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# Capital Income and Income Inequality: Evidence from Urban China

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## Capital Income and Income Inequality: Evidence from Urban China

### **Abstract:**

Using urban household survey data collected by National Bureau of Statistics of China from 1988-2009, this study examines the distribution, composition, and changes of capital income and its contribution to income inequality. The data shows that capital income has increased considerably in past 20 years in urban China. Although the average value of capital income is still relatively low, the dispersion of capital income is significant, and for high-income earners capital income is substantial. Compared to other forms of income, capital income is distributed the most unequally, and its contribution to total income inequality has been growing. This study also examines capital income in China's western, central, and eastern regions separately, and finds that capital income is highest and contributes the most to income inequality in the eastern region.

**Keywords:** capital income; income inequality; regional income gaps; Gini coefficient

**JEL code:** J3

## **1. Introduction**

The recent rise in income inequality in urban China has attracted great attention from researchers and policy makers. Much of this attention has been focused on the magnitude of income inequality and reasons for the rising inequality. As an individual's income consists of both wage and non-wage income, rising income inequality may be caused by widening wage inequality as well as non-wage inequalities. Previous research on income inequality in China has mostly focused on wage inequality and discovered that the changes in the wage structure, e.g. the increasing returns to education and widened wage gaps between gender, industry, occupations, and regions, have led to the rising wage inequality in urban China (Chi et al., 2011; Meng, 2004; Appleton et al., 2005; Gustafsson and Li, 2001a; Knight and Song, 2003, 1991). In contrast to many studies on wage inequality, there are relatively few studies that have focused on inequality in non-wage income, specifically capital income.

Capital income has the potential to influence income inequality significantly. Capital income comes from the investment of tangible and intangible assets, and is comprised of interest, dividends, rent from leasing a property or profit from selling the property, or income from intellectual property. High-income earners tend to have greater assets and thus receive more capital income than low-income earners. Capital income is, then, accumulated as capital and generates more income, which consequently causes the further widening of income inequality. This effect is known as the Matthew effect (i.e. the rich get richer and the poor get poorer).

In China, since the Shanghai and Shenzhen stock exchanges were founded in the early 1990s, investment channels for urban citizens have been greatly expanded. Housing reform and the development of the housing market in the late 1990s provided further opportunities for urban residents to acquire properties. With the fast-growing financial markets, many people in the urban areas have accumulated considerable financial capital and have begun to enjoy the income stream generated from it. In recent years, as capital income has grown so fast, many people believe that it has become the major source of rising income inequality in China.<sup>1</sup> Despite this popular belief, there is little evidence regarding the role of capital income in China's rising income inequality. Motivated by this observation, in this paper we decompose income inequality into the components of wage income, capital income, and transfer income. With available data, we further decompose inequality of capital income into specific sources. Considering the large income gaps between the western and eastern regions of China, we also conduct decompositions for different regions separately.

We find that capital income has generally increased since the 1980s and is highly volatile. Capital income is also extremely unequally distributed among urban residents – the dispersion of capital income is much greater than that of earnings and transfer income. We find that the contribution of capital income to the Gini coefficient has increased in recent years, but it is still smaller than that of earnings, mostly because the share of capital income in the total income is relatively low. The rest of

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<sup>1</sup> According to an online survey conducted in 2007 by a leading news agency, People Daily, 76 percent of respondents believed that capital income was the leading factor that will cause the further widening of income inequality. ([http://paper.people.com.cn/rmlt/html/2007-12/01/content\\_33664641.htm#](http://paper.people.com.cn/rmlt/html/2007-12/01/content_33664641.htm#))

paper is organized as follows: in Section 2, we introduce related studies in the literature. Section 3 gives background about the growth of capital income in China. Sections 4 and 5 describe data and decomposition methods, respectively. The results are reported in Section 6. Section 7 summarizes and concludes the paper.

## **2. Review of related studies**

In scholarly literature, several studies have decomposed income inequality by income source using Chinese urban or rural household data.<sup>2</sup> Concerning urban income inequality, Meng (2004) indicated that large-scale unemployment as the result of labor reallocation was the major source of rising income inequality during the radical reform period, 1995-1999; Gustafsson and Li (2001b) attributed the rising income inequality in 1988-1995 to the housing reform and the growth of subsistence income. Our study bears the most similarity to Gustafsson and Li (2001b), who decomposed the Gini coefficient of urban income inequality by income source for the period between 1988 and 1995. However, the income sources examined by Gustafsson and Li (2001b) were money income, subsistence income, in-kind income, and transfer income. They did not include capital income. In the 1980s and 1990s, urban households were generally poor and had few properties, so capital income was not important. However, in recent years capital income has grown, to and as a result has become an important source of income for many households, especially the high-income ones. Thus, it is crucial to include capital income in the analysis. Moreover,

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<sup>2</sup> Meng (2004) focused on urban income inequality; Gustafsson and Li (2001b) studied both urban and rural income inequality. Morduch and Sicular (2002), Benjamin et al. (2005), Wan (2004), and Wan and Zhou (2005) decomposed the rural income inequality into the contribution of various farm and non-farm incomes.

compared to Gustaffson and Li (2001b), we use more recent data (from the 2000s) and obtain updated results.

In other transition countries, although capital income has not been studied specifically, it is suggested that non-wage private-sector income, including rent and investment income, exacerbated income inequality during transition years (Kattuman and Redmond, 2001; Milanovic, 1999). Guriev and Rachinsky (2006) indicated that privatization has transferred real estate to urban residents and farm land to farmers, resulting in an increase in both personal wealth and personal wealth inequality.

In contrast to the relatively few empirical studies on capital income in China and other transition countries, western scholars have long been studying capital income and the impact of capital income on income inequality. Lerman and Yitzhaki(1985) found that property income contributed to income inequality in the United States in 1980, but that its marginal contribution was exceeded by that of wage income. Jäntti(1997) indicated that although only 3% of income in the UK was property income in 1986, it was responsible for 10% of inequality. Jenkins (1995) showed that inequality of capital income nearly doubled in the 1980s in the UK, and had a negative influence on household income equalization. In Gottschalk and Smeeding (1997)'s review of cross-national studies, the growing correlation between increased capital income and income inequality was confirmed in the United Kingdom, Japan, Australia, and New Zealand; however capital income was not nearly as important as earnings in contributing to income inequality. The most recent cross-national study by Fräbendorf et al. (2011) found that capital income was exceedingly volatile and that its share in

disposable income has risen in recent years. Moreover, capital income has made a disproportionately large contribution to overall inequality in Germany and the United States. In this paper, we compare our findings with those of western scholars and discuss the differences and similarities between China and other countries in terms of the role of capital income in income inequality.

### **3. Background**

Before the economic reform, bank savings were almost the only source of household financial assets in China. But since workers were provided comprehensive benefits by their work units while monetary income was generally very low, people had little savings. In the late 1970s, aggregate household savings were less than 7% of gross national product (GNP) and increased to over 50% by 2009.<sup>3</sup> As savings were the only type of household assets, interest from the savings was the only type of household capital income. Furthermore, at the beginning of the reform, income inequality was low, as household income was mostly composed of wages and those wages were highly compressed due to the regulation of labor bureau. Transfer income was little, mostly in the form of private transfer. Self-employment income was negligible as the majority of urban workers were employed by work units and very few were self-employed.

In 1990 and 1991 stock exchanges were established in Shanghai and Shenzhen, respectively. This change was considered an important benchmark in the development

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<sup>3</sup> Source: China Statistical yearbooks, 2010 and 1991



of the financial market in China. The stock market offers plenty of investment opportunities for people with extra income. In the late 1990s, the urban housing reform boosted the development of the real estate market. Free housing was no longer provided by work units. Monetary income was increased and used to purchase housing and other properties. As a result, households' financial assets have grown substantially since the 1990s. In addition to interest, investment income and property rental income have become important sources of capital income.

In the meanwhile, urban wage levels increased and so did wage inequality, due to the liberalization of labor regulations. State-owned enterprises reduced the benefits provided to employees. Some benefits were instead provided to citizens by the government in the form of social benefits, such as pension, health insurance, unemployment insurance, and work injury insurance, and consequently, public transfer increased. In addition to the social safety net, some people sought additional protection and reward from the private insurance market, which led to the rise of another source of capital income: investment income from insurance premiums and risks. Finally, as the number of self-employed workers increased in the urban areas while the overall number of people employed decreased, self-employment income also became more important than before.

In sum, with the passage of urban economic reforms, the share of wage income in the total income declined, even though the level and dispersion of wage income increased. At the same time, other sources of income, such as capital income, transfer income, and self-employment income, all have grown rapidly. Since capital income

was presumably more variable than other income types, it could have been responsible for the widening of income inequality, especially in the more developed eastern region of China. We therefore speculate that the contribution of capital income to income inequality has been greater in the eastern region.

The purpose of this analysis is to answer questions concerning the role of capital income in urban income inequality. Despite the recent rapid growth in capital income, what is the share of capital income in the total income? How dispersed is capital income, and to what extent has capital income led to the widening of income inequality in urban China? As a by-product, we also obtain results regarding other income components.

#### **4. Data**

This study uses data collected from the Urban Household Surveys from 1988 to 2009. The Urban Household Survey has been conducted every year since 1987 by China's National Bureau of Statistics (NBS). In the survey, information from a large random sample of urban households is collected through interviews, and each individual member's demographic, employment, income, and household expenditure data is gathered. This data is used by the NBS to produce aggregate statistics on employment and income, which are published in China Statistical Yearbooks. The overview of the survey methodology can be found in the yearbooks.

The NBS urban household surveys use a stratified random sampling method. In the first stage, cities and counties are selected based on population size. In total, 146 cities

and 80 counties were selected for survey. In the second stage, within each selected city or county, sub-districts (street committees), resident committees, and households are sampled, successively. To ensure that the sample is representative, each year 1/3 of the households from the second stage are rotated out and replaced by new households, so that the household sample is completely renewed every 3 years.

The survey is comprised of an individual and a household survey. The individual survey covers demographic information, education, employment status, industry, and occupation, as well as the total income, earnings, and other income components, such as capital income and transfer income. The household survey mainly asks about the household living arrangement, housing type, and all kinds of expenditures. Household total income and income components are calculated from individual income data. Each month, this data is gathered from sampled households. Monthly data are then aggregated into yearly data and reported to NBS.

This study utilizes individual income data. Before 1992, the survey asked about five income components, including earnings, self-employment income, capital income, transfer income, and special income. Special income refers to occasional income received for special reasons. After 1992, special income was no longer asked.

Capital income is composed of interest, dividends, income from insurance investments, other investment income, property rental income, intellectual property income and other property income. For simplicity, we group these capital income components into three categories: investment income, including interests, dividends, income from insurance investments, and other investment income; property rental

income; and other property income, which includes intellectual property income. Before 2002, property rental income was considered part of other property income. From 2002 to 2007, property rental income was asked as a single category. However, it was grouped back into investment income in 2008 and 2009.

In the urban household surveys, all of the income recorded refers to actual payment that occurred in a month. Pertaining to capital income, if a person did not withdraw interest from bank savings, and interest remained in an account and was re-invested, then the person was typically not aware of the amount of interest. In this case, interest income was not counted in capital income. Analogously, imputed income from an investment was not counted as capital income. If no actual payment occurred, the imputed returns from an investment were not reported in the survey.

Finally, capital gains or losses were not included in capital income. These refer to any changes in the market value of an asset or property, which certainly affect a person's wealth and subsequent economic behaviors. However, if the person did not sell a property, unrealized profits or losses were not reported. As a result, our estimate of the level of capital income based on the urban household survey data is likely underestimated, but the change and dispersion of capital income may not be particularly affected. The definition of capital income we adopt is comparable to that in Fräβdorf et al. (2011).

NBS has provided us with data from nine provinces, specifically, Beijing, Liaoning, Zhejiang, Guangdong, Sichuan, Shaanxi, Gansu, Anhui, and Hubei. In our study, the nine provinces are divided into three regions, the eastern region (Beijing, Liaoning,

Zhejiang, and Guangdong), the central region (Anhui and Hubei) and the western region (Sichuan, Shaanxi, and Gansu). We select all individuals aged 25 through 60. The lower limit is set to exclude enrolled students who had no income, while the upper limit is set to avoid retired people, so that the sample focuses on the primary working-age population. The total number of observations from all years is 376,876, among which 17,763 individuals reported zero income, amounting to 5% of the sample. A total of 72,655 people had zero earnings who were either unemployed or out of the labor force. The proportion of those out of work with zero earnings has increased dramatically, from 9 percent in the late 1980s and early 1990s to over 20 percent in the late 2000s. As pointed out by Meng (2004), the sharp increase in the number of unemployed persons in the urban areas contributed to the rise in income inequality in the late 1990s.

## 5. Empirical method

In order to decompose the Gini coefficient by income source, we adopt the method developed by Shorrocks (1980) and Pyatt, Chen and Fei (1980). A similar method is used by Gustafsson and Li (2001a, 2001b). Specifically, the decomposition is as follows.

Assume that there are  $n$  observations in the sample. The total income of the  $i^{th}$  person is denoted as  $y_i$ , and there are  $m$  components of income, denoted as  $y_{ki}$ ,  $k=1, \dots, m$ . The observations are ranked by  $y_i$  in ascending order with  $r_i$  denoting the rank from 1 to  $n$ . Then, from the definition of the Lorenz curve and the Gini coefficient, we obtain

equation (1). The detailed derivation may be referenced in the study of Pyatt, Chen and Fei (1980).

$$G(y) = \frac{2}{n\bar{y}} \text{cov}(y, r(y)) \quad (1)$$

in which  $G(y)$  denotes the Gini coefficient of the total income;  $\bar{y}$  is the mean of the total income;  $y$  and  $r(y)$  are the vectors of  $y_i$  and  $r_i$ , respectively.  $\text{cov}$  denotes the covariance of  $y$  and  $r(y)$ .

Since the total income is the sum of  $m$  components of income, we have:

$$y_i = \sum_{k=1}^m y_{ki}$$

and,

$$\bar{y} = \sum_{k=1}^m \bar{y}_k,$$

where  $\bar{y}$  is the mean of the total income, and  $\bar{y}_k$  is the mean of the  $k^{\text{th}}$  component of income. Substituting the two equations into (1), we get:

$$G(y) = \frac{2}{n\bar{y}} \text{cov}\left(\sum_{k=1}^m y_k, r(y)\right) = \sum_{k=1}^m \phi_k c(y_k, y) \quad (2)$$

in which  $\phi_k = \frac{\bar{y}_k}{\bar{y}}$ , denoting the share of the  $k^{\text{th}}$  income in the total income,

and  $c(y_k, y) = \frac{2}{n\bar{y}_k} \text{cov}(y_k, r(y))$ , known as the factor concentration ratio of the  $k^{\text{th}}$

income component. The factor concentration ratio and the Gini coefficient differ only

in the ranking of income: in the Gini coefficient, the ranking would be based on the

factor income,  $r(y_k)$ , while in the factor concentration ratio, the ranking is based on the total income,  $r(y)$ . The factor concentration ratio can be regarded as the generalized Gini coefficient. It also measures income inequality, with a larger value indicating greater inequality in an income component.

Equation (2) indicates that the Gini coefficient of the total income can be written as the weighted average of the factor concentration ratios of income components, in which the weight is the share of the  $k^{th}$  income component in the total income. From equation (2), the contribution of the  $k^{th}$  component to the Gini coefficient of total income inequality is :

$$\varpi_k = \frac{\phi_k c(x_k, y)}{G(y)} \quad (3)$$

Equation (3) suggests that the contribution of the  $k^{th}$  income component to income inequality is determined by both the share of the  $k^{th}$  component in the total income as well as the inequality of the  $k^{th}$  component.

## 6. Results

### 6.1 Description of capital income

In Figure 1, we observe a general increase in capital income from the late 1980s to 2009. Our calculation shows that in most years the annual growth of capital income exceeded 20%, falling below 10% in only a few years. Capital income was volatile, especially compared to earnings that have grown steadily over time (as can be seen in Appendix A). In 2008 there was a sharp drop in capital income. 2008

happened to be the year of the global financial crisis, which also impacted China. This result indicates that capital income is closely related to financial market conditions. The drop in capital income in 2002 can be attributed to domestic economic restructuring in China.<sup>4</sup>

Another finding concerning capital income is that the distribution of capital income is extremely unequal. We calculate the share of capital income in the total income for people whose total income falls into either the 0-95th percentile, 95-99th percentile, or the 99th percentile and above. Our results are shown in Figure 2, which indicates that a majority of urban residents had little capital income, with the share of capital income in their total income representing less than 2 percent. However, the top 1 percent of income earners had a significant amount of capital income, and the share of capital income in their total income was over 30 percent in recent years. We also notice that capital income increased more rapidly for high-income earners – for the top 1 percent of income earners, the share of capital income went up from 10 percent in 1988 to its highest level (37 percent) in 2007.

The findings, firstly that capital income is highly volatile and secondly that the share of capital income in the total income is much higher for high-income earners, are comparable to those found for other developed economies (Fräbendorf et al., 2011; Gottschalk and Smeeding, 1997). However, the growth of capital income was much faster in China: according to Fräbendorf et al. (2011), capital income doubled in OECD

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<sup>4</sup> In 2002, there was a large-scale layoff in the urban areas as the result of massive restructuring in state-owned enterprises.



countries during 1991-2007; in roughly the same period from 1988 to 2008, capital income increased more than 20 times in China. This has to do with the low level of capital income in China at the beginning of the period, so a small increase in this level led to a large growth rate.

Figure 3 reports the mean for the three components of capital income. The results show that investment income accounted for the highest proportion of capital income in most years. Investment income declined slightly in the second half of the 1990s but rose steeply in the 2000s, until 2008 when it fell again. In the late 1990s, other property income also experienced a large increase, but this was likely due to the inclusion of rental income. Since rental income was separately reported after 2002, other property income fell sharply and increased only slightly in the 2000s. During the same period, rental income increased notably. The results indicate that investment income and rental income were the two most important sources of capital income for urban residents, and after 2000 capital income experienced a significant increase.

## 6.2 Contribution of capital income to income inequality

Table 1 demonstrates the results of decomposition of income inequality by income source, including the Gini coefficient of total income, the share and factor concentration ratios of each income component, and the contribution of each income component to total income inequality from 1988 to 2009. Table 1 confirms that income inequality in urban China has increased significantly.

Of all the income components, capital income had the highest concentration ratio, indicating that capital income was the most unequally distributed. This finding is consistent with Figure 2. Moreover, capital income inequality increased considerably over the twenty year period. The factor concentration ratio of capital income increased from 0.571 in 1988 to 0.745 in 2009.

Although capital income showed much greater dispersion than other income components, the contribution of capital income to total income inequality was relatively small. This is because the contribution of an income component to the Gini coefficient depends on both the inequality of the income component and the share of the income component in the total income. Since capital income accounted for only a small share of the total income, it is not surprising that capital income made a relatively small contribution to total inequality.

In the United States, the UK, and Germany, the share of capital income within the total income was 9, 4, and 6 percent in 2003, respectively (Fräßdorf et al., 2011), while it was less than 2 percent in China. This comparison suggests that the share of capital income was lower in China than that in other developed economies. The dispersion of capital income was also lower in China – the Gini coefficient of capital income was around 0.6 in China in 2003, while in the same year it was around 0.8 in the United States, the UK, and Germany. As the result of the lower share and smaller inequality of capital income, the contribution of capital income to income inequality was less significant in China. However, from 1988 to 2009, the inequality of capital

income increased rapidly in China, while the OECD countries and the United States experienced only a very modest increase.

In China, as expected, the share of wage income in the total income went into decline, especially in recent years, while the share of self-employment income showed an increase from 1 percent in 1988 to almost 10 percent in 2009. Consequently, the contribution of wage income to the Gini coefficient decreased, while that of self-employment income increased, even though the factor concentration ratios of both wage and self-employment income rose over time. The factor concentration ratio of transfer income also increased significantly from 1988 to 2009, but the share and contribution of transfer income increased by only a small amount.

Considering that living cost varies across provinces, we adjust total income and income components by province consumer price index (CPI). If in a low-income province the prices are even lower, then after the adjustment, income inequality would be smaller. However, if the prices are not lower in low-income provinces, the income gap may be even greater after the adjustment. In Appendix B, we report the decomposition results for total income inequality where income is adjusted by province CPI. The results show that the total or capital income inequality is not significantly affected by the adjustment. In some years, inequality became smaller after the adjustment, and in other years it became larger. The contribution of capital income to total income inequality remains roughly the same.

### 6.3 Contribution of capital income to income inequality in different regions

To compare the contribution of capital income to income inequality in different regions of China, we decompose the Gini coefficient for the eastern, central, and western regions separately. We obtain the results for each region, similar to Table 1. However we present the results in figures for better illustration.

In Panel A of Figure 4, Gini coefficients for the eastern, central, western regions during 1988-2009 are exhibited. The result shows a consistent widening trend in income inequality in the three regions. In almost every year, the Gini coefficient of the eastern region is higher than that of the central and western regions, implying that the eastern region has wider income inequality, while there is no significant difference between the central and western regions in the level of income inequality.

Panels B and C demonstrate the factor concentration ratios of wage income and capital income in the three regions. They show that the inequality in both wage and capital incomes was much higher for the eastern region than that for the central and western regions. While regional disparity in wage income inequality was relatively stable in the past 20 years, the disparity in capital income inequality changed over time, widening after the mid 1990s. After 2005, the gap in capital income inequality between the eastern and central regions grew narrower; however the gap between the eastern and western regions remained wide.

Panels D and E show the contribution of wage and capital incomes to total income inequality in the three regions for each year. Panel D suggests that wage income contributes more to total income inequality in the western region than in the other two regions. We note that wage income was the most equally distributed in the

western region, as shown in Panel B. But since the share of wage income in the total income was highest in the western area, the contribution of wage income to total income inequality was highest. Panel E indicates that capital income contributes more to total income inequality in the eastern provinces than in the central and western provinces. This is due to both the greater inequality of capital income and the larger share of capital income in the total income in the eastern region.

We also conduct the decomposition of the Gini coefficient for the three regions, using provincial CPI-adjusted income. The factor concentration ratio and contribution of capital income to the Gini coefficient are reported in Appendix C. We notice that there is little difference between Appendix C and Figure 4, implying that the decomposition results for the three regions were not affected by whether income was adjusted or not.

#### 6.4 Decomposition of capital income inequality

In order to explore the sources of capital income inequality, we further decompose the Gini coefficient of capital income inequality into the contribution of the sub-components of capital income. As shown in Table 2, investment income accounts for the largest share of capital income, and consists mostly of interest and stock dividends. Since 1988, the share of investment income in capital income has gradually decreased, especially after the mid 1990s, falling from over 90 percent in 1995 to 65 percent in 2007. This result confirms that other sources of capital income have increased over time, along with the decline in the share of investment income.

Before 2002 the urban household survey did not ask about property rental income specifically, and rental income was included in the category of “other property income”. After 2002, rental income was asked for separately in the survey. It began to become another important source of capital income, accounting for 30-40% of the total capital income. Unfortunately, after 2008 and 2009, rental income was no longer asked for separately in the survey, and instead it was included in investment income, which explains why the share of investment income went back up to over 90 percent in 2008 and 2009. Although rental income was not asked for in a separate question until 2002, we notice the significant rise in the share of “other property income” after 1996, which coincided with the housing reform in urban China, suggesting that increased rental income was behind the increase.

In Table 2, all the components of capital income have large concentration ratios, implying that capital income was generally unequally distributed. Furthermore, the factor concentration ratio of investment income slightly increased by 0.02 from 1988 to 2009. As investment income accounted for the largest share of capital income and also had a high concentration ratio, its contribution to capital income inequality was the highest among the three components of capital income. Nevertheless, the effect of rental income on capital income inequality, although not as large as that of investment income, is not negligible.

## **7. Conclusion**

Using urban household survey data collected by the National Bureau of Statistics of China from 1988-2009, we examine the levels and changes of capital

income and the contribution of capital income to income inequality. A number of important findings emerge from our study, among which the most important one concerns the large dispersion of capital income in urban China. Despite the relatively low level and share of capital income, the factor concentration ratio of capital income inequality was strikingly high, approaching a level comparable to such developed economies as the U.S., the UK and Germany. For most people, capital income was rather trivial, yet for top income earners it was substantial. Compared to wage income, capital income had a higher factor concentration ratio. Moreover, the factor concentration ratio of capital income has been increasing steadily, indicating the widening of the inequality in capital income in China.

Another finding is that the level and dispersion of capital income were higher in the eastern region than in the central and western regions. The decomposition of capital income inequality suggests that investment income was the most important source of capital income and contributed most to capital income inequality. After the housing reform in 1995, rental income increased and began to make a substantial contribution to capital income inequality.

Finally, going back to the questions posed at the beginning of the paper, we did not find evidence in support of the idea that capital income has become the major source of income inequality in urban China. Based on our analysis, wage income is still the predominant factor for rising income inequality. However, the concern about capital income is justified, as the distribution of capital income appears to be exceedingly unequal. With a possible increase in the share of capital income in the

future, the contribution of capital income to inequality will rise further. Thus, our study calls attention to the widening inequality of capital income and its impact on overall income inequality.



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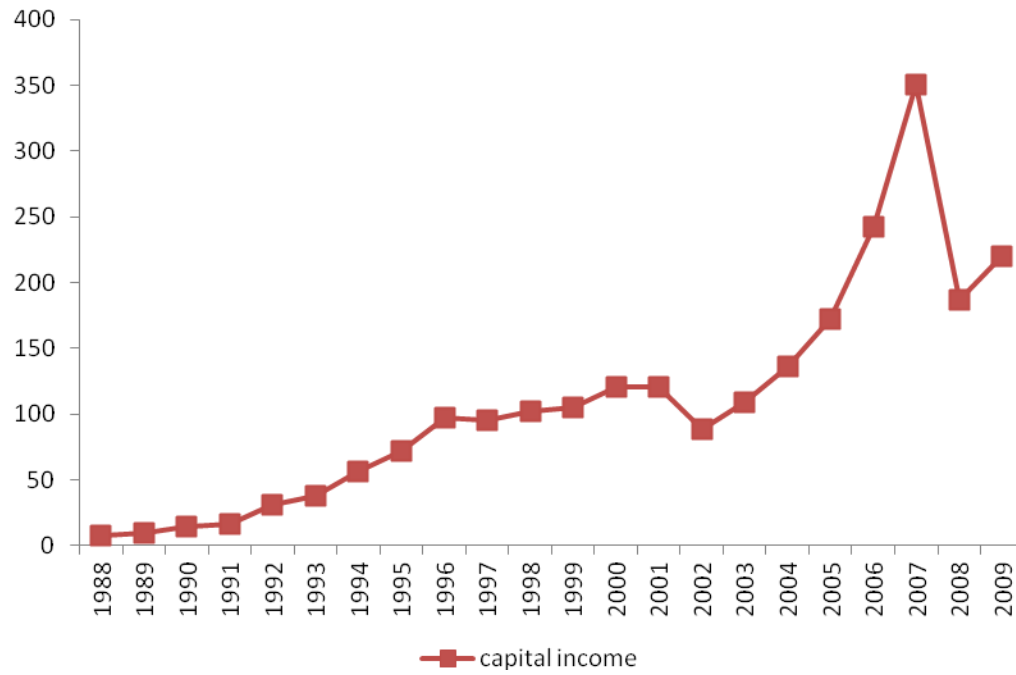
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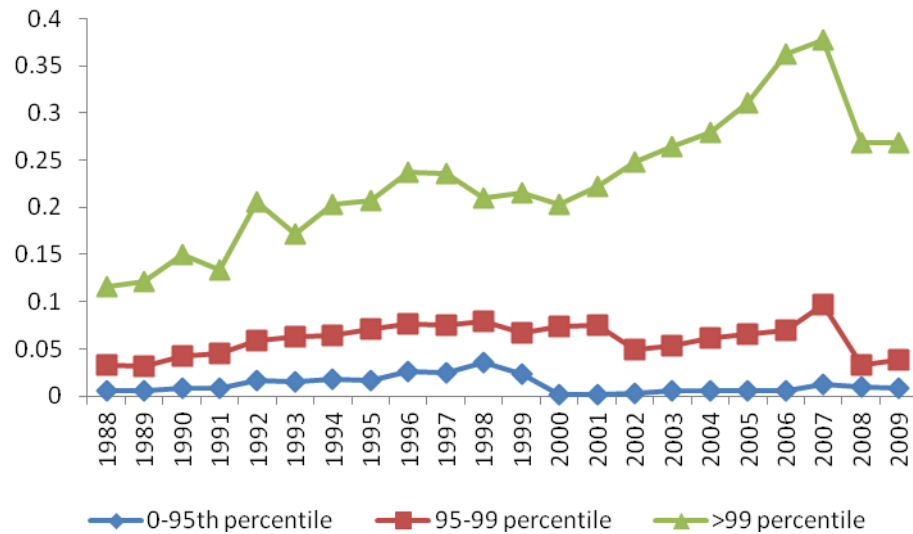
Figure 1: Capital income by year



Source: NBS urban household survey data, author's calculation

Note: the figure shows the average capital income by year. The unit is RMB yuan.

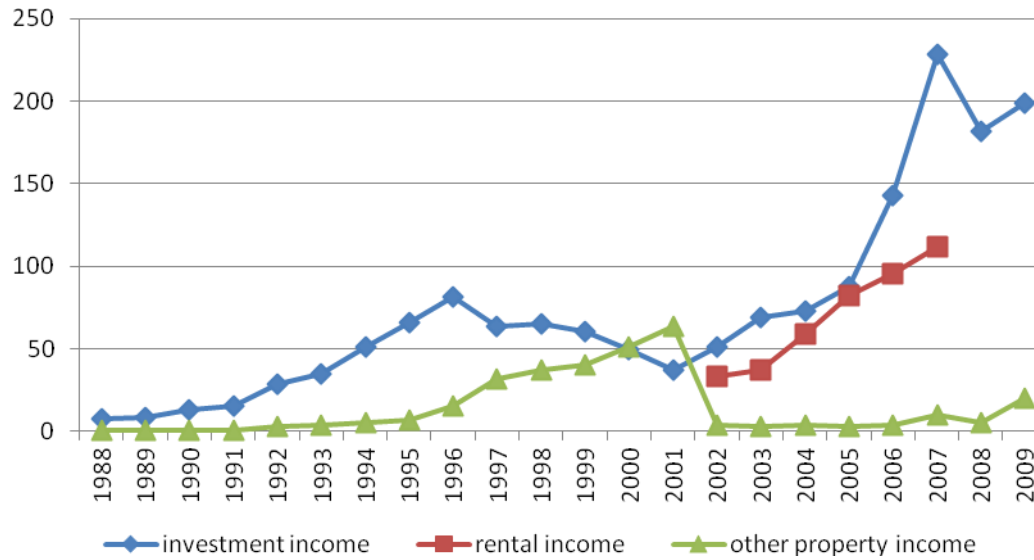
Figure 2: Distribution of capital income



Source: NBS urban household survey data, author's own calculation.

Note: the figure shows the share of capital income in the total income for people whose income falls into the 0-95<sup>th</sup> percentile, 95-99<sup>th</sup> percentile, and 99<sup>th</sup> percentile and above.

Figure 3: Composition of capital income



Source: NBS urban household survey data, author's own calculation.

Note: the figure shows the mean of investment income, property rental income, and other property income for each year.

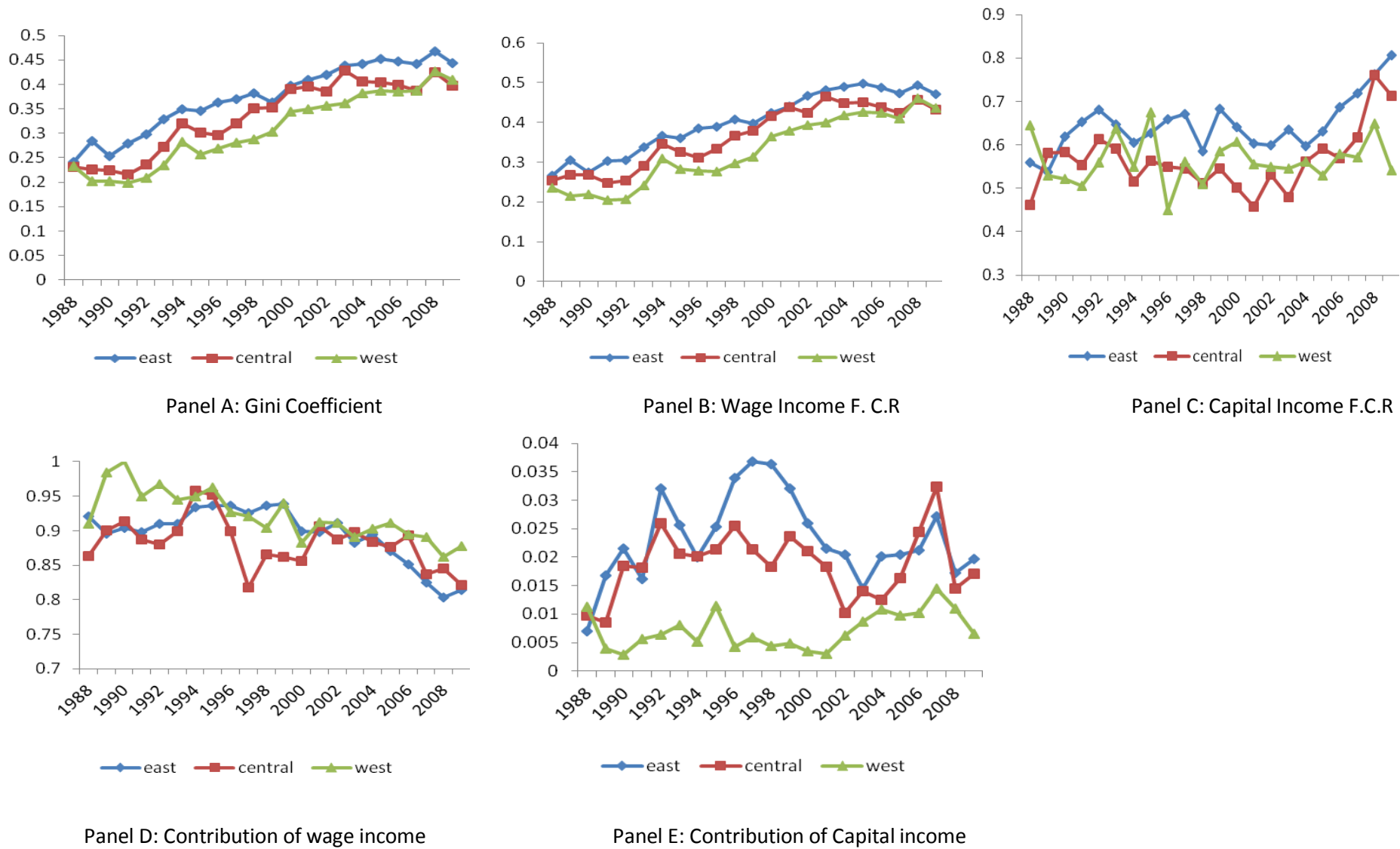
Table 1: Decomposition of total income inequality

Year	Total income		Wage income			Capital income			Transfer income			Self-employment income			Special income		
	Gini Coeff.	Share	F.C.R	Contribution	Share	F.C.R	Contribution	Share	F.C.R	Contribution	Share	F.C.R	Contribution	Share	F.C.R	Contribution	
1988	0.246	0.839	0.264	0.901	0.004	0.571	0.009	0.116	0.023	0.011	0.009	0.428	0.017	0.032	0.474	0.062	
1989	0.262	0.835	0.286	0.912	0.004	0.572	0.009	0.123	0.007	0.003	0.012	0.550	0.026	0.025	0.519	0.050	
1990	0.245	0.839	0.271	0.927	0.006	0.627	0.015	0.127	0.010	0.005	0.009	0.371	0.013	0.020	0.486	0.040	
1991	0.256	0.834	0.277	0.901	0.006	0.642	0.015	0.124	0.015	0.007	0.013	0.598	0.030	0.023	0.518	0.047	
1992	0.281	0.891	0.288	0.916	0.009	0.679	0.023	0.088	0.115	0.036	0.011	0.626	0.025				
1993	0.319	0.886	0.330	0.916	0.009	0.659	0.019	0.091	0.125	0.035	0.014	0.640	0.028				
1994	0.356	0.885	0.378	0.939	0.010	0.625	0.017	0.093	0.100	0.026	0.012	0.524	0.017				
1995	0.344	0.890	0.364	0.942	0.010	0.642	0.019	0.087	0.081	0.021	0.012	0.500	0.018				
1996	0.359	0.882	0.376	0.924	0.012	0.654	0.023	0.089	0.110	0.027	0.016	0.575	0.026				
1997	0.368	0.872	0.382	0.906	0.012	0.636	0.020	0.094	0.156	0.040	0.022	0.571	0.034				
1998	0.381	0.869	0.402	0.916	0.012	0.571	0.018	0.099	0.160	0.042	0.020	0.476	0.025				
1999	0.367	0.857	0.392	0.916	0.012	0.645	0.020	0.109	0.145	0.043	0.022	0.339	0.020				
2000	0.409	0.834	0.434	0.884	0.012	0.623	0.018	0.125	0.229	0.070	0.029	0.387	0.027				
2001	0.418	0.832	0.450	0.895	0.011	0.597	0.016	0.126	0.218	0.066	0.031	0.319	0.023				
2002	0.413	0.818	0.453	0.897	0.008	0.561	0.011	0.129	0.187	0.059	0.045	0.309	0.034				
2003	0.439	0.809	0.476	0.875	0.009	0.597	0.013	0.132	0.227	0.068	0.051	0.386	0.044				
2004	0.440	0.811	0.479	0.884	0.010	0.581	0.013	0.129	0.196	0.058	0.050	0.401	0.046				
2005	0.447	0.796	0.487	0.866	0.011	0.624	0.016	0.130	0.200	0.058	0.063	0.428	0.060				
2006	0.443	0.792	0.477	0.852	0.014	0.676	0.021	0.127	0.194	0.056	0.067	0.467	0.071				
2007	0.434	0.783	0.460	0.829	0.017	0.694	0.028	0.124	0.166	0.047	0.076	0.545	0.096				
2008	0.463	0.774	0.488	0.816	0.009	0.736	0.014	0.117	0.172	0.044	0.100	0.587	0.127				
2009	0.439	0.775	0.464	0.820	0.009	0.745	0.015	0.120	0.158	0.043	0.096	0.557	0.122				

Source: NBS urban household survey data, author's own calculation.

Note: "Share" indicates the share of an income component in the total income; F.C.R. denotes the factor concentration ratio. "Contribution" indicates the contribution of an income component to total income inequality.

Figure 4: Decomposition of income inequality by region



Source: NBS urban household survey data, author's own calculation

Table 2: Decomposition of capital income inequality

Year	Investment income			Rental income			Other property income		
	Share	F.C.R	Contribution	Share	F.C.R	Contribution	Share	F.C.R	Contribution
1988	0.903	0.963	0.901				0.097	0.988	0.099
1989	0.929	0.968	0.928				0.071	0.987	0.073
1990	0.942	0.964	0.940				0.058	0.991	0.060
1991	0.948	0.963	0.947				0.052	0.983	0.053
1992	0.914	0.963	0.912				0.086	0.986	0.088
1993	0.906	0.963	0.904				0.094	0.987	0.096
1994	0.911	0.963	0.910				0.089	0.967	0.090
1995	0.909	0.963	0.908				0.091	0.977	0.092
1996	0.839	0.962	0.841				0.161	0.947	0.159
1997	0.665	0.963	0.666				0.335	0.958	0.334
1998	0.635	0.967	0.640				0.365	0.941	0.360
1999	0.580	0.961	0.584				0.420	0.953	0.416
2000	0.408	0.961	0.409				0.592	0.957	0.591
2001	0.307	0.958	0.307				0.693	0.961	0.693
2002	0.578	0.976	0.576	0.379	0.987	0.382	0.042	0.977	0.042
2003	0.633	0.980	0.632	0.341	0.985	0.342	0.026	0.973	0.026
2004	0.536	0.976	0.533	0.435	0.986	0.437	0.030	0.982	0.030
2005	0.508	0.979	0.507	0.475	0.986	0.477	0.016	0.973	0.016
2006	0.591	0.983	0.591	0.394	0.984	0.394	0.015	0.969	0.015
2007	0.652	0.979	0.653	0.319	0.975	0.318	0.029	0.975	0.029
2008	0.973	0.989	0.973				0.027	0.977	0.027
2009	0.907	0.987	0.907				0.093	0.993	0.093

Source: NBS urban household survey data, author's own calculation.

Note: "Share" indicates the share of an income component in capital income; F.C.R. denotes the factor concentration ratio. Contribution indicates the contribution of a component to total capital income inequality.



Appendix A: The mean of total income and income components by year

	Total income	Wage income	Capital income	Transfer income	Self-employment income	Special income
1988	2027.162	1700.162	8.086	234.848	19.223	65.007
1989	2334.041	1949.170	9.438	287.614	29.082	58.878
1990	2496.892	2093.756	14.200	317.534	21.438	50.136
1991	2771.587	2311.398	16.040	344.556	35.844	63.868
1992	3325.273	2964.355	31.242	292.011	36.902	
1993	4266.720	3779.069	38.195	386.723	60.361	
1994	5728.746	5071.598	56.548	533.180	66.385	
1995	6907.392	6147.023	72.123	600.601	86.141	
1996	7815.310	6894.109	97.407	697.958	124.690	
1997	8228.528	7178.796	95.0515	774.5943	178.7383	
1998	8656.553	7519.475	102.2882	861.3143	172.3781	
1999	9054.33	7763.395	104.8111	984.4551	198.1979	
2000	10122.61	8442.129	120.7478	1268.52	289.6579	
2001	10785.75	8974.909	120.6866	1359.645	329.1886	
2002	11091.789	9074.463	88.3	1430.285	498.736	
2003	11738.060	9490.974	109.3	1543.912	593.872	
2004	13884.340	11258.904	136.4	1789.498	699.557	
2005	15411.087	12271.038	172.7	2003.724	963.669	
2006	17403.418	13786.798	242.2	2209.661	1164.749	
2007	20137.639	15757.856	350.3	2492.016	1537.426	
2008	21481.786	16625.568	187.1	2518.232	2150.850	
2009	24690.037	19142.810	219.7	2954.066	2373.471	

Source: NBS urban household survey data

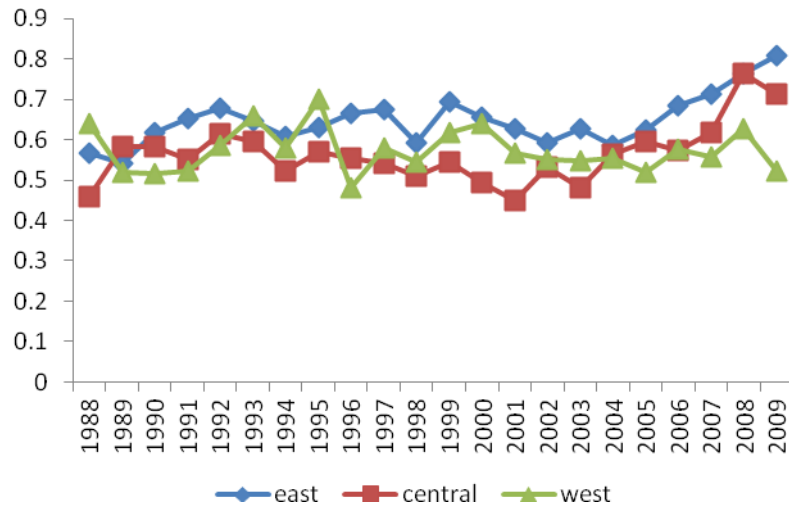
Appendix B: Decomposition of province-CPI adjusted total income

Year	Total income Gini Coeff.	Wage income			Capital income			Transfer income			Self-employment income			Special income		
		Share	F.C.R.	Contribution	Share	F.C.R.	Contribution	Share	F.C.R.	Contribution	Share	F.C.R.	Contribution	Share	F.C.R.	Contribution
1988	0.241	0.838	0.259	0.901	0.004	0.573	0.009	0.116	0.018	0.009	0.009	0.419	0.016	0.032	0.479	0.064
1989	0.253	0.835	0.277	0.914	0.004	0.573	0.009	0.124	-0.005	-0.003	0.012	0.535	0.026	0.026	0.529	0.053
1990	0.241	0.839	0.267	0.929	0.006	0.630	0.015	0.127	0.003	0.001	0.009	0.365	0.013	0.020	0.494	0.042
1991	0.255	0.834	0.276	0.902	0.006	0.643	0.015	0.124	0.013	0.006	0.013	0.595	0.030	0.023	0.523	0.047
1992	0.280	0.891	0.288	0.916	0.009	0.680	0.023	0.088	0.114	0.036	0.011	0.624	0.025			
1993	0.311	0.886	0.322	0.917	0.009	0.661	0.019	0.091	0.117	0.034	0.014	0.630	0.028			
1994	0.354	0.885	0.376	0.940	0.010	0.629	0.018	0.093	0.098	0.026	0.012	0.521	0.017			
1995	0.347	0.890	0.367	0.941	0.011	0.650	0.020	0.087	0.085	0.021	0.012	0.502	0.018			
1996	0.363	0.882	0.380	0.924	0.013	0.662	0.023	0.089	0.113	0.028	0.016	0.580	0.026			
1997	0.373	0.873	0.388	0.908	0.012	0.641	0.020	0.093	0.154	0.038	0.022	0.580	0.034			
1998	0.388	0.870	0.409	0.918	0.012	0.582	0.018	0.098	0.156	0.040	0.020	0.478	0.024			
1999	0.369	0.859	0.395	0.920	0.012	0.655	0.021	0.107	0.132	0.038	0.022	0.341	0.020			
2000	0.411	0.835	0.436	0.886	0.012	0.633	0.019	0.124	0.223	0.067	0.029	0.396	0.028			
2001	0.421	0.833	0.453	0.897	0.011	0.612	0.017	0.125	0.210	0.062	0.031	0.330	0.024			
2002	0.413	0.820	0.454	0.902	0.008	0.560	0.011	0.127	0.172	0.053	0.045	0.315	0.035			
2003	0.440	0.810	0.478	0.880	0.009	0.594	0.013	0.130	0.212	0.063	0.051	0.390	0.045			
2004	0.439	0.813	0.481	0.889	0.010	0.577	0.013	0.126	0.175	0.050	0.051	0.413	0.048			
2005	0.445	0.798	0.486	0.872	0.011	0.618	0.015	0.128	0.174	0.050	0.064	0.440	0.063			
2006	0.440	0.792	0.475	0.854	0.014	0.674	0.021	0.125	0.175	0.050	0.068	0.479	0.074			
2007	0.433	0.783	0.460	0.830	0.017	0.692	0.027	0.122	0.148	0.041	0.078	0.558	0.101			
2008	0.464	0.774	0.489	0.815	0.009	0.735	0.014	0.115	0.157	0.039	0.102	0.598	0.132			
2009	0.440	0.775	0.465	0.819	0.009	0.747	0.015	0.119	0.149	0.040	0.097	0.566	0.125			

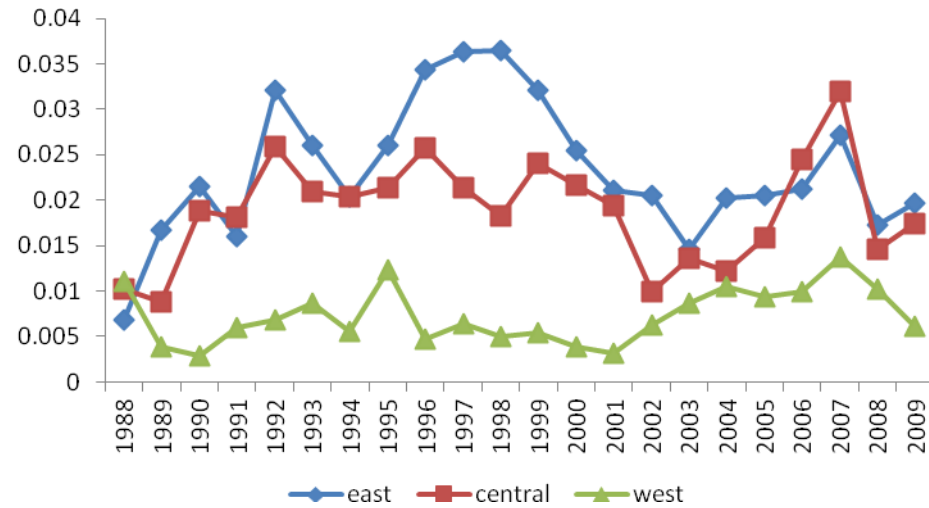
Source: NBS urban household survey data, author's own calculation

Note: Total income and all income components are real income that has been adjusted by province consumer price index (CPI). Share, F.C.R., and contribution, indicates the share of an income component in the total income, the factor concentration ratio, and the contribution of a component to total income inequality, respectively.

Appendix C: Factor concentration ratio and contribution of capital income to inequality by region – province-CPI adjusted



Panel A: F.C.R. of capital income



Panel B: contribution of capital income to inequality

Source: NBS urban household survey data, author's own calculation

Note: The total income, capital income, and other income components have been adjusted by province CPI.