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ABSTRACT

Urban Consumption Inequality in China, 1995–2013[1]

We use 1995, 2002 and 2013 CHIP data to investigate the urban household consumption expenditure inequality. The overall inequality of urban household consumption expenditure measured by Gini coefficient slightly decreases from 0.33 in 1995 to 0.32 in 2002, but increases to 0.36 in 2013, which follows the same trend with that of urban income but is severer. However, the percentile ratio of p90/p10 shows that consumption inequality increases all the time. Besides, the inequality of basic food consumption is much smaller than the overall consumption, its contribution to the overall consumption inequality decreases from 20% in 1995 and 2002 to 15% by 2013, and its share also decreases steadily from 34% in 1995 to 30% in 2002 and further to 24% in 2013, and finally its share steadily decreases as the overall consumption level moving up the distribution in each of the three years. The inequality of housing consumption is much larger than overall consumption but decreasing over time, its contribution to the overall consumption inequality increases 35% in earlier two years to 40% by 2013, and its share also sharply increases from 23% in 1995 to 30% in 2002 and further to 38% in 2013, besides its share shows upward sloping as overall consumption level increases in each of the three years.

JEL Classification: D3, D63
Keywords: inequality, household surveys, consumption

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1. Introduction

According to Amartya Sen (1992), there are many kinds of external inequalities[2] among human beings, such as inequality of opportunity (education, medical care), income, wealth, etc. Just like poverty, those external inequalities are also multidimensional. To get a clear picture of a country's inequality, one has to examine every dimension of its inequality. In this paper, we study the household consumption inequality in urban China by using China Household Income Projects' (CHIPs) 1995, 2002 and 2013 urban household survey data. Just as the income inequality, consumption inequality is also an ex post outcome of a country's political, social and economic arrangements. It is the existence of a highly unequal distribution of income or consumption inequality that leads us to attach so much weight to ensuring that the political and social and economic institutions are fair, which also affect the equality of opportunity of our next generation (Atkinson, 2015, pp.10).

During the process of China's rapid upgrading from a backward and poor agricultural economy to the world manufacturing hub and the second largest economy in the last 40 years or so, the frontier mode of the Chinese household consumption has also been shifting at a dazzling speed, first from "wristwatch and bicycle and sewing machine" of 1970s to "refrigerator and color TV and washing machine" of 1980s, then to "air condition and computer and video recorder" of 1990s, "apartment and car and large amount of bank deposit" of the first decade of 2000s, and further to the current "apartment and car and abroad studying and traveling". Thus, it can be observed that while the rich are racing for taste, the poor have to put up with subsistence living, for there are still 70 million people in poverty in China, from which we might hypothesize that the consumption inequality in particular non-food consumption inequality of China has been increasing. As people getting richer, their scope of consumption is much widened and their consumption is much diversified.

The paper proceeds as follows. Section 2 reviews the literature on consumption inequality. Section 3 introduces the data. Section 4 gives the results. Section 5 summarizes.

2. Literature Review

Consumption inequality is widely researched across the world. Attanasio et al. (2007) find that the American consumption inequality has increased substantially in the 1980s and 1990s. Aguiar and Bils (2011) show that the American consumption inequality has closely tracked income

[2] According to Sen (1992), there are also enormous internal inequalities among human beings, such as health, beauty, cognitive ability, etc.

inequality over the period 1980-2007. Hassett and Mathur (2012) find that the American consumption inequality has increased only marginally since the 1980s, and consumption inequality narrows in periods of recessions, such as during the 2007–2009 recession. Norris and Pendakur (2015) demonstrate that the Canadian household-level consumption inequality measured by the Gini coefficient increased from 0.251 to 0.275 over 1997 to 2006, and then declined to 0.264 by 2009.

In the developing world, Idrees and Ahmad (2010) find that inequality in consumption expenditure in Pakistan improved slightly between 1992/93 and 2004/05, and that the extent of inequality in food consumption has remained substantially lower than in nonfood consumption; household expenditure on education has been more unequally distributed than overall consumption expenditures; healthcare expenditure in urban areas has been distributed relatively more evenly in recent years, while the level of inequality in healthcare expenditures in rural areas has remained persistent and somewhat higher. Shanbhogue (2014) exhibits that in all major states of India the rural consumption inequality is less than the urban, and there is a very insignificant decline in rural inequality from 2004-05 to 2009-10. Mukhopadhyay (2014) shows that access to microcredit exacerbates consumption inequality both at the slum-level and the household-level in India. Basole and Basu (2015) find that in India the rise in overall expenditure inequality is due to the increased weight in the household budget of non-food spending, which tends to be more unequal than food spending; consumption inequality is very different across broad non-food items: durables, education, healthcare, and consumer services show the most rapid increases in real expenditure, and also display the highest levels of inequality.

Consumption inequality has been studied in China. Qu and Zhao (2008) find that low quantiles are associated with large consumption disparity and the price effect is the dominant factor for the urban-rural consumption disparity. Guo and N'Diaye (2010) show that efforts to further raise household income and the share of employment in the services sector, as well as to develop capital markets, including liberalizing interest rates and creating alternative savings instruments are likely to have the biggest impact on consumption. Gao and Zeng (2010) exhibit that economic development has a negative impact on consumption inequality, controlling for inequality in after-tax income, and financial development is an important channel for this effect. Cai et al. (2010) find that a steadily rising trend in income and consumption inequality during the years 1992–2003 in urban China, but all urban residents were strictly better off economically. Liu and Li (2011) find that consumption inequality of urban households steadily increased from 1988 to 2007. Qiao (2013) find that China is experiencing consumption inequality with the full or partial insurance of consumption against both permanent and transitory income shocks. Ma (2014) find that since the

Chinese economic reform, the inequality of urban consumption has become more serious, and it has been worse than the inequality of income.

3. The Data

We use 1995, 2002 and 2013 CHIP data to investigate the urban household consumption expenditure inequality.[3] The surveys were designed by a team of international scholars including the authors and researchers at the Institute of Economics of the Chinese Academy of Social Sciences and School of Economics and Business at Beijing Normal University. Subsamples were drawn from the larger annual national household income survey of the National Bureau of Statistics. The subsamples cover 11 out of 31 provinces in 1995, 12 in 2002 and 15 in 2015. The questionnaires designed for CHIP are more detailed than those in the official income surveys, particularly with respect to the measurement of income and labor issues. For the cross-sectional analysis, we construct a self-estimated market rental price of owner-occupied housing that were not included in older official surveys. With respect to adjustment of the price level, we adjusted total consumption expenditures from all years to 2013 constant prices according to the urban consumer price indices published by China's National Statistical Bureau. Results from these surveys are in Griffin and Zhao (1993), Riskin, Zhao, and Li (2001), Li and Sato (2006), Gustafsson, Li, and Sicular (2008, 2017).

According to the China's National Statistical Bureau, the urban household consumption expenditure is divided into eight categories: food, clothing, housing, household equipment and service, transportation and communication, education and entertainment, health and medical care, and others. The CHIP data surveyed the household consumption also in these eight categories. The consumption of housing equipment indicates the purchase of durable home appliances, such as refrigerator, TV set, car, etc. In other words, the gradual consumption of the durable goods is not considered here due to that the price of the purchased durable goods cannot be identified and their annual consumption value cannot be calculated. In the 1995 data, there was certain amount of income in-kind from work units; when possible, they are computed and included in the wage income. In urban China, there is a universal 9-year compulsory education system and a medical insurance system for those worked in state sector but by 2013 it extended to the whole society. This indicates that those worked in the state sector enjoying medical subsidy to certain extent. By 1995, 57% of the surveyed urban households lived in the houses rented from the state and paid a tiny

[3] The reason that we did not use the 2007 data, it is because the 2007 data lack of certain variables on urban household consumption.

amount of rent. With the marketization of residential housing, the proportion of urban households lived in the state-owned housing has been decreasing all time. By 2002, only 18% of surveyed urban households lived in the state-owned housing, whereas in 2013 question of whether rented housing from the state was not surveyed any more. The housing consumption by the urban households is calculated by the estimated rental value of owner-occupied housing. Besides, the surveyed households are supposed to keep diary on the daily consumption and will be recorded by the statistical office. All the comparable consumption figures across years have been adjusted to the 2013 constant price according to the relevant provincial urban consumer price indices reported by the statistical yearbooks collected and published by the National Statistical Bureau.

Of the 1995, 2002 and 2013 urban household consumption survey data, only in 1995 the mean of the overall variable of the household consumption expenditure is much less than the mean of the sum-up of the above eight categories. The former is RMB 8301.28 yuans, the later is RMB 10077.92 yuans, both including the market rental value of owner-occupied housing and at the 2013 constant price. Yuan et al. (2016) who use the overall variable of household consumption report the growth rate of household consumption expenditure from 1995 to 2002 is 4.18%, whereas the equivalent figure is 1.19% by using the sum-up of the eight categories of household consumption expenditure. Given that in both 2002 and 2013 survey the overall variable of household consumption expenditure is equal to the sum-up of the eight categories, for the 1995 survey we use the sum-up variable instead of the overall variable.

As a two-person household would not consume more heating than a one-person household, there are economies of scale in household consumption. To this end, we employ the widely used OECD equivalence scale of household consumption expenditure (Jappelli and Pistaferri, 2010). In detail, the first adult of a household is given a weight of 1, each of the rest adults of the household is given a weight of 0.7, and each of the children or teenagers (16 year-old or less) of the household is given a weight of 0.5. All consumption variables are adjusted according to this equivalence scale.

After the equivalence scale adjustment, the household consumption expenditure per capita increases 30% in 1995, 28% in 2002 and 24% in 2013, and the Gini coefficient of household consumption per capita decrease 2.61% in 1995, 2.38% in 2002 and 3.78% in 2013 (Tables 1 and 2). The fall of the gaps is caused by the decrease of household size from 3.13 persons per household in 1995 to 3.02 in 2002 and further to 2.97 in 2013. While the urban income inequality measured by Gini decreases from 0.33 in 1995 to 0.31 in 2002, but then increases to 0.35). Although the consumption inequality follows the same trend with that of income, the former is severer than the latter. However, Krueger & Perri (2006) find that the consumption inequality is less that of income in the US.

[Tables 1 and 2 go around here]

4. Results

4.1 The inequality of urban household consumption expenditure per capita.

After being adjusted by the equivalence scale, the urban household consumption expenditure per capita increases by 1% per annum from 1995 to 2002 and 7.64% per annum from 2002 to 2013 (Table 2). This implies that from 2002 onwards the wellbeing of the Chinese urban residents have been getting much better off in term of consumption. By contrast, the annual growth rate of household income per capita is 5.62% from 1995 to 2002 and 13.61% from 2002 to 2013. [4]This states that the growth of household consumption lags much behind that of household income with a gap of about 4-6%. The proportion of household consumption per capita to household income per capita or Engle curve also varies substantially; it is 108% in 1995, 78% in 2002 and 71% in 2013. [5]It is a puzzle that the urban households consumed more than they earned in 1995. In the middle of the 1990s China experienced the most radical reform of its urban sector, which is characterized by downsizing its State-Owned Enterprises and ended in nearly 30 million SOE workers retrenched by 2002 (the New Office of the State Council, 2004). Stressed by the retrenchment of SOE workers in tens of millions, the urban wage rate was under no pressure of rising. However, the prices of consumer goods were increasing, which was encouraged by the reforming spirits of Deng Xiaoping's south talk in 1992. Typical urban household with their worker in the SOE sector would save nothing after meeting their monthly basic daily necessary expenses. Those households with retrenched SOE workers may have to endure the downgrade of falling living standard and to maintain their certain level of consumption by using saving. In all, the hardship caused by the widespread retrenchment of half the SOE labor force during the 1990s might partly explained the low growth rate of urban household consumption. But this hypothesis could not solve the above puzzle. The Engle ratios in both 2002 and 2013 explain much that the rising trend of the Chinese household saving.

Table 3 and Figure 1 also report the annual growth rate of household consumption expenditure per capita by decile, by which it can be observed that this rate for the period from 1995 to 2002

[4] Calculated from the CHIP urban household data by the authors, using exponential growth rate = [natural log of (household income per capita of the end year is divided by that of the base year figure)]/(no. of years).
[5] The figures are calculated using he CHIP urban household data by the authors.

exhibits inverse U shape with the height of 1.74% at the 6th decile point, whereas for the period from 2002 to 2013 it steadily increases with the decile point from 6.15% of the 1st decile to 7.83% of the 9th decile. For the first period, it seems the middle 50 percent urban households enjoyed relative higher growth rate of consumption; in other words, consumption inequality is decreasing. However, during the second period, the richer households enjoyed higher consumption growth rate, it implies that consumption inequality is increasing.

The overall inequality of urban household consumption expenditure per capita measured by Gini coefficient slightly decreases from 0.33 in 1995 to 0.32 in 2002, but increases to 0.36 in 2013 (Table 3). The change of urban household consumption expenditure inequality is in the same trend as the urban household income, whose Gini coefficient first decrease from 0.33 in 1995 to 0.31 in 2002 and but increases to 0.35 in 2013 (Gustafsson et al. 2016). These results imply that the urban household consumption inequality is increasing a bit faster than urban household income inequality.

[Table 3 goes around here]

[Figure 1 here]

In addition to the Gini coefficient, we also describe the inequality of the urban household consumption and its eight categories by percentile ratios of $90^{th}/10^{th}$, $90^{th}/50^{th}$, $50^{th}/10^{th}$ and $75^{th}/25^{th}$. The percentile ratios are companions to Gini coefficient in measuring inequality, for that these ratios are more direct and original measure of income or consumption inequality. However, the value of some consumption categories at certain percentile point might not goes together with the overall consumption, for example at certain percentile point, some of the households might not have medical expenses. To avoid this, we use the mean of household consumption per capita, for example, in the range of the 87.5^{th} percentile point to 92.5^{th} percentile point (>= the former, < the latter) to represent the household consumption per capita at the 90^{th} percentile point, the mean of the range of $p7.5^{th}$ to $p12.5^{th}$ to represent $p10^{th}$, etc. Then we calculate the mean of the values of each sub-category of consumption per capita strictly falling within the given range of overall household consumption per capita. For example, we use the mean of the values of medical care and health expenditure per capita falling in the range of the 87.5^{th} to 92.5^{th} percentile point of overall household consumption per capita to represent the medical care and health expenditure per capita at the 90^{th} percentile point value.

All the range ratios presented in Table 4 show that consumption inequality is increasing, which is slightly different from the Concentration ratio and Gini coefficient as shown above. [6]The range ratio "(p87.5-p92.5)/(p7.5-p12.5)" increases from 3.74 in 1995 to 3.97 in 2002 and further to 4.29 in 2013, while middle range ratio "(p72.5-77.5)/(p22.5-27.5)" only increases from 1.91 in 1995 to 2.08 in 2013. In addition, consumption inequality is slightly larger in the upper half of the consumption distribution than the lower half.

[Table 4 here]

4.2 The decomposition of consumption inequality by its components

We employ Shapley decomposition method to decompose the inequality of urban household consumption expenditure into the eight categories of consumption items. Shapley decomposition method is proposed by Araar and Duclos (2009). Shapley decomposition reports: (1) the absolute contribution of each source k to the Gini index (Table 5a), (2) the relative contribution of each source k to the Gini index (Table 5b), and (3) the share in total income of each income source k (Table 5c). The contribution of food to the overall consumption inequality remains almost unchanged at 20% in 1995 and 2002, but it decreases to 15% by 2013. The contribution of housing also stays the same at 35% in earlier two years, but increases to 40% by 2013. The contribution of clothing more or less remains at about 6.5%. The contribution of house equipment and services is almost 30% in 1995, but it falls to 7% in 2002 and further to 6% by 2013. The contribution of transportation & communication, education & entertainment, and medical care & health all exhibit upward trend, in particular the contribution of transportation & communication sharply increases from less than 2% in 1995 to 9% in 2002 and further to 13% in 2013.

[Tables 5a. 5b. 5c. are around here]

4.3 Inequality of major components of urban household consumption per capita

Comparing with the overall consumption inequality, the inequality of food consumption per capita is much lower as shown in Table 6a. It would be ideal to distinguish the tobacco and alcohol

[6] This discrepancy might be explained by the fact that by employing the Gini coefficient, if giving an extra yuan of money to a person a quarter of the way up from the bottom would produce an effect at three times the weight of an extra yuan of money given to a person a quarter of the way down from the top (Atkinson, 2015, p.17).

expenditure from other food consumption. However, due to that for the 1995 data the add-up figure of food and tobacco and alcohol is not equal to the overall figure of these three categories, we use the overall figure instead of separate figure. The range ratio "(p87.5-p92.5)/(p7.5-p12.5)" increases from 2.04 in 1995 to 2.54 in 2002 and but decreases to 2.39 in 2013, while all other range ratios remain around 1.50 across the period. These results strongly indicate that the inequality of basic food consumption is much smaller than the overall consumption, almost equal between the upper half and lower half of the whole distribution, and show the trend of decreasing.

[Table 6a. around here]

In contrast to food consumption, clothing consumption inequality is much larger and increasing sharply with the time (Table 6b). The range ratio "(p87.5-p92.5)/(p7.5-p12.5)" increases from 2.67 in 1995 to 3.20 in 2002 and further to 4.12 in 2013. The middle 50% of the distribution and the lower half exhibit almost the same inequality around 2.00 and slightly increasing. More interestingly, inequality is larger in the lower half of the distribution than in the upper half.

[Table 6b. around here]

Generally speaking, the housing consumption inequality (Table 6c) is decreasing. The range ratio "(p87.5-p92.5)/(p7.5-p12.5)" decreases from 5.98 in 1995 to 4.39 in 2002 and but increases to 4.99 in 2013, the range ratio of the middle 50% shows exactly the same trend around the value of 2.00. The inequality is much larger in the upper half of the distribution than in the lower half, and it decreases in the former but increases in the latter.

[Table 6c. around here]

The urban household consumption of house equipment and services is much unequal than the overall consumption, but this inequality is sharply falling (Table 6d). The range ratio "(p87.5-p92.5)/(p7.5-p12.5)" decreases from 8.43 in 1995 to 7.26 in 2002 and further to 4.97 in 2013, the range ratio of the middle 50% shows exactly the same trend around the value of 3.00. In 1995, the inequality is larger in the upper half of the distribution than in the lower half, but in the latter two years this phenomenon is reversed.

[Table 6d. around here]

The inequality of transportation & communication consumption is much larger than the overall consumption, and this inequality is decreasing in the first period but increasing in the second period (Table 6e). The range ratio "(p87.5-p92.5)/(p7.5-p12.5)" decreases from 7.36 in 1995 to 5.06 in 2002 but increases to 7.07 in 2013, the range ratio of the middle 50% shows exactly the same trend around the value of 2.50. In 1995 and 2002, the inequality is larger in the lower half of the distribution than in the upper half, but in 2013 this phenomenon is reversed. Besides, this inequality is increasing in the upper half of the distribution but decreasing in the lower half.

[Table 6e. around here]

The inequality of education and culture and entertainment consumption is much larger than the overall consumption, and this inequality is sharply increasing with time (Table 6f). The range ratio "(p87.5-p92.5)/(p7.5-p12.5)" increases from 5.36 in 1995 to 7.62 in 2002 and further to 8.10 in 2013, the range ratio of the middle 50% shows roughly the same trend around the value of 2.80. The inequality is larger in the lower half of the distribution than in the upper half, and both halves exhibit rising trend.

[Table 6f. around here]

The inequality of medical care and health consumption is about the same with the overall consumption in term of the range ratios (Table 6g). The range ratio "(p87.5-p92.5)/(p7.5-p12.5)" increases from 3.99 in 1995 to 5.74 in 2002 decreases to 4.51 in 2013. The range ratio of the middle 50% increases in the first period but remains unchanged in the second period at the value around 2.00. The inequality is also around 2.00 in both upper and lower half of the distribution, and it increases in the upper half but decreases in the lower half in the second period.

[Table 6g. around here]

4.4 The distributional analysis of shares of consumption items in overall consumption.

Now we tackle shares of each consumption item in the overall consumption (Table 9-5c) and its change in the whole distribution (Figure 2). As the Chinese urban households are getting richer, the share of food expenditure decreases steadily from 34% in 1995 to 30% in 2002 and further to

24% in 2013. In addition, the food share steadily decreases as the overall consumption expenditure increases in each of the three years. In 1995 the share falls from 50% at the 10th percentile to 28% at the 90th percentile (Figure 2). It falls from 40% to 26% in 2002 and from 36% to 21% on the same range.

[Figure 2 goes around here]

The share of clothing in overall consumption decreases from 8.21% in 1995 to 7.56% in 2002 and further to 7.23% in 2013. In the year of 1995, the clothing share almost decreases steadily as overall consumption level increase from 11% at the 10th percentile to 9.8% at the median and then sharply to 7.5% at the 90th percentile (Figure 3). For the year of 2002, the share first remains almost unchanged at about 8% from the 80th percentile downward, but then decreases to 6.6% at the 90th percentile. For the year of 2013, the share also first slowly increase from 6.8% at the 10th percentile to 8.4% at the 70th percentile, but then sharply decreases to 7% at the 90th percentile.

[Figure 3 goes around here]

In contrast with the falling food share over time, the share of housing consumption sharply increases from 23% in 1995 to 30% in 2002 and further to 38% in 2013. In 1995, the housing share increases steadily from 14% at the 10th percentile to 23% at the 90th percentile (Figure 4). In 2002, the curve of the share exhibits inverse U shape, first decreases from 28.6% at the 10th percentile to 26.5% at the median but then increases to 31.8% at the 90th percentile. In 2013, the share more or less slowly increases from 34.4% at the 10th percentile to 39.7% at the 90th percentile.

[Figure 4 goes around here]

The share of house equipment & services in the overall consumption decreases sharply from 22.22% in 1995 to 5.09% in 2002 but increases slightly to 5.29% in 2013. In the year of 1995, the share steadily increases from 12.9% at the 10th percentile to 29.0% at the 90th percentile (Figure 5). However, in both 2002 and 2013, the share is almost distinguishable in 2002 and 2013, and not much different from the mean over the whole distribution. This might be due to that in 1995 the prices of domestic electric and electronic appliances (TV set, Video cassette, washing machine,

refrigerator, etc.) were high relatively to wages, and its expenditure account for large share of household consumption. The richer households could afford more these equipment. In the new century, these home appliances become much cheaper relatively to wages and hence these equipment would not make much differences across households with different incomes.

[Figure 5 is around here]

The share of transportation & communication in the overall consumption increases sharply from 1.36% in 1995 to 7.76% in 2002 and further to 9.54% in 2013. Interestingly, both the first two years' curves are slightly upward sloping, and the 2013 curve almost coincides with the 2002 curve from the 80^{th} percentile downward. It implies there is not much difference on transportation & communication consumption of the families at different expenditure levels in the same year. From the 80^{th} percentile onwards, the share sharply goes up as the overall consumption move to the top in 2013, this group of households might those who own family cars.

[Figure 6 goes around here]

The share of education & entertainment in the overall consumption expenditure first sharply increases from 3.5% in 1995 to 11.7% in 2002, but then decreases to 8.7% in 2013. Generally, all the three years' share curves are upright sloping, with the latter two years' curve are much steeper than the first year's. This indicates that the share of education & entertainment increases with the overall consumption level.

[Figure 7 goes here]

The share of medical care & health in overall consumption increases from 2.4% in 1995 to 5.5% in 2002 but then decreases to 5.3% in 2013. All the three years' share curves fluctuate up and down around the mean. It means that the share would not be much different at different consumption level.

[Figure 8 goes here]

5. Summary

We use 1995, 2002 and 2013 CHIP data to investigate the urban household consumption expenditure inequality. After being adjusted by the equivalence scale, the urban household

consumption expenditure per capita increases by 1% per annum from 1995 to 2002 and 7.64% per annum from 2002 to 2013. This implies that from 2002 onwards the wellbeing of the Chinese urban residents have been getting much better off in term of consumption. The overall inequality of urban household consumption expenditure measured by Gini coefficient slightly decreases from 0.33 in 1995 to 0.32 in 2002, but increases to 0.36 in 2013, which follows the same trend with the that of urban income but is severer. However, the percentile ratio of p90/p10 shows that consumption inequality increases over the period. In addition, consumption inequality is slightly larger in the upper half of the consumption distribution than the lower half.

The inequality of basic food consumption is much smaller than the overall consumption, almost equal between the upper half and lower half of the whole distribution, and show the trend of decreasing. Unlike food, clothing consumption inequality is much larger and increasing sharply with the time. The inequality of housing consumption is decreasing, and it is much larger in the upper half of the distribution than in the lower half, and it decreases in the former but increases in the latter.

The contribution of food to the overall consumption inequality remains almost unchanged at 20% in 1995 and 2002, but it decreases to 15% by 2013. The contribution of housing also stays the same at 35% in earlier two years, but increases to 40% by 2013. The contribution of clothing more or less remains at about 6.5%.

As the Chinese urban households become richer, the share of food expenditure decreases steadily from one-third in 1995 to a quarter in 2013. In addition, the food share steadily decreases as the overall consumption level moving up the distribution in each of the three years. The share of clothing in overall consumption remains about 7% over time, but exhibits downward sloping as overall consumption increase in each of the three years. In contrast with the falling food share over time, the share of housing consumption sharply increases from 23% in 1995 to 30% in 2002 and further to 38% in 2013, besides it shows upward sloping as overall consumption increases in each of the three years. The share of house equipment & services in the overall consumption decreases sharply from 22% in 1995 to 5% in the latter two years.

Concerning the policy implication, the improvement of public services such as compulsory education, health care and transportation (underground train, high-speed train) largely reduced the consumption inequality. In addition, well-functioned marketed services such as telecom services (telephone, wifi, mobile phone, internet car services, on-line shopping) reduced inequality.

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Table 1 Summary Statistics of household consumption per capita (before using the household equivalence scale)

	No. of obs (households)	Gini	Mean	Standard Deviation	Minimum	Maximum
1995	6,930	0.34247	10077.92	10052.60	977.19	391378.40
2002	6,835	0.32542	10955.96	7517.52	1048.18	103621.90
2013	6,742	0.37137	26230.2	21101.66	1630.50	346366.1

Note: at 2013 constant price

Table 2 Summary Statistics of household consumption per capita (Household size adjusted value and weighted

	No. of obs (households)	Gini	Mean	Standard Deviation	Minimum	Maximum
1995	6,930	0.33375	13091.66	13252.01	1397.406	539832.3
2002	6,835	0.31785	14062.95	9387.341	1431.363	141302.6
2013	6,742	0.35782	32604.10	24803.95	2223.409	346366.1

Note: at 2013 constant price

Table 3 Urban Household Consumption per Capita by decile, 1995-2-13

Decile point value	1995	2002	2013	1995-2002: average annual growth speed	2002-2013: average annual growth speed
10	5492.50	5873.47	11555.04	0.96%	6.15%
20	6916.15	7519.90	15377.06	1.20%	6.50%
30	8106.38	8923.78	19101.96	1.37%	6.92%
40	9333.35	10290.56	22379.38	1.39%	7.06%
50	10562.73	11766.49	26272.09	1.54%	7.30%
60	11941.76	13488.65	30603.57	1.74%	7.45%
70	13839.12	15583.09	36020.66	1.70%	7.62%
80	16714.06	18740.18	44366.12	1.63%	7.83%
90	22560.22	24461.55	60539.48	1.16%	8.24%

Note: the household consumption expenditure per capita is adjusted by the equivalence scale and at the 2013 constant price.

Table 4. The range ratios of overall household consumption expenditure

Overall household consumption per capita	(p87.5-p92.5)/(p7.5-p12.5)	(p87.5-p92.5)/(p47.5-p52.5)	(p47.5-52.5)/(p7.5-p12.5)	(p72.5-77.5)/(p22.5-27.5)	Concentration ratio	Gini Coefficient
1995	3.74	2.06	1.82	1.91	0.3363	0.3364
2002	3.97	2.05	1.93	1.95	0.3262	0.3262
2013	4.29	2.15	2.00	2.08	0.3578	0.3580

Table 5a. The absolute contribution of each source k to the Gini index

Absolute Contribution	1995	2002	2013
Food, cigarette & alcohol	0.0623	0.0626	0.0536
Clothing	0.0194	0.0212	0.0242
Housing	0.1134	0.1101	0.1430
House equipment & services	0.0987	0.0225	0.0209
Transportation & communication	0.0055	0.0297	0.0470
Education, culture & entertainment	0.0122	0.0491	0.0369
Health & medical care	0.0087	0.0206	0.0211
Others	0.0161	0.0104	0.0112
Total (Gini Index)	0.3364	0.3262	0.3580

Table 5b. The relative contribution of each source k to the Gini index

Relative Contribution	1995	2002	2013
Food, cigarette & alcohol	18.51%	19.19%	14.97%
Clothing	5.78%	6.49%	6.77%
Housing	33.71%	33.75%	39.95%
House equipment & services	29.35%	6.90%	5.85%
Transportation & communication	1.65%	9.10%	13.14%
Education, culture & entertainment	3.62%	15.05%	10.32%
Health & medical care	2.60%	6.32%	5.89%
Others	4.78%	3.20%	3.12%
Total	100%	100.00%	100.00%

Table 5c. The share in total income of each income source

Consumption Share	1995	2002	2013
Food, cigarette & alcohol	34.26%	29.52%	23.85%
Clothing	8.21%	7.56%	7.23%
Housing	22.78%	30.29%	37.89%
House equipment & services	22.22%	5.09%	5.29%
Transportation & communication	1.36%	7.76%	9.54%
Education, culture & entertainment	3.46%	11.68%	8.71%
Health & medical care	2.37%	5.50%	5.25%
Others	5.35%	2.60%	2.24%
Total	100%	100.00%	100%

Table 6a. The range ratios of food, cigarettes and alcohols consumption

Food, cigarettes & alcohols	(p87.5-p92.5)/(p7.5-p12.5)	(p87.5-p92.5)/(p47.5-p52.5)	(p47.5-52.5)/(p7.5-p12.5)	(p72.5-77.5)/(p22.5-27.5)	Concentration ratio	Gini Coefficient
1995	2.04	1.41	1.44	1.43	0.2504	0.2505
2002	2.54	1.58	1.61	1.57	0.2735	0.2735
2013	2.39	1.60	1.49	1.55	0.3001	0.3003

Note: The values used to calculate the range ratios of the above category are strictly falling in the given range of overall household consumption per capita.

Table 6b. The range ratios of clothing consumption

Clothing	(p87.5-p92.5)/(p7.5-p12.5)	(p87.5-p92.5)/(p47.5-p52.5)	(p47.5-52.5)/(p7.5-p12.5)	(p72.5-77.5)/(p22.5-27.5)	Concentration ratio	Gini Coefficient
1995	2.67	1.55	1.73	1.73	0.4165	0.4087
2002	3.20	1.58	2.02	1.85	0.4451	0.4392
2013	4.12	1.99	2.07	2.23	0.4958	0.4886

Note: The values used to calculate the range ratios of the above category are strictly falling in the given range of overall household consumption per capita.

Table 6c. The range ratios of housing consumption

Housing	(p87.5-p92.5)/(p7.5-p12.5)	(p87.5-p92.5)/(p47.5-p52.5)	(p47.5-52.5)/(p7.5-p12.5)	(p72.5-77.5)/(p22.5-27.5)	Concentration ratio	Gini Coefficient
1995	5.98	2.88	2.07	2.17	0.6208	0.6202
2002	4.39	2.49	1.76	1.91	0.4435	0.4433
2013	4.99	2.24	2.22	2.14	0.4646	0.4640

Note: The values used to calculate the range ratios of the above category are strictly falling in the given range of overall household consumption per capita.

Table 6d. The range ratios of house equipment and services consumption

House equipment and services	(p87.5-p92.5)/(p7.5-p12.5)	(p87.5-p92.5)/(p47.5-p52.5)	(p47.5-52.5)/(p7.5-p12.5)	(p72.5-77.5)/(p22.5-27.5)	Concentration ratio	Gini Coefficient
1995	8.43	3.18	2.66	3.10	0.5435	0.5427
2002	7.26	2.32	3.13	2.96	0.6413	0.6350
2013	4.97	1.99	2.50	2.45	0.5777	0.5742

Note: The values used to calculate the range ratios of the above category are strictly falling in the given range of overall household consumption per capita.

Table 6e. The range ratios of transportation & communication consumption

Transportation & communication	(p87.5-p92.5)/(p7.5-p12.5)	(p87.5-p92.5)/(p47.5-p52.5)	(p47.5-52.5)/(p7.5-p12.5)	(p72.5-77.5)/(p22.5-27.5)	Concentration ratio	Gini Coefficient
1995	7.36	1.91	3.85	2.60	0.6773	0.6096
2002	5.06	2.18	2.32	2.41	0.5183	0.5124
2013	7.07	3.28	2.16	2.67	0.6364	0.6354

Note: The values used to calculate the range ratios of the above category are strictly falling in the given range of overall household consumption per capita.

Table 6f. The range ratios of education, culture and entertainment consumption

Education, culture & entertainment	(p87.5-p92.5)/(p7.5-p12.5)	(p87.5-p92.5)/(p47.5-p52.5)	(p47.5-52.5)/(p7.5-p12.5)	(p72.5-77.5)/(p22.5-27.5)	Concentration ratio	Gini Coefficient
1995	5.36	2.15	2.49	2.88	0.6874	0.5736
2002	7.62	2.65	2.88	2.76	0.6005	0.5888
2013	8.10	2.37	3.42	2.93	0.6387	0.6239

Note: The values used to calculate the range ratios of the above category are strictly falling in the given range of overall household **consumption per capita.**

Table 6g. The range ratios of medical care & health consumption

Medical care & health	(p87.5-p92.5)/(p7.5-p12.5)	(p87.5-p92.5)/(p47.5-p52.5)	(p47.5-52.5)/(p7.5-p12.5)	(p72.5-77.5)/(p22.5-27.5)	Concentration ratio	Gini Coefficient
1995	3.99	2.11	1.89	1.93	0.7068	0.6739
2002	5.74	2.19	2.62	2.26	0.6519	0.6353
2013	4.51	2.41	1.87	2.26	0.7217	0.7050

Note: The values used to calculate the range ratios of the above category are strictly falling in the given range of overall household consumption per capita.

Figure 1. ***Annual growth rate of HD consumption per capita***

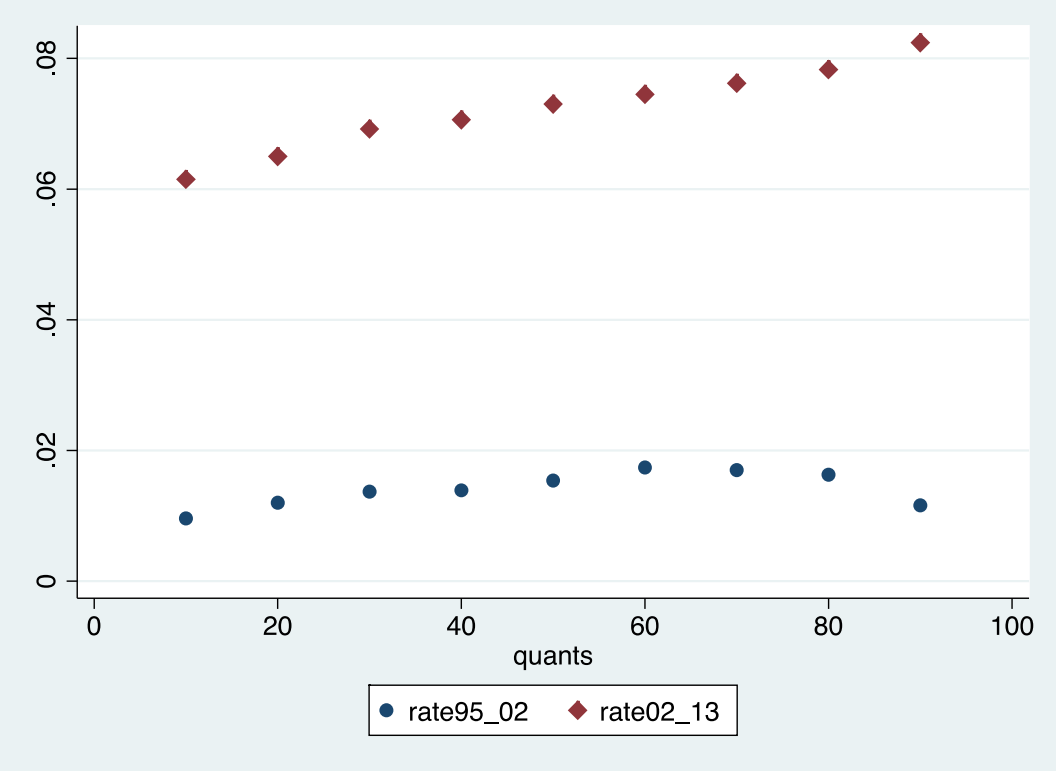

Figure 2. ***Share of food in overall consumption***

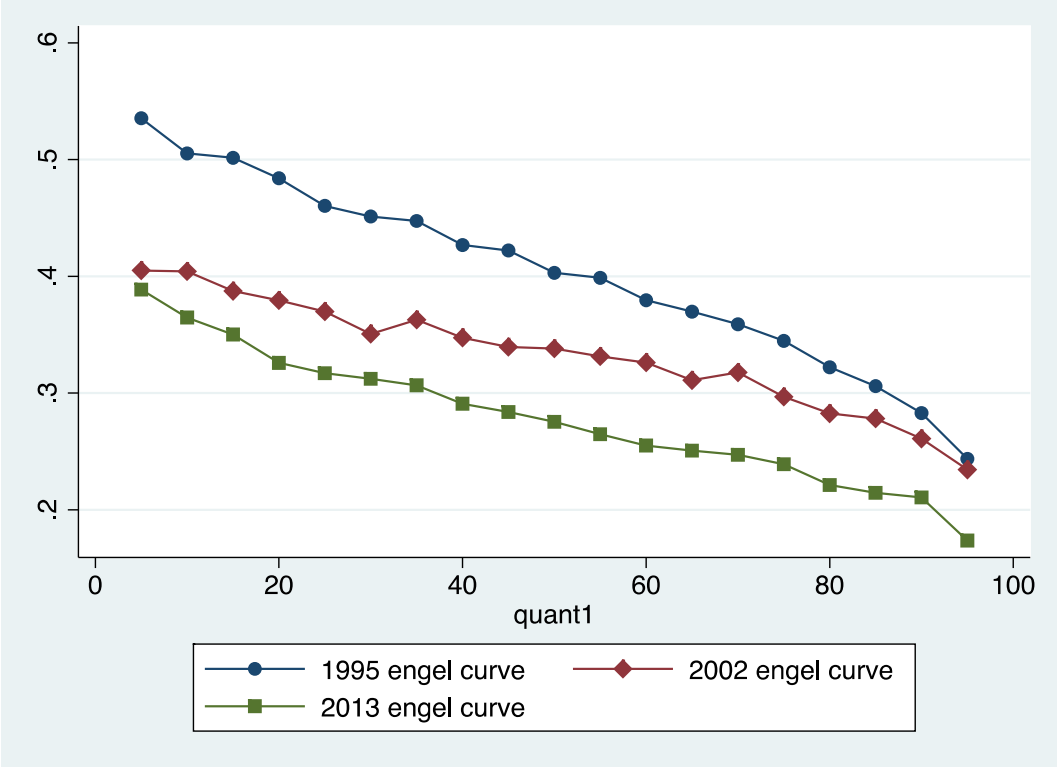

Figure 3. ***Share of clothing in overall consumption***

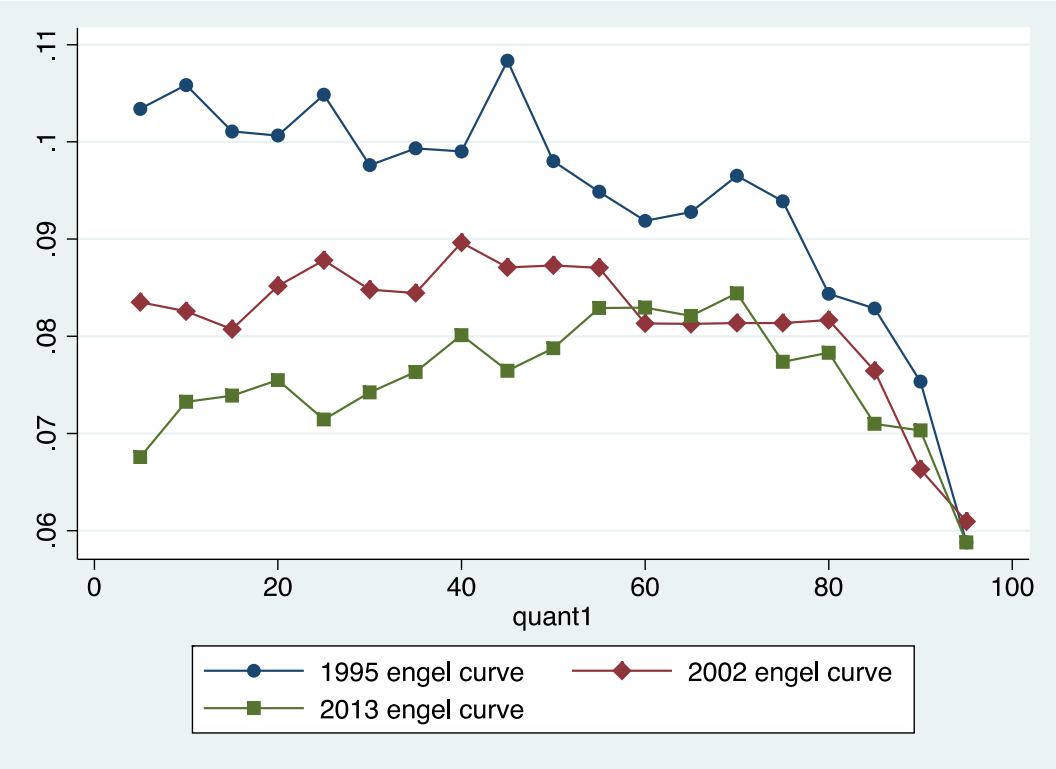

Figure 4. ***Share of housing in overall consumption***

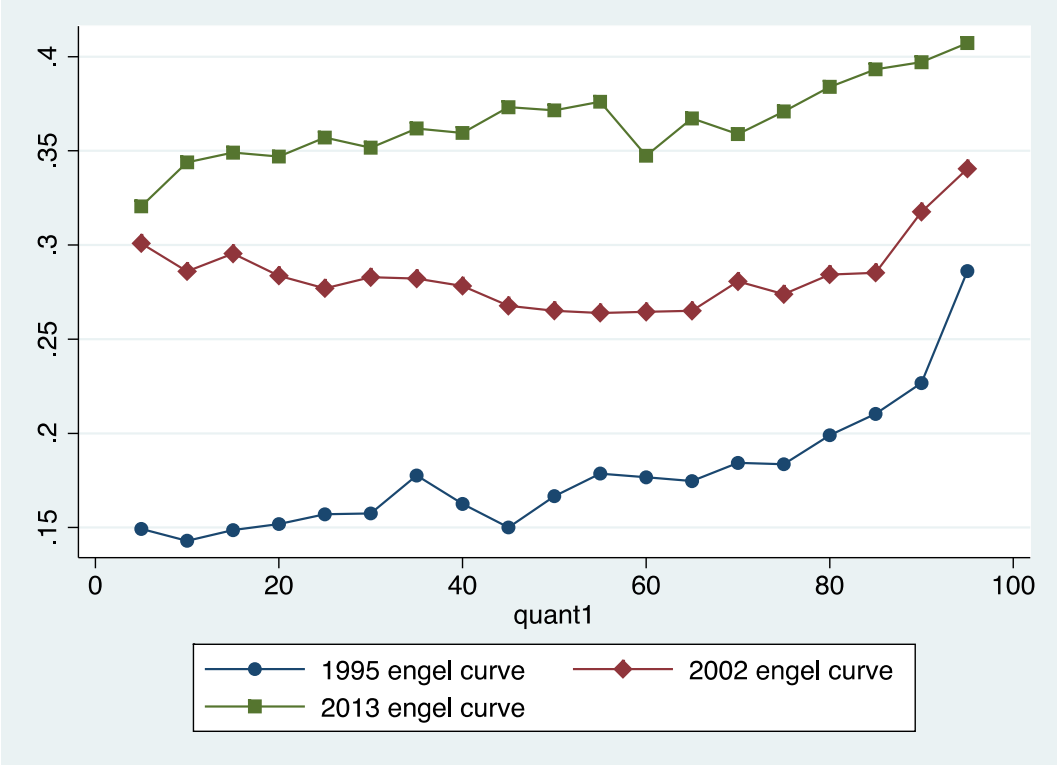

Figure 5. ***Share of house equipment and services***

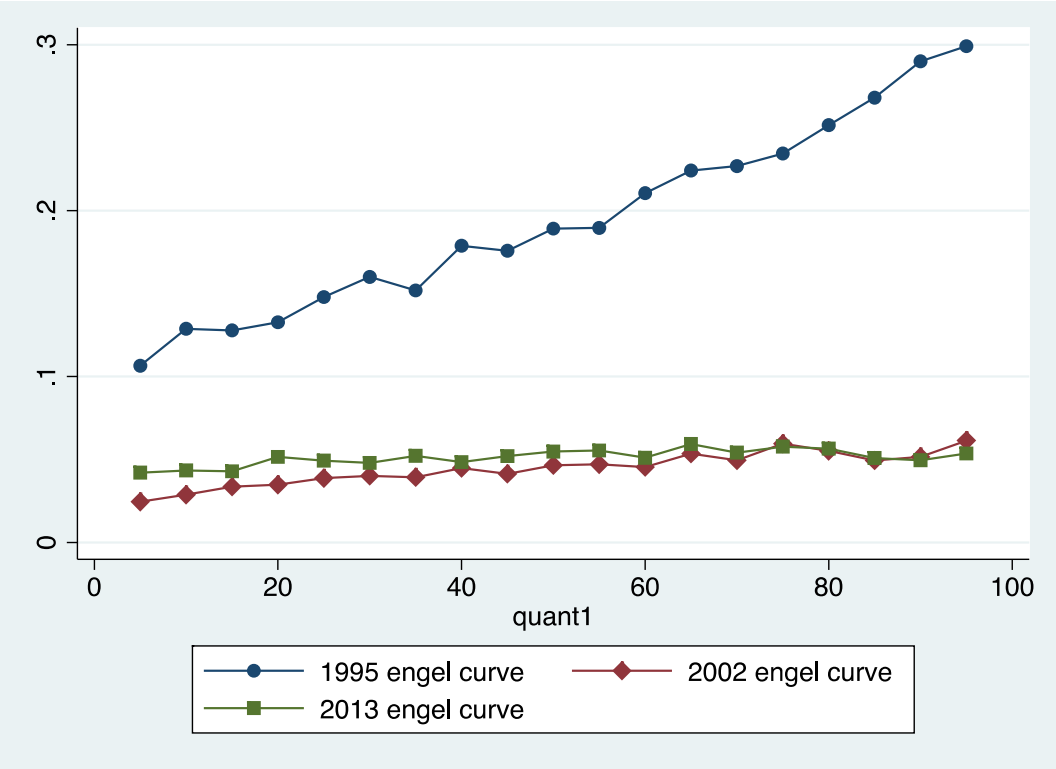

Figure 6. ***Share of transport and communication***

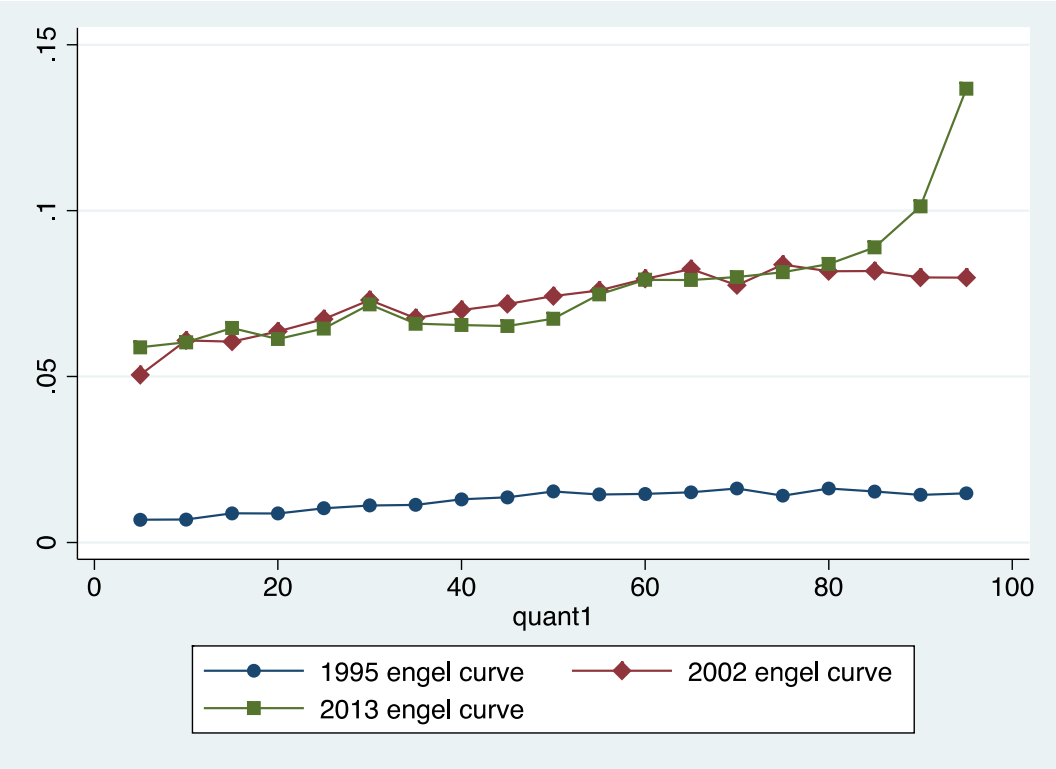

Figure 7. ***Share of education and entertainment***

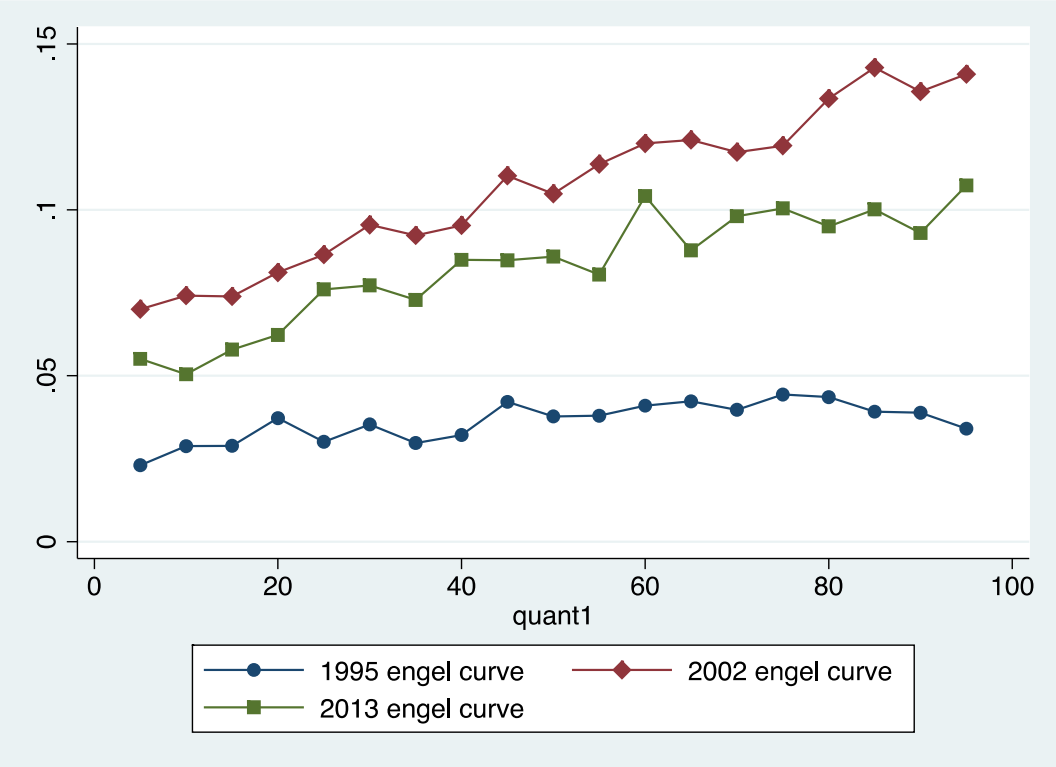

Figure 8. ***Share of medical care and health***