would be partially funded through a centralized fund (Barr and Diamond 2010).

3. Pension Coverage in Urban and Rural Areas

Pension coverage is still limited primarily to formal sector employees in urban areas. The remaining population has relatively little coverage, especially in rural areas, where individual savings and intrahousehold transfers continue to play key roles in supporting the elderly. Unlike the pension system for urban employees that dates back to 1952, rural residents had no pension plans until 1986 when some villages in Jiangsu and Zhejiang provinces set up pilots. In 1991, the Ministry of Civil Affairs advocated running rural pension pilots starting in Shandong Province. The “Basic Scheme of Rural Pensions at the County Level (Trial Implementation)” in 1992 was the first formal indication of these preliminary explorations and initially outlined the blueprint of the country’s rural pension system. By the end of 1995, 1,608 counties in 30 provinces had introduced this system, and 6.12 million farmers (14.2% of the rural population aged 20–60) had voluntarily participated and contributed 6.2 trillion yuan. From 1995 to 1997, the number of participating counties grew to 2123, and more than 8.2 million rural residents were covered (a 9.47% participation rate). This rural pension system reached its peak around 1999 accumulating an 18.4 trillion yuan surplus and then rapidly shrank to 1,887 counties in 2004 (a 32.6% reduction compared with 1999) and 5.389 million participants because of serious problems with the fund’s administration.

These pilots mainly financed their pension funds from individual contributions and only partly from collective allowances. The State Council tried to popularize commercial insurance plans in rural areas in 1999 but quickly gave up as the premiums were evidently beyond the reach of most of the rural population. In 2002, the 16th National

Congress of the Communist Party of [the People's Republic of] China set up targets to establish a system combining pension plans, health insurance, and subsistence allowances in rural areas and thus began to develop rural pension systems again.

By the end of 2003, some 54.28 million people had joined the old-age insurance program in rural areas with 1.98 million farmers drawing pensions. In 2004 in some rural areas, the government also began to experiment with a system that supported and rewarded households that practiced family planning by having only one child or two girls. Each member of such a couple can receive a minimum of 600 yuan a year from the age of 60 until the end of his or her life, provided jointly by the central and local governments.

In 2009, the government issued the “State Council Guidance for New Rural Pension Pilots” (*Guowuyuan Guanyu Kaizhan Xinxing Nongcun Shehui Yanglao Baoxian Shidian de Zhidao Yijian*) effective September 1. The aim was to safeguard the livelihoods of the rural aged by establishing a “basic, wide, flexible and sustainable” pension system with the following requirements: (i) financing and payment standards must correspond to rural socioeconomic capacity; (ii) individuals (or households), communities, and governments must share financial responsibility; (iii) enrollment must be voluntary; and (iv) the central government determines only the basic principles and main policies while local governments autonomously formulate their specific plans and administer their own pension funds.

This system calls for financing from individual contributions, collective subsidies, and government allowances and is intended to be a combination of pay-as-you-go and funded systems similar to the urban pension system. The goal is to gradually expand to full coverage by 2020.

4. Private Transfers to the Elderly: Familial Support

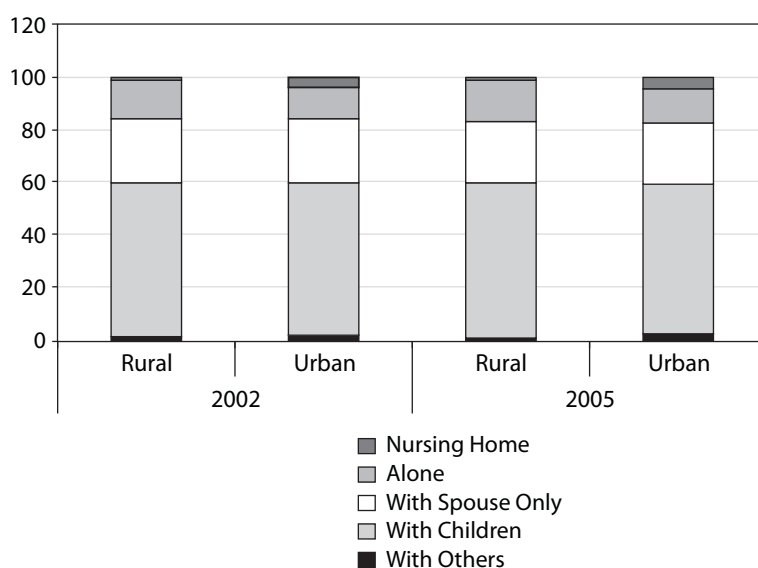
The PRC does not currently have nationwide census data on familial support for the elderly; however, the National Aged Population surveys (Peking University 2002 and 2005) provide valuable data for evaluating it based on a sample size of 15,638. Table 4 and Figure 16 show living arrangements for the population aged 65 and older. In 2005, the majority lived in the same household as their offspring (59.14% in rural areas and 57.04% in urban areas) while only 1.22% and 4.5%, respectively, lived in nursing homes; the percentage living with offspring changed little between 2002 and 2005. These data reveal that familial support for the elderly, a long-standing tradition, continues to play a key role. Recent evidence, however, suggests that family and household structures have been changing greatly (Zeng and George 2000) as lower fertility has reduced the number of potential relatives with whom the elderly can reside.

Table 4: Living Arrangements of the Elderly, 2002 and 2005 (percent)

	2002 Total	2005 Total	2002 Rural	2002 Urban	2005 Rural	2005 Urban
With offspring	64.46	64.06	57.99	58.03	59.14	57.04
With spouse only	15.69	17.9	24.36	24.42	23.18	23.2
Alone	13.45	13.41	14.64	11.71	15.39	12.78
In a nursing home	4.61	2.7	1.22	3.82	1.22	4.5
With others	1.79	1.94	1.79	2.02	1.07	2.48

Source: Authors' calculations using data from the National Aged Population Survey website, available: web5.pku.edu.cn/ageing/html/datadownload.html.

Figure 16: Living Arrangements of the Elderly (Aged 65+), 2002 and 2005 (percent)



Source: Authors' calculations using data from the National Aged Population Survey website, available: web5.pku.edu.cn/ageing/html/datadownload.html.

People often take it for granted that the rural elderly are more likely to live with offspring while the urban elderly are more likely to live independently, but the data from the survey do not support this assumption as the percentage living with offspring did not vary significantly between rural and urban areas. Based on this data, we may infer that intrahousehold transfers are the main channel of support for the elderly, which is supported by the data in Table 5.

Table 5: Main Source of Financial Support for the Elderly (Aged 65+), 2002 (percent)

	Urban	Rural	Total
Pension	37.8	5.5	19.9
Spouse	2.4	1.9	2.1
Child(ren)	43.8	69.0	57.8
Grandchild(ren)	3.9	6.0	5.0
Other relative(s)	0.4	0.7	0.6
Local government or community	5.8	4.2	4.9
Self-supported	3.9	11.3	8.0
Other main source of support	2.1	1.3	1.7

Source: Authors' calculations using data from the National Aged Population Survey website, web5.pku.edu.cn/ageing/html/datadownload.html.

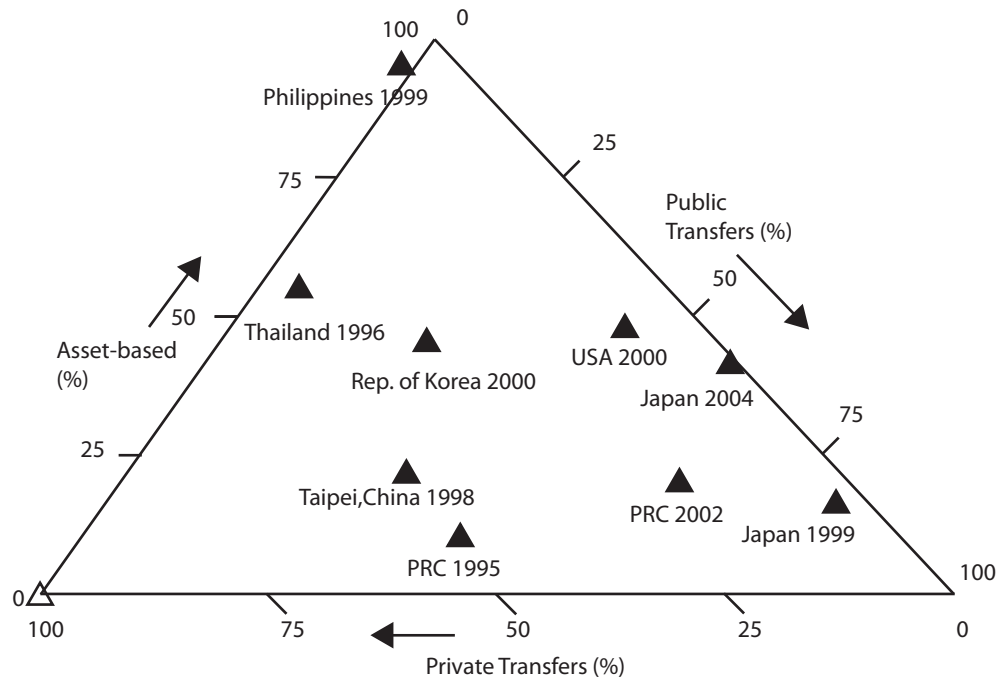
Clearly, families are the main sources of financial support for the elderly in both urban and rural areas, and while 37.8% of the elderly depended on pensions as their main financial source in urban areas, only 5.5% did so in rural areas—a significant disparity. It is also important to note that 11.3% of the elderly in rural areas were self-supporting, which is consistent with our estimates of the age–labor income profile for rural areas in Figures 4 and 5 that show a relatively smooth “peak” and continued labor income into advanced ages. In addition, National Aged Population Survey data also indicate that 26.3% of rural elderly and 18.2% of urban elderly do not have enough financial support to cover their living costs, which is a high proportion (not shown).

Given the large scale of rural-to-urban migration for work, how are migrant adult children supporting their elderly parents who stay behind in rural areas? While more research is needed, recent studies have shed considerable light on this important issue. Li, Jin, and Feldman (2011) examined how the mass outflow of rural labor has not only accelerated aging in rural areas but has also had an impact on familial support for the elderly. Analyzing longitudinal data from Anhui province as well as data on rural–urban migrants in Shenzhen City in Guangdong province, they found that the tradition of elder care and change coexist. Migrant children are able to provide their parents with better economic support but with less direct care and emotional support. Migration also places additional burdens on grandparents in terms of child care and agricultural fieldwork, which affects their health and well-being.

Figure 17 compares sources of financial support for the elderly in the PRC and selected Asian economies based on recent NTA estimates. At the apex of the triangle is asset-based reallocations, while the bottom two vertices show reliance on private transfers (to the left) and public transfers (to the right). The numbers along each side indicate the mix of the three sources that each economy uses to support the elderly. The Philippines shows a high reliance on asset-based reallocations while Japan has relied on public transfers, although that decreased between 1999 and 2004 in favor of assets. In 2000, the US showed a mix of assets and public transfers with little reliance on private transfers. Other economies show a substantial reliance on familial transfers. The position

of the PRC changed significantly from 1995 to 2002 with private transfers decreasing from about 50% to about 25% of elderly financial support. Over the same period, reliance on public transfers and on assets increased modestly. We anticipate that reliance on assets and public transfers has increased further since then and will continue to do so as the elderly cohorts have opportunities to accumulate assets.

Figure 17: Sources of Financial Support for the Elderly (65+) in Selected Asian Economies



Source: National Transfer Accounts website accessed 20 March 2011.

B. Health Care

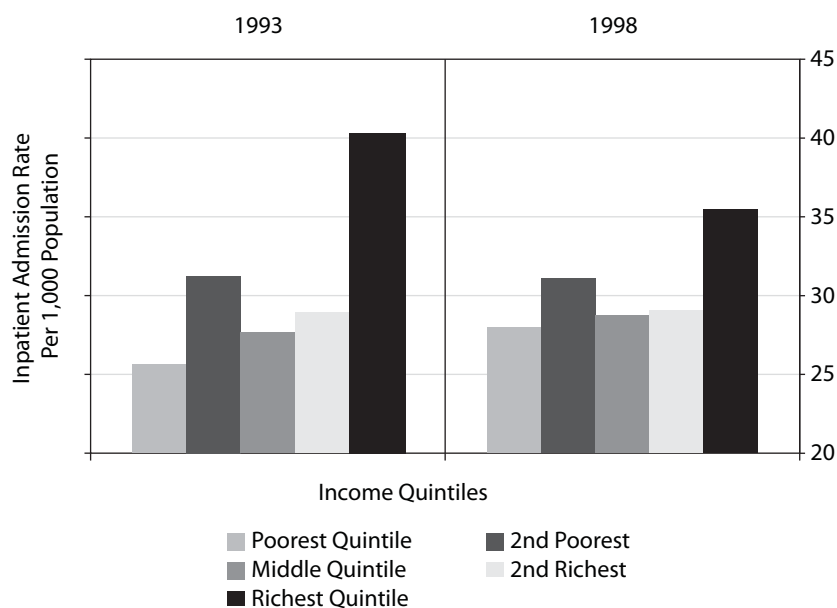
1. Health Care Reform since 1980

The health care delivery system in the PRC is quite extensive in both urban and rural areas. In 2003, the number of beds per 1,000 population was 2.35, a figure that increased by 14.4% during the 1980s and by 3.9% during 1990s. There are 1.868 million doctors in total and 1.48 doctors per 1,000 population. In the first half of 1980s, the number of doctors per 1,000 population increased by 13.7% while in the second half the number increased by 15.8%. During the 1990s, the number was comparatively stable.

Public hospitals owned by states and local governments account for 93.31% of hospital beds and employ 94.23% of health professionals. All public hospitals are classified as nonprofit organizations. The number of private hospitals is growing gradually.

Since the 1990s, the government has decreased subsidies to public hospitals and adopted explicit or implicit policies allowing them to generate profits from user charges to cover their own expenditures. Government subsidies accounted for 30% of expenditures of public hospitals in the 1980s but account for just 10% at present. As a result, an oversupply of profitable services like high-tech diagnostics and procedures and profitable medications has become common while basic services are not necessarily of high quality nor accessible to all. As in many countries, health care expenditures have grown rapidly exceeding the growth rate of per capita income.⁶ In fact, the high health care spending burden is considered to be one of the most serious social and economic problems in the PRC.⁷ Evidence suggests that the lower-income population is most severely affected since they utilize fewer services (Figure 18) despite having a higher burden of ill health.

Figure 18: Access to Health Care in Rural Areas, 1993 and 1998



Source: Third National Health Care Service Survey 2003 (Ministry of Health 2003).

⁶ The per-outpatient-visit fee grew from an average of 10.8 yuan in 1990 to 126.9 yuan in 2005, while the consumer price index only doubled during the same period.

⁷ A survey conducted in 2003 by the Ministry of Health found that 48.9% of patients who “should” see a doctor chose not to and that over 70% of them reported this decision was because of the high price of health care.

2. Basic Medical Insurance System for Urban Employees

The government has responded to the issue of high out-of-pocket expenses in part by expanding health insurance coverage to pool risk and prevent poverty caused by illness. In 1998, the government reformed the basic medical insurance system for urban employees creating municipal insurance pools to replace the previous company-based arrangements. This system combines individual medical savings accounts with a social health insurance risk pool and is managed by local governments. By the end of 2003, some 109.02 million people had participated in the program including 79.75 million employees and 29.27 million retirees.

The basic program covers all employers and employees in urban areas including the retired. The funds come mainly from premiums paid by employees (2% of wages) and employers (6% of the total wage bill) though we are not aware of any rigorous study quantifying the true incidence of paying health insurance premiums. Retirees are exempted from paying premiums. The individual's premiums and 30% of the premiums paid by the employers generally are allocated to personal accounts; the remaining 70% goes into the social risk-pooling fund.

Outpatient treatment fees are mainly paid from the personal account while inpatient expenses are paid mainly by the social risk-pooling fund. The minimum benefit level is, in principle, about 10% of the average annual wage of local employees, and the maximum reimbursement is about 4 times that average. Therefore, urban insurance does not cover catastrophic spending but rather caps the insurer's liability, leaving households at risk for the largest medical bills. This insurance design, while not optimal, does keep premiums down and coverage relatively wide.

3. The New Cooperative Medical Scheme for Rural Residents

Before 1978, the communes in rural PRC provided health care through a three-tiered "cooperative medical system" that organized barefoot doctors and provided other medical services managed and financed by commune welfare funds. Thus the system served the dual role of supplier and collector of insurance funds. After economic reforms in agriculture, the system collapsed as communes collapsed.

In 2003, the government began to implement the "New Cooperative Medical Scheme" in rural areas. Insurance is voluntary for households while risk pooling and benefit design are done at the county level, so there are wide variations across the country depending on the socioeconomic status of the locality. Originally, the premium was just 50 yuan a year of which 40 yuan was subsidized by central and local governments while the remaining 10 came from the individual. Benefit levels have subsequently increased although they are still modest. The insurance covers mainly inpatient medical expenditures and some outpatient expenditures. As the funding scale is low,

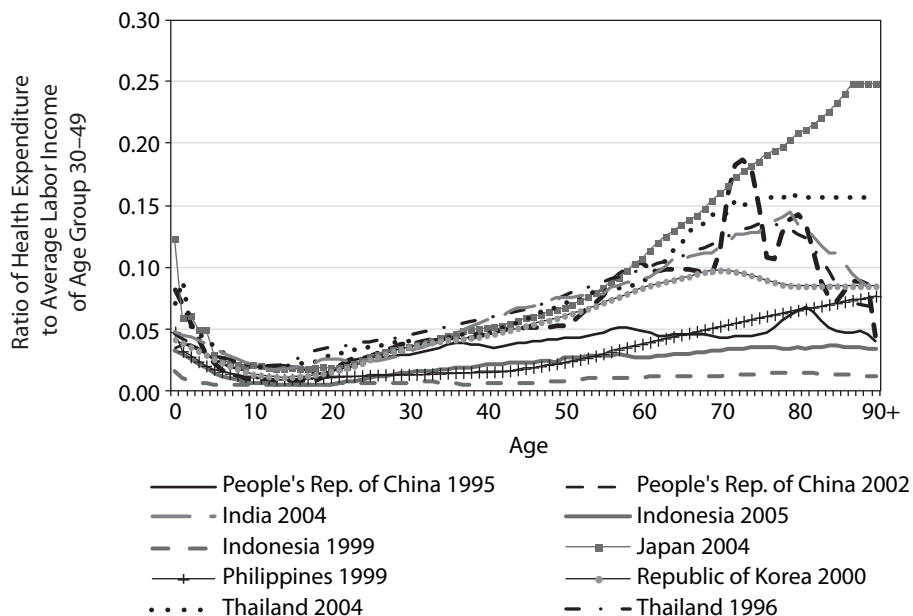
the insurance benefit is limited. The main characteristics of the new scheme include (i) strengthened government financial support, (ii) increased access to medical aid for the poor by coordinating with anti-poverty policies (e.g., *dibao*), (iii) increased risk pooling for counties, and (iv) a focus on insurance for catastrophic illnesses.

This program has been rolled out nationally and has now achieved nearly universal coverage, representing probably the most rapid expansion of insurance in world history. Since it is voluntary, adverse selection is potentially a problem though it has been a comparatively minor one to date given strong incentives for local governments to keep enrollment high. Secondly, the administrative costs of collecting premiums are high as they must be collected household-by-household rather than as payroll deductions, and because the premiums and government subsidies are low, the reimbursement rate is also low. The co-payment by the individual can still be as high as 50%–70%. Moreover, to ensure sustainability, the government will need to address important issues of payment incentives for providers and increasing “value for money” in the health sector, including revising incentives for government-owned hospitals and their employees so that their financial and professional goals are better aligned with the social goal of quality health care at a reasonable cost.

4. An International Comparison of Life Cycle Health Expenditures

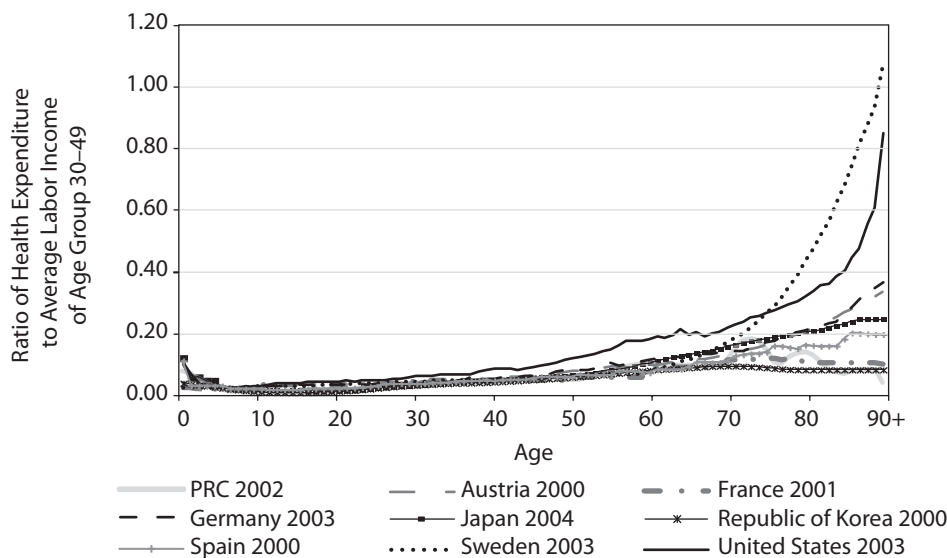
Economic theory and international experience would suggest that expanded insurance coverage and increased incomes in the PRC would have led to increased health care expenditures per capita, perhaps disproportionately so among the elderly as that cohort grows and the burden of disease shifts from communicable to chronic, noncommunicable diseases. Figures 19 and 20 show the patterns of health expenditures by age in the PRC compared with those in other countries. We do indeed see a rise in health spending in the PRC between 1995 and 2002 in Figure 19, with the largest increases among those aged 50–80. In the 1990s, health spending by age was relatively flat into old age in the PRC as it was in Indonesia, in sharp contrast with the rising spending with age evident in countries like Japan, Sweden, and the US after the turn of the century (Figure 20). In 2002, the spending profile in the PRC became more like Japan’s in 2004 albeit still at a much lower level and increasing far less steeply with age even when normalized by the average labor income of the age group 30–49 in each country.

Figure 19: Health Expenditures in Selected Asian Countries, Various Years



Sources: Authors' calculations using National Transfer Accounts estimates and the National Transfer Accounts website accessed 30 April 2011.

Figure 20: Health Expenditures in the People's Republic of China and Organization for Economic Co-operation and Development Countries, Various Years



Source: Authors' calculations using National Transfer Accounts estimates and the National Transfer Accounts website accessed 30 April 2011.

Finally, we compared the NTA estimates of the share of public financing in total health expenditures with that reported in the Global Health Observatory Database, the main repository for health statistics of the WHO (see www.who.int/gho/en/). As shown in Table 6, while the estimates of the public/private shares in health expenditures are quite similar for many countries, there are also notable discrepancies. Moreover, the differences are not consistently of the variety that one might expect from comparing household survey estimates (from the NTA) with those supplied by governments with adjustments for international consistency (WHO estimates). Some NTA estimates found a much higher level of public health spending than the WHO reports (e.g., by 17% for Brazil and 25% for India), while other NTA figures underestimated public spending relative to the public–private ratio reported by WHO (e.g., by 3% for Germany, 12% for Japan, 21% for Senegal, 42% for Uruguay, and 43% for Thailand in 2004). Overall, the correlation coefficient between the two series is 0.636. Further investigation of these differences is warranted, especially when interpreting public and private transfers for health generated by NTA estimates across countries over time.

Table 6: National Transfer Accounts and World Health Organization Estimates of Public and Private Expenditures on Health

Country	Year	Share of Public Health Expenditure (%)	
		From NTA Estimates	From the WHO Global Health Observatory Database
Austria	2000	75.71	76.80
Brazil	1996	57.98	40.50
Chile	1997	47.26	47.10
China, People's Rep. of	1995	51.20	51.20
PRC	2002	35.83	37.10
Costa Rica	2004	78.16	70.40
France	2001	79.68	79.40
Germany	2003	75.50	78.70
Hungary	2005	72.92	72.30
India	2004	47.92	22.50
Indonesia	2005	42.55	45.80
Japan	2004	69.41	81.70
Philippines	1999	41.60	44.20
Senegal	2005	33.99	55.30
Slovenia	2004	79.89	73.00
Korea, Rep. of	2000	46.99	44.90
Spain	2000	75.98	71.60
Sweden	2003	90.46	82.50
Thailand	1996	20.95	47.20
Thailand	2004	21.93	64.90
Uruguay	2006	31.62	74.10
United States	2003	44.11	43.90

Sources: NTA website; WHO Global Health Observatory Database, available: www.who.int/gho/en/, both accessed 30 April 2011.

V. Conclusions and Policy Discussion

The PRC is aging. As this accelerates, the number of elderly people will become very large and will reach a peak in the 2030s. The country faces numerous challenges to sustain its economic development during what is referred to as its third stage of social and economic transformation. Arguably, this stage is different from the previous two, i.e., the socialist transformation initiated in the 1950s and the transition from central planning to a market-based economy that started in 1979. The current transformation started in approximately 2003 but is especially well articulated in the current Twelfth Five-Year Plan that emphasizes balancing economic development and social development, achieving a “harmonious society” through improving people’s lives, and happiness. Unfortunately, the NTA estimates described in this chapter end in 2002 and thus do not reflect the latest policies and trends. The direction of change nevertheless appears clear. Achieving a balance between sustained growth and social inclusiveness will be a challenging task in the years ahead.

Many observers are concerned about support for the elderly and the potentially negative impact of population aging on the future economic growth of the PRC. Some characterize the situation as not only a crisis but a crisis that has to date been mishandled by policymakers: “The aging of [the People’s Republic of] China’s population represents a crisis because its arrival is imminent and inevitable, because its ramifications are huge and long-lasting, and because its effects will be hard to reverse” (Wang 2010, 251); “[the People’s Republic of] China’s slow recognition and inaction in the face of its impending demographic crisis—inaction that persists despite appeals by almost all the country’s population experts to phase out the one-child policy—reflect policy makers’ lack of understanding of the changing demographic reality” (Wang 2010, 251).⁸ In contrast, Banister, Bloom, and Rosenberg (2010) emphasize that there are many reasons to believe that the economy *will* respond effectively to this demographic transition and that the government will continue to establish resilient policy and institutional responses that maintain development momentum even as the growth rate declines—an almost inevitable consequence of reaching middle-income status.

We see an element of truth in both views but lean toward cautious optimism. The demographic future of the PRC will indeed be quite different from its recent past, and the challenges of an aging population with a relatively low per capita income in such a populous country are daunting. The trajectory for the PRC over the coming decades will be determined to a large extent by its policy responses. “To continue to have both economic growth and support an elderly population, it is necessary to have policies that encourage work effort, higher rates of savings and investment, and greater investment

⁸ Concern also arises because of the potential impact of disparities on social stability. Reports of public disturbances including protests, demonstrations, picketing, and group petitioning totaled 74,000 in 2004 and 87,000 in 2005 (Lum 2006). Whether this trend is related to demographic change and its associated social challenges is not entirely clear.

in human capital” (Mason and Lee 2011). It is in effective policy response that the government can learn from the experiences of many other countries and from its own newfound determination to seek more balanced, inclusive growth.

We must also not forget the diverse ways in which the elderly continue to make substantial contributions to younger generations. The experiences of other rapidly aging countries with strong familial support traditions such as Japan and the Republic of Korea suggest not only that a second demographic dividend is possible but also that the elderly provide ongoing support to their families in ways that are not often recognized in the crisis rhetoric of population aging. For example, Ogawa, Chawla, and Matsukura (2011) found that with regard to intrafamilial transfers in Japan, the age at which an average individual shifted from a net giver to a net receiver increased dramatically from 64 in 1984 to 77 in 2004. The authors argue that the elderly should be considered latent assets rather than liabilities in contemporary Japanese society because during Japan’s so-called “lost decade”, the elderly played a crucial role in providing financial assistance to their adult offspring and their grandchildren.

In contrast, in the PRC the opportunities of the current elderly to accumulate private wealth during their prime working ages were severely constrained (therefore our lack of systematic data on bequests is unlikely to be a large limitation). The elderly nevertheless make substantial contributions to family well-being as, for example, caregivers for grandchildren. In fact, in rural areas the elderly often are the sole caregivers for children left behind by parents who have migrated to urban areas. Improved health presumably makes this role possible for a longer period and for a broader range of families. These intrafamilial transfers by the elderly to their offspring are not accounted for in the intergenerational transfers discussed in this paper since, as mentioned previously, current NTA estimates do not include nonmarket household activities such as child care.

On balance, the sheer number of older Chinese will still present a formidable challenge in the country’s quest to achieve a relatively well-off (*xiao kang*) society with balanced development. Without a more robust social protection system, many of the elderly will be left without adequate support, fueling the wide economic disparities that currently characterize the nation. On the other hand, an overly generous system can impede chances to generate a second demographic dividend. Thus, while the tradition of familial support for the elderly has merits, policy makers need not overly fear the transition away from it. “If countries rely to a significant degree on assets to fund retirement, population aging will lead to greater wealth...and higher standards of living...The evidence suggests that East Asian countries are following this track...with low reliance on public transfer systems” (Mason and Lee 2011). As the world’s most populous country, trends in the PRC will shape those of the region and the world.

A vital component of such a transition is establishing a viable pension system not exclusively based on pay-as-you-go public transfers and flexible enough to address poverty alleviation and income redistribution as the PRC continues to urbanize and develop. Since the savings rate is already quite high, there are reasons to suggest that adopting a fully funded pension system is currently not optimal. Barr and Diamond (2010, 48) argue that "...limited pension accumulation rather than full funding better suits conditions in [the People's Republic of] China today." They recommend notional accounts, expanding the contributory pension system to all large firms in both rural and urban areas, and introducing a nationwide, tax-financed "citizen's pension" based on age and residence to everyone except those with a significant pension from the mandatory system, similar to pension systems in Australia, Canada, Chile, the Netherlands, and New Zealand.

The effects of aging will have specific gender impacts as well. The traditional reliance on male children for old-age support will no doubt continue to erode with the large-scale migration of the rural population and its long-term low fertility and with increased financial support from migrant daughters (Li, Jin, and Feldman 2011). The economic impact of reductions in the working-age population can be partly offset by greater female labor force participation and less gender discrimination (see for example discussion in Banister, Bloom, and Rosenberg 2010). As is true around the world, women in the PRC have a longer life expectancy than men and therefore can expect to spend a part of their retirements without a spouse.⁹ For men, the poorest economic strata will increasingly find it difficult to marry given the large gender imbalance in the PRC; Porter (2011) argues that there will be a particular need to address the care requirements of unmarried elderly men in rural areas in the future. A citizen's pension would be especially attractive for supporting women and unmarried men, especially in rural areas. Wise policy decisions to invest in the human capital of the next generation, to shore up safety nets for the vulnerable, and to develop a sustainable system of old-age support can lay the foundation for continued economic growth and more balanced socioeconomic development.

⁹ In 2010, the probability of surviving to age 65 was 85.28% for women compared with 77.78% for men (according to life tables for the PRC maintained by the US Census Bureau).

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About the Paper

There is a growing awareness of the social strains accompanying economic growth in the People's Republic of China, such as the lagging development of the social protection system as the population ages. Using estimates from the National Transfer Accounts database, Qiulin Chen, Karen Eggleston, and Ling Li describe changes in life cycle public transfers; interhousehold transfers; and intrahousehold transfers for education, health care, and other support; and discuss the main challenges that demographic change poses for the People's Republic of China's pension and health care systems. They argue that demographic change and its interaction with family behavior and social policies will strongly shape both future economic growth—through savings and investment decisions, labor supply, and productivity—and the sustainability of social support systems.

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Asian Development Bank
6 ADB Avenue, Mandaluyong City
1550 Metro Manila, Philippines
www.adb.org/economics
ISSN: 1655-5252
Publication Stock No. WPS124298

November 2011

 Printed on recycled paper



Printed in the Philippines