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Asset Poverty in Urban China:

A Study Using the 2002 Chinese Household Income Project

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Asset Poverty in Urban China: A Study Using the 2002 Chinese Household Income Project

Defining asset poverty as insufficiency of assets to satisfy household basic needs for a limited period of time, the study examines asset poverty rates in urban China using the 2002 survey data from the Chinese Household Income Project (CHIP). We find that asset poverty rates in urban China are lower than those of developed countries, in part due to Chinese households' strong commitment to precautionary savings and the low poverty standards. However, the liquid asset poverty rate is five times that of the income poverty rate in urban China. Notably, the asset-poverty-gap ratio shows that most households in asset poverty have zero liquid assets or negative net worth. Given the increasingly common trend for lower-income individuals to experience transient poverty and income uncertainty, asset building ought to be an integral part of the anti-poverty agenda to protect the poor from economic hardship and provide them with opportunities for economic growth.

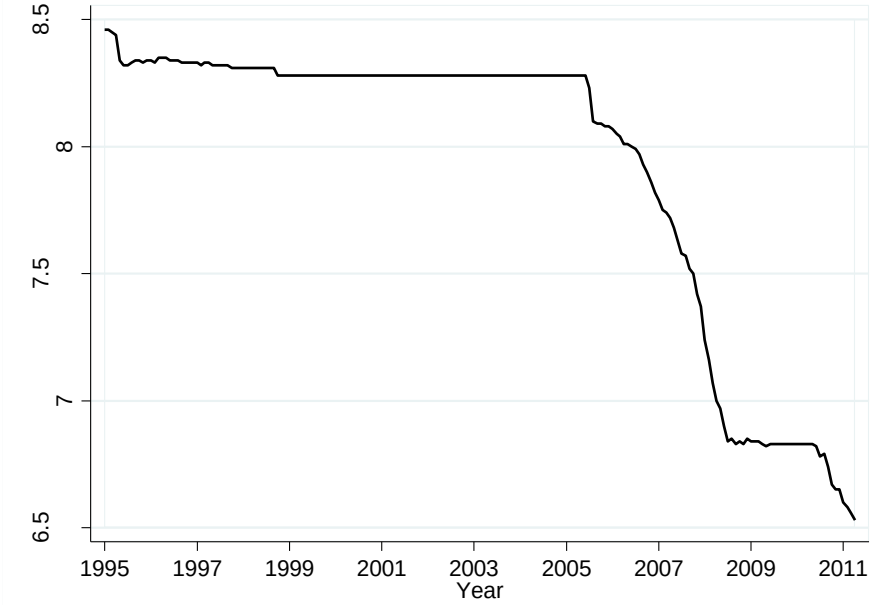
Key words: *poverty, asset distribution, income poverty, urban China, wealth*

Introduction

The 2011 China private wealth study reported that the number of individuals with net worth over 10 million yuan (approximately US$1.5 million at the current exchange rate; see Figure 1 for information on China-US currency exchange rates) had doubled since 2008, with the strongest growth from those with net worth greater than 100 million yuan (Bain & Company, Inc, 2011). These numbers reflect the unprecedented growth of wealth in Chinese households created by China's economic advances.

While the wealthy are generally doing well, even in the recession, poverty and social inequality have raised concerns among policymakers and researchers. China still had 254 million people living below the new international poverty standard in 2005—US$1.25 per day in 2005 Purchasing Power Parity (PPP) dollars (World Bank, 2009)—despite the country's concerted poverty reduction efforts over the last three decades. Along with this rapid economic growth, income and wealth inequalities have widened significantly, indicated by an increase in the overall Gini coefficient of income distribution from 0.16 prior to the market reform to 0.45 in the early 2000s and to 0.47 in 2007 (UNDP, 2008). The Gini coefficient of wealth distribution for the country as a whole was 0.45 in 1995 and 0.55 in 2002 (Li & Zhao, 2007). Although the Gini coefficient of wealth is still relatively low compared to developed countries, its growth is remarkable given the fact that personal wealth accumulation in China did not actually start until two decades ago (Zhang & Ding, 2008) following the end of the socialist era.

Figure 1. The China-US Exchange Rates from 1995-2011



Income disparity in China has been widely acknowledged, but much less attention has been given to asset inequality. Assets are stocks of resources owned by households at a certain point in time, including a home, business, savings, stocks, and bonds, among others. Compared to income, assets (wealth) not only serve as a storehouse for future consumption to protect household economic security, but are also an important facilitator of economic development (Caner & Wolff, 2004; Nam, Huang, & Sherraden, 2008). Household assets are an important determinant of income in the long run (Brandolini, Magri, Smeeding, 2010), affecting an individual's opportunities for business startup, education, homeownership, and achievement of economic aspirations. In addition, the well-being of individuals and households depends on not only income but also asset ownership (Caner & Wolff, 2004; Schneider, 2004; Sherraden, 1991).

Using the 2002 survey data of the Chinese Household Income Project (CHIP), this study examines asset inequality in urban China from the perspective of asset poverty, and with a focus on low-wealth populations. Asset poverty refers to insufficiency of assets to satisfy household basic needs for a limited period of time (Haveman & Wolff, 2001). The asset-poverty perspective is expected to add valuable insights to income-poverty analysis. The study estimates asset-poverty rates in urban China based on different asset-poverty lines, investigates characteristics of asset-poor households, then examines interactions between asset poverty, income poverty, and public assistance, and finally, discusses policy implications of asset-poverty research in China.

Background

Asset distribution in urban China

Household assets have grown substantially since China's reform in the late 1970s (Zhao & Ding, 2008), which has opened up various opportunities for individuals to accumulate significant amounts of assets. Reforms in areas such as land use, housing, state-owned enterprises, and finance have allowed people to become owners of their properties. Estimates from the CHIP show that per

capita net worth, defined as the sum of all assets minus non-housing liabilities, increased from 13,700 yuan in 1995 to 46,100 yuan in 2002. At the household level, mean household net worth increased from 66,747 yuan (Li, Wei, & Gustafsson, 2000) to 306,000 yuan (Cheng, 2008) between 1995 and 2007. Asset inequality also widened, with the highest decile group owning 34% of total net worth in contrast to only 2.8% owned by the two lowest groups (Zhao & Ding, 2008). The Gini coefficient of wealth distribution for urban areas was 0.48 in 2002 (Zhao & Ding, 2008), 0.56 in 2005, and 0.58 in 2007 (Liang, Huo, & Liu, 2010). Housing and financial assets were the two largest categories of assets for urban households, constituting 70% and 90% of net worth in 1995 and 2002, respectively (Li & Zhao, 2007; Zhao & Ding, 2008). Liang and colleagues (2010) show that, in 2007, housing and financial assets contributed to 90% of asset inequality in urban China.

Previous studies indicate that asset accumulation for urban households in China is highly related to household demographics and individual characteristics, including age, gender, health status, political status, occupation, education, and income (Liang, Huo, & Liu, 2010; Meng, 2007). These demographic characteristics likely affect household asset-poverty status as well. Some of the findings regarding the association between household assets and demographics are different from those found in developed countries (i.e., Caner & Wolff, 2004). Several studies even generate different findings on the same demographic characteristics, such as age, occupation, and education. For instance, consistent with the life-cycle hypothesis, one study finds a hump-shaped age-savings profile in the Household Assets Investment Study: household assets peaked at age 50 in the 2005 data and at age 60 in the 2007 data (Liang, Huo, & Liu, 2010). As older adults are more likely to own a house, the change in the peak age from 2005 to 2007 could be caused by rising housing prices. In the two cross-sectional data sets (1995 and 1999), Meng (2007) also identifies the same age-asset pattern with different peak ages (52 and 76, respectively). Li, Wei, and Gustafsson (2000), however, report a different savings pattern with two peaks at ages 35-44 and 60-64 in urban China, and a recent study of Chamon and Prasad (2010) presents a U-shape age-savings profile, in contrast to Liang et al. (2010).

Female-headed households and those headed by individuals with excellent health, high income, or membership in the Communist party have more wealth than their counterparts (Liang, Huo, & Liu, 2010; Meng, 2007). Household assets also vary by occupation. In 2005, business owners held the highest level of household net worth, followed by teachers, technical workers, and government employees, but by 2007, the average household net worth of government employees exceeded that of private business owners (Liang, Huo, & Liu, 2010). In addition, a positive correlation is found between household assets and heads' educational attainment in two studies (Liang, Huo, & Liu, 2010; Meng, 2007) but not a third (Li, Wei, & Gustafsson, 2000).

According to Chamon and Prasad (2010), one explanation for these variations in findings is that household asset accumulation, to a large extent, is constructed by institutional and policy structures rather than individual and household characteristics. In contrast to many developed countries, institutional structures in China have changed drastically during recent economic and policy transitions, resulting in varied relationships between demographic characteristics and wealth accumulation. For instance, Meng (2007) and Zhao and Ding (2008) find that the housing reform policy in the early 1990s significantly contributed to asset inequality in urban China. Feng, He, & Sato (2009) suggest that pension reform in the mid-1990s may also have changed household saving behavior. Furthermore, Wei and Zhang (2009) argue that even the imbalanced sex ratio, a result of the one child policy, has induced families with male children to favor asset accumulation over

consumption. As these examples demonstrate, asset inequality in current China is a product of "historically and culturally defined processes created by contemporaneous political, economic, and social forces" (Davis & Feng, 2009).

A series of economic reforms and institutional transitions in China have provided tremendous opportunities for wealth accumulation. However, as reflected by increasing wealth inequality, these opportunities are not equally distributed. Overall, political or economic elites have been the primary beneficiaries of these institutional arrangements, enjoying the advantages of a multidimensional stratification system including redistributive power, rent-seeking ability, and market power (Davis & Feng, 2009), and therefore are able to accumulate more wealth than other groups (Meng, 2007). Despite the widely acclaimed institutional changes in the reform process over the past three decades, many individuals have been excluded from these asset accumulation opportunities. For instance, in the reform of state-owned enterprises, many urban workers lost out to managerial cadres and new capitalist owners during the sales of state-owned industrial assets to individuals. Unfortunately, few studies have systematically examined how these institutional changes excluded certain populations, especially those with low income and low wealth, from building household assets.

Asset poverty research

The concept of asset poverty can be applied to an examination of asset inequality. Most current poverty research focuses only on income despite efforts to include wealth in poverty measures (Brandolini, Magri, & Smeeding, 2010; Nam, Huang, & Sherraden, 2008). Oliver and Shapiro (1995) consider households as asset poor if their asset value is zero or less. Lusardi, Schneider, and Tufano (2011) define households' financial fragility as the lack of capacity to come up with $2,000 in 30 days. Haveman and Wolff (2001) categorize households as asset poor if their access to "wealth-type resources is insufficient to enable them to meet its basic needs for some limited period of time." Haveman and Wolff (2001) and Caner and Wolff (2004) set this "period of time" at three months based on the estimated duration of unemployment (2.2-4.2 months), a major event causing economic hardship. Brandolini, Magri, and Smeeding (2010) indicate that the reference period of three months is consistent with the estimates of desired precautionary savings. "Basic needs" is measured by the family-size conditioned poverty threshold proposed by a National Academy of Sciences panel (Citro & Michael, 1995). Haveman and Wolff (2001) and Caner and Wolff (2004) estimate asset-poverty rates with three forms of assets, including net worth, net worth minus home equity, and liquid assets. Net worth is defined as the sum of all marketable assets less the value of all debts. Liquid assets include the values of cash and other kinds of easily monetizable asset items.

According to Caner and Wolff (2004), the U.S. asset poverty rate in 1999 was 26% when measured with net worth, 40% with net worth minus home equity, and 42% with liquid assets. The level of asset poverty stayed almost the same from 1984 to 1999. Generally, asset-poverty rates are two to four times higher than the income-poverty rate (Caner & Wolff, 2004). Households headed by disadvantaged populations—such as ethnic minority groups, females, individuals younger than 34, individuals with children, individuals with low educational attainment, and renters—are more likely to experience asset poverty (Haveman & Wolff, 2004; Lusardi, Schneider, & Tufano, 2011).

A similar pattern of asset poverty has been identified in other developed countries. Using the data from the Luxembourg Wealth Study, Brandolini, Magri, and Smeeding (2010) study asset poverty in several wealthy countries (including Canada, Finland, Germany, Italy, Norway, Sweden, UK, and

US), and report that the asset-poverty rate is 2-3 times the income-poverty rate in most of these countries.

We note that the asset-poverty measure proposed by Haveman and Wolff (2001) defines assets as a storehouse for future consumption. This measure takes into consideration only the insurance role of household assets (Brandolini, Magri, & Smeeding, 2010). In fact, the role of assets in defining poverty can also be examined from a development perspective (Brandolini, Magri, & Smeeding, 2010; Carter & Barett, 2006; Nam, Huang, & Sherraden, 2008). Assets can promote the general capability of individuals, help them achieve goals beyond short-term consumption smoothing, open up a variety of opportunities, and determine long-term prospects. Carter and Barett (2006) propose an asset-based approach to poverty, and draw the asset poverty line at which to distinguish households likely to stay in income poverty from those that may grow out of income poverty conditional on asset accumulation. Considering the role of assets in future development, the asset-poverty threshold can be set at an asset value large enough for home down payment, business start-up, or children's post-secondary education (Nam, Huang, & Sherraden, 2008).

Based on previous literature on asset poverty, this study examines asset inequality in urban China from the perspective of asset poverty using the 2002 survey data of Chinese Household Income Project (CHIP).

Data and Methods

Data

The 2002 CHIP is a nationally representative data set collected by the Institute of Economics at the Chinese Academy of Social Sciences through a series of questionnaire-based interviews and coded on-site observations. Using a multistage stratified probability sampling method, the 2002 CHIP urban sample includes 12 provinces from the eastern, central, and western regions of China, and contains 6,835 households and 20,632 individuals from 77 cities. The survey collects comprehensive information on household demographics, income sources, financial and physical assets, and social benefit receipt, among others.

Definition of asset poverty

Household assets. The study adopts the definition of asset poverty developed by Haveman and Wolff (2001): a household is considered asset poor if its assets are insufficient to enable the household to meet its basic needs for three months. Following Haveman and Wolff (2001) and Caner and Wolff (2004), household assets are measured in three forms: net worth, net worth minus home equity, and liquid assets. The CHIP provides information on multiple asset categories, including home equity, savings, stocks, bonds, money lent out, investment in enterprises or business, housing funds, commercial insurance, collections, durable goods, productive fixed assets, and other assets. Net worth consists of all the asset categories mentioned above net of total household debts. Net worth minus home equity excludes home equity in the calculation of net worth. Liquid assets are the sum of stocks, bonds, and savings in CDs or regular savings accounts.

Asset poverty line. The asset poverty line refers to a minimum level of household consumption needs for a period of three months. We do not use China's official poverty line to measure household

basic needs because it is based on a food-energy-intake method (2,100 calories per capita per day) for rural areas only. This rural poverty line (785 yuan in 2002) is far below the international poverty standard and not considered appropriate for urban areas of China (Khan, 2004). Instead, we use three approaches to measure household basic needs in urban areas of China. The first is the Minimum Living Standard (MLS) set by local governments to determine a household's eligibility for Minimum Living Standard Assistance, the safety net for the urban poor in China (Gao, Garfinkel, & Zhai, 2009). As an estimation of the local monthly expenses on basic necessities, the MLS takes into consideration about 20 essential goods and services, including food, clothing, shelter, utility, medical care, and tuition expenses (Chen & Barrientos, 2006). The MLS-based asset-poverty line is the product of three terms: the MLS, household size, and the period of three months. Information regarding the 2002 MLS is collected by the authors from official websites of local governments. For cities where the MLS information is not available, we use the MLS of the central city in the same province as a proxy.

Secondly, we use a specific poverty line for urban China developed by Khan (2004) to measure household basic needs, which has been used in several other studies (e.g., Gao, Garfinkel, & Zhai, 2009; Gustafsson & Deng, 2007). This poverty line is set at 2,534 yuan per capita per year, almost two times the World Bank poverty line (US$1.25 per day in 2005 PPP dollars). Using this method, the asset poverty line is the product of household size and one quarter of Khan's poverty line.

For the third approach, we use the monthly household minimum expenditure reported by household heads in the CHIP as a measure of household basic needs. Therefore, the asset-poverty line is the product of self-reported minimum expenditure and three months. This approach considers poverty from the perspective of consumption rather than income, and the self-reported minimum expenditure allows the subjective poverty line to be estimated.

Other measures

To examine the characteristics of asset-poor households, the study includes two groups of demographic variables. *Household head's characteristics* include gender, age (20-29, 30-39, 40-49, 50-59, and 60 and above), employment status (employed or not), ethnic groups (Han versus minority groups), marital status (married versus otherwise), health condition (very good versus otherwise), political party (Communist party versus otherwise), and education (less than high school, high school or equivalent, two-three years of college, and four years of college or above). *Household characteristics* are household size, presence of a child in the household (younger than 18), presence of an elderly adult in the household (older than 64), and household income quartiles.

Analysis

The study first reports demographic characteristics and asset distributions of the sample. Using different asset-poverty lines, we then calculate asset-poverty rates and asset-poverty-gap ratios at the household level with three asset indicators. The asset-poverty rate provides an estimation of the share of households living under the asset-poverty line, while the asset-poverty-gap ratio, indicated by a share of the asset-poverty line, measures the amount of assets households need to grow out of asset poverty. In the discussion of the study results, we focus on liquid asset poverty in particular. Compared with the other two asset forms, net worth and net worth minus home equity, liquid assets precisely reflect the role of assets in consumption smoothing. Asset items included in the other two

measures, such as home or business, are less likely to be liquidized for consumption when negative income shocks occur.

We further tabulate the sample by households' asset-poverty and income-poverty status. Income-poverty lines are defined similar to asset-poverty lines, with a different reference period (12 months). The tabulation of asset poverty and income poverty results in four categories of households (see Figure 2): the income and asset poor, the income poor only, the asset poor only, and the income and asset non-poor. The income-poor-only group has assets above the asset-poverty line, while the asset-poor-only group has an income greater than the income poverty line. Finally, a logit model and a multinomial model are conducted to examine if household demographics are associated with household asset-poverty status and the four categories in Figure 2. The sample has few missing values, so we use listwise deletion in all analyses.

Figure 2. Cross-tabulation of Household Income and Asset Poverty

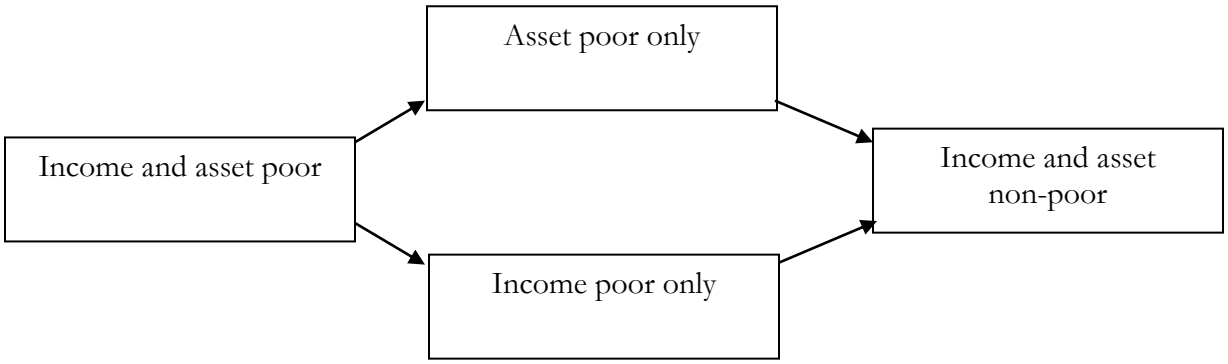


Table 1. Sample Characteristics (N=6,835)

Variables	Full Sample Percentage or Mean	Liquid Asset-Poor Sample Percentage or Mean
Household Head's Characteristics		
Gender (1=Female)	32.77	28.21
Age		
20-29	2.11	2.85
30-39	22.55	22.86
40-49	35.49	35.63
50-59	23.83	22.69
60 and above	16.02	15.96
Ethnicity (1=Han)	96.15	95.60
Political party (1=Communist party)	37.67	27.87
Marital status (1=married)	94.06	92.15
Employment status (1=employed)	70.48	66.95
Education level		
Below high school	36.22	46.98
High school or equivalent	36.88	36.61
Two or Three-year college	18.10	10.45
Four-year college and above	8.79	5.96
Health condition (1=very good)	20.43	21.66
Household Characteristics		
Household size (mean, SD)	3.02 (.79)	3.09 (.81)
Number of children (mean, SD)	.56 (.56)	.61 (.59)
Number of older adults (mean, SD)	.23 (.16)	.23 (.53)
Household income (mean, SD)	23757.23 (15558.55)	16411.45 (11045.39)
Region and Province		
Eastern region:		
Beijing	7.07	2.24
Liaoning	10.20	8.89
Jiangsu	10.67	9.49
Guangdong	7.96	3.19
Central region:		
Shanxi	9.35	13.96
Anhui	7.21	7.42
Henan	9.95	11.04
Hubei	9.83	9.92
Western region:		
Chongqing	4.11	3.71
Sichuan	8.56	9.23
Yunnan	9.31	13.03
Gansu	5.78	7.85
Asset-poverty Line (mean, SD)		
Minimum Living Standard	1774.16 (662.45)	
Khan poverty line	2630.32 (687.84)	
Self-reported minimum expenditures	3640.03 (1986.97)	

Results

Sample characteristics

The first column of Table 1 reports demographic characteristics of the study sample. Of the 6,385 households, 33% are headed by females. Most household heads are middle aged, and only 2% are younger than 30. A small proportion of household heads are members of ethnic minority groups (5%), and 38% are members of the Communist Party of China. Most household heads are married (94%) and employed (70%). About one-third of householders have educational attainment below high school, and another one-third have a high school diploma or equivalent. Nearly 20% have 2-3 years of college, and 9% have at least a bachelor's degree. Regarding health condition, 20% of household heads report having "very good" health. On average, there are .56 children and .23 older adults in these households. The mean household income in 2002 was 23,757 yuan (SD=15,559 yuan). The CHIP collects household information from 12 provinces in the eastern, central, and western regions; Table 1 reports the percentage of the sample from each province.

Also shown in Table 1, the means of the three asset-poverty lines proposed by the study are 1,774 yuan, 2,620 yuan, and 3,640 yuan. The MLS, as the lowest asset-poverty line in this study, is 70% of Khan's line, and 50% of the self-reported minimum household expenditure.

Household asset distribution in urban China

The first column of Table 2 describes the mean and median of liquid assets, net worth, and net worth excluding home equity for the study sample. Distributions of asset categories are shown in the table as well. The mean and median liquid assets are 28,007 yuan and 15,000 yuan, respectively. Compared to the 1995 CHIS (Li, Wei, & Gustafsson, 2000), mean liquid assets increases by almost 200%. Nearly 13% of households do not have any liquid assets. The mean liquid assets are 4,000 yuan higher than the average household income, and 3.5 times as large as the 2002 per capital disposable income of urban residents (7,703 yuan; NBSC, 2003). Given that the average household size is about three, the amount of liquid assets owned by an average urban household approximates its annual household income.

The mean of liquid assets is about 20% of the average household net worth (128,577 yuan), and 60% of net worth net of home equity (48,357 yuan). The average household net worth doubles from 1995 to 2002 (Li, Wei, & Gustafsson, 2000). Nearly 85% of households in the sample are homeowners; home equity accounts for about two-third of the total net worth. In other words, a home seems to be the most commonly owned asset category and the most important asset for urban households. Other important asset categories are savings in CDs and regular savings accounts, and durable goods.

Table 2. Mean and Median of Household Assets

Asset Categories	Full Sample		Liquid Asset-Poor Sample	
	Mean (SD)	Median	Mean (SD)	Median
Liquid Assets	28006.63 (41242.28)	15000.00	265.38 (555.33)	0
Percent of zero liquid assets	12.70		74.89	
Net Worth	128577.20 (150392.00)	94000.00	65586.98 (78237.33)	6038.64
Percent of negative or zero net worth	1.77		7.51	
New Worth-Home Equity (NW-HE)	48356.50 (66250.08)	31000.00	11098.02 (29788.02)	5500.00
Percent of negative or zero NW-HE	2.41		16.91	
Savings in CD accounts	18057.49 (30250.58)	10000.00	61.88 (304.23)	0
Savings in regular savings accounts	5019.50 (10182.96)	2000.00	198.29 (464.17)	0
Stocks	3748.95 (15391.02)	0	3.84 (65.35)	0
Bonds	1180.68 (8018.08)	0	1.36 (32.91)	0
Money lent out	1434.66 (8735.33)	0	665.70 (5662.7)	0
Family business	1103.62 (10709.89)	0	1140.93 (9774.25)	0
Investment in enterprises	509.32 (4791.25)	0	375.32 (3915.16)	0
Housing fund	3124.65 (6275.95)	0	1536.41 (4093.00)	0
Commercial insurance	1418.31 (6475.47)	0	516.70 (3044.39)	0
Collections	532.05 (4294.06)	0	160.91 (1172.34)	0
Durable goods	9168.87 (26851.69)	5000.00	6039.72 (14669.82)	3000.00
Self-owned productive fixed assets	2461.91 (22314.11)	0	296.59 (2015.94)	0
Homeownership	.84 (.37)	1	.79 (.41)	1
House value	84450.54 (113691.60)	60000.00	59915.92 (71413.84)	45000.00
Other assets	1871.73 (8071.26)	0	1200.42 (6377.08)	0
Total household debts	5505.09 (53508.30)	0	8686.23 (21797.87)	0

Asset-poverty rates by different asset measures and asset-poverty lines

Table 3 shows estimated asset-poverty rates using the three different asset measures (liquid assets, net worth, and net worth excluding home equity) and asset-poverty lines (the MLS, Khan's poverty line, and the self-reported minimum household expenditure). Among the three asset measures, liquid assets generate the highest estimates of asset-poverty rates: 17% of households in the sample are asset poor according to the MLS asset-poverty line, which is five times the income-poverty rate (16.96/3.34=5.1). The liquid asset-poverty rate rises by less than one percentage point for Khan's poverty line and four percentage points for the self-reported minimum expenditure. Although Table 3 only reports the liquid assets poverty rate, the ratio between household liquid assets and the self-reported minimum expenditure actually has a median value of five in the sample. This means that the amount of liquid assets owned by a typical urban household could support its minimum consumption for about 15 months (median value 5*3 months). This estimation is higher than estimates regarding household precautionary savings in developed countries (Brandolini, Magri, & Smeeding, 2010).

Table 3. Asset Poverty and Income Poverty in Rural China (percent)

Household Economic Resources	Asset and Income Poverty Rates (%)		
	MLS	Khan's Poverty line	Self-reported expenditure
Liquid assets	16.96	17.51	21.02
Net worth	2.18	2.30	2.39
New worth-home equity	5.05	5.35	6.36
Household income	3.34	5.24	9.76
	Median Asset-Poverty Gap Ratios for the Asset Poor (%)		
Liquid assets	100	100	100
Net worth	285	178	163
New worth-home equity	100	100	100

It is perhaps not surprising that asset-poverty rates estimated from the net worth measure are the lowest, because of its inclusive nature as a measure of wealth-type economic resources (Caner & Wolff, 2004). Nearly 3% of households have net worth not sufficient to meet consumption needs during a three-month period, regardless of which poverty line is used. When home equity is excluded from household net worth, asset-poverty rates rise to about 5% or 6%. Overall, the estimates of asset-poverty rates in urban China are much lower than those in developed countries (Brandolini, Magri, & Smeeding, 2010).

Another interesting finding is that asset-poverty rates are more consistent across different poverty lines than income-poverty rates. For instance, the income-poverty rate based on the self-reported minimum expenditure (10%) is about three times the income-poverty rate using the MLS poverty line (3%), and the income-poverty rate using Khan's poverty line (5%) is nearly two times the rate obtained by using the MLS poverty line. However, for liquid asset-poverty rates, the ratios are 1.24 and 1.20, respectively.

A smaller disparity in asset-poverty rates over different poverty lines can be explained by the fact that most asset-poor households have nearly zero liquid assets or negative net worth. These

households are asset poor by all measures. Asset-poverty-gap ratios reported in the second panel of Table 3 support this reasoning. The asset-poverty-gap ratio uses a share of the asset-poverty line to indicate the amount of assets that households need to avoid asset poverty. It is calculated by dividing the difference between the asset-poverty line and household assets by the asset-poverty line. Median values of asset-poverty-gap ratios are all at least 100% in Table 3, indicating that asset-poor households typically do not own any assets or have negative assets. More specifically, about 75% of liquid-asset-poor households do not have any liquid assets, and more than 80% of net-worth-poor households have negative net worth.

The second column of Table 2 shows asset ownership and asset distributions for households with liquid assets below the MLS poverty line. The average liquid assets (265 yuan) owned by asset-poor households is 1% of that owned by the entire sample. Three out of every four asset-poor households have zero liquid assets. Median savings in CDs or regular savings accounts is zero for these households. In addition, the average household debt (8,686 yuan) is nearly 60% higher than that of the entire sample (5,505 yuan). Nonetheless, the distributions of homeownership, family business, and durable goods are relatively balanced in the full sample and the asset-poor sample.

Asset-poverty rates by demographic characteristics

Table 4 presents liquid-asset-poverty rates by demographic characteristics using only the rates based on the MLS poverty line. First, households headed by males have a higher asset-poverty rate than those headed by females (18% vs. 15%). Meng (2007) also finds that female-headed households owned more assets in urban China. There is a negative association between household head's age and the asset-poverty rate. The youngest group (aged 20-29) has the highest asset-poverty rate (23%), and the age group of 50-59 (pre-retirement stage) has the lowest asset-poverty rate (16%), consistent with life-cycle theory. As expected, the liquid asset-poverty rate is lower for households headed by individuals who are married, employed, have more education, own a home, or are a member of the Communist party. The asset-poverty rate is higher for those who are ethnic minorities. Households headed by individuals with "very good" health have a higher asset-poverty rate than their counterparts, although Liang et al. (2010) find that health condition is positively related to the amount of household assets. There is also a negative correlation between household income and the asset-poverty rate. Households in the lowest income quartile have a liquid-asset-poverty rate (32%) that is four times higher than those in the highest income quartile (6%). Finally, geographic disparities in asset poverty are found both within and across different regions. Among the 12 provinces, four in the eastern region have the lowest asset-poverty rates. The highest asset-poverty rate (25% for Shanxi) is almost five times the lowest asset-poverty rate (5% for Beijing).

To supplement the analysis in Table 4, the second column of Table 1 reports the characteristics of the liquid-asset-poor sample based on the MLS poverty line. The relationships between asset poverty and these demographic characteristics are further explored in the following multivariate analyses.

Table 4. Asset-Poverty Rate by Demographic Characteristics

Demographic Characteristics	Asset-Poverty Rate (%)
Household head's gender***	
Female	14.60
Male	18.11
Household head's age	
20-29	22.92
30-39	17.20
40-49	17.03
50-59	16.14
>=60	16.89
Household head's employment status***	
Employed	16.11
Not employed	18.98
Household head's ethnicity**	
Han	16.86
Ethnic minority groups	19.39
Household head's member of party***	
Communist Party	12.54
Others	19.63
Household head's marital status***	
Married	16.61
Not married	22.41
Household head's education***	
Below high school	22.00
High school or equivalent	16.85
Two or Three-year college	9.79
Four-year college and above	11.50
Household head's health condition	
Very good	17.98
Others	16.70
Types of Family *	
With children	17.68
Without children	16.15
Homeownership***	
Owners	22.22
Renters	15.93
Household income quartiles***	
1st quartiles	32.32
2nd quartiles	17.77
3rd quartiles	11.97
4th quartiles	5.79
Region and Province***	
Eastern region:	
Beijing	5.38
Liaoning	14.78
Jiangsu	15.09
Guangdong	6.80
Central region:	
Shanxi	25.35
Anhui	17.48

Henan	18.82
Hubei	17.11
Western region:	
Chongqing	15.30
Sichuan	18.29
Yunnan	23.74
Gansu	23.04

Note: Chi-square tests are conducted to detect statistically significant differences in asset-poverty rates across demographic groups. *p<.1, **p<.05, ***p<.001.

Asset poverty, income poverty, and public assistance

Households in the sample can be categorized into four groups by their status of income poverty and asset poverty. We cross-tabulate household income poverty and liquid asset poverty using different poverty lines, and the results are presented in Table 5. In the first panel, the poverty line is defined by the MLS. Less than 2% of households are both income- and liquid-asset poor. This group is the most vulnerable, and nearly 40% of households in this category receive some kind of public assistance, including the minimum living standard subsidy, living hardship subsides from employers, and so on.

Table 5. Liquid Asset Poverty, Income Poverty, and Public Assistance

Categories of Income and Liquid Asset poverty	Percentage (%)	Percentage covered by Public Assistance (%)
Panel I. MLS Poverty line		
Income and liquid asset poor	1.80	37.40
Income poor	1.54	12.38
Liquid asset poor	15.16	6.47
Income and liquid asset non-poor	81.50	2.55
Panel II. Khan's Poverty Line		
Income and liquid asset poor	2.71	31.89
Income poor	2.53	15.61
Liquid asset poor	14.81	5.53
Income and liquid asset non-poor	79.96	2.31
Panel III. Self-reported Minimum Expenditure		
Income and liquid asset poor	3.99	16.91
Income poor	5.77	7.36
Liquid asset poor	17.03	6.28
Income and liquid asset non-poor	73.21	2.36

The second group (1.5% of the full sample), while also experiencing income poverty, has liquid assets higher than the MLS asset-poverty line. With a buffer of household assets, this group (the income poor only) is better off than the first group (the income and asset poor). Nearly 12% of households in the second group receive public assistance. Combining the first and second groups, about half of income-poor households are not asset poor (1.54/(1.80+1.54)); the percentage is even higher if using the self-reported minimum expenditure as the poverty line for estimation. Poor households are at greater risk of economic insecurity and are more motivated to save.

The third category (15% of the full sample) comprises households with sufficient income to meet basic living standards but insufficient liquid assets for protection from negative income shocks (the liquid-asset poor). Only 6% of this group receives income support from public assistance programs. The fourth group has income and assets both greater than the poverty lines (the income and liquid-asset non-poor). Although the percentage of households receiving public assistance varies in the four categories, altogether only 4% of the households in the sample are supported by public assistance programs.

Determining the characteristics of the asset poor

Results of logit models. We further conduct multivariate analyses to examine the relationship between household demographic characteristics and asset poverty. The first model in Table 6 presents the results of a logit regression on liquid asset poverty for the MLS poverty line. Most estimates are consistent with those reported in Table 4. In contrast to previous studies on asset poverty in developed countries, the results indicate that female-headed households have a lower probability of asset poverty than male-headed households. Households headed by individuals less than 30 years old are more likely to experience asset poverty. Households headed by individuals who are members of the Communist party, married, and/or home owners, are less likely to be asset poor compared to their counterparts; all these demographic characteristics reduce the odds of having liquid-asset poverty by about 20%-30%. Interestingly, compared to the group without a high school diploma, those headed by individuals with some college are less likely to be asset poor, and the other two education categories (a high school degree or equivalent and a bachelor degree or above) are not statistically significant in the analysis. This suggests that the bivariate association between household head's education and asset poverty reported in Table 4 is mainly confounded with some other demographic characteristics, such as age and household income.

Household size has a positive association with the probability of asset poverty. After controlling for household size, having a child reduces a household's propensity for asset poverty, a result inconsistent with the bivariate analysis reported in Table 4. The results also confirm the importance of household income in asset poverty. Households with higher levels of income are more likely to have liquid assets for short-term consumption needs.

The second model examines liquid asset poverty (based on Khan's poverty line) as the dependent variable, and the test yields results consistent with those from Model 1. The dependent variable of the third model in Table 6 is liquid asset poverty based on the poverty line of the self-reported minimum expenditure. Most estimates are consistent with those in the first two models, but three age categories (30-39, 40-49, and 50-59) lose their statistical significances in this analysis. In addition, geographic disparity in asset poverty in Model 3 appears smaller than that in Models 1 and 2. For instance, asset-poverty rates for eastern provinces are not statistically different in Model 3. This may imply that the self-reported minimum expenditure, as a poverty line, is better than others in adjusting household consumption needs for different life stages and geographies. It is likely that the self-reported minimum expenditure, to some extent, reflects an individual's expectation for future income uncertainty.

Table 6. Results of Logistic Regression: Asset Poverty and Demographic Characteristics

Variables	Model 1: MLS		Model 2: Khan's Line		Model 3: Self-reported Expenditure	
	Coefficients	SE	Coefficients	SE	Coefficients	SE
Household head's Characteristics						
Gender (ref: Male)	-0.206**	0.083	-0.208**	0.082	-0.163**	0.075
Age categories (ref: 20-29)						
30-39	-0.454**	0.225	-0.523**	0.221	-0.325	0.211
40-49	-0.489**	0.221	-0.583***	0.217	-0.309	0.207
50-59	-0.507**	0.234	-0.621***	0.230	-0.355	0.219
60 and above	-0.699***	0.256	-0.809***	0.252	-0.514*	0.240
Ethnic groups (ref: Han)	-0.052	0.177	-0.019	0.174	0.055	0.159
Political party (ref: not a Communist party member)	-0.237***	0.080	-0.239***	0.080	-0.232***	0.072
Marital status (ref: not married)	-0.343**	0.141	-0.320**	0.141	-0.302**	0.130
Employment (ref: unemployed)	-0.144	0.099	-0.093	0.099	-0.082	0.093
Education (ref: <high school)						
High school or equivalent	-0.011	0.081	-0.013	0.080	-0.002	0.075
Two- or three-year college	-0.400***	0.122	-0.396***	0.121	-0.237**	0.107
Four-year college or above	0.008	0.156	0.001	0.154	0.042	0.139
Health condition (1=very good)	-0.020	0.085	-0.014	0.085	-0.021	0.078
Household Characteristics						
Household size	0.383***	0.052	0.419***	0.051	0.241***	0.048
Whether having children (ref: no)	-0.243**	0.096	-0.299***	0.096	-0.198**	0.088
Whether having older adults (ref: no)	-0.085	0.113	0.014	0.111	0.008	0.104
Homeownership (ref: no)	-0.249***	0.086	-0.265***	0.086	-0.191**	0.081
Household income quartiles						
2nd quartile	-0.770***	0.086	-0.798***	0.085	-0.614***	0.080
3rd quartile	-1.175***	0.099	-1.211***	0.099	-0.934***	0.090
4th quartile	-1.876***	0.135	-1.843***	0.133	-1.589***	0.118

Province of residence (ref: Beijing)						
Liaoning	0.362	0.239	0.560**	0.253	0.236	0.199
Jiangsu	0.473**	0.238	0.662***	0.252	0.215	0.199
Guangdong	-0.138	0.272	-0.196	0.295	-0.084	0.221
Shanxi	0.861***	0.237	1.173***	0.251	0.674***	0.198
Anhui	0.411*	0.249	0.676**	0.261	0.325	0.208
Henan	0.431*	0.240	0.700***	0.253	0.198	0.201
Hubei	0.538**	0.239	0.830***	0.252	0.488**	0.198
Chongqing	0.404	0.274	0.665***	0.285	0.493**	0.227
Sichuan	0.436*	0.242	0.723***	0.255	0.389*	0.201
Yunnan	1.076***	0.235	1.338***	0.249	1.019***	0.195
Gansu	0.786***	0.250	1.050***	0.263	0.703***	0.210
N	*6826*		*6827*		*6815*	

*p<.1, **p<.05, ***p<.001.

Table 7. Results of Multinomial Analysis (N=6,815)

Variables	Asset poor only vs. Income and asset poor		Income poor only vs. Income and asset poor		Asset poor vs. Income and Asset non-poor	
	Coef.	SE	Coef.	SE	Coef.	SE
Household head's Characteristics						
Gender (ref: Male)	-0.079	0.160	0.161	0.183	0.311***	0.080
Age categories (ref: 20-29)						
30-39	-0.531	0.556	0.430	0.736	0.299	0.218
40-49	-0.660	0.547	0.513	0.725	0.306	0.214
50-59	-0.248	0.571	0.481	0.750	0.454**	0.226
60 and above	-0.620	0.604	0.053	0.789	0.755***	0.250
Ethnic groups (ref: Han)	-0.434	0.337	-0.100	0.403	0.045	0.171
Political party (ref: not a Communist party member)	-0.001	0.165	0.012	0.193	0.353***	0.077

Marital status (ref: not married)	-0.117	0.280	0.057	0.332	0.498***	0.139
Employment (ref: unemployed)	0.236	0.196	0.049	0.226	0.166	0.101
Education (ref: <high school)						
High school or equivalent	0.246	0.155	0.051	0.181	0.168**	0.080
Two- or three-year college	0.866***	0.277	0.634**	0.312	0.514***	0.110
Four-year college or above	0.914**	0.378	0.426	0.443	0.440***	0.140
Health condition (1=very good)	0.426**	0.190	0.238	0.221	-0.035	0.083
Household Characteristics						
Household size	0.125	0.105	-0.091	0.127	-0.090*	0.050
Whether having children (ref: no)	-0.222	0.189	-0.124	0.218	0.096	0.095
Whether having older adults (ref: no)	0.314	0.232	0.386	0.273	-0.115	0.111
Homeownership (ref: no)	-0.059	0.172	0.262	0.207	0.263***	0.087
Province of residence (ref: Beijing)						
Liaoning	-0.846*	0.487	-0.052	0.527	-0.737***	0.211
Jiangsu	0.140	0.521	-0.746	0.599	-0.687***	0.207
Guangdong	-0.596	0.547	-0.065	0.590	-0.076	0.239
Shanxi	-0.067	0.495	-0.920	0.563	-1.434***	0.202
Anhui	0.231	0.536	-0.199	0.596	-1.076***	0.212
Henan	-0.030	0.506	-0.506	0.566	-0.991***	0.205
Hubei	-0.392	0.490	-0.443	0.541	-1.131***	0.204
Chongqing	-0.674	0.531	-0.958	0.602	-1.005***	0.240
Sichuan	-1.307	0.479	-0.702	0.521	-0.875***	0.216
Yunnan	0.441	0.503	-0.795	0.574	-1.646***	0.200
Gansu	-0.193	0.517	-1.393**	0.623	-1.399***	0.215

*p<.1, **p<.05, ***p<.001.

Results of multinomial model. We conduct a multinomial analysis to compare the four categories described in Figure 2. Income poverty and liquid asset poverty are defined by the poverty line of the self-reported minimum expenditure (Panel III of Table 5) since the proportion of income-poor households identified by the MLS or Khan's poverty line is relatively low (2%-3%). Unlike those analyses using logit models (Table 6), these analyses exclude income as an independent variable because the dependent measure already carries such information.

Table 7 reports three sets of comparisons. The first set contrasts the probability of being both income and asset poor with that of being asset poor only. The second set compares the likelihood of being both income and asset poor with that of being income poor only. The final one compares the probability of not being poor with the probability of being asset poor only. The reference category in the first two sets of comparisons is the group who is both income and asset poor, apparently the most vulnerable among the four. Results of the comparison suggest that the reference category differs from the asset-poor-only and the income-poor-only groups mainly in the human capital of household heads. Households headed by individuals with some college or those with "very good" health are less likely to live in both income and asset poverty. The third set of comparisons uses the asset-poor-only group as the reference category. Among those without income poverty, asset-poor households are likely to be bigger in size and to be renters. Heads of asset-poor households are more likely to be male, unmarried, younger than 50, less educated, and not a member of the Communist party. These findings are consistent with those of Model 3 in Table 6.

Asset poverty from development perspective

All of the above analyses focus on asset-poverty measures defined by the insurance role of household assets. We also examine asset-poverty status from the perspective of long-term economic development. First, we compare household liquid assets of the unemployed with the mean family business value of those owning a family business (16,913 yuan). Assuming the mean family business value as a necessary startup fund for a small business, this comparison shows that more than half of households headed by the unemployed (53%) do not have sufficient funds for business startup. Second, if using 20% of the median house value as the asset-poverty threshold (14,000 yuan), about 60% of renters are asset poor. Finally, nearly one-fourth of households with children own liquid assets below the average annual college tuition in 2002 (5,000 yuan).

Discussion

Precautionary savings

This study examines asset distribution and asset-poverty rates in urban China, and reports characteristics of asset-poor households. Consistent with previous studies on household savings in China (Chamon & Prasad, 2010; Meng, 2003), our analysis of asset distribution shows that urban households have strong motives for precautionary savings. Previous research shows that the average household savings rate in urban China rose from 17% in 1995 to 24% in 2005 (Chamon & Prasad, 2010), 12 percentage points higher than the Asian average (Baldacci et al., 2010). Long and Zhou (2000) estimate that the coefficient of prudence, a measure of the strength of precautionary savings, is 5.2 in China, much higher than that in the US (Dynan, 1993), indicating a high level of precautionary savings. Although this study does not directly test the strength of precautionary savings in urban China, it shows that mean household liquid assets is slightly higher than mean

annual household income, a large ratio compared to other countries. For instance, Spanish temporary workers hold average liquid assets equivalent to four to five months' earnings (Barceló & Villanueva, 2010). Kennickell and Lusardi (2005) identify the ratio of desired precautionary savings over normal income as a median value of around 10% in the US. In addition, the study finds that about half of income-poor households have sufficient assets to cover their consumption needs for three months. It has been estimated that, in developed countries, about 20% of income-poor households are not asset poor (Brandolini, Magri, & Smeeding, 2010). It appears that this percentage is much higher in China, indicating that a high proportion of income-poor households save for an emergency.

A number of factors, including cultural influence, habit formation, and demographic characteristics, may explain the strong motivation for precautionary savings and the high savings rates in China. However, as suggested by Chamon and Prasad (2010), perhaps these high rates are best explained by the inadequacy of social protection programs and the rising burden of expenditures on housing, education, and health care. The privatization and commercialization of public services has aggressively replaced the universal basic health care and education established prior to the reform. Along with increasing income uncertainty, public provision of social services continues to decline, which forms an institutional context that profoundly shapes households' motivations for saving.

Deep asset poverty

Partially due to strong motivation to accrue precautionary savings and relatively high savings rates, asset-poverty rates estimated above are lower compared to those for developed countries (Brandolini, Magri, & Smeeding, 2010). For example, the highest liquid-asset-poverty rate (21%) estimated by this study is 12 percentage points lower than that of Italy in the same period of time, and is less than 50% of liquid asset-poverty rates in Germany and the UK. Compared to other countries, urban households in China have higher income-poverty rates than net-worth poverty rates. However, like in other countries, the liquid-asset-poverty rate in China is much higher than the income-poverty rate. The liquid-asset-poverty rate based on the MLS poverty line is five times as high as the income-poverty rate, but this ratio was only 3.4 in the US in 1999. Asset poverty, especially liquid asset poverty, appears to be a severe problem in urban China.

Most asset-poor households barely have any assets, which should raise a concern for policymakers. This is because income uncertainty has increased significantly since China's economic reform, and risk of poverty due to negative income shocks is widespread. With transitory income variance increasing from .04 in 1990 to .16 in 2004, households with extremely low assets are more likely to experience economic hardship, fall into transient poverty, or become persistently poor.

In addition, many households without any assets do not have access to public assistance when needed. Public expenditure on social programs in China is still low, and only 4% of households in the sample received public assistance in 2002. As a result, family economic resources have become vitally important, especially in areas such as education and health services.

Last but not least, asset-poor households are likely to be excluded from opportunities for economic development simply because they do not have assets. As our analyses show, much higher asset-poverty rates are defined by the lack of sufficient funds for business start-up, home downpayment, or college tuition than those defined by consumption smoothing.

Interactions between demographics and policy transitions

This study suggests that impacts of household demographics on asset poverty are shaped by the unique policy context of urban China. Specifically, household asset accumulation has been affected by interactions of demographic changes and institutional settings. Research on asset distribution already shows the importance of institutional structures (Chamon & Prasad, 2010; Davis & Feng, 2009; Feng, He, & Sato, 2009; Meng, 2003; Wei & Zhang, 2009; Zhao & Ding, 2008). Policy and structural changes are highly related to current income poverty in China (World Bank, 2009). Many policy transitions and economic reform processes that have contributed to economic success and wealth accumulation may also have created challenges, such as wealth inequality and risk of asset poverty.

We mainly discuss several demographic characteristics here—party affiliation, gender, children, age, and region of residence. Households led by Chinese Communist party members are consistently better off than their counterparts in all analyses probably because of the role and power party members have in the policymaking process, especially during economic and policy transitions. For example, individuals with a higher political status can acquire their occupancies at more heavily subsidized prices (Meng, 2007). Urban home ownership is only one example of how individual-level political capital and ties to the party-state have shaped asset inequality in the capitalist era. The party organization and officials continue to hoard asset-accumulation opportunities and extract high rent in post-socialist China.

In contrast to households in developed countries, households in China headed by females are less likely to be asset poor in this study. Previous literature (Meng, 2007) also reports that households headed by females accumulate more assets than those headed by males. A possible explanation is that, generally occupying a domestic role in the household, women in China are more sensitive to the decline of public services and increase of private burdens of education and health care. For instance, shares of educational and health expenditures in the household budget increased by about eight and five times, respectively, from 1988 to 2003 (World Bank, 2009). Households headed by females, therefore, may develop stronger motivations to accrue precautionary savings. Previous research suggests that households with children have a savings rate five percentage points higher than childless households (Baldacci et al., 2010). Similarly, this study finds that households with children are less likely to be asset poor after controlling for household size, probably because they are more likely to be concerned about future income uncertainty and have greater motivation to avoid economic hardship. Households with children also try to be financially prepared in response to rapidly growing educational expenditures. It is estimated that college tuitions rose four times from 1997 to 2006 (Liu et al., 2011). Another policy-related demographic factor is that, in younger generations, there is a high sex ratio imbalance partly due to a preference for sons in the "one child" policy; because of this imbalance, parents of male children strive to save in order to enhance their sons' competitiveness on the marriage market (Wei & Zhang, 2009).

The first two models in Table 6 report that households headed by older adults (aged 60 or above) have the lowest asset-poverty rate. This seems to contradict the life-cycle theory, which hypothesizes that household assets peak at pre-retirement age. This discrepancy may be explained by China's pension reform in the mid-1990s, which has essentially reduced the income replacement rate for older adults and stimulated their savings rate (Feng, He, & Sato, 2009). Interestingly, household heads' age, as a measure of the life-cycle theory, shows an insignificant association with asset poverty

when the asset-poverty line used is based on the self-reported minimum expenditure (Model 3 of Table 6). Different from the other poverty lines used in the first two models, the one based on the self-reported minimum expenditure may better capture the dynamics of consumption, concerns about income uncertainty, and purposes of asset accumulation at different life stages. Basically, it suggests that all age groups in urban China have developed strong motivations to save in response to drastic structural changes in the economy and policy. As argued by Chamon and Prasad (2010), younger households accumulate assets for housing, education, and career development, while older households prepare for uncertain health expenditures and supplemental retirement income.

Finally, regarding region of residence, households in the eastern region are less likely to be asset poor than households in other regions; Beijing and Guangdong have the lowest asset-poverty rates. This geographic disparity is essentially a consequence of institutional arrangements that favor large cities or select regions. The country's highly decentralized fiscal system continues to favor eastern/coastal regions where more fiscal resources and public spending have been seen. Despite the central government's efforts to invest in western regions, it is still the eastern and coastal regions where substantially more economic resources and opportunities are concentrated. Results in Table 7 also show that geographic indicators may be used to distinguish the wealthy from the poor (Column 3), but not the poorer from the poor (Columns 1 and 2). This is consistent with the fact that poverty is widespread in China. In addition, this result implies the common lack of sufficient social protection and social assistance for vulnerable populations across different regions, despite the fact that economic growth opportunities vary across provinces/regions.

Policy implications

Research on asset distribution in Chinese households is interested in two policy questions in general. One is how to change household saving behaviors and boost domestic consumption. Currently, the consumption level is still relatively low in China, with a ratio of household consumption to GDP at 37% (Baldacci et al., 2010), although there have been proposals to stimulate consumption, such as increasing public expenditures on social programs and developing financial markets (Baldacci et al., 2010; Chamon & Prasad, 2010). The other question seeks to answer what can be done at the policy level to address the problem of upside-down redistribution of wealth as well as reduce asset inequality. Zhao and Ding (2008) suggest policies must prevent rent-seeking activities in housing and create progressive tax instruments (i.e., an inheritance tax) to correct wealth inequality.

These suggested policy approaches, if adopted, can also protect asset-poor households from economic hardship and from exclusion from economic development. For example, if social assistance programs or other policy measures are in place, asset-poor households may be spared economic insecurity and hardship. Although all populations may benefit from the development of financial markets and increasing social expenditures, it is important to emphasize a pro-poor approach in these policies. For example, appropriate financial products and services, such as a credit market combined with the subsidies for postsecondary education and small business, could be considered specifically for financially vulnerable families.

Research on asset poverty also has important implications for a broader agenda of poverty reduction in China. As suggested by the World Bank (2009), poverty in China is largely attributable to risk, and transient poverty has become the main form of poverty. About 40% of poverty cases are caused by the inability to cope with income loss, health shocks, or other risks (World Bank, 2009). Even with a

strengthened social safety net, asset building ought to be an integral part of development-oriented strategies for poverty reduction.

Institutional infrastructure is significant in facilitating asset building among vulnerable populations (Sherraden, 1991; Sherraden, Schreiner, & Beverly, 2003). The asset poor may need even stronger incentives for asset building. There have been examples of well-designed policy settings that successfully encourage the poor to build assets. For example, Individual Development Accounts in the US provide financial education and a savings match to encourage asset building among the poor. The United Kingdom Child Trust Fund (which, unfortunately, ceased in 2011) provided seed funds to households with children to start a savings and investment account and to facilitate savings for the next generation. In Singapore, the Central Provident Fund, a comprehensive social insurance savings plan, has been successful over several generations (Vasoo & Lee, 2006). These policy examples provide valuable experiences for China to learn from when developing its own pro-poor asset-building programs. Summarizing lessons from Individual Development Accounts in the US, Beverly and Sherraden (1999) identify a practical framework which includes several institutional constructs (i.e., access, knowledge, incentives, and so on) that aim to promote asset accumulation among the poor. This framework can be used as a general guide for designing and developing asset-building programs that benefit poor citizens in contrast to tax instruments, for example, that may be less favorable for asset building because poor people generally do not have access to these instruments. Also, creative strategies can be explored to accommodate conditions specific to China, such as strong motivations of households to accrue precautionary savings and ongoing policy transitions (i.e., low public spending on social protection and social services). In a word, institutional arrangements should be put in place to promote asset building among the poor.

Finally, some specific findings of the study have implications for policy practice. For example, asset-building policy may target female members of a household since they may have a keen motivation to save for precautionary reasons. For households without children, stronger incentives may be provided to encourage asset building. Results in Table 7 also indicate that education is the key to lifting income- and asset-poor households out of poverty. Previous research has repeatedly identified education as a critical determinant of welfare outcomes (World Bank, 2009).

Limitations

This study has several limitations. First, the study uses data collected in 2002, which may not accurately reflect asset distribution and asset poverty in today's China. More recent data, when it becomes available, should be used in future research to examine these questions. Second, although asset inequality and household asset poverty can be explained to a large extent by economic and policy transitions in China, we do not investigate what unequal opportunities for asset accumulation were created by these transitions or how low-income people were excluded. Third, although it identifies asset-poor households in urban China, this study does not examine how these households cope with economic hardship. Fourth, the validity of the asset-poverty lines adopted in this study is debatable. Therefore, as a precaution, we use different poverty lines, and also note that findings from these different measures are mostly consistent. Finally, the study does not compare asset-poverty rates between urban and rural China, which is an important research question for further investigation.

Conclusion

To conclude, the study estimates asset-poverty rates with three asset indicators and three asset-poverty lines. Overall, China's asset-poverty rates are lower than those of developed countries. This is, in part, due to the low poverty standards and Chinese households' strong motivation to accrue precautionary savings and high savings rates. Despite these low asset-poverty rates, asset poverty still appears to be a serious problem as indicated by the ratio of the liquid asset-poverty rate to the income-poverty rate. Noticeably, the asset-poverty-gap ratio shows that most households in asset poverty have zero liquid assets or negative net worth. In other words, they are the poorest, lacking any form of economic resources for backup. To exacerbate this situation, social protection programs in China are poorly funded, which places asset-poor households at a high risk of economic hardship. The study also shows that asset poverty is affected by the interplay of demographic characteristics and institutional settings. In order to encourage poor people to accumulate assets, it is crucial to promote asset-building policy innovations that target vulnerable populations.

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