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Abstract

This paper examines underlying factors that could explain the decline in income inequality in China since 2008 and inquires whether the decline indicates China's income inequality has peaked following the Kuznets hypothesis. The paper first identifies four key drivers of rising income inequality in China since the mid-1980: rising skill premium, declining share of labor income, increasing spatial inequality, and widening inequality in the distribution of wealth. It then provides evidence that the reversal of these drivers, with the exception of wealth inequality, could partly explains the decline in income inequality since 2008. The paper argues that since part of the reversal of these drivers is policy-induced, it is important that the policy actions continue for income inequality to decline further. The paper further argues that a critical factor underlying the Kuznets hypothesis is that taxation and transfers play a bigger role in income redistribution as a country becomes more developed, while their role is still limited in China, the future path of China's income inequality may not be one-directional, and may stay high before personal income tax plays a bigger role.

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1.   Introduction

Rapidly rising income inequality in China since economic reform started in the late 1970s has attracted considerable attention by policy makers and researchers in and outside the country in recent years (Li, Wan, and Zhuang 2014). While the Chinese economy has managed to grow at close to 10% annually for more than 3 decades, and the growth has helped lift hundreds of millions of people out of poverty, the Chinese society has in the process become less equal. The Gini coefficient of per capita household disposable income[1] was below 30 in the early 1980s (Ravallion and Chen 2007). In 2015, according to the estimate of China National Bureau of Statistics (CNBS), it stood at 46.2 (CNBS 2016). This is a high level compared with many countries in Asia (ADB 2012).

However, in more recent years, China's Gini coefficient has been on the decline. According to the estimates released by CNBS in recent years, the Gini coefficient reached a peak at 49.1 in 2008, fell to 48.1 in 2010, 47.7 in 2011, 47.4 in 2012, 47.3 in 2013, 46.9 in 2014, and 46.2 in 2015 (Wan and Zhuang 2015, CNBS 2015, CNBS 2016). These declines have led some to ask whether China's income inequality has peaked, and whether this vindicates the Kuznets-hypothesis which says that a country's income inequality tends to increase at an early stage of development, and peak and then decline when the income increase to a certain level.[2]

The purpose of this paper is to examine the underlying factors that could explain the recent decline in China's Gini coefficient and ask whether the decline indicates that the income inequality has peaked. To answer this question, in Section 2, the paper provides a brief review of the evolution of income inequality in China during the period of 1978-2015. Section 3 constructs a simple conceptual framework where key drivers of income inequality can be analyzed. Section 4 presents empirical evidence on the key drivers, and discusses their relevance to explaining the dynamics of inequality in China in the last 3-4 decades including the recent decline. Section 5 concludes.

2.   China's Income inequality: 1978−2015

This section pieces together a broad picture of the evolution of income inequality in the PRC

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[1] The Gini coefficient of per capita household income (or consumption) is a commonly-used measure of income inequality, and it ranges from 0 indicating perfect equality to 100 (or 1) indicating perfect inequality.

[2] Questions have also been raised over the quality of statistical data in China.

during 1978−2015 using estimates of the Gini coefficient from various sources, updating Wan and Zhuang (2015). Largely due to the public unavailability of household survey data covering the entire country, earlier attempts to assess the level of income inequality in China focused on the measurement of regional or inter-household inequality in specific locations, such as rural or urban areas, and in specific provinces for specific periods (see Tsui 1993, Rozelle 1994, Hussain and Zhuang 2000, Kanbur and Zhang 1999). More recently, attempts to measure income inequality have also used synthetic unit-level data generated from grouped household income and consumption expenditure data covering most provinces (Lin et al. 2010).

Inequality can be measured using per capita income or consumption expenditure. Inequality measured by the former is usually higher, in the case of the Gini coefficient, by 5 to 10 points when measured using the range of 0−100 (ADB 2012). Unless otherwise noted, this paper focuses on income-based inequality. Table 1 presents six sets of estimates of the Gini coefficient of per capita household income in the PRC in the post-reform period.[3]

Among the six sets of estimates, two were obtained by adjusting for spatial cost of living (COL) differences. If one compares the spatial COL-adjusted with the corresponding unadjusted estimates, the latter are much larger (by 15%−30%). Since most researchers do not consider spatial COL differences, we will ignore the two sets of adjusted estimates. However, the adjusted and unadjusted estimates share the same trends.

Figure 1 plots estimates from the remaining four sources. These are comparable[4] and all show a rising trend of income inequality. In particular, the Ravallion and Chen (2007) estimates show that income inequality declined at the onset of economic reform until the mid-1980s— due largely to rising rural incomes following the rural economic reforms including the introduction of household responsibility system—and since then it has been on the rise amid some fluctuations.

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[3] In addition to the six sets, two more sources of estimates are also often cited and used in literature but not reported. One is the World Income Inequality database maintained by UNU-WIDER, and the other is World Development Indicators maintained by the World Bank. The World Income Inequality Database set was collected from different publications and based on different datasets, and it is not clear whether the estimates are comparable. The Gini coefficients from the World Development Indicators (WDI) database are inconsistent because post-1989 estimates are consumption-based, while the earlier estimates are income-based.

[4] Ravallion and Chen (2007) used data directly provided by the CNBS, while Lin et al. (2010) used CNBS data in grouped form. The CHIP data are piggy-backed by a CNBS survey. It is clear that the CHIP data estimates are consistently larger and Lin et al. consistently smaller than all the other estimates. The discrepancies can be attributed to the approximation method Lin et al. used to obtain unit-record data from grouped data. The CHIP data have a smaller coverage in sample size than the data used by others

Table 1: China's Gini coefficients, 1978−2015

| Year | Ravallion and Chen (2007) | | Chinese Household Income Project (CHIP) [a] | Lin et al. (2010) | | China National Bureau of Statistics (CNBS) |
	Without adjustment for spatial COL difference	With adjustment for spatial COL difference		Without adjustment for spatial COL difference	With adjustment for spatial COL difference	
1978	…	…	…	…	…	…
1979	…	…	…	…	…	…
1980	…	…	…	…	…	…
1981	31.0	28.0	…	…	…	…
1982	28.5	25.9	…	…	…	…
1983	28.3	26.0	…	…	…	…
1984	29.1	26.9	…	…	…	…
1985	29.0	26.5	…	…	…	…
1986	32.4	29.2	…	…	…	…
1987	32.4	28.9	…	…	…	…
1988	33.0	29.5	39.5	…	…	…
1989	35.2	31.8	…	…	…	…
1990	34.9	31.6	…	34.5	28.7	…
1991	37.1	33.1	…	…	…	…
1992	39.0	34.2	…	…	…	…
1993	42.0	36.7	…	…	…	…
1994	43.3	37.6	…	…	…	…
1995	41.5	36.5	46.9	39.7	32.9	…
1996	39.8	35.1	…	…	…	…
1997	39.8	35.0	…	…	…	…
1998	40.3	35.4	…	…	…	…
1999	41.6	36.4	…	…	…	…
2000	43.8	38.5	…	41.1	34.7	…
2001	44.7	39.5	…	…	…	…
2002	…	…	46.8	…	…	…
2003	…	…	…	…	…	47.9
2004	…	…	…	…	…	47.3
2005	…	…	…	45.7	38.8	48.5
2006	…	…	…	…	…	48.7
2007	…	…	49.7	…	…	48.4
2008	…	…	…	…	…	49.1
2009	…	…	…	…	…	49.0
2010	…	…	…	…	…	48.1
2011	…	…	…	…	…	47.7
2012	…	…	…	…	…	47.4
2013						47.3
2014						46.9
2015						46.2

… = data not available, COL = cost of living. [a] A project of Beijing Normal University.
Sources: Wan and Zhuang (2015), CNBS (2015, 2016).

Figure 1: Gini coefficients, 1981−2015
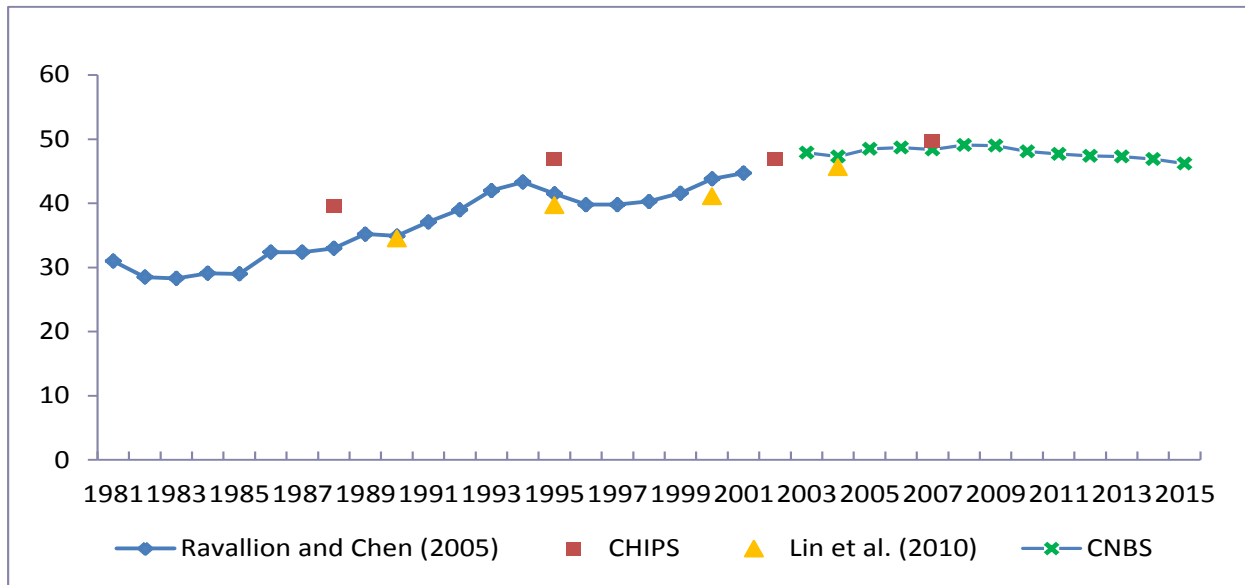
CHIPS = Chinese Household Income Project, a project of Beijing Normal University; CNBS = China National Bureau of Statistics.
Sources: Wan and Zhuang (2015), CNBS (2015, 2016).

Estimates by CNBS—for recent years—show a more stable trend. Inequality peaked in 2008, with a Gini estimate of 49.1, and has since been on the decline, though marginally, each year, reaching its lowest recent level at 46.2 in 2015. One can combine the CNBS estimates with those of Ravallion and Chen to form a more complete time series on China's income inequality. This shows that, over a period of 35 years, inequality as measured by the Gini coefficient grew by more than 50% from 28.3 in 1983 to 49.1 in 2008, and then dipped to 46.2 in 2015. Whether the recent decline represents the beginning of the end of worsening income distribution—as suggested by the Kuznets Hypothesis in China—is still a debated issue.

3.   Drivers of income inequality: A conceptual framework

This section presents a simple framework to look at drivers of income inequality. The framework is based on the definition of total income of a household, *Y*, as the sum of its income derived from labor and that derived from capital (or wealth):

$$Y = W\,L + R\,K \tag{1}$$

Capital income is the product of the different types of capital assets (*K)* owned by the household and their respective rates of return (*R*). For a typical household, capital assets

consist mostly of housing, land, factories and machinery owned by households, and financial assets.[5] Labor income—which includes returns to human capital—is the product of the different types of labor assets (L) and their respective wage rates (W). The return to human capital is reflected in the skill premium, that is, the more educated and skilled labor earns higher wages.

Income inequality estimates, such as the Gini coefficient, are often based on per capita household income, that is:

$$\frac{Y}{H} = W\left(\frac{L}{H}\right) + R\left(\frac{K}{H}\right) \tag{2}$$

Therefore, inequality in per capita household income is the result of inequality in per capita labor income (WL/H), inequality in per capita capital income (RK/H), and the relative importance of labor and capital incomes in total household income.[6] Changes in income inequality can be thought of as resulting from a combination of changes in the distributions of per capita labor assets and capital assets across households, changes in the relative returns to labor and capital, and changes in the relative importance of labor and capital incomes in total household income.

In any society, the distribution of capital assets reflects its ownership structure, while the distribution of labor assets is determined to a large extent by the inequality in access to education and health. Over time, many factors shape these distributions, including initial distributions, household savings behavior and investment decisions, differences in individual efforts and entrepreneurship, political economy factors (such as pressures for land redistribution, taxation on labor and capital incomes, and public spending on human capital), the quality of governance and institutions, and demographics.

Changes in the relative returns to labor and capital reflect demand and supply conditions in the marketplace, how efficiently the market works—for instance, the presence or absence of monopoly or discrimination against particular population groups (such as females or rural residents), and political economy factors (such as labor market institutions and taxation on

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[5] In this paper we use the terms "capital" and "wealth" interchangeably. Capital includes all real and financial assets owned by a household, but excludes human capital. A household's capital incomes include all the incomes from owning various capital assets. See discussions in Piketty (2014, pp.36-38).

[6] Lerman and Yitzhaki (1985) decompose the Gini coefficient into the contributions by income source. Each source's contribution to overall inequality is the product of its own Gini coefficient, its share in total income, and its correlation with the rank of total income.

labor and capital incomes).

Finally, changes in the relative importance of labor and capital incomes in total household income are determined by the relative changes in returns to labor and capital and in the capital-labor ratio in production. These are in turn determined by technological advances and the bias of technical progress, the relative bargaining positions of labor and capital, political economy factors such as labor market institutions (minimum wages, collective bargaining, and employment protection), taxation, and the presence or absence of market distortions.

Within this framework, income inequality will increase if changes in relative returns to labor and to capital, or in the distribution of labor assets and capital assets, or in the relative importance of labor and capital incomes in total income favor the better-off households. There are many ways in which this could happen:

First, wage rates could increase faster for the better educated and skilled workers than for the less educated and skilled. There is a large literature showing that globalization and technological progress may have increased the demand for skilled workers relative to that for unskilled workers in many developing countries, leading to *an increasing skill premium* (ADB 2012). In the case of China, the market-oriented reforms introduced since the late 1970s dismantled the fixed-wage system that existed under central planning, and have made wages more reflective of workers' skills and educational attainments and of market demand and supply conditions, and have also contributed to the increase in the skill premium, as evidenced by rising wage inequality (Knight and Song, 2003; Deng and Li, 2009).

Second, the differentials in the returns to capital and in wage rates between Chinese richer coastal and urban areas and the poorer interior and rural areas could increase as growth accelerated, leading to increasing *spatial inequality*. This is because coastal regions are closer to trade routes and world markets than interior regions; and because urban cities have better infrastructure than rural areas, they are more likely to attract investment and new technologies, especially during the initial phase of growth take-off (Lewis 1954). All these could lead to greater increases in productivity, wages and returns to capital in the favored areas. Land and housing prices have increased much faster in coastal areas and urban cities than in inland provinces and rural areas in China in the last 40 years or so.

Third, capital income could increase faster than labor income. This would lead to a rising *share of capital income in total household income* (which tends to be less equally distributed)

and a declining *share of labor income* (which tends to be more equally distributed). This occurs when total income grows faster than labor income (or when per capita income grows faster than the wage rate), leaving a larger share of value added accruing to capital. It has been suggested that technological progress especially in information and communications technology (ICT) and automation may have reduced the demand for labor relative to that for capital, as shown by a declining employment elasticity of growth in recent decades in many countries, thus favoring capital (ADB 2012). In the case of China, the large pool of rural surplus labor has also put downward pressure on wage rates until recently (Knight et al, 2011).

Fourth, increasing inequality in the *distribution of human capital* (embedded in labor) or *capital (or wealth)* can also lead to an increase in income inequality. Inequality in human capital could increase if wealthier households invest more on or have better access to education and health than poorer households. Inequality in wealth could increase if wealthier households save more, if they receive higher returns to capital due to economies of scale or if they have lower fertility rates than less wealthy households.

4.   Empirical evidence

This section provide empirical evidence on the major drivers of rising income inequality in China in recent decades, focusing on skill premium, share of capital income in national income, spatial inequality, and wealth distribution. Although distribution of human capital is also highly relevant in our framework, due to the lack of data, it is not included in the empirical analysis below.

Skill premium

In many countries, inequality of human capital is often a major contributor to inequality of income. In Asia, empirical studies find that returns to education increase with educational attainment and that the relationship has been getting stronger over time in recent years. An ADB study finds that from the mid-1990s to the mid-2000s, real wages grew much faster for wage earners with tertiary or higher education than for those with lower educational attainment in India and the Philippines, leading to wider wage differentials (Zhuang et al, 2014). In India, the Gini coefficient of wages increased from 40.5 in 1993 to 47.2 in 2004 and about 50% of the increases was accounted for by education. Many studies provide direct evidence of rising skill and education premiums in Asia (World Bank 2012).

Returns to education have also risen in the PRC in the post-reform period (Zhang et al. 2005, Liu 2009). The World Bank (2012) estimates that the tertiary education premium was 60% in 2005 and increased across sectors in recent years. Household survey data show the growing importance of educational status in explaining inter-household income inequality. Sicular et al. (2008) find that education can explain more than 25% of the PRC's rural−urban income gap. The ADB (2012) finds that, based on survey data, the share of income inequality accounted for by differences in educational attainment of heads of households increased from 8.1% in 1995 to 26.5% in 2007 (Figure 2). The study also finds that the importance of education in explaining household incomes has risen in many other Asian countries as well, such as Bhutan, India, Pakistan, the Philippines, and Thailand. However, the increase was most pronounced in the PRC.

Figure 2. Income inequality decomposition by educational attainment of household head, selected countries
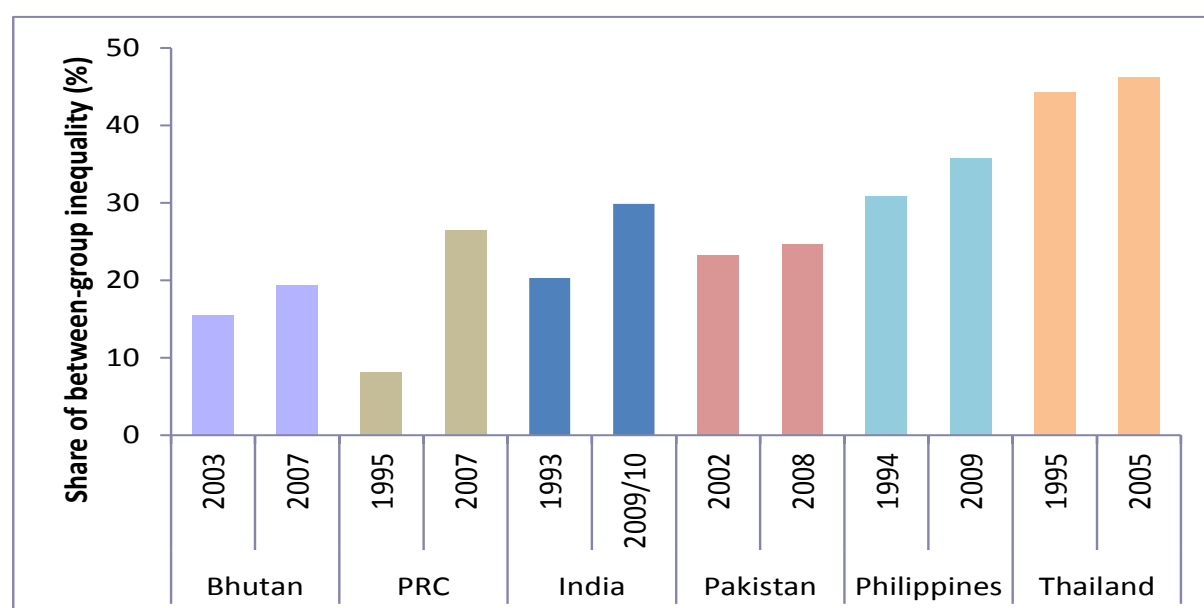


PRC = People's Republic of China.
Note: Estimates are based on per capita consumption expenditure in nominal terms except for the PRC, which is based on income. The decomposition is based on GE(0), which is a special form of the generalized entropy index.
Source: Asian Development Bank (2012).

More recent empirical evidence, however, suggests that the increase in skill premium may have slowed down or the level of skill premium may have decreased in China. Assuming that the wage levels above the national average correspond to jobs requiring high skills, and that those below the national average correspond to jobs requiring low skills, recent data show

that wages in high-skill sectors are now rising at a slower pace than wages in low-skill sectors (Figure 3). During 2004-2009, with the exception of 2008, the average wage growth was faster for high-skill sectors than low-skill sectors. Since 2009, however, the average wage growth has been faster for low-skill sectors than for high-skill sectors. In 2011, for example, the average wage growth for low-skill sectors was close to 20%, while that for high-skill sectors was only about 14%.

Figure 3. Nominal wage growth of low-skill and high-skill sectors in China, 2004-2014
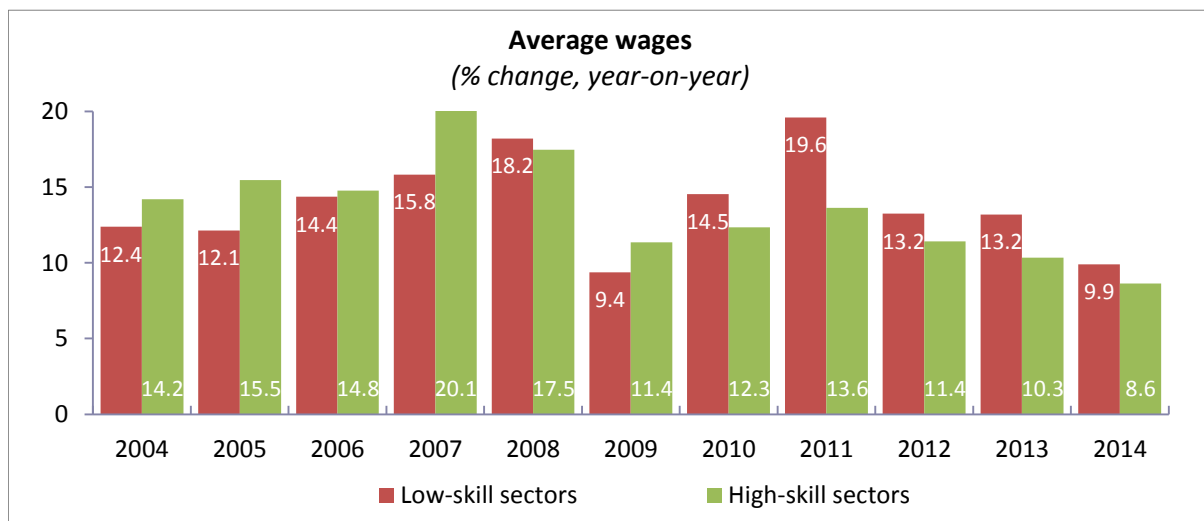
Low-skill sectors: Agriculture, forestry, animal husbandry, and fishery; Manufacturing; Construction; Wholesale and retail trades; Hotels and catering services; Management of water conservancy, environment, and public facilities; Services to households, repair, and other services.
High-skill sectors: Mining; Production and supply of electricity, heat, gas, and water; Transport, storage, and post; Information transmission, software, and information technology; Financial intermediation; Real estate; Leasing and business services; Scientific research and technical services; Education; Health and social service; Culture, sports, and entertainment; Public management, social security, and social organization.

Source: China National Bureau of Statistics, China Statistic Yearbook, various years, http://www.stats.gov.cn/ (accessed 16 April 2016).

One possible reason for the declining skill premium in China in recent years is a rapid increase in the investment in tertiary education. The annual university enrolment increased from 0.93 million in 1995 to 6.62 million in 2010, and it has been reported that many university graduates find it difficult to find suitable jobs in recent years, leading to high unemployment among these graduates (Chan 2015, Knight et al. 2016). This may have put downward pressures on wage rates for the better educated labor. Another possible reason is rapid increases in the minimum wage rates (Li and Lin 2015). During 2010-2014, the average monthly minimum wage rate in coastal provinces, applicable mostly to low-skill workers,

grew by 56.2%, and the average wage rate of the urban non-private sector, applicable mostly to high-skill workers, grew only by 54.2% (CNBS, various years).

Shares of labor and capital incomes

A decline in the share of labor income (with the consequent increase in the share of capital income) in national income can increase income inequality because, in general, labor income is more equally distributed than capital income. During the last two decades, many countries, both developed and developing, saw the income share of labor fall. In the United States (US) this share declined from 65% in 1992 to 52.4% in 2009 in industry, and, for the entire economy and during the same period, it fell from 68.7% to 64.2% (ADB 2012). In Germany, the share increased from the mid-1980s until 1993, when it peaked at 79.5%, but has declined since then.

Figure 4. Shares of labor and capital incomes in manufacturing value added (% of total)
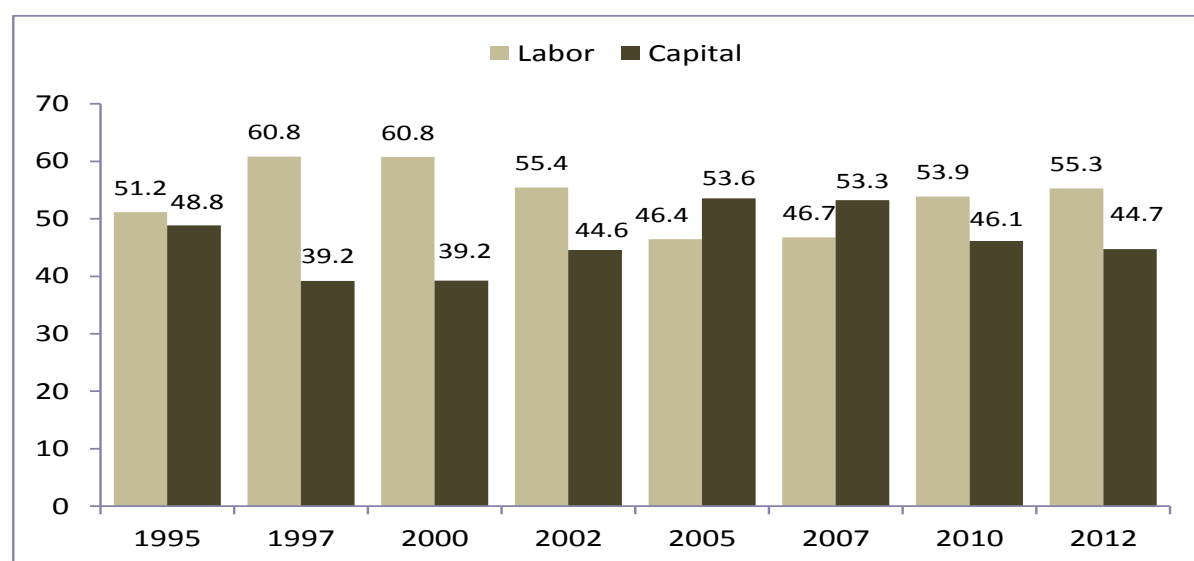
Labor income share = remuneration of employees / (manufacturing gross value added - net production tax); Capital income share = (operating surplus + depreciation of fixed asset) / (manufacturing gross value added - net production tax).

Source: CEIC Data Company Ltd [from China input-output table, accessed 18 April 2016].

In China, Bai and Qian (2009) find that the share of labor income in the manufacturing sector fell from 48.4% in the mid-1990s to 42.2% in the mid-2000s. An ADB study (2012) shows that many other Asian economies also experienced a falling share of labor income, including India, Indonesia, Japan, Republic of Korea, Singapore, and Taipei,China. However, more recent data suggests that the share of labor income in China's manufacturing sector has

started rising, from 46.4% in 2005 to 53.9% in 2010 and 55.3% in 2012 (Figure 4).

Many have argued that China is approaching the so-called "Lewis turning point" where the pool of rural surplus labor has shrunk to the extent that further rural migration to cities would require greater wage increases, leading to labor market tightening in urban areas. This is consistent with the fact that Chinese coastal provinces have been experiencing labor shortages since the mid-2000s (ADB 2012). However, it has also been noted that the increase in the labor income share was partly due to redefining labor income share by China National Bureau of Statistics; some implicit subsidies and government spending on welfare programs have now been reclassified as a part of labor income, which was not in the previous statistics (Li et al 2014).
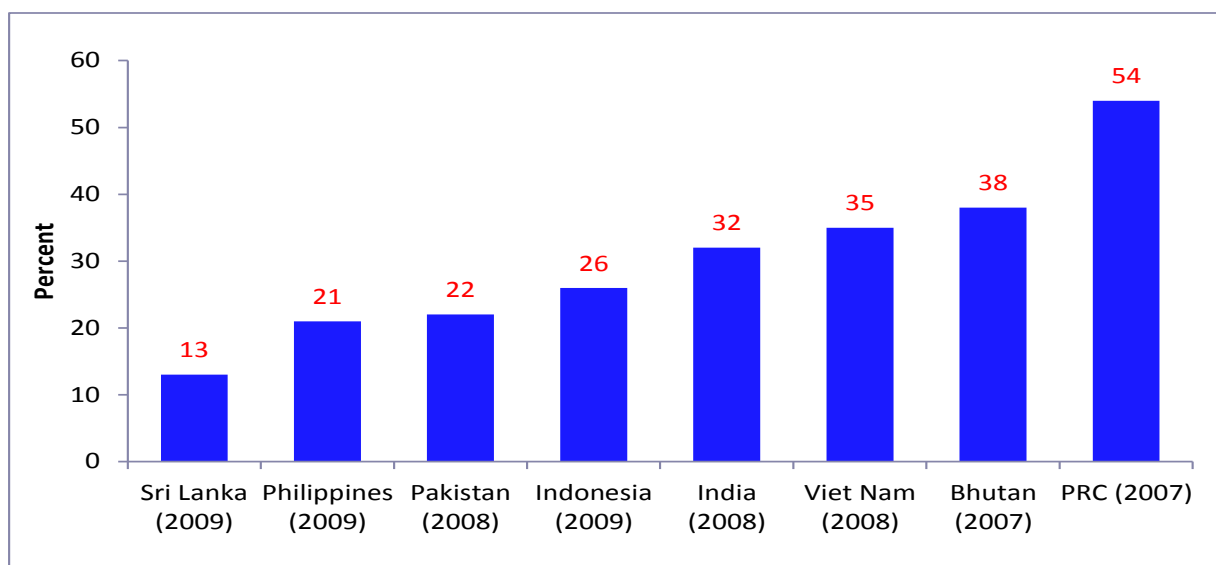
Spatial inequality

Increasing spatial inequality, covering both urban–rural income gaps and interprovincial disparities, has been particularly important as a channel by which technological progress, integration with the global economy, and market-oriented reform impact income distribution in China. Just as the distribution of economic activity is structured geographically, so is the distribution of income. Some locations have natural advantages, such as fertile soil for agriculture or proximity to a coastline for trade or better infrastructure in cities. Economic analysis has also highlighted the role of agglomeration benefits (Krugman 2008). According to an ADB study (2012), in 2007, more than 50% of income inequality in China can be explained by the spatial inequality, the highest among Asian countries with comparative data (Figure 5).

The increasing urban-rural income gap is a particularly significant contributor to rising inequality in China. Using synthetic unit-level data estimated from the grouped household income and consumption expenditure data covering 85% of the population and updating estimates of Lin et al. (2010), it is found that the share of between–urban–rural inequality in total income inequality increased from about 20% in 1990 to 32% in 2008 after adjusting household income by differences in the cost of living between urban and rural areas. During the same period, the share of within-rural inequality declined from 66% to 32% and that of within-urban inequality increased from 14% to 37%. Without adjusting household income by cost of living differences, ADB (2012) finds that the share of the between-urban-rural inequality increased from 34% in 1990 to 45% in 2008. The ADB study (2012) shows that

the PRC is not the only country in Asia that experienced rising urban−rural income gaps in the last 2 decades.

Figure 5. Contribution of spatial inequality to overall inequality, selected Asian countries


PRC = People's Republic of China.
Note: Spatial inequality covers both between-region and urban–rural inequality. The estimation is arrived at by dividing all sample households into groups classified by both region and urban−rural. For example, if a country has 20 provinces, the total groups will be 40 (20 urban and 20 rural). The between-group inequality is the combined spatial inequality.
Source: Asian Development Bank (2012).

However, recent data suggest that urban-rural income gap in China has started decline in recent years. The urban-rural ratio of the mean per capita household disposable income was on the rise consistently from the mid-1990 to mid-2000s. But it has been on the decline more recently, from 3.33 in 2007 to 2.90 in 2015 (Figure 6). Despite statistical issues related to these figures that have often been raised (such as the definition of rural and urban households and the treatment of rural migrants), the trend shows a consistent decrease in the ratio in recent years.

A number of factors could explain this decline in urban-rural income gap. Large migration from rural to urban areas reduces rural surplus labor and helps improve labor productivity of farming. Rapid pace of urbanization also helps reduce rural-urban income gaps. Recent government policy actions in supporting rural peasants (such as investment in rural infrastructure, improvement in social security, and anti-poverty programs) have also contributed to increasing rural income and declining urban-rural income gaps (Li et al. 2013).

Figure 6: The Ratio of urban-rural per capita household disposable income, 1980-2015
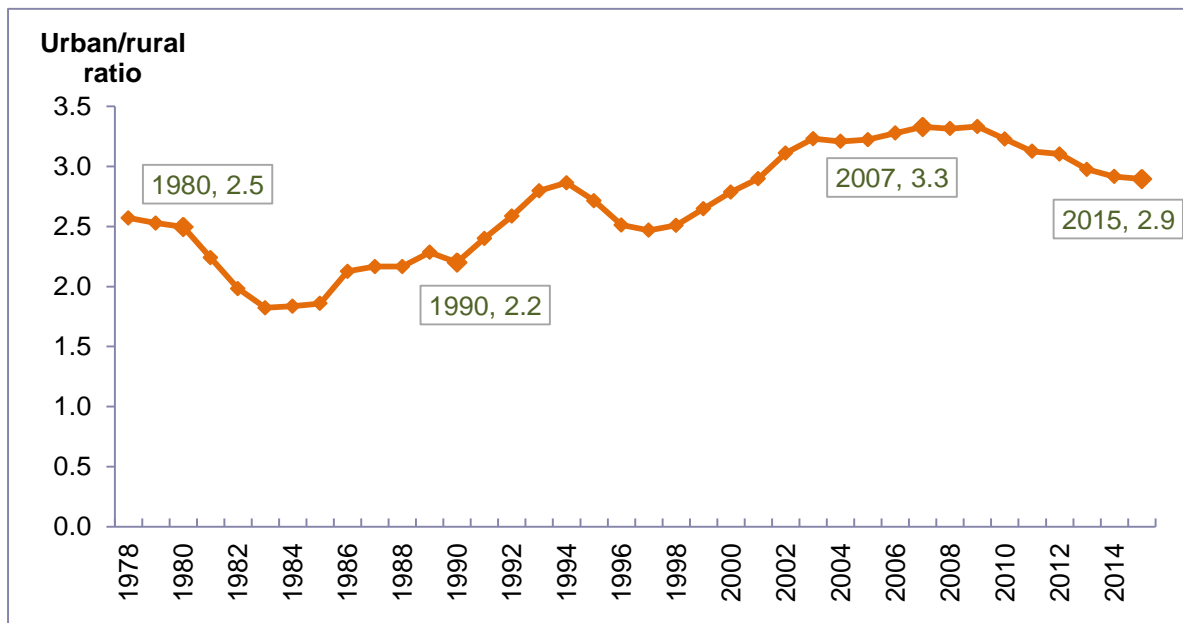
Urban households refer to per capita disposable household income and rural households refer to per capita net income.

Source: China National Bureau of Statistics , http://www.stats.gov.cn/english/ (accessed 18 April 2016).

Figure 7. Gini coefficient of provincial per capita incomes, 1990−2014
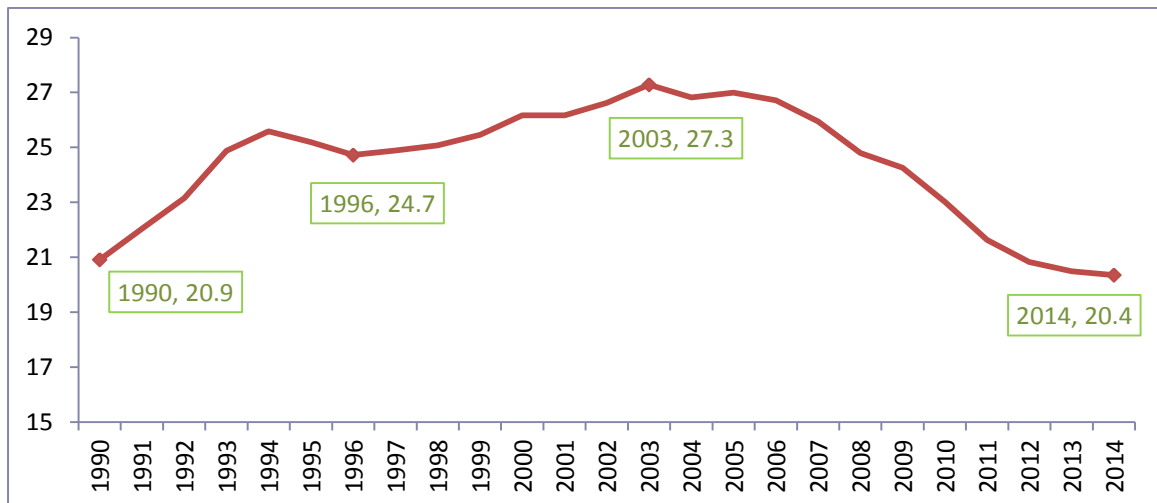
Note: Gini coefficients are weighted by group population.
Source: Authors' estimates using CEIC Data, Global Database (accessed 19 April 2016).

The other dimension of spatial inequality is regional inequality, which has also been a key contributor to rising inequality in China. In 1990–2003, the Gini coefficient of per capita provincial income increased more or less concurrently with the overall national Gini coefficient. However, since 2003, regional inequality has been on the decline (Figure 7).

Some studies attribute this to the Great Western Development Strategy (Fan, Kanbur, and Zhang 2011). Decomposition analysis shows that the contribution of between-province inequality to total inequality remained stable at about 10% in 1990 and in 2008 (ADB 2012).

Wealth distribution

Wealth distribution is usually more unequal than income distribution. Rising wealth inequality has likely also been a major contributor to the rising income inequality in China, although it has not been studied as extensively as income inequality because of the data limitation. A recent study by Li and Wan (2015) find that wealth distribution has become more and more unequal in China. For China as a while, the wealth Gini coefficient increased from 34 in 1988 to 73 in 2010 (Figure 8). For urban China, it increased from about 50 in mid-1990 to 63 in 2010. For rural China, it increased from 31 in 1988 to 71 in 2010. A major contributing factor to the rising wealth distribution has been rising housing prices.

Figure 8: Gini coefficient of per capita net household wealth, 1988-2012
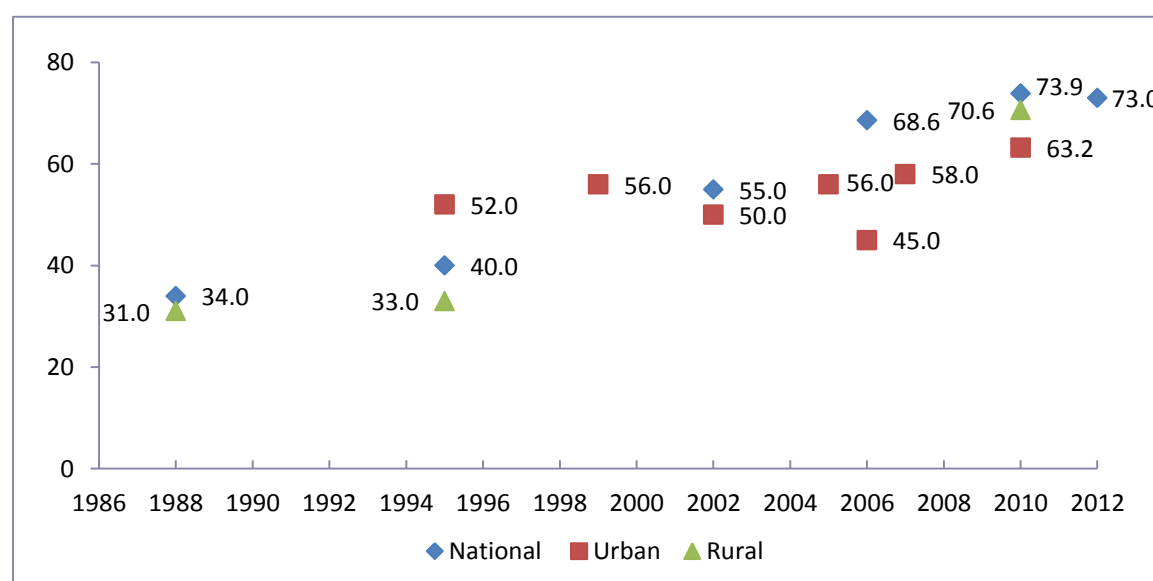
Source: Li and Wan (2015).

5.   Conclusion: Has China's income inequality peaked?

The previous section shows that rising skill premium, declining share of labor income and rising share of capital income, widening rural-urban income gap and regional inequality, and increasing wealth inequality have been among key drivers of rising income inequality in

China in recent decades. But many of these drivers appear to have reversed their directions more recently. Empirical data show that, in recent years, skill-premium has declined, the share of labor income has been on the rise and capital income on the decline, and urban-urban income gaps and regional inequality have fallen, and these may have been underlying factors contributing to the decline in China's overall income inequality as measured by the Gini coefficient since 2008.

Has China's income inequality peaked, as suggested by the Kuznets hypothesis? For the following reasons, we believe that it is premature to think that China's inequality has peaked.

First, much of the recent reverse of the drivers of China's income inequality is policy-induced. For instance, falling skill-premium may have been due to the large government investment in tertiary education in recent years, as well as government measures to increase minimum wages for low-skill workers. Falling regional inequality is partly due to the implementation of the Great Western Development Strategy since 2000. Narrowing urban-rural gaps are also partly related to the government's policy actions to promote urbanization and improve rural incomes and social protection in rural areas. While increasing labor income share may have been associated with the approaching of the Lewis turning point, it has also something to do with the rising minimum wages set by many provincial governments. The fact that there are still more than 200 million people working in the agriculture sector means that labor market situation could change, especially when China's growth slows down. For all these reasons, policies for reducing inequality should continue if inequality is to be reduced further.

Second, inequality in wealth distribution has continued to increase in China, and could be a new major source of rising income inequality in China.

Third, although Kuznets hypothesized that income inequality will first increase, then peak, and then decline as a country's income level increases, empirical testing of the Kuznets hypothesis has so far yielded mixed results. Recent experiences of the developed countries—many of which saw rising inequality in the last 2-3 decades have put another shadow over the validity of the Kuznets hypothesis. More importantly, one of the underlying factors for the inverted-U hypothesis is that as a country becomes more advanced, the rising middle class will demand for greater income redistribution through taxation and public sending (Kuznets 1955). This suggests the importance of public policy in containing and reducing income

inequality.

Figure 9: Pre- and post-tax and -transfer income inequality in OECD countries
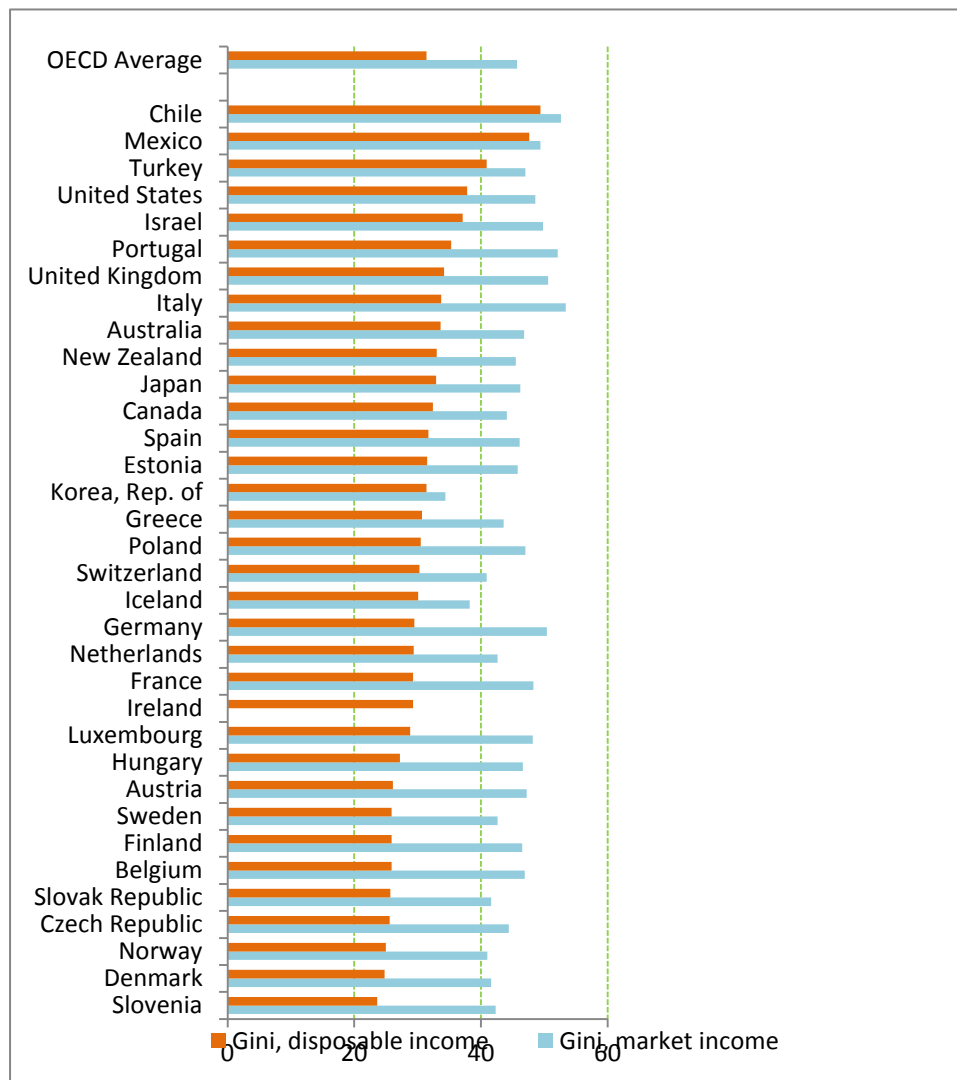
Source: Zhuang, et al. 2014.

In most OECD countries, while post-tax and -transfer Gini coefficients that are based in per capita disposable income are low, in the range of 25-35, their pre-tax and pre-transfer Gini coefficients that are based in per capita market income are not low, mostly in the range of 40-50, about one-third higher (Figure 9). China's current Gini coefficient of per capital household disposable income, as shown in Figure 1, is within this range. Li et al. (2014) and Zhan and Li (2016) show that income redistribution plays a very limited role in reducing income inequality in China. In 2009, the pre-tax urban Gini coefficient was 34.7 and after-tax

Gini coefficient was 33.5, only slightly lower; in 2013, the two were 38.5 and 37.3, respectively (Table 2).

The limited role of personal income taxes in reducing income inequality in China is consistent with the fact that, as recently as 2013, the country's total personal income tax revenue only amounted to about 1.5% of GDP. This suggests that the future path of China's income inequality may not be one-directional, and may stay high, before personal income taxes play a greater role.

Table 2: Pre-tax and post-tax urban Gini coefficient, China

Year	Pre-tax Gini	After-tax Gini
1997	30.1	29.6
2002	32.5	31.8
2005	35.2	34.2
2008	36.3	35.1
2009	34.7	33.5
2013	38.5	37.3

Sources: Li et al. (2014), and Zhan and Li (2016).

In sum, the recent decline in income inequality in China as measured by the Gini coefficient is encouraging. But part of the decline is policy-induced, and there is no guarantee that the decline will continue in the absence of these policies. It is therefore important for China to continue its efforts in reducing income inequality by creating more opportunities for a wider section of population and making a greater use of fiscal policy to equalize access to opportunities, including greater public spending on education, health care, and social protection; and more effective and fairer personal income taxes. The government has recently indicated that personal income tax reform will be a priory under its 13th Five-Year Plan during 2016-2020 (China Daily 2016).

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