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The Pattern of Household Savings during a Hyperinflation

The Case of Urban China in the Late 1980s

Abstract:
This paper presents evidence on household savings in urban regions of the Chinese provinces Sichuan and Liaoning based on data from the State Statistical Bureau's Urban Household Survey for the late 1980s. In this period the Chinese economy was subject to extensive reforms that resulted in rapid economic growth followed by extremely high inflation rates in 1988 and 1989. The high inflation rates gave the households strong motives to switch from financial savings to purchase of consumer durables, which also appear to be consistent with the structure of the observed data. By providing empirical evidence on the relative importance of savings by lower, middle and upper income groups for single-child families and for all households, this study also demonstrates that the savings decisions depend heavily on the level of household income. Single-child families are focused, not only because of its growing dominance in the current Chinese society, but also to control for the effect of demographic disparities.

Keywords: Income, savings, consumer durables.

JEL classification: D12, D91

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1. Introduction

It is conventional wisdom that the 1980s has been a period of economic reforms and fast growth in China. However, few people have realised the important role savings, and private sector savings in particular, has played during this process. In fact, China has been the top saver among the league of nations ever since the 1970s, with an average savings rate of 35 percent for the past quarter of the century. According to a recent World Economic Outlook (International Monetary Fund, 1995) China has overtaken the United States and Japan as the largest saver already by 1993, contributing to 16 percent of total world savings on the Purchasing Power Parity(PPP) basis[1].

The market-oriented economic reforms began in the late 1970s in the rural areas with the aim of increasing productivity and improving the standard of living of peasants. It was not until the end of 1984 that the government decided to introduce major economic reforms in the urban regions. Altogether, the market-oriented reforms resulted in a rapid increase in productivity and output and on average in the standard of living. The growth process was, however, not regular but rather a stop-go cycle characterized by periods with extremely high inflation rates. Despite demand pressure and increasing inflation the Chinese government announced plans for a comprehensive price reform in June 1988. The knowledge of these plans along with the high inflation rate brought about a boom in purchases of durable goods financed by savings from previous years. Since household savings behavior may depend on the income level and the household's relative position in the income distribution this paper explores the relative importance of savings by lower, middle and upper income groups.[2]

This study uses micro-data from the State Statistical Bureau's Urban Household Survey (UHS) for the period 1986-1990 to examine savings behavior of urban households in the Chinese provinces Sichuan and Liaoning during the late 1980s. Liaoning is a coastal province in the north-east of China which had a population of 40 million people in 1990. Liaoning is characterized by relatively high degree of industrialization and urbanization. Approximately two fifths of the population lives in urban regions which include four out of 30 cities in China with more than one million non-agricultural residents. The more heavily-populated south-western province of Sichuan has a relatively low degree of urbanization. Only two of the cities has a population above one million people, whilst the remaining 24 cities are medium-sized or small.

This paper is organised as follows. Section 2 gives a review of the macroeconomic environment in the late 1980s, which will prove helpful in understanding savings behaviour at the household level. Section 3 describes the aggregate pattern of savings that emerges from the UHS data.

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[1] Some recent studies, including those by IMF and World Bank, have suggested that China's per capita GNP is 5-8 times higher on PPP basis than that indicated by its official exchange rate.

[2] On this issue see Cole et al. (1992).

Section 4 explores different motives for savings. Section 5 focuses on the subsample of couples with a single child to control for the impact of demographic factors on savings, whilst Section 6 decomposes total savings with regard to various components. Section 7 studies the life-cycle aspects of savings behaviour of urban households in China. The last section summarises the paper and discusses briefly whether the high savings rate in China is likely to be maintained in the future. Finally, in Appendix A we provide basic information on sample method and coverage of the UHS.

2. The macroeconomic environment in the late 1980s

The economic reforms in China began in 1979, with the spontaneous implementation of the "Household Responsibility System" in some most backward rural areas. By the time this "bottom up" experiment was officially sanctioned in 1981, it had been adopted by 45 per cent of the country's production teams. The de-collectivised agriculture sector immediately registered an impressive growth, at a 6.6 per cent per annum during the period 1979-1985, contributing to almost half the acceleration in the annual growth rate of 9.5 per cent in GNP for the same period. The living standards of the Chinese people were raised markedly during this period, not only for peasant families as a result of a sharp increase in procurement prices and a dramatic growth in outputs of major agricultural products, but also for urban households. Adjusted for price increases, per capita income for urban families rose at an average rate of 6.9 per cent between 1980 and 1985. With the substantial rise of industrial and agricultural production, the supply of consumer goods has become increasingly sufficient and the variety of goods greatly enriched. By 1985, the coupon system that had been practised for almost three decades, was largely abandoned, with the exception of grain and edible oils.

Visible achievements in rural reforms have given strong impetus to the introduction of urban reforms. However, the first set of reforms seemed to have exhausted any easy possibilities for an immediate improvement. The urban and industrial reforms from 1984, not least of the state industrial sector, have turned out to be far more intractable and less successful than the rural reforms.

The year 1985 saw an explosive growth in price levels in urban areas, 12.2 per cent higher than the preceding year as measured by the urban overall retail price index. This is virtually a historic high for the last quarter of the century, after the ‘three years of hardship’(1960-1962). Faced with widespread discontent, the leadership had to pursue a stabilisation policy to bring down the inflation rate by reining in investment. As a result, the urban inflation rate fell remarkably to 7.0 per cent in 1986. However, in 1987 the control over credit was relaxed and the inflation recurred. Although the coupon system was reintroduced for major non-staples in provincial capitals and other large cities to curb inflation pressures in September 1987, the urban inflation rate still reached 9.1 per cent on an annual basis. The demand pressures became pronounced in the first half of 1988, pushing the economy to the limits of its productive potential. At the same time, local authorities raised the prices of meats, vegetables, eggs and

sugar in succession while granting price subsidies directly to the urban consumers. Despite the overheated economy, the central authorities announced in June 1988 plans for a comprehensive price reform. Inflation soared as consumers switched in panic from financial assets into durable consumer goods. For 1988 as a whole, the urban inflation rate went as high as 21.3 per cent. Faced with this crisis, the central government adopted a series of stabilisation measures which, although decided in the late 1988, was implemented in its full rigor only in June 1989, following the change in the leadership. Inflation control became the most important policy goal for 1989. But the inflation rate remained high, at 16.0 per cent per annum, with the inflation of the preceding year contributing as much as 64 per cent. The huge price subsidies have played a predominant role in smothering the explosion of inflation. According to a study by the State Statistical Bureau, the retail price level would have been raised by another 30 percentage points in Shanghai had the price subsidies on grain, edible oil, vegetables, meats and eggs been removed. The anti-inflation policies finally proved to be successful in reducing annual inflation to 0.2 per cent as measured by the urban retail price index in 1990. But they have also lowered growth rates in GNP, from 11.0 per cent in 1988, to 4.0 per cent in 1989 and stayed comparatively low at 5.2 per cent in 1990. In short, China's economic growth in the reform era can be characterized by a stop-go cycle. The period we are studying, 1986-1990, may be roughly regarded as a complete economic cycle. The years 1986, 1987 and 1990 were more or less 'normal', with low inflation and a growth rate in GNP which is sustainable in the long term. For the remaining years, the economy were clearly overheating.

Table 2.1 outlines the price movement in forms of various kinds of price indexes during 1986-1990. Note that the first two columns will be used to convert current prices into fixed prices later in this paper.

Table 2.1. Price indexes, 1986-1990. Preceding year = 100

Year	Overall residents Cost of living indexes		Overall staff and workers Cost of living indexes	Urban retail price indexes
	Sichuan	Liaoning		
1986	104.8	107.0	107.7	107.0
1987	107.6	108.8	108.8	109.1
1988	119.9	119.3	120.7	121.3
1989	119.8	118.2	116.3	116.0
1990	103.8	103.3	101.3	100.2

Source: UHS and SYC 1991, pp. 223-225.

3. The pattern of savings in urban Sichuan and Liaoning

Relatively few studies on household savings in China have been published so far. Pudney(1993) used the non-parametric approach to test the life-cycle hypothesis for China, and Qian(1988) studied the household savings behaviour in China during the period 1955-1983, applying aggregate time-series data.

3.1. Measurement of savings

Savings are never measured directly, either in household survey data or in national accounts. In this paper, we shall follow the traditional approach of estimating savings as the residual between real disposable income and real total expenditure, each itself measured with error. The term "financial savings", or just "savings", will refer to the difference between household income and expenditure, whereas "total savings" refers to the sum of financial savings and expenditures on consumer durables. When inflation is expected to hold on in the foreseeable future, expenditures on durable consumer goods may well be regarded as savings rather than consumption. It should be pointed out that it is not unusual to include the purchases of consumer durables in savings in studies of consumer behavior in the economic literature.

A household is defined to include all persons living in the same dwelling and having conmmon board. The main income variable of the UHS, total annual household income, includes all cash income received by the household during the year, but excludes sources of spending such as bank deposits withdrawn, money borrowed from relatives or friends, and repayment of debt by others. The predominant source of cash income in urban areas is wage earnings by employment in the state or collective sector. Other important sources comprise subsidies, pensions, income from secondary employment and income from self-employment. For further details of the income data we refer to Aaberge and Li (1997) who study the trend in urban income inequality in the late 1980s.

3.2. Structural shift in household savings

Since the People's Republic was founded in 1949, the Chinese authorities adopted the Stalinist style development strategy, which gave top priority to the establishment of heavy industry, partially because of defence concerns. Through the system of obligatory procurement of agricultural products, the infant industry had been secured by cheap raw materials. By keeping the wage level down, the labour cost was also under control. As a result, an increasing proportion of national savings was carried out by the sector of modern industry before economic reforms. The net financial surplus generated by the modern industry in forms of profits and taxes accounted for nearly 80 per cent of the national financial savings and 25.4 per cent of GNP in 1978. On the other hand, household financial saving amounted to merely 1.3 per cent

of GNP for the same year[3] and the possession of durable consumer goods stayed at a very low level as a predictable consequence of the "low wage, low consumption" policy. The "Big Three" consumer durables in the 1970s were namely wrist watches, bicycles and sewing machines, which of all were rationed by "industrial coupons".

After being frozen for a decade during the Cultural Revolution, the wages of staff and workers were substantially increased to provide better incentives. As demonstrated by Table 3.1 the average annual real wage for staff and workers were raised by more than 50 per cent during the period 1978-1986, irrespective of the ownership form of their work units. In the mean time, family sizes have also been steadily reduced throughout the period due to the introduction of the one-child policy. The urban dependency rate, as measured by dependents per urban employee, dropped from 106 per cent to about 77 per cent between 1978 and 1990. Accordingly, household savings grew at a phenomenal speed. The total urban saving deposits by the end of 1990 were 32.5 times higher than they were twelve years ago. This corresponds to an annual increase of 25.4 per cent in real terms.

Table 3.1. Average annual wage of staff and workers and urban savings deposits

Year	Average annual nominal wage (yuan)		Real wage index (1978 = 100)		Year-end urban savings deposit Value index	
	State owned	Collective	State-owned	Collective	(bil y)	(1978 = 100)
1978	644	506	100.0	100.0	15.5	100.0
1985	1213	967	140.4	142.5	105.8	682.6
1986	1414	1092	152.9	150.3	147.2	949.7
1987	1546	1207	153.7	152.7	206.8	1334.2
1988	1853	1426	152.6	149.5	165.9	1715.5
1989	2055	1557	145.6	140.4	373.5	2409.7
1990	2284	1681	159.8	149.6	519.3	3350.3

Note: Staff and workers cost of living index is used as deflator for calculating real wage index.
Source: SYC 1991, p. 112, p. 576.

However, the most remarkable change took place in the field of household possession of consumer durable goods[4]. Table 3.2 indicates the changes in the urban household possession of selected durable consumer[5] goods throughout the 1980s for Sichuan province.

[3] It has always been difficult to break down the total domestic savings of China into government savings, business savings and household savings, due to the different national account practice.

[4] According to one survey(see Qian, 1988), rural savings-income ratios are 2-4 times higher than the urban ones in the early 1980s.

[5] All of these consumer durables were counted for the first time in 1980. Before that, we have only figures for bicycles, sewing machines, radios and wrist watches available.

Table 3.2. Urban household possession of selected durable consumer goods in Sichuan. Per cent

	1980	1985	1988	1990
Electric fans	16.97	79.36	126.20	156.45
Washing machines	0.06	49.46	73.81	80.52
Refrigerators	0.03	5.80	28.74	49.02
Black & white TV	10.91	59.94	53.09	45.71
Colour TV	0.03	17.78	46.24	63.46
Recorders	4.26	37.08	59.95	66.15
Cameras	0.77	8.61	18.52	22.46

Source: *Sichuan Tongji Nianjian* (Statistical Yearbook of Sichuan), 1991, p519.

The expenditures on major durables usually accounted for a sizeable proportion of the household annual income. While necessary goods are heavily subsidised by the government, major consumer durables on the other hand, have often been used as an effective means of recalling surplus currency out of circulation by the government to ease inflation pressure[6]. The production of household electric appliances became so profitable that hundreds of production lines were imported in just a couple of years. In 1988, special "consumption tax" and "business tax", which could amount to 20 per cent of the value, were imposed on the sale of Colour TVs and refrigerators, on top of the ordinary retail taxes. This proved to have very little effect on consumption demands. The special taxes were finally abolished in 1990 as demand fell short of supply in the market of consumer durables.

Table 3.3. Average market prices on selected major consumer durables as share of average annual household income in urban Sichuan, 1986-1990. Per cent

	1986	1987	1988	1989	1990
Washing machines	10.2	10.4	10.5	10.3	9.4
Refrigerators	28.3	34.5	37.5	37.4	25.3
Colour TVs	42.4	41.2	51.7	57.0	44.9
Recorders	13.3	11.6	9.0	7.5	5.0

Note: The term "Recorders" refers to both stereo and mono recorders.

Table 3.3 gives an indication of the costs the purchase of a major consumer durable can mean to the average Chinese urban household. The major consumer durables are rather expensive, especially colour TVs and refrigerators. Thus, for ordinary households it was impossible to make the purchase of these durable goods without any beforehand savings or any forms of commercial credit.

[6]: Between 1983 and 1985, billions of dollars worth of consumer durables were imported to meet the strong consumption demand that could not be otherwise met by the domestic production capacity. The huge income generated from high tariffs on imports has contributed to the relatively modest price increases in 1983-1984. However, a ban on importing consumer durables and motor vehicles had to be imposed in late 1985, due to a dramatic deterioration in the balance of trade.

4. Motives for savings

Until the late 1980s, there were virtually no access to commercial credit for ordinary Chinese families. The only source of a loan is from friends and relatives, usually in the absence of any interest paid. However, this was constrained by traditional conservative attitudes toward borrowing. It is therefore natural to assume that household savings, the most important of which in the form of bank deposits, will play an important role in acquisition of consumer durables. Our hypothesis is strongly supported by Table 4.1, where financial sources of expenditures on durables are studied for the whole population in general and for those households with relatively high expenditures on durables (more than 20 per cent of the annual household income) in particular. The year 1988 was chosen, with good reasons, as this was the year with the highest *expenditures on durables-income ratio* in the five year period for both provinces.

The gradualist aspects of China's reforms made its transition to a market-oriented economy different from the pattern ("Big Bang") that has been widely advocated for Eastern Europe and the former Soviet Union. The transition is far from complete as there are still many problems unsolved. One of the most important issues is the establishment of a modern social security system. The traditional enterprise-based labour insurance system remained essentially unchanged throughout the 1980s. One should be very cautious in judging the living standard of urban Chinese households by merely studying the monetary wage bills which may not reflect the real income. Through the system of the permanent residence registration (*hukou*), urban households were provided guaranteed employment, access to rationed essential consumer items, and eligibility for an enterprise (*danwei*)-based labour insurance system that included health care, housing, retirement, and disability provisions. Minimum nutritional intake, shelter, basic health care and universal primary education were generally achieved in urban areas even in the pre-reform era. With the absence of substantial income inequality, the vast majority of Chinese households were provided a guaranteed living standard, which is reflected by China's favourable rankings for many socio-economic indicators among the low-income countries.

Aaberge and Li (1997) demonstrated that the mean real household income in Sichuan did not change much during the late 1980s, while the households in Liaoning experinced a period of relatively steady growth in the standard of living. Their study also shows that income inequality increased considerably from 1986 to 1990. This means that poor households living in urban Sichuan suffered a loss in their material well-being. However, generally speaking, urban wage earners had very stable wage income. The growth in the cost of living in recent years was largely compensated by increases in wages and bonuses and various kinds of subsidies[7]. Savings for retirement, medical care or children's education are unnecessary as they are either fully covered by the extensive enterprise-based welfare system or

[7] State-owned enterprises had a reputation of granting generous wage and bonus increments even when a loss incurred. This happened, of course, at the cost of increasing state subsidies.

heavily subsidised by the state government. Practically no one saved for housing. Close to 90 per cent of the households in both provinces live in dwellings provided by the employing unit at very low costs. The others rent privately or own dwelling themselves (see Bjerkholt & Zhu, 1993). In contrast to the rural areas, where farmers face increasingly larger investment opportunities, primarily in housing and means of production, urban residents had very few investment objects available. Moreover, the nominal interest rate has been kept low as the consequence of the institutional arrangement, therefore making real interest rate negative or slightly positive in the late 1980s. This in turn, provided very little incentive for any long-term household savings. In fact, durables were commonly viewed as a tangible store of value for the depreciating currency, i.e. purchases of durables were regarded as investment rather than consumption by conventional wisdom.

It is also common practice in China that parents bear a considerable proportion of children's wedding expenses. Thus, savings for children's marriages might be viewed as another major motive for household savings in addition to target savings for purchases of consumer durables. However, this is indirectly connected to expenditures on consumer durables, as most of the wedding expenses are often spent on furniture and major electric durable goods such as colour TVs and refrigerators, which are usually viewed as necessities by the younger generation.

Purchases of durables will be financed by *current income surplus***,** and eventually by a reduction in the stock of spotcash, none of which bears interests. When that proves to be inadequate, which is often the case, the balance has to be covered by the bank savings from previous years, or from another perspective, dissavings from the current year. Indeed, roughly 40 per cent of the panic purchases of consumer durables in 1988 were financed by withdrawal from saving deposits. For those who did make purchase of major consumer durables (see the right column for each province in Table 4.1), the withdrawal of deposits played an even more significant role, accounting for almost 55 percent and 60 percent of expenditures on durables for Sichuan and Liaoning, respectively. The contribution from current income has dropped to one third in both provinces. More than 85 per cent of households in each province had to finance their purchases of major durables in the form of withdrawals of bank deposits. Households who did not count on withdrawal of deposits in order to make major purchases on durables, had significantly higher mean incomes, amounting to 5320 yuan for Sichuan and 5726 yuan for Liaoning.

Table 4.1. Financing sources of durable purchases for all households and for households whose expenditure on durables exceeds 20 per cent of the annual disposable income in Sichuan and Liaoning in 1988. RMB yuan and per cent

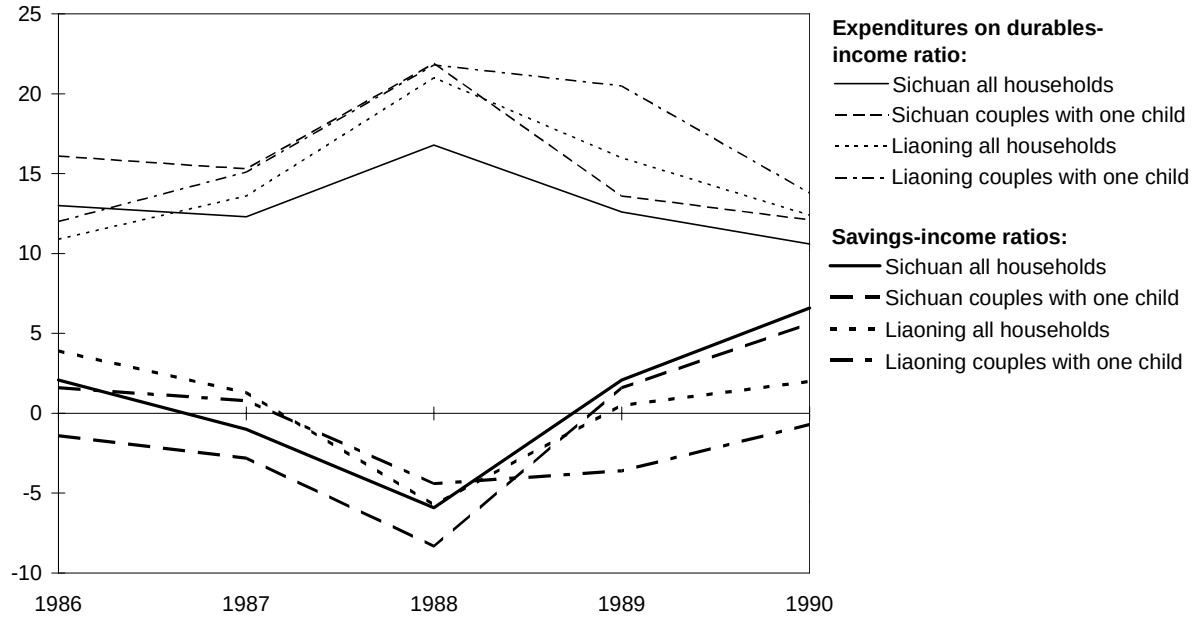
	Sichuan		Liaoning	
	ALL	E > 0.20 DI	ALL	E > 0.20 DI
No. of observations	550	133	600	167
Mean household income	4186	4790	4601	4969
Size of household (persons)	3.24	3.36	3.39	3.42
Expenditure on durables (yuan)	702	2241	964	2866
Of which (per cent):				
Current income:	64.5	33.6	72.9	32.7
Bank deposits:	39.9	54.8	38.9	59.3
Other (dis)savings:	-4.4	11.8	-1.8	8.0
Sum	100.0	100.0	100.0	100.0
Per cent of households with net withdrawal of deposits	49.1	85.7	47.8	88.6

Note: E > 0.20 DI = households with expenditure on durables exceeding 20 per cent of annual disposable income. Other (dis)savings include reduction in the stock of spotcash by year end, and borrowing, etc.

Table 4.1 also suggests that savings for purchases of consumer durables, or target saving, could be singled out as the most important motive for urban household savings.

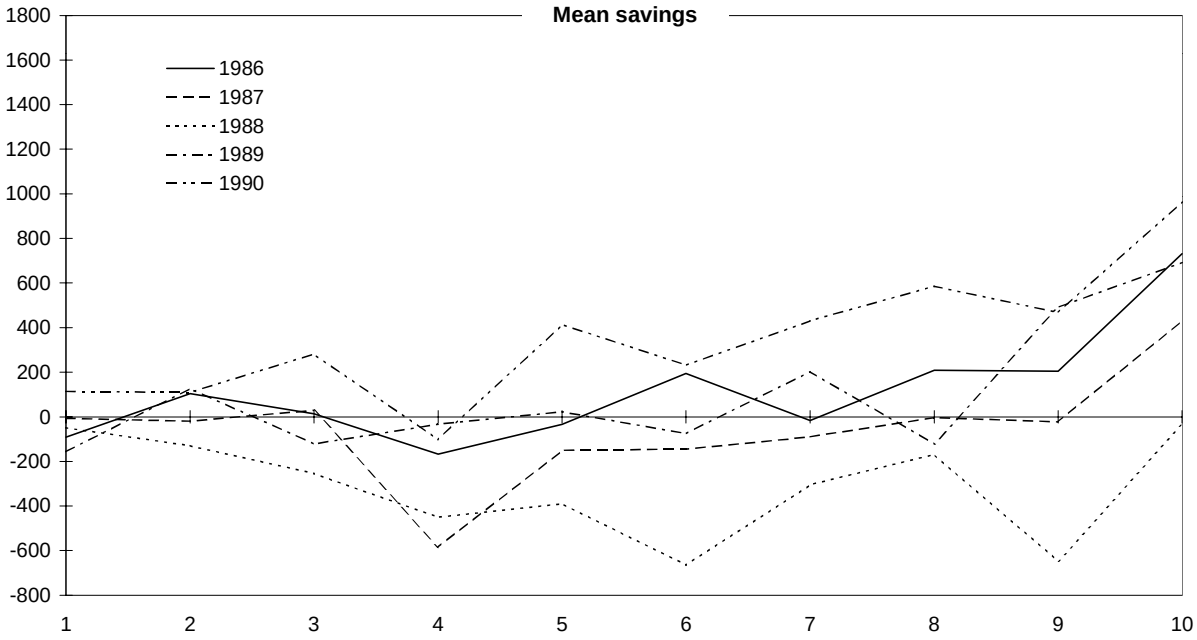
Figure 4.1 shows that the time series of savings and the expenditure on durable goods as shares of total annual household incomes are strongly negatively correlated, which is consistent with the claim that purchases of durable goods to a certain degree are financed by savings from previous years. It is also clear that savings dropped abruptly in 1988 while expenditure on durables peaked.

Figure 4.1. Mean savings-income ratios and expenditure on durables income ratios for Sichuan and Liaoning, 1986-1990, Percentage



Figures 4.2 and 4.3 (see also Tables B1 and B2 i Appendix B) present mean annual savings and expenditure on durables by income decile groups for both provinces in the late 1980s. Financial savings which seemed to be at a relatively high level in 1986, declined in the following years which were characterised by high inflation, but it made a strong come-back towards the end of the 1980s. However, the variation in savings became much less volatile when we looked at 'total savings', defined as the sum of expenditures on durables and financial savings. The results show that low-income households tend to spend a relatively higher proportion of their income on purchases of durables while rich households contribute most to the financial savings in both absolute and relative terms. This is likely to reflect the low initial stock of durables of the poorer households and the limited consumption opportunities (forced saving) for the more well off families. It is also worth noting that all decile groups in both provinces reported dissavings in 1988, when almost everyone believed that it is better to store family wealth in consumer durables rather than putting them in a bank account.

Figure 4.2. Mean savings and expenditure on durables by income decile groups for all households in Sichuan, 1986-1990. In 1990 RMB yuan



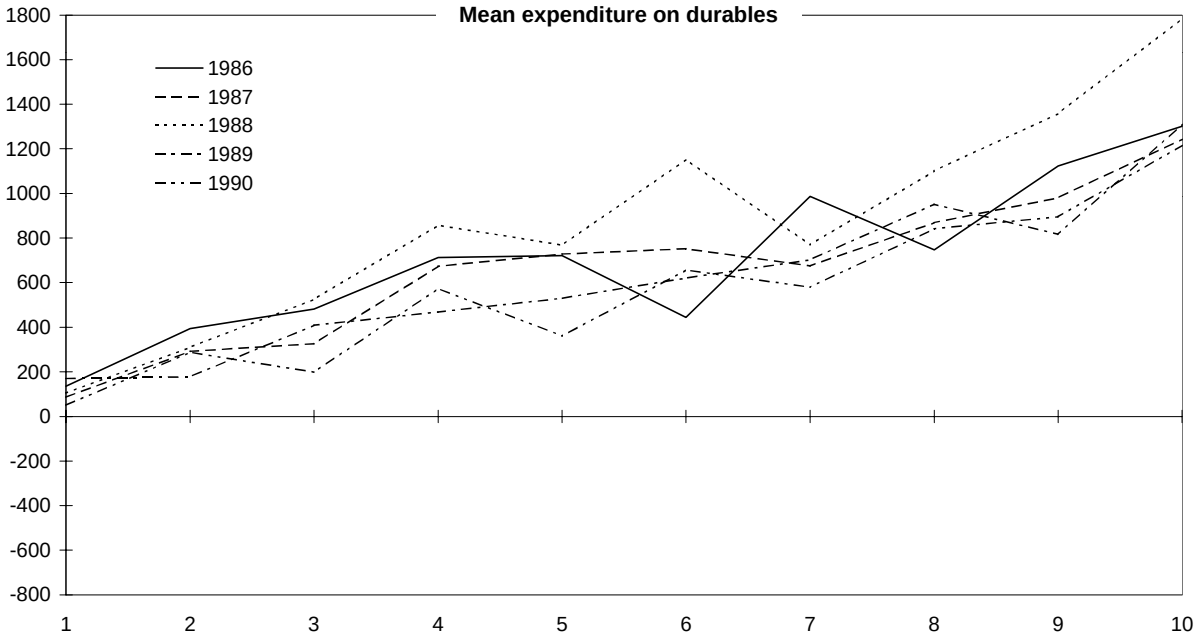
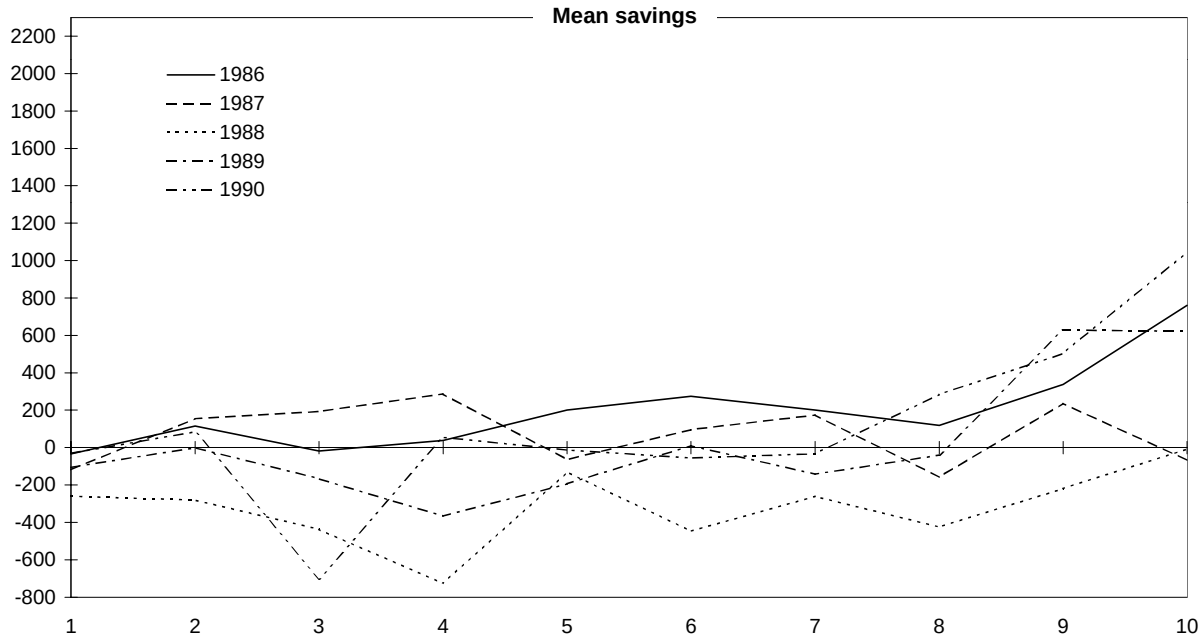
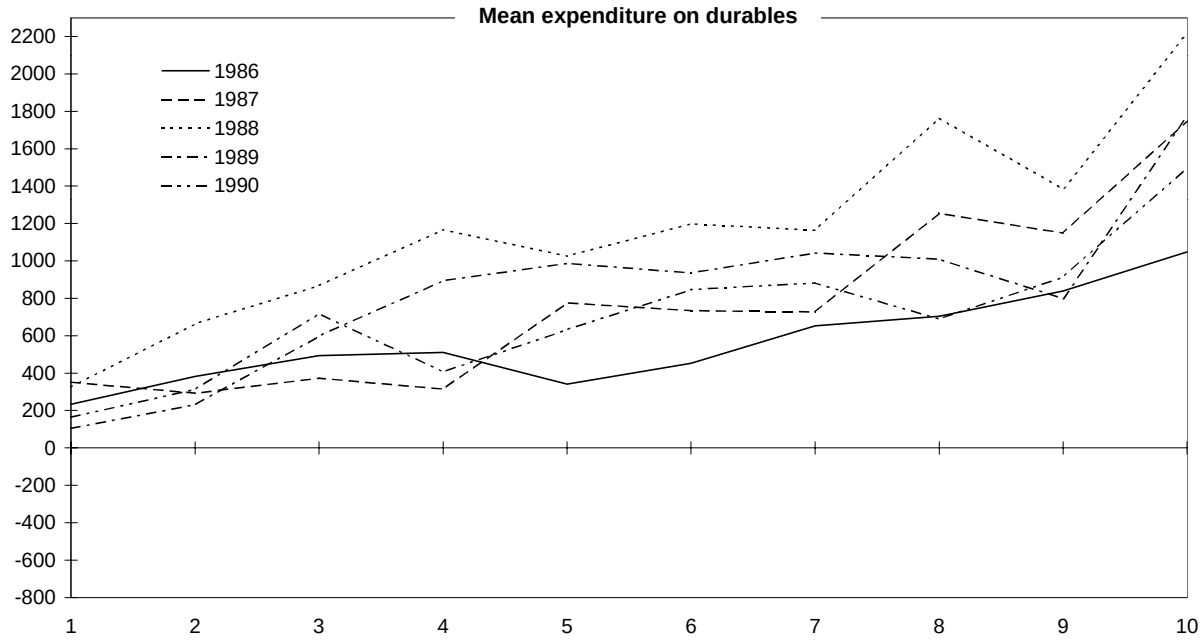


Figure 4.3. Mean savings and expenditure on durables by income decile groups for all households in Liaoning, 1986-1990, in 1990 RMB yuan





5. The pattern of savings for couples with one child

As a result of the "one-child policy" that has been rather strictly enforced in urban China since 1980, couples with one child have become a predominant urban household type. The pure type of couples with one child less than 18 years old accounted for roughly half of the population of urban households in 1990.

It is clear from Figure 4.1 that the savings-income ratio for couples with one child is lower than that for the total population, with the only exception for Liaoning in 1988. On the other hand, couples with one child spent on average higher proportions of income on durables during the five-year period for both provinces. Therefore, when we apply the concept "total savings" by summing up financial savings and expenditures on consumer durables it is no longer evident that couples with one child saved less than others.

Table 5.1. Ownership of major durables in 1990. Per cent

	Sichuan		Liaoning	
	Single child families	Others	Single child families	Others
Bicycles	53.3	43.9	89.8	87.6
Electric fans	100.0	95.2	51.1	29.6
Washing machines	87.4	78.9	84.5	77.0
Refrigirators	76.4	62.7	69.3	48.5
Colour TV	74.4	68.4	76.8	60.9
Stereo recorders	42.2	27.1	39.3	26.6
Cameras	25.6	27.4	32.2	23.4
Sewing machines	57.8	64.4	40.6	74.8
Black & white TV	35.2	47.9	35.3	60.2
Mono recorders	32.2	42.2	35.6	39.8
Age of head of household	38.0	51.0	35.8	48.5
Per capita household income	1646	1748	1736	1730

Table 5.1 compares possession of major consumer durables between couples with one child and other family types. Note that the major electric appliances are divided into two subsets in Table 5.1. With the only exception of cameras for Sichuan, couples with one child have a higher ownership level of the first subset of durables than the reference group. The second subset of durables, of which couples with one child have a much lower ownership, happened to be inferior goods. Like everywhere else, people will turn to ready-made clothes when they are more well off.

Figures 5.1 and 5.2 (see also tables B3 and B4 in Appendix B) offer an opportunity to look at the profiles of savings and purchase of consumer durables by income for a homogeneous household type. As suggested by economic theory, the savings rate rises as income increases. But this relationship is not straight away supported by Figures 5.1 and 5.2. It seems that even the poorest families could manage to make the ends meet. It is often the 4th or 5th income decile that recorded the highest dissaving rate. Low savings rates tend to be accompanied by high proportion of expenditures spent on durables, and extremely low savings rates are always accompanied by extremely high expenditure on durable-income

ratios. Apparently, we would have found a much more stable (proportional) relationship between savings and income if we had chosen the alternative definition of total savings given by the sum of financial savings and expenditures on consumer durables.

Figure 5.1. Savings-income ratios and expenditure on durables income ratios by income decile groups for couples with one child in Sichuan, 1986-1990, Per cent

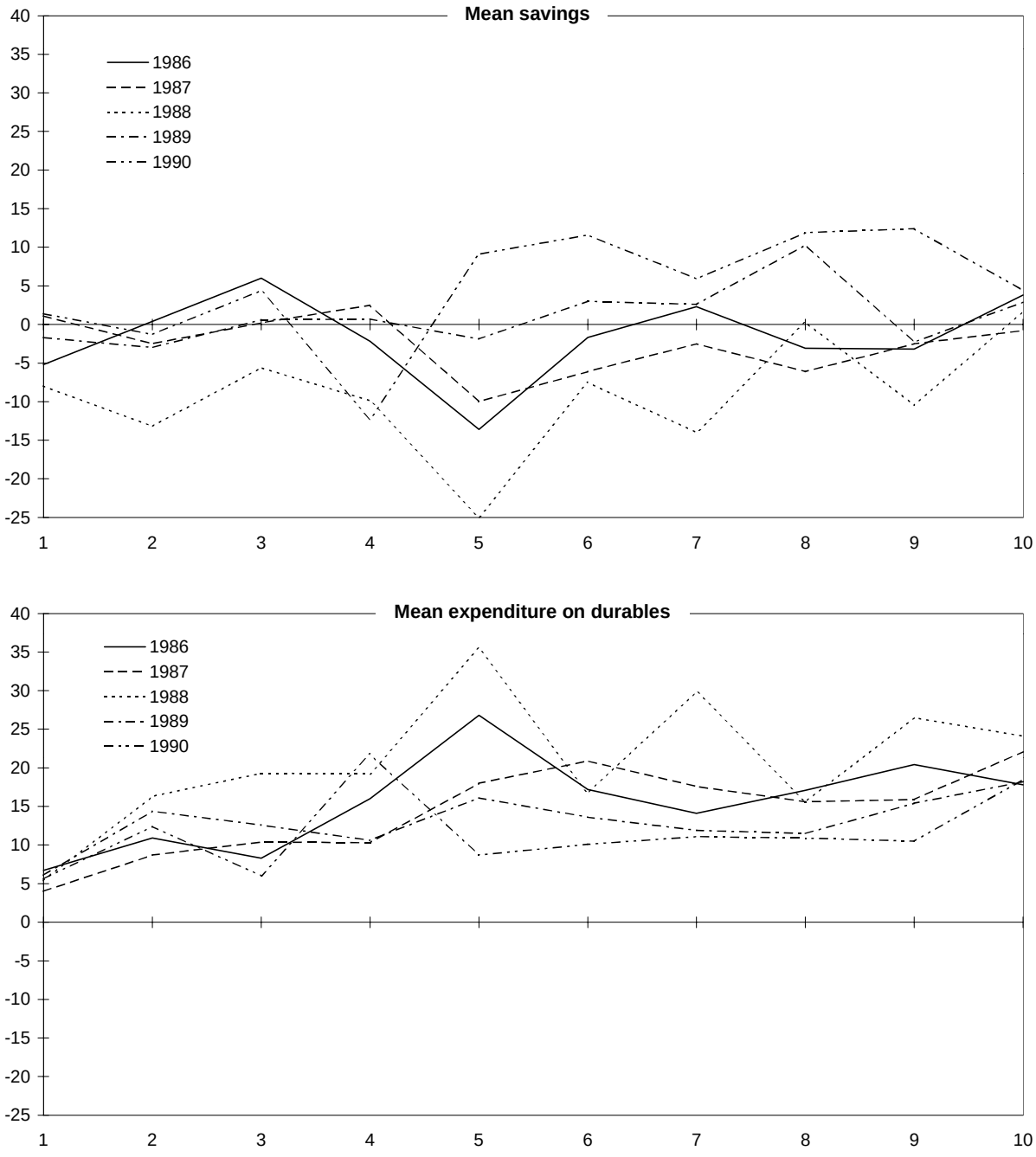
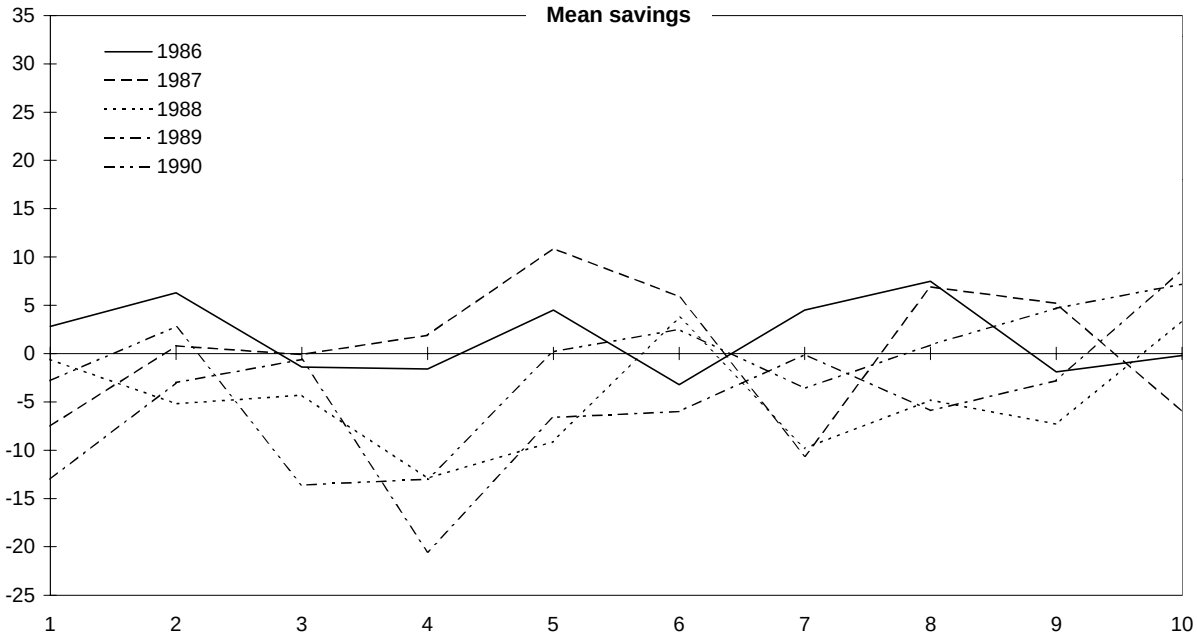
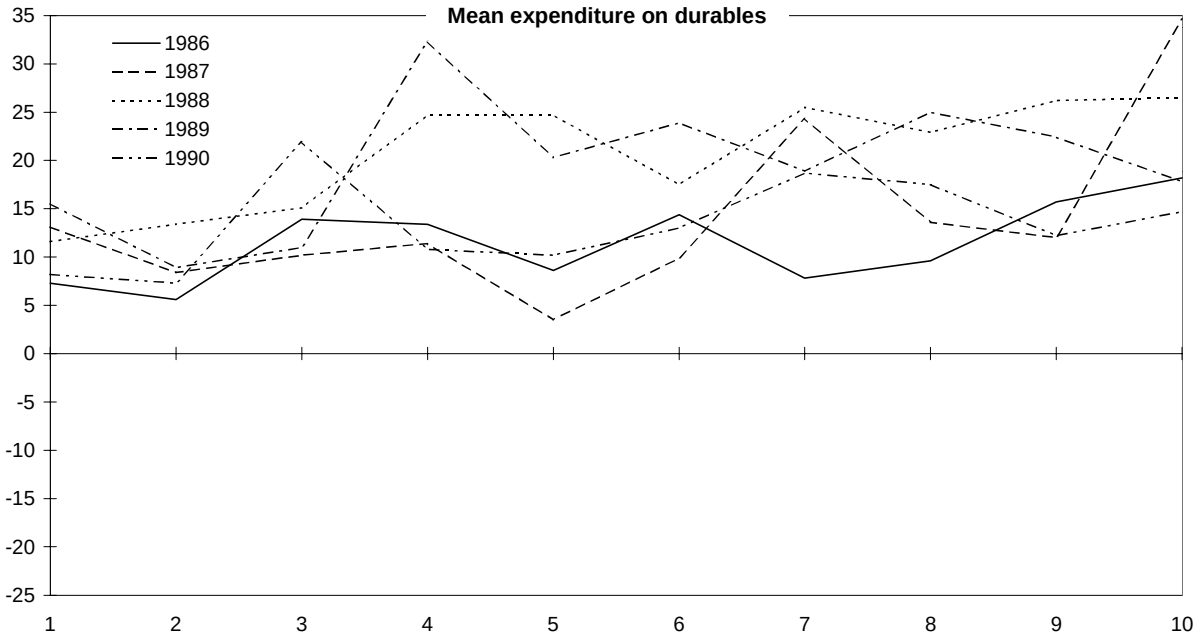


Figure 5.2. Saving-income ratios and expenditure on durables income ratios by income decile groups for couples with one child in Liaoning, 1986-1990, Per cent





6. Decomposition of savings

Data for household (financial) savings are not readily available in UHS. The construction of savings data and its composition is based on the following identity:

Spot Cash(year beginning) + Real Income + Withdrawal and Debit-Credit Income
= Real Expenditure + Expenditure on Loans + Spot Cash(year-end)

Therefore

Savings = Real Income - Real Expenditure
= Increases in the stock of spot cash + (expenditure on loans - withdrawal and debit-credit income)

Savings is defined as the difference between annual real income and annual real expenditure. Thus, savings and dissavings can be further decomposed into increases in the stock of spot cash and differences between expenditure and income of various credit categories. The results are displayed in Figures 6.1 and 6.2.

Figure 6.1. Distribution of savings and dissavings by components for Sichuan, 1986-1990. Per cent and RMB values in 1990 yuan

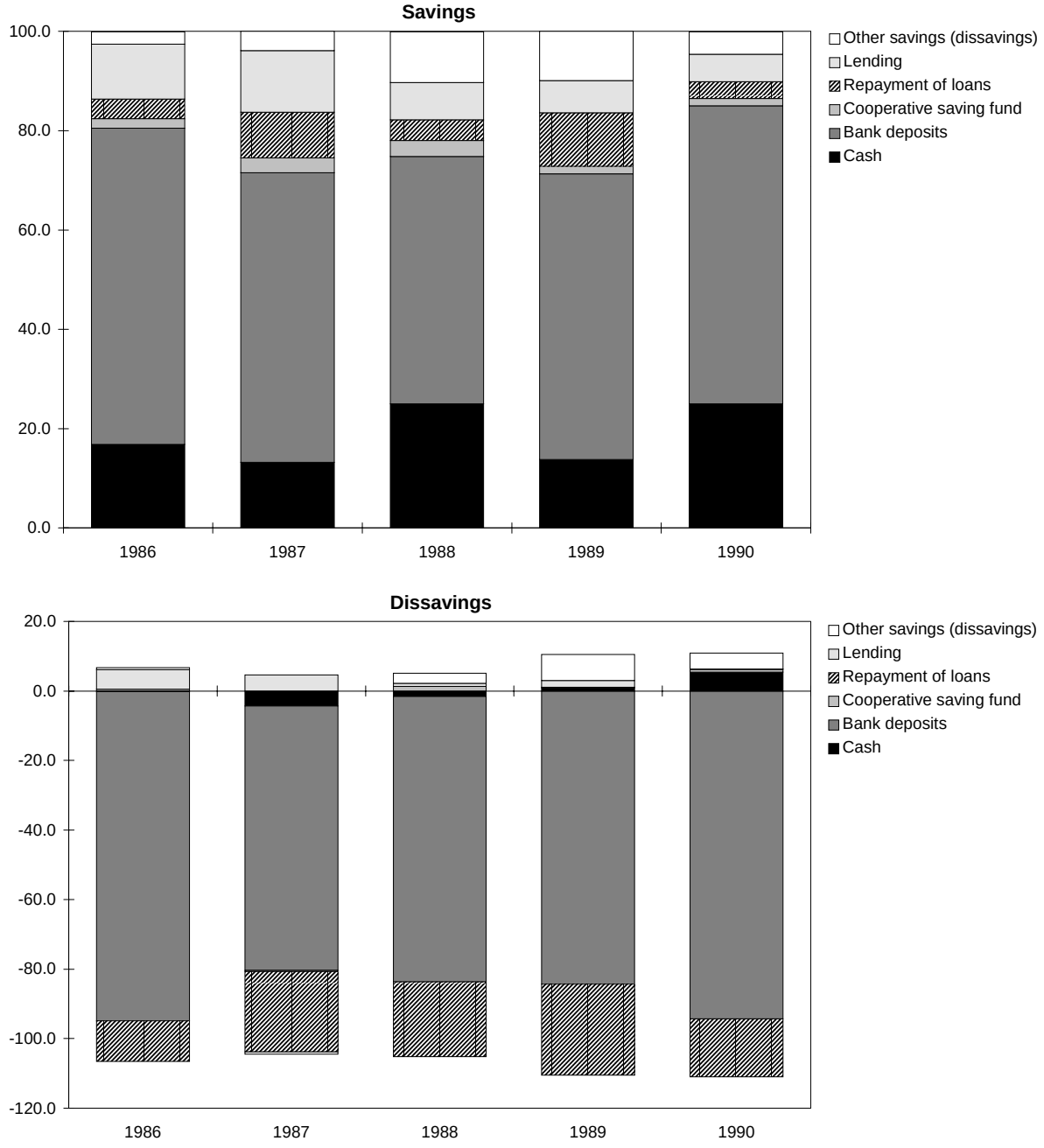
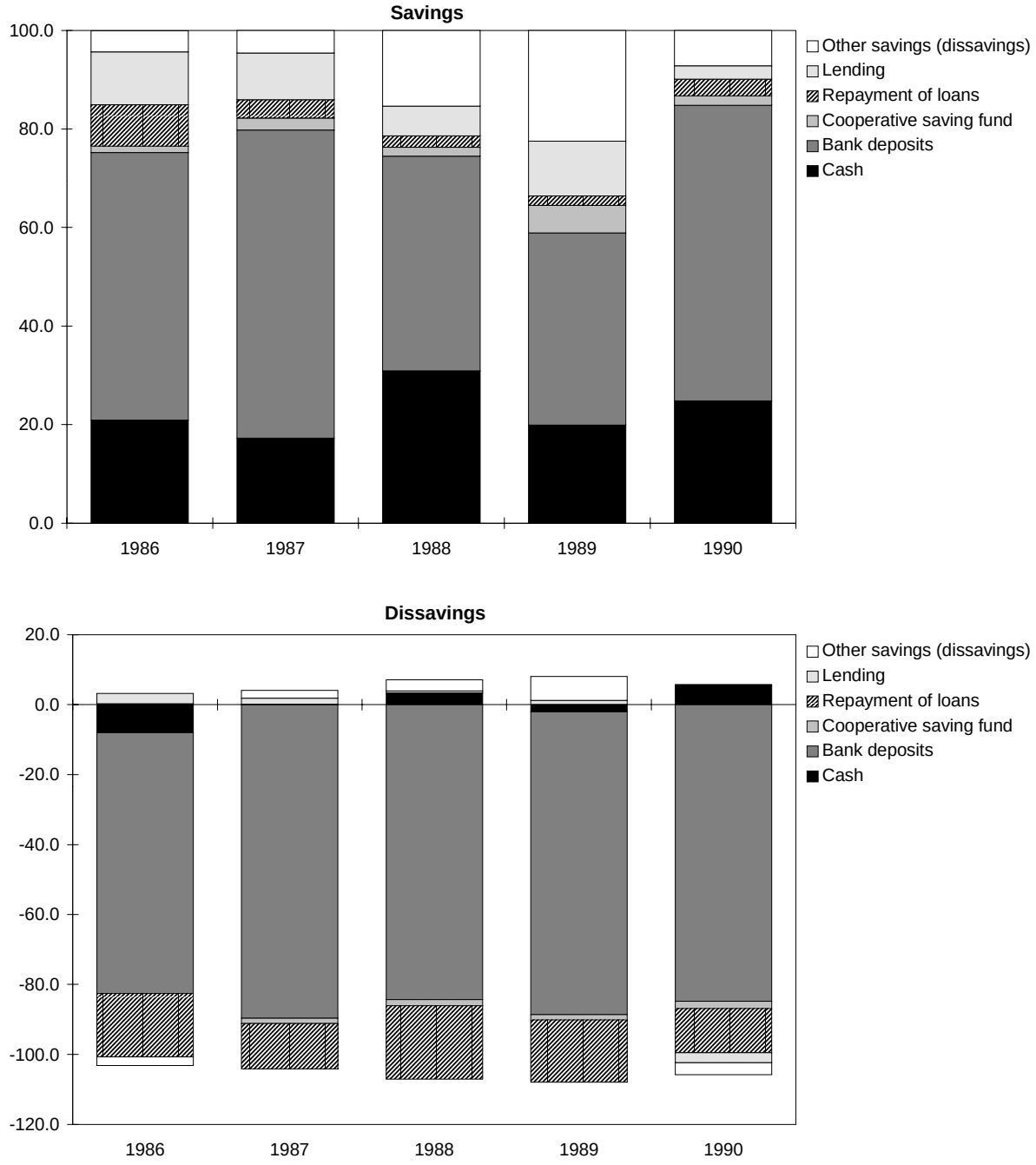


Figure 6.2. Distribution of savings and dissavings by components for Liaoning, 1986-1990. Per cent and RMB values in 1990 yuan



There are six components of savings in Figures 6.1 and 6.2 (see also tables B5 and B6 in Appendix B). From 1988 four more categories, namely savings insurance, portfolio, repayment of purchase on credit and repayment of loans for purchasing dwelling, were added into the survey. Nevertheless, they will be entered as 'other savings' in Figures 6.1 and 6.2. The fluctuations for the share of 'other savings' might therefore reflect the volatility of returns of risky portfolios.

Tables B5 and B6 show that about one-third of all households have negative savings in a 'normal' year. In general, households that have non-negative savings have slightly higher total income

than households with negative savings. However, when accounting for the effect of the household size this relationship is no longer clear. On the other hand, families with negative savings record on average expenditure on durables that are 4-8 times as high as that of families with non-negative savings.

Figures 6.1 and 6.2 also demonstrate that a remarkable large proportion (20-30 per cent) of savings was kept in cash, which granted no interest at all. This might indicate that either the demand for cash for the purpose of transaction is rapidly increasing or alternative cost of holding cash is not very high. It is noteworthy that bank deposits appear to be the dominant type of savings for those who do save. In a 'normal' year, this will account for 60 per cent of total saving. In the years when inflation ran out of control (1988-1989), people responded by reducing the share of deposits in total savings to 40-50 per cent while increasing the shares of cash and more risky assets. When the situation returns to normal (1990), the share of deposits recovers to its original position. This is likely to be a reflection of lack of investment objects for individuals in China. For those who need to run down wealth to supplement current consumption, withdrawal of bank deposits may prove to be even more important, often accounting for 90 per cent of total dissavings. The second most important source of dissavings is borrowing, which are reflected by the negative 'repayment of loans' in Figures 6.1 and 6.2.

7. Impact of demographic factors on savings

The life-cycle hypothesis suggests that an individual's propensity to save varies with age in such a way that the life-cycle comprises of a low-income, low wealth phase in early adulthood, followed by rising earnings and wealth accumulation in mid-life, and completed by a phase of low income and dissavings in retirement. Although longitudenal data is required for testing the life-cycle hypothesis crossectional data may be used as basis for examening whether the age-profile of the savings pattern is consistent with the life-cycle hypothesis. Table 7.1 presents mean savings, expenditure on durables and income, as well as size of households by the age of head of households for Liaoning province. Sichuan province displays an almost identical pattern, and is thus omitted to save space.

Table 7.1. Household savings and expenditure on durables by the age of the head of the household in Liaoning, 1986-1990. RMB values in 1990 yuan

Year		1986	1987	1988	1989	1990
Age of head of household		599	600	599	599	597
-30	Pct. of pop.	13.4	17.5	15.7	11.4	9.7
	Mean saving	-6	-18	-234	-84	-130
	Mean exp.	369	597	943	686	960
	Mean income	2864	3893	4151	4228	5280
	Household size	3.46	3.41	3.30	3.14	3.12
31-35	Pct. of pop.	23.2	24.8	19.4	21.5	20.6
	Mean saving	-13	34	-247	-255	-197
	Mean exp.	424	515	1000	990	749
	Mean income	2816	3503	4177	4472	5089
	Household size	3.43	3.26	3.10	3.05	3.05
36-40	Pct. of pop.	21.9	18.0	21.2	21.9	25.8
	Mean saving	84	-137	-403	-83	170
	Mean exp.	375	605	999	853	661
	Mean income	3117	3370	4360	4713	5452
	Household size	3.93	3.29	3.31	3.18	3.17
41-45	Pct. of pop.	14.5	13.0	10.7	15.0	15.2
	Mean saving	195	210	-183	-29	19
	Mean exp.	262	361	1003	877	770
	Mean income	3511	4115	5230	5550	6199
	Household size	4.40	4.26	4.05	3.96	3.79
46-50	Pct. of pop.	11.0	12.2	13.2	11.5	11.2
	Mean saving	376	189	-442	505	600
	Mean exp.	354	604	1142	783	648
	Mean income	4227	4891	5570	6173	6742
	Household size	4.73	4.29	3.94	3.94	3.88
51-55	Pct. of pop.	7.8	6.2	6.8	8.7	7.2
	Mean saving	112	-66	37	446	412
	Mean exp.	449	623	995	680	719
	Mean income	3993	4989	6051	6745	7006
	Household size	4.26	3.81	3.98	4.09	3.73
56-60	Pct. of pop.	2.7	4.3	6.5	4.7	4.0
	Mean saving	617	419	-78	354	271
	Mean exp.	253	515	947	646	1071
	Mean income	3897	4312	4961	5648	6926
	Household size	3.44	3.04	3.33	3.11	3.53
61-70	Pct. of pop.	4.3	2.3	5.0	4.0	4.0
	Mean saving	350	236	-232	-54	163
	Mean exp.	126	225	492	416	67
	Mean income	2578	3016	2999	3549	4127
	Household size	3.42	2.50	2.53	2.65	2.39
71-	Pct. of pop.	1.2	1.7	1.5	1.3	2.2
	Mean saving	10	-13	120	-228	275
	Mean exp.	34	131	0	414	23
	Mean income	1729	2094	2423	3101	3159
	Household size	2.29	2.60	2.44	2.49	2.46

Table 7.1 shows that people did not start to save until their mid-forties. The savings rate then increased steadily with the age of the head of the households, and peaked at the age of late fifties. It began to fall with retirement, but still remained positive for the rest of the life-cycle[8]. It is clear that people over 60 had significantly lower income. This is not surprising though, as a retired worker usually receives a pension of between 60 and 80 percent of his last wage bill, plus some price subsidies which often lags behind the pace of inflation.

Unfortunately, the UHS does not contain any information on household wealth. Nevertheless, it is still possible to outline the life-cycle pattern of household savings in urban China. Young cohorts on average spend more money on purchases of consumer durables than any other age cohorts, and as a result have very little financial savings. This is in line with our hypothesis of target savings for purchases of consumer durables. If target savings is the single most important motive for young cohorts, then savings and dissavings will tend to offset each other when individual households are aggregated. In contrast, middle-aged cohorts spend much less on durables although their income are 20-30 per cent higher. Figures 5.1 and 5.2 demonstrate that this is not a result of high initial stock of durables for this group since couples with one child have a higher ownership level of most durables than others. The high savings rate may well reflect motives other than target savings, such as children's education cost, supplements for the future public pension, and perhaps most important, children's wedding expenditures.

The estimates for savings of pensioners may be less reliable, as relatively few households fall into these cohorts. The small but positive savings may be best explained by a strong precautionary motive.

Our finding seemed to contradict the classical version of the life-cycle hypothesis, which implies a higher savings rate among younger cohorts. This result emphasizes the importance of taking the dynamic aspects of the Chinese economy into consideration when the life-cycle hypothesis is subject to testing based on Chinese household data. In an economy where real wage and real per capita consumption grew by an average of 4.0 and 5.8 per cent per annum in urban areas for more than one and a half decade, it is hard to imagine that consumers will not form rational expectations about that increase in their future income and adjust their consumption and savings behaviour accordingly.

8. Summary and discussion

The purpose of this paper has been to provide a broad descriptive overview of household savings in urban China for the 1986-1990 period based on data from the State Statistical Bureau's Urban Household Survey. The late 1980s is characterized by economic reforms, rapid growth and periodically extremely high inflation rates. The strong motives to switch from financial savings to purchase of durables caused

[8]: The official retirement age for men is sixty, and that for women is fifty-five in China. For blue collar workers, the retirement age is five years earlier for both genders.

by hyperinflation appear to be consistent with the structure of the observed data. We have shown that the motives for savings were rather monotonous and that target-savings for future purchases of major consumer durables clearly singled out. Expenditures on durables were highly negatively correlated with financial savings, which indicates that it may be appropriate to include it as part of total savings. There is also a distinctive generation gap with respect to the readiness to save, as the young generation will expect a much higher life-time income than their parents so long as the current trend in economic growth continues.

One interesting question emerges. Could the high savings rate in China be maintained in the future? Most economists seem to agree that China's economy is likely to grow at a relatively fast pace at least for the near future. Numerous empirical studies have suggested that there may be a virtuous circle between growth and savings; increases in growth raise the savings rate, which in turn feeds back to increase growth. The termination of life-time employment will almost certainly induce more precautionary savings. The current pension and housing reforms are also likely to work in favour of high savings rates in the coming years. However, there are many factors that may affect savings in the opposite direction. Most importantly, deregulation of the financial market will allow Chinese consumers better access to credit and thus reduce target savings. Changes in demographic and cultural factors may also reduce savings rate in the long run. The ageing process of the population will accelerate in early next century as a result of the family planning policy. As the dependency ratio increases, savings rate will inevitably decline if other things remain unchanged.

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Appendix A

Sample method

The State Statistical Bureau's Urban Household Survey is an annual survey of non-agricultural households living in cities and county towns. The survey covers all provinces, but in this paper we restrict to analysing the microeconomic data from the provinces of Sichuan and Liaoning for the years 1986-1990.

The Urban Household Survey (UHS) was initiated in 1955, but was suspended from 1966 to 1979 as a consequence of the Cultural Revolution. Since the re-establishment in 1980 the UHS has been reorganized and extended several times. The major extension took place in 1984 when the survey expanded both in coverage and content. For further information on the history of the UHS we refer to Bjerkholt and Zhu (1993).

A particular attractive feature of the UHS is its continuity in recording the income and consumption data and possession of major durable goods. Each household is keeping daily records of its cash income and its consumption quantities and expenditures for monthly collection by survey officials.

The sample of households is selected by adopting a two-stage sampling design. At each stage stratified systematic sampling is used. In the first stage, a sample of cities and county towns is selected by the State Statistical Bureau (SSB) and provincial statistical bureaus. The cities and county towns are according to the size of their non-agricultural populations selected by means of a systematic sampling procedure. In the second stage 100 households are selected randomly from each selected city and county town. The total sample size is about 15 000 households. In addition to provide daily income and consumption accounts the selected households are every month asked questions about household size and composition and about education and employment status of the household members.

In order to reduce non-response and the extent of measurement errors the Urban Household Survey has been based on a rotation sample since 1988. The rotation proportion is 1/3 and the rotation period is one year. Unfortunately, SSB does not publish information on non-response rates, but the Survey officials report very high response rates due to extensive supervision by the local household survey divisions and a comprehensive set of instructions for Survey officials. These instructions deals with the Survey officials' behavior during the field operations. They are, for instance, instructed to assist the selected households with homework and child care and otherwise comply with the housholds' customs. Note that selected households who initially refuse to participate are revisited by Survey officials in order to convince them about the importance of their participation.

Appendix B

Table B1. Mean savings and expenditure on durables by income decile groups for all households in Sichuan, 1986-1990. In 1990 RMB yuan

Income decile group	1986		1987		1988		1989		1990	
	Mean savings	Mean expend. on durables	Mean savings	Mean expend. on durables	Mean savings	Mean expend. on durables	Mean savings	Mean expend. on durables	Mean savings	Mean expend. on durables
1	-92	136	-7	86	-49	105	-157	170	114	50
2	104	394	-20	292	-130	310	127	178	109	288
3	13	482	29	326	-254	525	-122	409	282	198
4	-168	712	-585	673	-451	858	-33	468	-103	574
5	-33	721	-150	728	-390	768	23	530	414	361
6	194	444	-145	752	-665	1153	-76	621	231	657
7	-17	987	-90	675	-305	770	203	702	430	579
8	208	748	-4	869	-169	1101	-121	952	586	842
9	205	1123	-23	981	-648	1358	490	816	467	895
10	732	1302	432	1243	-36	1785	693	1310	965	1216
Total	115	705	-56	662	-310	873	103	616	349	566

Table B2. Mean savings and expenditure on durables by income decile groups for all households in Liaoning, 1986-1990, in 1990 RMB yuan

Income decile group	1986		1987		1988		1989		1990	
	Mean savings	Mean expend. on durables	Mean savings	Mean expend. on durables	Mean savings	Mean expend. on durables	Mean savings	Mean expend. on durables	Mean savings	Mean expend. on durables
1	-34	233	-118	352	-261	325	-106	104	-31	164
2	115	382	155	292	-281	664	-1	231	85	313
3	-18	493	193	373	-437	868	-167	598	-703	718
4	37	510	287	314	-727	1167	-367	894	55	406
5	200	341	-65	776	-130	1025	-194	987	-13	632
6	275	452	96	733	-447	1198	10	935	-56	846
7	201	653	174	727	-261	1164	-142	1042	-33	882
8	119	704	-159	1255	-425	1765	-40	1009	284	689
9	338	839	236	1148	-219	1384	628	798	503	913
10	761	1047	-68	1749	-8	2215	622	1772	1046	1499
Total	199	561	73	772	-320	1177	24	837	114	706

Table B3. Savings-income ratios and expenditure on durables income ratios by income decile groups for couples with one child in Sichuan, 1986-1990, Per cent

Income decile group	1986		1987		1988		1989		1990	
	Mean savings	Mean expend. on durables	Mean savings	Mean expend. on durables	Mean savings	Mean expend. on durables	Mean savings	Mean expend. on durables	Mean savings	Mean expend. on durables
1	-5.2	6.7	1.1	4.0	-8.0	5.4	-1.7	6.1	1.4	5.6
2	0.4	10.9	-2.5	8.7	-13.2	16.3	-3.0	14.4	-1.3	12.4
3	6.0	8.3	0.2	10.4	-5.6	19.3	0.6	12.6	4.4	6.0
4	-2.2	16.0	2.5	10.3	-9.9	19.2	0.7	10.6	-12.3	21.8
5	-13.6	26.8	-10.0	18.0	-25.0	35.5	-1.9	16.1	9.1	8.7
6	-1.7	17.2	-6.1	20.9	-7.5	16.7	3.0	13.6	11.6	10.1
7	2.3	14.1	-2.5	17.6	-14.0	29.9	2.6	11.9	5.9	11.1
8	-3.1	17.1	-6.1	15.6	0.3	15.6	10.3	11.5	11.9	10.9
9	-3.2	20.4	-2.5	15.9	-10.5	26.5	-2.3	15.4	12.4	10.5
10	3.8	17.8	-0.8	22.1	1.7	24.1	2.9	18.2	4.4	18.5
Total	-1.4	16.1	-2.8	15.3	-8.3	21.9	1.6	13.6	5.6	12.1

Table B4. Savings-income ratios and expenditure on durables income ratios by income decile groups for couples with one child in Liaoning, 1986-1990, Per cent

Income decile group	1986		1987		1988		1989		1990	
	Mean savings	Mean expend. on durables	Mean savings	Mean expend. on durables	Mean savings	Mean expend. on durables	Mean savings	Mean expend. on durables	Mean savings	Mean expend. on durables
1	2,8	7,3	-7,5	13,1	-0,6	11,6	-13,0	15,5	-2,8	8,2
2	6,3	5,6	0,8	8,4	-5,2	13,4	-3,0	8,9	2,8	7,3
3	-1,4	13,9	-0,1	10,2	-4,3	15,1	-0,6	11,0	-13,6	21,9
4	-1,6	13,4	1,9	11,4	-12,9	24,7	-20,5	32,3	-13,0	10,8
5	4,5	8,6	10,9	3,5	-9,1	24,7	-6,6	20,3	0,2	10,2
6	-3,2	14,4	5,9	9,9	3,8	17,5	-6,0	23,9	2,5	13,0
7	4,5	7,8	-10,6	24,3	-9,8	25,5	-0,1	18,9	-3,6	18,7
8	7,5	9,6	6,9	13,6	-4,8	22,9	-5,9	25,0	0,9	17,5
9	-1,9	15,7	5,2	12,0	-7,3	26,2	-2,8	22,4	4,7	12,2
10	-0,2	18,2	-6,0	34,6	3,4	26,5	8,7	17,8	7,2	14,7
Total	1,6	12,0	0,8	15,1	-4,4	21,8	-3,6	20,5	-0,7	13,8

Table B5. Distribution of savings and dissavings by components for Sichuan, 1986-1990. Per cent and RMB values in 1990 yuan

	1986		1987		1988		1989		1990	
	S ≥ 0	S < 0	S ≥ 0	S < 0	S ≥ 0	S < 0	S ≥ 0	S < 0	S ≥ 0	S < 0
Cash	16.8	-0.1	13.2	-4.3	25.0	-1.6	13.8	0.9	25.0	5.4
Dep.	63.7	-94.8	58.3	-76.1	49.8	-82.1	57.5	-84.3	60.0	-94.3
Co.f	1.9	0.5	3.0	-0.3	3.2	1.3	1.5	0.2	1.5	0.8
Rep.	4.0	-11.7	9.2	-23.1	4.2	-21.5	10.8	-26.2	3.4	-16.7
Lend	11.0	5.6	12.4	4.6	7.5	0.9	6.5	1.9	5.5	0.1
Other	2.5	0.6	3.9	-0.7	10.2	2.9	9.9	7.5	4.5	4.6
All	100	-100	100	-100	100	-100	100	-100	100	-100
Pct.	62.7	37.3	58.1	41.9	49.3	50.7	64.0	36.0	70.9	29.1
Total savings/ dis-savings	707	-876	666	-1067	603	-1194	727	-1021	837	-840
Exp.	310	1368	326	1129	281	1449	209	1339	295	1227
Inc.	5532	5252	5456	5265	5234	5182	4997	4693	5324	5343

Note: Pct. = Proportion of households with non-negative and negative saving; Dep. = Bank deposits; Co.f = Cooperative saving fund; Rep. = Repayment of loans; Lend = Lending; Other = Other savings (dis savings); Exp. = Expenditure on durables; Inc. = Income.

Table B6. Distribution of savings and dissavings by components for Liaoning, 1986-1990. Per cent and RMB values in 1990 yuan

	1986		1987		1988		1989		1990	
	S ≥ 0	S < 0	S ≥ 0	S < 0	S ≥ 0	S < 0	S ≥ 0	S < 0	S ≥ 0	S < 0
Cash	20.9	-8.0	17.2	0.1	30.9	3.4	19.9	-2.0	24.8	5.8
Dep.	54.3	-74.6	62.6	-89.7	43.6	-84.3	39.0	-86.6	60.0	-84.8
Co.f	1.3	0.3	2.4	-1.5	1.8	-1.8	5.6	-1.5	1.9	-2.1
Rep.	8.4	-18.1	3.7	-12.9	2.3	-21.0	1.9	-17.9	3.4	-12.6
Lend	10.7	2.9	9.5	1.8	6.0	0.5	11.1	1.2	2.7	-2.9
Other	4.3	-2.5	4.6	2.2	15.4	3.2	22.5	6.9	7.2	-3.4
All	100	-100	100	-100	100	-100	100	-100	100	-100
Pct.	65.3	34.7	65.8	34.2	55.7	44.3	61.3	38.7	62.8	37.2
Total savings/ dis-savings	780	-878	815	-1350	837	-1768	880	-1333	957	-1307
Exp.	231	1183	232	1813	359	2205	272	1733	245	1486
Inc.	5242	4943	5550	5884	5698	5517	5399	4945	5771	5545