The Impact of Urbanization on Happiness Inequality: Evidence from China

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China's urbanization is one of the two engines driving global economic development in the 21st century. However, for a long time, the impact of urbanization on China's happiness inequality has not received much attention. Using data from the CGSS, the China Statistical Yearbook and China Real Estate Statistical Yearbook, etc., and based on the fixed-effects model with instrumental variable and Recentered Influence Function regression, we studied the relationship between urbanization and happiness inequality in China and the heterogeneity of this relationship. The main findings are as follows: First, although happiness inequality in China from 2008 to 2018 was generally more severe than from 2003 to 2006, there has been a trend of improvement in happiness inequality in recent years. Second, the degree of happiness inequality in China worsened with the deepening of urbanization, and this result was consistent across multiple empirical strategies. Third, urbanization helps reduce happiness inequality by alleviating income inequality, but it exacerbates happiness inequality by increasing wealth inequality and public service inequality in China. Fourth, the relationship between urbanization and happiness inequality exhibits a stage-specific pattern, specifically, after 2014 (the new-type urbanization stage), the deteriorating effect of urbanization on happiness inequality disappeared. Besides, compared with rural areas, urbanization has a greater impact on happiness inequality in urban areas. The findings of this study have significant reference value for developing countries suffering severe inequality in rapid urbanization. (JEL R11)

Keywords: *urbanization, happiness, inequality, China*

Recent decades have witnessed unprecedented urbanization in China, which is as remarkable as its economic miracle. Since the economic reforms of the late 1970s, China's urban population has increased by 742 million and contributed to 26.7% of the world's total urbanized population during the corresponding period,[1] resulting in its urbanization ratio rising from 17.9% in 1978 to 64.7% in 2021 (National Bureau of Statistics of China, 2022[2]). The 14th Five-Year Plan,[3] the most crucial economic plan in China, actively promotes a people-centred urbanization strategy. And some studies have even predicted that China's urbanization rate may rise to 80% by the middle of the 21st century (e.g., Wan, 2011; United Nations, 2008; Fan et al., 2020). Therefore, the continuous deepening of urbanization should remain the focus of China's social development for some time.

In China's context, every one percentage point increase in the urbanization ratio can maintain

1 According to World Bank data (https://data.worldbank.org/indicator/SP.URB.TOTL), the world's total urbanized population has increased from 1.65 billion in 1978 to 4.43 billion in 2021.

2 http://www.gov.cn/xinwen/2022-02/28/content_5676015.htm

3 http://www.gov.cn/xinwen/2021-03/13/content_5592681.htm

35 economic growth of 7.1% (Zhu et al., 2011), and China's economy has grown at an average annual rate
36 of 9.2% over the past 40 years.[4] However, rapid economic growth is accompanied by a marked
37 deterioration in social equality. Since 2003, China's Gini Index has never been lower than 0.46 (see
38 Appendix 1). which has become one of the greatest challenges for Chinese policymakers (Yang et al.,
39 2018; Cai et al., 2018; Wang et al., 2019). In recent years, many studies have found an inverted
40 U-shaped relationship between China's urbanization and income inequality (e.g., Li & Zhang, 2022;
41 Yao & Wu, 2019; Wu & Rao 2016). That is, when the urbanization rate exceeds a certain threshold, the
42 trend of increasing income inequality with an increasing urbanization rate will reverse. According to
43 Wu and Rao (2016), this threshold is approximately 53%. Based on these research findings and the fact
44 that China's urbanization level exceeded 50% about a decade ago, those scholars believe that China
45 should accelerate the process of urbanization in the current and future periods. It's worth noting that
46 this perspective solely relies on the observed trend of income distribution improvement during
47 urbanization and lacks support from research on the distribution of subjective welfare. It poses the risk
48 that a hasty promotion of radical urbanization may lead to a deterioration in the actual outcomes of life
49 distribution.

50 With the rising realization of the insufficiency of using income as the only criterion for measuring
51 human welfare (Kollamparambil, 2019), people's self-reported happiness has increasingly drawn
52 academic attention. Given that people value material possessions in differing ways, some scholars hold
53 that happiness is a better measure of welfare than income and that concerns about social inequality
54 should focus more on the dispersion of actual outcomes of life, such as happiness inequality or life
55 satisfaction inequality, than income inequality (e.g., Veenhoven, 2005; Helliwell et al., 2017). Despite
56 increases in income inequality, happiness inequalities in the world's major economies, such as the
57 United States, Japan, and South Africa, have registered an overall downward trend in recent decades
58 (Stevenson & Wolfers, 2008; Dutta & Foster, 2012; Niimi, 2016; Kollamparambil, 2019). In contrast,
59 since China became an upper-middle-income country, its happiness inequality has expanded, according
60 to the studies of Yang et al. (2018) and Wang et al. (2019). It might offer a hopeless perspective for
61 developing countries to some degree, as economic growth might neither enhance the overall happiness
62 of the citizen (Easterlin et al., 2010) nor harmonize the dispersion of national happiness.

63 In summary, China has experienced rapid urbanization accompanied by a marked deterioration in
64 social equality in recent decades. Existing studies have extensively explored the relationship between
65 urbanization and income inequality (Lu & Chen 2004; Li & Zhang, 2022; Yao & Wu, 2019; Wu & Rao,
66 2016; Oyvat, 2016; Kanbur & Zhuang, 2013; He & Zhang, 2022). Some studies in China have also
67 examined the impact of urbanization on social segregation (Guo et al., 2018; Chen & Zhang, 2015),
68 health disparities (Ding et al., 2018), gender inequality (Bruin & Liu, 2019), and energy gaps (Hua et
69 al., 2023). Besides, some scholars have paid attention to the relationship between urbanization and
70 happiness (or life satisfaction), but the majority of studies have only examined the impact of
71 urbanization on the absolute level of happiness (e.g., Shourjya & Adam, 2023; Dang et al., 2020; Chen
72 et al., 2015). Ye and Feng (2014) investigated the differences in happiness between urban residents and
73 rural residents at different income levels during the urbanization process in China, but their research
74 method was still limited to comparing the absolute levels of happiness among different groups, failing
75 to reflect the situation of happiness inequality in China. Therefore, the existing literature's attention to
76 the relationship between urbanization and happiness inequality is insufficient. It is not only a
77 deficiency of research perspective on the relationship between urbanization and inequality but also not

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4 http://www.stats.gov.cn/tjsj/ndsj/

conducive to policymakers properly promoting the urbanization process. In this context, this study aims to study the relationship between urbanization and happiness inequality in China.

The marginal contributions of this study lie in the following three areas: First, it demonstrates the new features of the changes in happiness inequality in China and provides a detailed theoretical analysis of the relationship between urbanization and happiness inequality. Second, based on the direct measurement of happiness inequality in China, it examined the relationship between urbanization and happiness inequality using the fixed-effects model with instrumental variable, and conducted robustness tests of this relationship using the Recentered Influence Function (RIF) regression. Multiple empirical strategies yielded consistent results. Third, the impact of urbanization on income inequality, wealth inequality and public service inequality is examined, and the mechanism of urbanization's effect on happiness inequality in China is clarified. Fourth, it further explored the heterogeneity characteristics of the relationship between urbanization and happiness inequality in China, including heterogeneity across different developmental periods and heterogeneity between urban and rural areas. The present study contributes to this research field by expanding the research perspective on urbanization and inequality. In addition, the findings of this study have significant policy references for developing countries that are experiencing high-speed urbanization and suffer from inequality deterioration.

I. *Background: Urbanization and Happiness in China*

A. *China's Urbanization Development*

The "China Dream" is an "Urban Dream" (Taylor, 2015). Referring to the studies of Su and Wei (2018), Chen et al. (2015), Chen et al. (2018), and Chen et al. (2023), based on the regional population mobility characteristics and significant institutional changes that have influenced China's urbanization process, China's urbanization process can be divided into three periods since 1978, namely the "in situ urbanization" period (1978–1991), the "migrant urbanization" period (1992–2013), and the "new-type urbanization" period (2014–present).

After the implementation of the reform and opening-up policy in China in 1978, the promotion of the rural household responsibility system for land management greatly increased food production and generated a surplus of rural labour. At the same time, the development of the market economy facilitated the proliferation of township enterprises. The combined effects of these two forces led to a shift in the government's attitude towards rural population migration from being restrictive to more relaxed, and the government gradually began to loosen the household registration system (*hukou*). The Chinese government has started to abandon the restrictions on farmers engaging in non-agricultural activities. As a result, some farmers have begun to enter urban areas as temporary workers, nannies, entrepreneurs, and in other capacities (Lin, 2002). However, the policy relaxation was limited to a small scope (Zhao & Zhang, 2021), and formal restrictions on peasants' settlement in their non-agricultural working places remained strict. Therefore, many peasants at that time chose to work in township enterprises during the day and return to live in the countryside at night, which is the so-called "leave the land but does not leave the hometown." During this period, China's advancement in urbanization progressed slowly (from 17.92% in 1978 to 26.94% in 1991), with a 0.67 percentage point annual increase on average.

A series of speeches by Chinese leaders on economic reform in southern China in early 1992 led to a new period of market economy development in China, especially in 2001 when China officially

120 joined the WTO and the surge in international trade orders further stimulated the demand for rural
121 labour in labour-intensive industries in urban areas. Meanwhile, the household registration restrictions,
122 especially in restrictions on the cross-regional movement of rural populations, were further relaxed,
123 with many small cities and counties gradually allowing rural populations to settle. However, the
124 threshold for settling in large and medium-sized cities remained high. The movement of rural labour
125 during this period has broken the traditional "leave the land but does not leave the hometown" (Su &
126 Wei, 2018), and a large-scale population migration movement between China's regions and between
127 urban and rural areas gradually took shape, thus supporting the rapid progress of China's urbanization.
128 During this period, China's urbanization ratio increased at an average annual rate of 1.25 percentage
129 points and has maintained rapid growth for a decade (from 27.46% in 1992 to 53.10% in 2013).

130 Since 2014, due to the weakening of the demographic dividend, the transfer of the agricultural
131 labour force approaching its end, and the prominence of social contradictions in cities, the Chinese
132 government has formally promoted a new-urbanization strategy. In 2014, the "National New
133 Urbanization Plan (2014-2020)" and the "Opinions of the State Council on Further Promoting the
134 Reform of the Household Registration System" were issued. Under the guidance of these two important
135 documents, "people-centred" has become the main theme of China's urbanization process in the new
136 era. The main development goals include promoting the full coverage of basic public services for
137 permanent residents in urban areas and improving the citizenship level of rural migrants.[5] Although
138 significant progress has been made, the problem of the dualization of household registration interests
139 has not been fundamentally eliminated, especially in some mega-cities and super-cities, where there are
140 discriminatory policies regarding the educational background of settled individuals (Zhao & Zhang,
141 2021). During this, the quality of China's urbanization has improved (Xiao et al., 2018), and its
142 urbanization population ratio increased from 54.49% in 2014 to 63.89% in 2020, while urbanization
143 speed has declined for five consecutive years since 2015 (see Figure A2 in Appendix 2).

144   B. *The Vicissitude of China's National Happiness*
145 Unlike the continuous deepening of urbanization, the Chinese people's happiness development
146 has some twists and turns. Around 2000, economists found that China's sharp national income growth
147 had brought a minimal rise in national happiness (e.g., Huang, 2002), posing a puzzling riddle. Later, a
148 great amount of ink was spilled by psychologists, economists, and sociologists to paint a picture of
149 China's national happiness trajectory (e.g., Brockmann et al., 2008; Easterlin et al., 2012; Liu et al.,
150 2012; Lam & Liu, 2014; Yang et al., 2018; Wang et al., 2019). Most studies agree that China has
151 essentially followed the Easterlin paradox, and its happiness change trend with time is basically in line
152 with the U-shaped life satisfaction trajectory, which was found in Central and Eastern European
153 transition countries. This nonlinear association strikes scholars to turn their attention to the happiness
154 distribution among the Chinese people. According to the studies by Yang et al. (2018) and Wang et al.
155 (2019), the distribution of happiness in China has been moving in a more uneven direction since 2009.
156 However, their sample only covered data up to around 2015, and the study conducted by Yang et al.
157 (2018) aggregated data from 2-3 consecutive years into composite groups, which, while helpful in
158 examining the stage-by-stage characteristics of changes in happiness inequality, largely obscures the
159 more nuanced year-by-year characteristics of happiness inequality. Therefore, there is a need for
160 further examination of the most recent developments in happiness inequality in China.
161 Drawing data from the Chinese General Social Survey, we present the changing characteristics of

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5 For example, in 2015, China's state council issued the Provisional Regulations on Residence Permits to ensure migrant
workers in urban areas can enjoy equal rights as urban residents in public services, such as housing, education, and medical.

the Chinese people's sense of happiness since 1990 in Figure 1. Based on the information presented in Figure 1, we find that the happiness of the Chinese people showed a clear upward trend between 2003 and 2006, dropped to its lowest point during the period under examination in 2008,[6] recovered to a higher level than before in 2010, and has achieved consecutive years of improvement since 2013.

Regarding the distribution of happiness, happiness inequality in China exhibited a decline between 2003 and 2006. It reached its highest point in 2008 during the global financial crisis, and although it declined in 2010, it remained significantly higher overall compared to pre-2008 levels. However, after three years of fluctuations, happiness inequality has been consistently decreasing since 2013. Notably, happiness inequality in China has returned to a comparable level as it was at the beginning of the century. That means in recent years, China has somewhat "digested" the nasty effects of the global crisis around 2008 on social equality. The same feature can be found in China's provincial data (see Figure 3).

Based on the above discussion, we hold that the Chinese people's happiness has been stable in recent years. The happiness inequality in China has a trend to improve in recent years despite it being overall worse from 2008 to 2018 than from 2003 to 2006, according to the CGSS, which differs from the findings of existing studies (e.g., Yang et al., 2018). The findings of our study differ from existing research but are not contradictory. Yang et al. (2018) conducted their study with sample limited to years before 2015, and they combined adjacent 2-3 year samples for analysis. Through this approach, they compared happiness inequality in China before and after 2008 and found that overall happiness inequality increased after 2008. We agree with this viewpoint, and Figure 1 also reflects this trend before 2015. However, our study extends the observation period of the sample from 2015 to 2018, which can capture new characteristics of happiness inequality changes in China. Additionally, in Yang et al.'s (2018) study, there is actually a downward trend in happiness inequality after 2008, but their focus was on comparing samples before and after 2008, overlooking this trend. The continuous decrease in the level of happiness inequality in China in recent years can be attributed to a series of pro-people policies implemented during this period, which include, but are not limited to, the nationwide poverty alleviation campaign, employment-first strategy, and the new-type urbanization strategy.
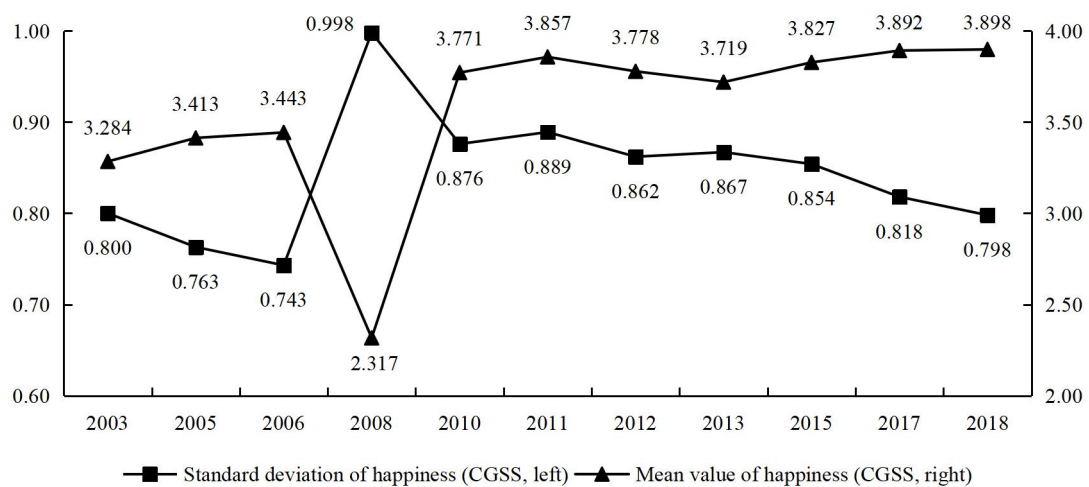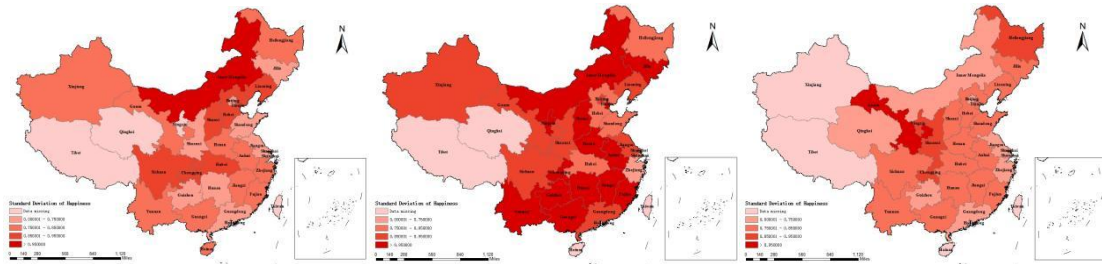

Standard deviation of happiness (CGSS, left) ■— Mean value of happiness (CGSS, right)

Fig. 1 The trajectory of China's national happiness in the Chinese General Social Survey. (Note: The index of national happiness is measured by people's feelings of happiness, ranging from 1 to 5. The sample size is 109,168.)

Fig. 2 The standard deviation of happiness in China from 2003 to 2008. (Note From left to right are data for 2003, 2008, and 2018. Except for Hong Kong, Macau, and Taiwan, data are missing for Tibet, Qinghai, and Ningxia in 2003, for Tibet, Qinghai, and Hainan in 2008, and for Tibet, Xinjiang, and Hainan in 2018.)

II. *Theoretical Basis*

A. *Urbanization, Income Inequality, and Happiness Inequality*

Individuals tend to be concerned not only about their absolute income but also about their socioeconomic position relative to others (Kang et al., 2020). Comparison with other members of society affects whether or not individuals feel optimistic about their lives (Ferrer-i-Carbonell, 2005). That's why the income gap matters for happiness.[7] Income growth without income disparity is likely to increase the mean happiness of a general population (Oishi et al., 2011). Likewise, happiness inequality within a nation can be alleviated through more equitable income distribution (Yang et al., 2018; Lakshmanasamy & Maya, 2020; Kollamparambil, 2019).

Under the heavy-industry-oriented development strategy, China's urbanization level has been decoupling with economic development for a long time, namely "under-urbanization." And China is also one of the most prominent countries in the world with a dual urban-rural economic structure and urban-rural income gap. The development of the market economy and the Chinese government slackened restrictions on inter-regional migration in the 1990s creating the world's most enormous rural-urban migration flow. According to the dual structure theory, income inequality will continue to worsen in the early stages of economic development, and with the sustained expansion of urban economies, there will be a shortage of surplus labour, leading to a gradual decline in income inequality (Lewis, 1954). However, since the level of income inequality within cities is generally higher than in rural areas, and if the income distribution system within cities cannot be improved as urbanization deepens, it will lead to a continuous deterioration of the overall income distribution in society (Kuznets, 1955). It strikes us that income inequality may be the bridge between urbanization and happiness inequality, given its significant effect on happiness inequality reduction in developing countries.

B. *Urbanization, Wealth Inequality, and Happiness Inequality*

Income, as the economic circumstance restricted to a specific point in time, is not the only or necessarily the best indicator of the material standard of living. In contrast, wealth confers economic security, both financial and non-financial assets generate real income, an actual flow of benefits, which affects life satisfaction more than income (Headey et al., 2007). The distribution of wealth is central to

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7 Existing theoretical discussions suggest that there are envy effect, information/signal effect, compassion effect, and pride effect in the relationship between income gap and happiness.

227 evaluating social justice (Li & Wan, 2015), and as such, it is crucial to the distribution of happiness in a
228 country. In China, the share ratio of housing assets in household wealth has been increasing and
229 reached a very high level,[8] making housing the most important structural reason for wealth inequality
230 (Li &Wan, 2015; Yue & Ying, 2022). However, China's rapid urbanization driven by land finance[9]
231 may have worsened this house-dominated wealth inequality.

232   For the urban inside, since the tax-sharing system reform and commercial housing reform in the
233 1990s, driven by institutional reasons, such as "land finance" and the direct link between urban housing
234 and education and medical resources, the urban real estate market in China is booming, and the housing
235 prices in cities are continuously surging upward (Li & Fan, 2020). During this, urban indigenous
236 residents became the direct beneficiaries of soaring housing prices. In contrast, housing is the most
237 basic demand when the population flows into the city. Most migrants need savings accumulated over
238 two or three generations and even bear a lot of bank loans to buy a house in cities for a stable life. The
239 migrant people who buy houses earlier in cities become the "new" urban residents, thus could partially
240 transfer their housing purchase cost to the later buyers and tenants through the increasing housing
241 prices and rents. However, those who choose not to buy but rent must endure high housing rents for a
242 long time and suffer a higher cost of living. Therefore, to some degree, urbanization drives the urban
243 indigenous residents and the "new" urban residents to become a rentier class when the real estate
244 market develops much more than wages do (Guo et al., 2018). The wealth accumulation of the migrant
245 population and urban residents shows the trend of the Matthew effect, resulting in increased wealth
246 inequality within cities.

247   For the urban-rural gap, urban and rural areas have distinct institutional structures related to the
248 land and housing markets. The housing policy in rural China has changed little since the reform and
249 opening-up. Every rural household is eligible to apply for one, and only one, piece of residential land,
250 called a homestead, to construct housing for self-occupancy (Wang et al., 2020). Meanwhile,
251 transactions related to residential land and house are limited to taking place in members within the
252 same village by formal rules.[10] The isolation of rural real estate transactions from the market and rural
253 population outflow leads to rural residents cannot obtain the housing price dividend, resulting in
254 increased wealth inequality between rural and urban.

255   In China, an increase in urbanization ratio by 1% will drive up housing prices by 0.343%~0.778%,
256 according to Zhang and Zhang (2016) and Wang et al. (2017). And housing price is responsible for
257 around 70% of wealth inequality worsening (Wan et al., 2021). Data from the Chinese Household
258 Income Project[11] shows wealth inequality has risen sharply in China over the past two decades, and the
259 Gini Index of Chinese household wealth was 0.657 in 2018, up from 0.630 in 2013 and 0.578 in 2003.
260 Hence, the exclusive prosperity of the real estate market in urbanization inevitably leads to wealth
261 distribution deteriorating with urbanization advances, regardless between urban and rural or within the
262 urban inside; thus exacerbating happiness inequality.

263   C. *Urbanization, Public Services Inequality, and Happiness Inequality*

264   Public services involve medical care, education, employment, and social security, which will
265 inevitably impact happiness because people know they can rely on it when needed (Baldini, 2017). The

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8 Real property is the most important asset for the Chinese people.

9 The reform of China's tax-sharing system implemented since 1994 has caused a gap of about 30% of the revenue and expenditure of local governments (Li et al., 2013). The local budget constraints combined with the political achievement evaluation system based on economic performance have greatly stimulated China's local governments to seek additional income by selling land (Tao and Xu, 2005; Han et al., 2018), that is, "land finance."

10 Some regions, such as Chengdu in Sichuan, are reforming these restrictions, but it has not been widely spread.

11 More details about the Chinese Household Income Project can be found on its official website: http://www.ciidbnu.org/chip/index.asp

study of Easterlin (2012) found that the retreat of public policy related to education and health care in transition countries harmed people's happiness, thus full employment and a generous and comprehensive social safety net do matter in national happiness increase. Based on individuals' comparison psychology, similar to individuals concerned about their relative income, differences in access to public services should significantly impact happiness and its distribution.

The rapid urbanization process has promoted urban infrastructure and public service to an unprecedented level. However, the hukou[12] system conveys different sets of entitlements, and the urban (local) residents' entitlements are usually much superior to rural (migrant) ones (Guo et al., 2018). It should be recognized that around 2000, rural migrant workers without local urban hukou could not share equal rights with urban residents.[13] These migrant workers become "second-class" citizens and live a "marginalized" life with unfavourable working and living conditions (Wong et al., 2006; Guan et al., 2018), experiencing salient discrimination and social injustice (Meng & Zhang, 2001; Wu, 2004; Guo et al., 2018). Even now, the discrimination against migrant workers in cities has not been eradicated. According to the 2017 China Migrants Dynamic Survey,[14] merely 30% of the 17,000 migrant people surveyed have local health records (problem-oriented medical records), and 33% have not signed a formal labour contract with their work units. In addition, in 2018, 42.2% of rural-registered migrant workers in China worked more than 48 hours per week,[15] while only 26.2% of other types of urban workers were overworked (Li et al., 2022). Even in the last decade, the employment quality gap between rural migrant workers and native workers is still significant and increases yearly (Yang & Zhang, 2022). Unequal urban gains distribution made the high-skilled natives enjoy large gains from agglomeration and migrants (Combes et al., 2020). These are all potential factors that threaten urban social harmony.

Besides, in terms of the rural-urban public service gap, when the government increases investment in public services in different regions in a balanced manner, the per capita medical resources in cities will gradually decrease with the rural population flow into cities, while it is the opposite for the rural areas. In the end, the rural-urban gap will be narrowed with the advancement of urbanization. On the contrary, it should be noted that post-reform economic policies in China are biased toward urban residents (Lu & Chen, 2006). The fiscal expenditure on public services for health care, education, and social security is inevitably inclined to the cities where the population is concentrated, and the rural-urban gap will be widened further. In reality, as the Chinese government has promoted the nationwide poverty reduction campaign in recent years, primary medical care and senior care service for rural residents have been guaranteed to a certain extent. However, rural jobs remain scarce, and high-quality education and medical resources are still concentrated in cities to a high degree.

Therefore, it is highly likely that inequality in public services in China worsened during the early urbanization process, given the institutional discrimination experienced by migrant populations in cities and China's urban bias policies. However, with the shift in national policy orientation in recent years, this situation may have eased.

In this section, we have analyzed the possible changes in income inequality, wealth inequality, and

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12 In China, the whole society is categorized into urban and rural societies by the unique urban and rural household registration systems (Chan, 2009), namely hukou. The rights of adobe, employment and social welfare are associated with hukou registration in a locale where one lives permanently (Guo et al., 2018).

13 For example, migrant workers' minor children cannot study in the local school, and they do not have access to local medical resources cause their medical insurance can only be reimbursed in their hometown.

14 More details about the China Migrants Dynamic Survey can be found on its official website: https://www.chinaldrk.org.cn/wjw/

15 According to the Labor Law of the People's Republic of China, employed persons shall not work more than 44 hours per week.

304 public service inequality during China's urbanization process and have attempted to clarify the
305 mechanisms at play through which urbanization has affected happiness inequality in China. In
306 summary, we propose the following specific hypotheses:

307 **Hypothesis 1.** Urbanization will worsen happiness inequality in China.

308 **Hypothesis 2.** Urbanization affects happiness inequality in China mainly through three primary
309 mechanisms: income inequality, wealth inequality and public service inequality.

310 **Hypothesis 3.** The impact of urbanization on happiness inequality varies by stage in China.

311

III. *Methods*

A. *Data*

314 Data used in this study is mainly drawn from the Chinese General Social Survey (CGSS), the
315 *China Statistical Yearbook*, the *China Real Estate Statistical Yearbook*, the *China Health Statistics*
316 *Yearbook*, the *China Education Fund Statistical Yearbook*, etc. Firstly, the CGSS is conducted at the
317 Renmin University of China and Hong Kong University of Science and Technology, which provides
318 the Chinese people's happiness and income distribution data for the present study. The 2003–2006 and
319 2010–2018 sampling designs are multistage stratified designs, while the CGSS in 2008 used 2005 1%
320 national population survey data as the sampling frame (there was no survey in 2004, 2007, 2009, 2014,
321 and 2016).[16] Despite the difference in sampling design, we still employed the data of 2008 in our
322 benchmark regression as the distribution of happiness is unlikely to be biased as a result, and the
323 regression results excluding the 2008 data will serve as a robustness test. Overall, 109,168 respondents
324 from 25 provinces (except Tibet, Inner Mongolia, Qinghai, Xinjiang, Ningxia, Hainan, Hong Kong,
325 Macau, and Taiwan) were included in our data set. Secondly, provinces' other socioeconomic
326 characteristics, such as urbanization ratio and GDP, were drawn from the *China Statistical Yearbook*,
327 the *China Real Estate Statistical Yearbook*, the *China Health Statistics Yearbook*, and the *China*
328 *Education Fund Statistical Yearbook*, etc.

B. *Variable*

330 The key independent variable of this study is urbanization (U), which is measured by the
331 proportion of urban permanent residents to the total population. The dependent variable in this study is
332 happiness inequality. The mainstream academic view holds that the standard deviation (or variance) is
333 a more suitable measure for happiness distribution than the Gini Index (Niimi, 2016; Kollamparambil,
334 2019; Yang et al., 2018). Refer to the study of Yang et al. (2018), this study calculates the degree of
335 happiness inequality in China from the provincial level and uses the standard deviation of happiness to
336 measure the Chinese people's happiness inequality level in different provinces and years. The
337 happiness data directly comes from the question in the CGSS surveys, "Overall, do you think your life
338 is happy?" And the options for it include 1 (very unhappy), 2 (unhappy), 3 (normal), 4 (happy), and 5
339 (very happy). Besides, the data used to calculate happiness inequality is weighted to ensure the data we
340 use can represent the actual distribution of happiness in China.

341 Happiness inequality is determined by many elements. In the benchmark regressions, a set of
342 variables, including age structure (*AS*), population density (*PD*), education (*EDU*), industrial structure
343 (*IS*), per capital GDP (*PGDP*) and its square (*PGDP*_2), open, structure of fiscal expenditure (*SFE*),
344 wage, and financial development (*FD*) was added to our benchmark regressions to control for potential
345 confounding factors. Last but not least, to examine the mechanism by which urbanization affects

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16 More details about the CGSS can be found on its official website. http://cgss.ruc.edu.cn/

happiness inequality, this study selects the urban-rural income gap, house price disparity, and public service inequality as mechanism variables. Among them, the urban-rural income gap is measured by the Theil index calculated based on per capita disposable income.[17] The disparity of housing prices is measured by the Gini coefficient calculated based on housing prices in each prefecture-level city.

The level of public service inequality is a composite index calculated from tow aspects: basic education gap and health care gap between urban and rural areas. Following the principles of continuity, consistency in statistical criteria, and representativeness, this study refers to the research of Miu et al. (2017) and Li and Pei (2019) to select the following indicators to measure the disparities in basic education and health care between urban and rural areas: (1) The ratio of the average educational expenditure of urban middle school students to the average educational expenditure of rural middle school students. (2) The ratio of per capita education expenditure for urban primary school students to rural primary school students. (3) The ratio of the number of licensed physicians per ten thousand population in urban areas to the number of licensed physicians per ten thousand population in rural areas. (4) The ratio of the number of registered nurses per ten thousand population in urban areas to the number of registered nurses per ten thousand population in rural areas.

Table 1 shows the descriptive statistics results of the the variables we use.

Table 1   Descriptive statistics results

Variables	Description	Mean	S.D.
Dependent Variable			
Happiness Inequality	The standard deviation of happiness.	0.826	0.110
Independent Variables			
Urbanization Rate (*U*)	The proportion of permanent urban population in total population.	0.535	0.153
Control Variables			
Age Structure (*AS*)	Dependents as a percentage of the working-age population.	0.358	0.0780
Population Density (*PD*)	Population per square kilometer.	0.356	0.273
Education (*EDU*)	The proportion of people with higher education in the total population.	0.110	0.0740
Industrial Structure (*IS*)	The proportion of the output value of the secondary industry and the tertiary industry to the regional gross domestic product.	0.895	0.0540
Per capital GDP (*PGDP*)	Per capita regional gross domestic product.	10.543	0.625
Square of per capita GDP (*PGDP_2*)	The square of per capita GDP divided by 100.	1.115	0.131
Open	The proportion of total imports and exports in GDP.	0.351	0.409
Structure of Fiscal Expenditure (*SFE*)	Expenditure on education and medical care as a proportion of total government expenditure.	0.230	0.037
Wage	Urban wage level.	10.698	0.447
Financial Development (*FD*)	The ratio of balance of deposits and loans of financial institutions to regional GDP.	2.967	1.107
Other Variables			
Urban-rural Income Gap	Theil index calculated based on urban and rural per capita disposable income.	0.122	0.059

[17] The Theil index is a measure of inequality. Its calculation formula is as follows: $T = (1/N) * \Sigma((Y_i/Y) * log(Y_i/Y))$. Where T represents the Theil index, N represents the total population, Y_i represents the value of a certain variable for the i-th individual, and Y represents the mean value of the variable for the entire population. The Theil index ranges from 0 to 1, with higher values indicating greater inequality.

House Price Disparity	Disparity of housing prices in prefecture-level cities.	0.152	0.058
Public Service Inequality	Basic education gap between urban and rural areas.	0.138	0.168
	Health care gap between urban and rural areas.		

364 Note: The variable names are abbreviated in parentheses; "-" means not applicable; the "*Wage*", "*PGDP*" and

365 "*PGDP_2*" in the table are the results after logarithms are taken.

366

367 C. *Model*

368 1. *Entropy Weight Method*

369 This study uses the entropy weight method to calculate the comprehensive index of public

370 service inequality. The entropy weight method is a multi-criteria decision-making technique that

371 uses information entropy to determine the weight of each criterion. The method can effectively

372 solve the problem of subjective and objective weighting, and it has been widely used in various

373 fields. The calculation steps are as follows:

374 First, in order to eliminate the inconsistency in scale and dimensionality of different

375 measurement indicators, the range method is used to standardize the indicators:

376 $$Y_{ij} = \begin{cases} \frac{X_{ij}-min(X_{ij})}{max(X_{ij})-min(X_{ij})}, if\ X_{ij}\ is\ a\ positive\ index \\ \frac{max(X_{ij})-X_{ij}}{max(X_{ij})-min(X_{ij})}, if\ X_{ij}\ is\ a\ negative\ index \end{cases} \tag{1}$$

377 Second, calculate the information entropy (E_j) of the indicators:

378 $$E_j = ln\frac{1}{n}\sum_{i=1}^{n}[(Y_{ij}/\sum_{i=1}^{n}Y_{ij})ln(Y_{ij}/\sum_{i=1}^{n}Y_{ij})] \tag{2}$$

379 Third, calculate the weights (W_j) of the indicators:

380 $$W_j = (1-E_j)/\sum_{j=1}^{m}(1-E_j) \tag{3}$$

381 Finally, the comprehensive index is calculated according to the weight W_j and standardized

382 index value Y_{ij}.

383 2. *Fixed-effects Model with Instrumental Variable*

384 We used the following fixed-effects model to estimate the relationship between urbanization and

385 happiness inequality:

386 $$Happiness\_D_{it} = \alpha + \beta_1 U_{it} + \beta_2 X_{it} + \mu_i + \lambda_t + \varepsilon_{it} \tag{4}$$

387 In Eq. (4), $Happiness\_D_{it}$ represents the happiness inequality of province *i* in year *t*, measured

388 by the standard deviation of respondents' happiness. Happiness inequality is a function of urbanization

389 (U_{it}), control variables (X_{it}), province-fixed effects (μ_i), time-fixed effects (λ_t), and error term (ε_{it}).

390 Among them, U_{it} is the key independent variable that represents the urbanization rate. X_{it} is a vector

391 of control variables. Referencing the studies of Kollamparambil (2019) and Yang et al. (2018), a set of

392 variables, including age structure (*AS*), population density (*PD*), education (*EDU*), industrial structure

393 (*IS*), per capital GDP (*PGDP*) and its square (*PGDP_2*), open, structure of fiscal expenditure (*SFE*),

394 wage, and financial development (*FD*) was added to regressions to control for potential confounding

395 factors. The critical coefficient is β_1, which reflects the relationship between urbanization and

396 happiness inequality. To mitigate potential endogeneity issues in the fixed-effects model, this study

397 selects lagged values of urbanization rate as instrumental variables (IV). This approach is consistent

398 with previous research. Pischke and Velling (1997), Zhu and Lv (2020), Xie (2020), and Tao (2020)

399 have used lagged variables as IV to address endogeneity and provide more robust examinations of the

400 impact of urbanization and migration on residents' welfare.[18]

---

[18] In the regression, we included the urbanization rate of each province in 2002 to avoid the exclusion of

3. Recentered Influence Function Regression

Although we have weighted the raw data when measuring happiness inequality in provinces, there may still be some degree of error in the process. Given this, we will employ Recentered Influence Function (RIF) regression to examine the relationship between urbanization and happiness inequality from a micro-level perspective for robustness test. RIF was developed by Firpo et al. (2009) and has been widely used in the analysis of happiness inequality in recent years (e.g., Niimi, 2016; Yang et al., 2018; Kollamparambil, 2019). RIF regression can be used to estimate the effect of changes in covariates on the standard deviation (variance), interquartile ranges, quantile, and Gini Index, etc. This study constructs the following RIF regression model:

$$RIF(Happiness\_std) = \alpha + \beta_1 U_{it} + \beta_2 Controls_{it} + Year_t + Province_j + \varepsilon_{it} \qquad (5)$$

In Eq. (5), the dependent variable is happiness inequality, measured by happiness's standard deviation. U_{it} represents the level of urbanization in the region where each respondent is located, which is obtained by matching the data on the level of urbanization from the China Statistical Yearbook with CGSS data. This approach is well documented. For example, Zhu and Lv (2020) studied the relationship between urbanization and subjective well-being by matching the level of urbanization across provinces with CGSS data. Similarly, Xie (2020) employed this kind of approach in studying the effects of urbanization on poverty reduction in rural China. $Controls_{it}$ is a vector of control variables, including gender, age and its square, *hukou*, health, education, income, marriage, employ, and politics status. The results of the descriptive statistics of the micro data are presented in Table A2 of the Appendix 4. The rest of the symbols have the same meaning as before.

IV. *Results*

A. *Benchmark Regression*

Columns (I) to (III) in Table 2 present the fixed-effects model regression results of the impact of urbanization on happiness inequality. As we can see in column (I), the coefficient of urbanization (U) is 0.829 and significant at a 1% level, indicating that the standard deviation of happiness would increase with the urbanization level. Next, column (II) shows the regression results of introducing the lagged term of urbanization as an instrumental variable. The Underidentification test (Kleibergen-Paap) results show a p-value of 0.011, indicating no underidentification problem with the instrumental variable. The Weak identification test results show Cragg-Donald and Kleibergen-Paap F-statistics of 385.758 and 43.644, respectively, indicating a strong correlation between the instrumental variable and the endogenous variable. As shown in column (II), when introducing the lagged urbanization variable as an instrumental variable in the regression, the coefficient of urbanization is 1.103, higher than before, and its significance remains consistent with the previous results. It suggests that the worsening effect of urbanization on happiness inequality remains after mitigating the endogeneity problem.

Besides, the sampling rule of the data from 2008 is different from that of other years, which may affect the accuracy of the regression results. Therefore, we conducted the regression again after removing the data from 2008, and the results are shown in Table A3 of the Appendix 4. As shown in the columns (I) and (II) in Table A3, after removing the data from 2008, the relationship between urbanization and happiness inequality did not change significantly, demonstrating the robustness of the benchmark regression results in Table 2. Another concern we have is that even after weighting the respondents' happiness data, there is still some error in the measurement of happiness inequality across regions. In view of this, we use a RIF regression to robustly test the relationship between urbanization

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samples from 2003 due to missing lagged data on urbanization rate.

443 and happiness inequality from a micro perspective, and the results are presented in Table A3 of
444 Appendix 4. As shown in column (III) of Table A3, from a micro perspective, the coefficient of
445 urbanization is 0.255 and significant at a 5% level, indicating that urbanization has a significant
446 positive effect on the happiness gap. That is, happiness inequality worsens with the increase in the level
447 of urbanization. This result further supports the results of the benchmark regression. Thus, Hypothesis
448 1 of this study is validated, which is that urbanization significantly exacerbates happiness inequality in
449 China.

450   As we analyzed in the Theoretical Basis section, the changes in income inequality, wealth
451 inequality, and public services inequality in the advancement of urbanization in China result in
452 alleviating or exacerbating happiness inequality. The mechanisms through which urbanization affects
453 happiness inequality in China will be examined and discussed in detail in the following sections.
454 Finally, the coefficients of the control variables in Table 2 are as expected, and since they are not the
455 focus of our study, we do not analyze them in detail to avoid verbosity.

456

457 **Table 2** Benchmark regression results

	(I)	(II)
	Fixed-effects model	*Fixed-effects model with instrumental variable*
U	0.829***	1.103***
	(0.216)	(0.385)
AS	-0.255	-0.247
	(0.198)	(0.199)
PD	0.074**	0.077**
	(0.036)	(0.036)
EDU	0.662**	0.723**
	(0.279)	(0.275)
IS	0.576	0.558
	(0.523)	(0.528)
PGDP	1.204**	1.202**
	(0.468)	(0.475)
PGDP_2	-6.478**	-6.631**
	(2.426)	(2.448)
Open	-0.015	-0.030
	(0.050)	(0.056)
SFE	-0.931**	-0.997**
	(0.394)	(0.388)
Wage	-0.097	-0.086
	(0.121)	(0.125)
FD	0.008	0.004
	(0.035)	(0.036)
Constant	-4.373*	-
	(2.508)	-
Fixed-effects	Yes	Yes
R^2	0.569	0.141

N	275	275
Kleibergen-Paap p-value	-	0.011
Cragg-Donald Wald F statistic	-	385.758
Kleibergen-Paap rk Wald F statistic	-	43.644

458   Notes: (1) Standard errors in parentheses. (2) *, ** and *** indicate the 10%, 5% and 1% significance levels,
459   respectively. (3) "-" means not applicable. The same as below.

460

461   B. *Mechanism Test*

462   The previous analysis has confirmed the worsening effect of urbanization on happiness inequality
463   in China. However, the exact mechanisms through which urbanization affects changes in happiness
464   inequality are unclear, and this is the main issue addressed in this section.

465   Specifically, this study employs the following strategies to examine the mechanism: Firstly, it
466   investigates the impact of urbanization on the income gap between urban and rural areas. Secondly, it
467   examines the influence of urbanization on the the disparity of house prices (Gini coefficient of house
468   prices). Lastly, it assesses the effect of urbanization on the basic public service gap between urban and
469   rural areas. Through these regression analyses, the study aims to determine the changes in income
470   inequality, wealth inequality, and public service inequality during the urbanization process, thereby
471   elucidating the mechanisms through which urbanization affects happiness inequality in China. It is
472   important to note that, due to two primary reasons, the study utilizes the dispersion of house prices as a
473   proxy for wealth inequality: Firstly, the available statistics in China do not provide comprehensive
474   information on the wealth stock and changes among Chinese residents from 2003 to 2018. Secondly,
475   previous analysis has established that the surge in housing prices is the main driver behind the increase
476   in wealth inequality (Li & Wan, 2015; Yue & Ying, 2022). If the disparity of housing prices in different
477   regions continues to strengthen during the urbanization process, it will inevitably exacerbate regional
478   wealth inequality. Moreover, the main beneficiaries of rising housing prices are urban residents, as we
479   analyzed before, and the wealth inequality between urban and rural areas will also worsen due to the
480   increase in housing prices.

481   Besides, this section of the regression is entirely based on macro databases such as the *China*
482   *Statistical Yearbook* and the *China Real Estate Statistical Yearbook*.[19] The sample covers the period
483   from 2003 to 2018, including thirty provinces (excluding Tibet), providing continuous coverage of
484   annual data. In terms of control variables, when studying the relationship between urbanization and the
485   income gap, references from Lu and Chen (2004), Ye et al. (2011), and Zhang and Wan (2019) are
486   considered. The control variables selected include per capita GDP and its square, industrial structure,
487   openness, financial development, and fiscal expenditure. When studying the relationship between
488   urbanization and housing price disparity, references from Dong et al. (2010), Zhang and Zhang (2016),
489   and Li (2017) are considered. The control variables selected include total urban population, per capita
490   GDP, industrial structure, disposable income, government intervention, financial development, sales
491   area of commercial housing, and land price. When studying the relationship between urbanization and
492   urban-rural public service disparities, references from Miu et al. (2013) and Zhang et al. (2020) are
493   considered. The control variables selected include per capita GDP and its square, rural population,
494   industrial structure, fiscal expenditure, and openness. Descriptive statistics of the control variables in
495   this section are presented in Table A4 in Appendix 4. Regressions in this section are based on the

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[19] The missing housing price information in the *China Real Estate Yearbook* is supplemented with data
from the China Real Estate Information website (http://www.crei.com.cn/).

fixed-effects model with instrumental variable, and the regression results of the mechanism test are shown in Table 3.

As displayed in the column (I) of Table 3, urbanization has a significant negative effect on the urban-rural income gap, which is consistent with the findings of Lu and Chen (2004). The reasons why urbanization reduces the urban-rural income gap can be well explained by the dual structure theory, which has been discussed in detail in the previous section. The largest disparity in China lies in the urban-rural divide (Si, 2021). As long as the income gap between urban and rural areas narrows, the overall income disparity in China can also decrease, thereby alleviating happiness inequality.

Next, column (II) of Table 3 shows the impact of urbanization on house price disparity, where we can see that the coefficient of urbanization is positive and significant at a 5% level. It implies that the disparity in housing prices among regions widens with the deepening of urbanization, which is a new research finding. Previous studies by Zhang and Zhang (2016) and Li (2017) only examined the driving effect of urbanization on regional housing prices. The findings of this study serve as a supplement to the existing research conclusions. Real estate is the most important source of wealth for ordinary Chinese families (Wu et al., 2010), and the surge in housing prices and the widening gap of housing prices among regions exacerbate wealth inequality in China from various aspects, leading to an aggravation of happiness inequality.

Finally, column (III) of Table 3 demonstrates the impact of urbanization on the public services gap between urban and rural areas, where we can see that the coefficient of urbanization is positive and significant at a 5% level. It implies that the educational and healthcare disparities between urban and rural areas in China are gradually widening during the process of urbanization. This finding is consistent with the conclusions of Cui and Han (2016). Basic education and healthcare significantly impact individuals' human capital accumulation and quality of life. Under the long-term influence of China's urban-biased policies, the gap in basic public services between urban and rural areas has been expanding as urbanization progresses. This results in unequal access to education and healthcare resources for urban and rural residents, thereby exacerbating happiness inequality in China.

In summary, the results in Table 3 are able to provide mechanistic support for the previous studies, and Hypothesis 2 of this study has been confirmed. That is, urbanization affects happiness inequality in China mainly through three primary mechanisms: income inequality, wealth inequality and public service inequality. More specifically, urbanization in China reduces happiness inequality by alleviating income inequality, however, it exacerbates happiness inequality by increasing wealth inequality and basic public service inequality.

Table 3 Mechanism test results

	(I)	(II)	(III)
	Income gap	*House price disparity*	*Public service inequality*
U	-0.249***	0.696**	1.350**
	(0.043)	(0.352)	(0.506)
Constant	Yes	Yes	Yes
Fixed-effects	Yes	Yes	Yes
R^2	0.464	0.114	0.181
N	480	352	477

Note: In the first column, Tibet was excluded due to data unavailability. In the second column, Beijing, Tianjin, Shanghai, and Chongqing were excluded due to the inability to calculate regional housing price disparity. Xinjiang,

532 Hainan, Tibet, Guizhou, and Qinghai were excluded in the calculation of housing price disparity due to a small
533 number (1-4) of sampled prefecture-level cities. In the third column, Tibet was excluded due to data unavailability,
534 and Beijing was excluded in the years 2016, 2017, and 2018 due to data unavailability.

535

536 ### C. Heterogeneity Analysis
537 #### 1. Stage Heterogeneity Analysis

538 As analyzed earlier, the changing trend of happiness inequality in China exhibits obvious stage
539 characteristics: since China began to implement the "people-centred" new-urbanization strategy, the
540 level of happiness inequality in China has no longer been worsening or fluctuating as it did before, but
541 has been consistently declining. It means that the impact of urbanization on happiness inequality in
542 China may vary by stage. Therefore, this study divides the sample into two sub-samples: before and
543 after 2014 for grouped regression analysis, in order to examine the stage heterogeneity of the impact of
544 urbanization on happiness inequality in China. The group regression results are shown in Table 4.

545 As displayed in column (I) of Table 4, before 2014 (traditional urbanization period), urbanization
546 had a significant positive impact on China's happiness inequality. In contrast, after 2014 (new-type
547 urbanization period), the coefficient of urbanization has changed from positive to negative and is no
548 longer statistically significant. These results indicate that the impact of urbanization on China's
549 happiness inequality indeed have a phased characteristic. Before 2014, happiness inequality continued
550 to worsen as urbanization deepened, but this effect disappeared after 2014, which is consistent with the
551 phased characteristics of China's urbanization process and happiness inequality. Research hypothesis 3
552 of this study is confirmed.

553 The reasons may be as follows: Compared to the traditional "factor-dependent" and
554 "investment-driven" urbanization path, the new-urbanization is a brand-new urbanization process with
555 the core goals of equality, happiness, greenness, health, and efficiency (Shan & Huang, 2013; Yu, 2021).
556 Under the new-urbanization strategy, the Chinese government has paid more attention to improving
557 people's livelihoods and promoting equal rights to ensure that all citizens share in the fruits of
558 economic reform. The principle of urbanization in China has gradually shifted from industry-centred to
559 people-centred since 2012. Although the new-urbanization strategy has not significantly alleviated the
560 problem of happiness inequality in China, it has at least not led to further deterioration of the problem.
561 This is good news for both policymakers and the general public in China.

562

563 **Table 4** Regression results of stage heterogeneity

	(I) Traditional urbanization period	(II) New-type urbanization period
U	1.185*	-2.494
	(0.689)	(3.472)
Constant	Yes	Yes
Fixed-effects	Yes	Yes
R^2	0.198	0.249
N	200	75

564

565 #### 2. Urban-rural Heterogeneity Analysis

566 In addition to the stage characteristics, the impact of urbanization on happiness inequality may
567 also vary between urban and rural areas. In the process of urbanization, cities and rural areas are placed

568 in different positions. The former is the main carrier of urbanization, while the latter mainly undertakes
569 the task of providing a labour force and land resources for urban development. Urbanization has
570 different effects on the social and economic development of rural and urban areas, such as changes in
571 income disparity, the development of the housing market and public services. Therefore, this study
572 further calculated the standard deviation of happiness for urban and rural areas in each province of
573 China to examine the urban-rural differences in the impact of urbanization on happiness inequality. The
574 regression results are shown in Table 5.

575   As displayed in columns (I) and (II), urbanization has a significant positive effect on happiness
576 inequality in urban areas, however, in rural areas, urbanization does not significantly worsen happiness
577 inequality overall. The above results suggest that urbanization is more damaging to happiness
578 inequality in urban areas than in rural areas in China. It may be because cities are the main bearers of
579 urbanization and, accordingly, the places where conflicts erupt. Although there are disparities between
580 rural areas and cities in terms of income, wealth and public services, in terms of focusing on rural areas
581 alone, rural socio-economics does not change as radically as urbanization does, and there is relatively
582 more equality within rural areas in the distribution of the benefits of urbanization.

583
584 **Table 5**   Regression results of urban and rural heterogeneity

	(I)	(II)
	Urban areas	*Rural areas*
U	1.447**	-0.129
	(0.519)	(0.809)
Constant	Yes	Yes
Fixed-effects	Yes	Yes
R^2	0.054	0.094
N	275	239

585

V. *Concluding Discussion*

587   The relationship between urbanization and happiness inequality has been largely neglected in
588 research on happiness inequality. The lack of such research is surprising given that China's
589 urbanization population increased by nearly 400 million over the past two decades while the happiness
590 inequality in China generally worsened during the same period. To our best knowledge, the present
591 study is the first to thoroughly explore the relationship between urbanization and happiness inequality
592 within a developing country. Based on data from the CGSS, the *China Statistical Yearbook* and *China
593 Real Estate Statistical Yearbook*, etc., the present study conducted a theoretical analysis and empirical
594 examination of the relationship between urbanization and happiness inequality in China. Furthermore,
595 it explored the potential heterogeneity of this relationship. The main findings of this study are as
596 follows:

597   First, we found that the happiness index of the Chinese people has remained stable in recent years.
598 Although happiness inequality in China was generally more severe from 2008 to 2018 compared to the
599 period from 2003 to 2006, there has been a trend of improvement in happiness inequality in recent
600 years. Notably, happiness inequality in China has returned to a comparable level as it was at the
601 beginning of the century. These findings differ from previous research findings (e.g., Yang et al., 2018)
602 but are not contradictory. Our approach to handling the sample differs from previous research and

603 includes the latest year's data, thus reflecting the new features of China's happiness inequality. These
604 new features may be related to a series of pro-people policies implemented by the Chinese government
605 in recent years. For example, the nationwide poverty alleviation campaign has significantly improved
606 the living standards of the impoverished population and reduced the gaps among different groups. The
607 employment-first strategy implemented in recent years emphasizes the protection of workers' legal
608 rights and encourages self-employment among rural migrant workers and the urban labour force. The
609 new urbanization strategy promotes the integrated development of urban and rural areas in China,
610 making significant contributions to reducing regional development disparities and disparities among
611 different population groups.

612 Second, the empirical results confirm that urbanization is a novel element-influencing happiness
613 inequality. At the macro level, we examined the relationship between urbanization and happiness
614 inequality by using the fixed-effects model with instrumental variable based on the urbanization rate
615 and happiness inequality across various provinces in China. At the micro level, using the happiness
616 distribution data from the China General Social Survey (CGSS) conducted between 2003 and 2018,
617 which included 94,336 respondents, we conducted robustness tests on the relationship between
618 urbanization and happiness inequality using the Recentered Influence Function (RIF) regression. Both
619 regression results indicate that urbanization exacerbates happiness inequality in China. We explain the
620 relationship between urbanization and happiness inequality by analyzing the changes in income
621 inequality, wealth inequality, and public service inequality with urbanization advances. Based on the
622 theoretical analysis, we selected the urban-rural income gap, the disparity of house prices among
623 regions, and the public service gap between urban and rural areas as mechanism variables to test the
624 mechanism of urban influence on happiness inequality in China. We found that on the one hand,
625 urbanization significantly reduced the urban-rural income gap, which helped to alleviate the inequality
626 of happiness. On the other hand, with the advancement of urbanization, the regional disparity in
627 housing prices and the urban-rural gap in public services continue to widen, leading to the aggravation
628 of happiness inequality. Under the combined influence of various factors, urbanization has a positive
629 (deteriorating) effect on happiness inequality.

630 Third, the relationship between urbanization and happiness inequality exhibits a stage-specific
631 pattern. Prior to 2014 (the traditional urbanization stage), the degree of happiness inequality in China
632 worsened with the deepening of urbanization. However, this worsening effect disappeared after 2014
633 (the new-type urbanization stage). The results provide an explanation for the overall rise in happiness
634 inequality in China prior to 2014, where a crude urbanization strategy not only resulted in severe losses
635 in economic efficiency but also in people's subjective well-being. In addition, this study examines the
636 urban-rural heterogeneity of the impact of urbanization on happiness inequality, concluding that the
637 urbanization process has a more pronounced impact on happiness inequality in urban areas compared
638 to rural areas.

639 This study has some reference value for China's urbanization. There has long been an argument
640 that China should accelerate its urbanization further (e.g., Chen & Dai, 2011; Yao & Wu, 2019; Wan &
641 Zhang, 2021). However, we do not stand with this view. Our findings confirm that crude urbanization
642 can seriously damage happiness inequality, and it was true in China at least until 2014. Happiness
643 inequality in China has declined in recent years as the quality of urbanization has improved, however,
644 without devoting more policy attention to improving income inequality, wealth inequality and
645 inequality in public services, there is every chance that the damage of urbanization to the distribution of
646 happiness will return. Furthermore, one thing which should not be ignored is that the Chinese

647 government has set a long-term goal of achieving common prosperity for all national citizens[20] by
648 2050. We believe that the orientation for Chinese policymakers is further improving urbanization
649 quality and advancing urbanization steadily, rather than accelerating the urbanization process, given
650 that inequality in China remains severe. This study is significant not only for China but also for other
651 developing countries. Urbanization contributed about 300% of the increase in income inequality at the
652 national level in the Philippines, more than 50% in Indonesia, and slightly less than 15% in India
653 (Kanbur & Zhuang, 2013). If research on urbanization and happiness inequality is carried out in these
654 countries, the results will not be more optimistic than in China.

655   This study is not free of limitations. First, this study is not supported by detailed data on the
656 wealth of Chinese residents, which largely constrains the study of the mechanisms by which
657 urbanization affects happiness inequality. Second, we used one-time self-reported happiness data in our
658 empirical research, which may be affected by short-term events, leading to certain biases in the
659 measurement results. Employing a composite scale for measuring happiness, such as the Oxford
660 Happiness Questionnaire, is a desirable direction for improvement. Therefore, future studies with better
661 data conditions or empirical strategies may consider improving these deficiencies.
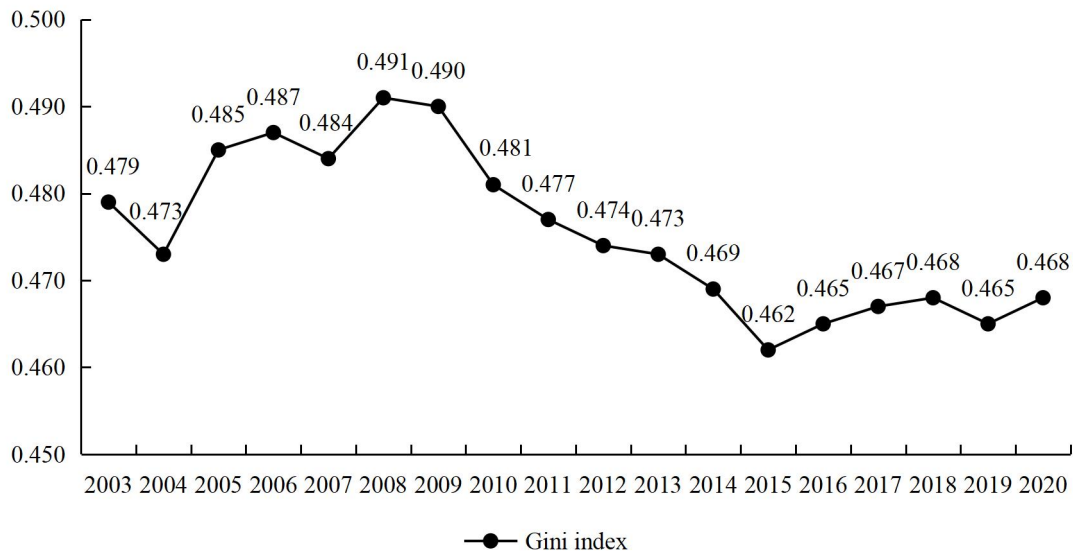
662

663   *Appendix*

664   *Appendix 1.*

665

666 **Fig. A1** The trend of income Gini Index in China from 2003 to 2020. (Source: The *China Yearbook of Household Survey*,
667 https://data.cnki.net/yearbook/Single/N2022010292)

668

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20 That is, prosperity for all rather than a few (including both material and spiritual prosperity). See details on the following website: https://www.12371.cn/special/19da/bg/
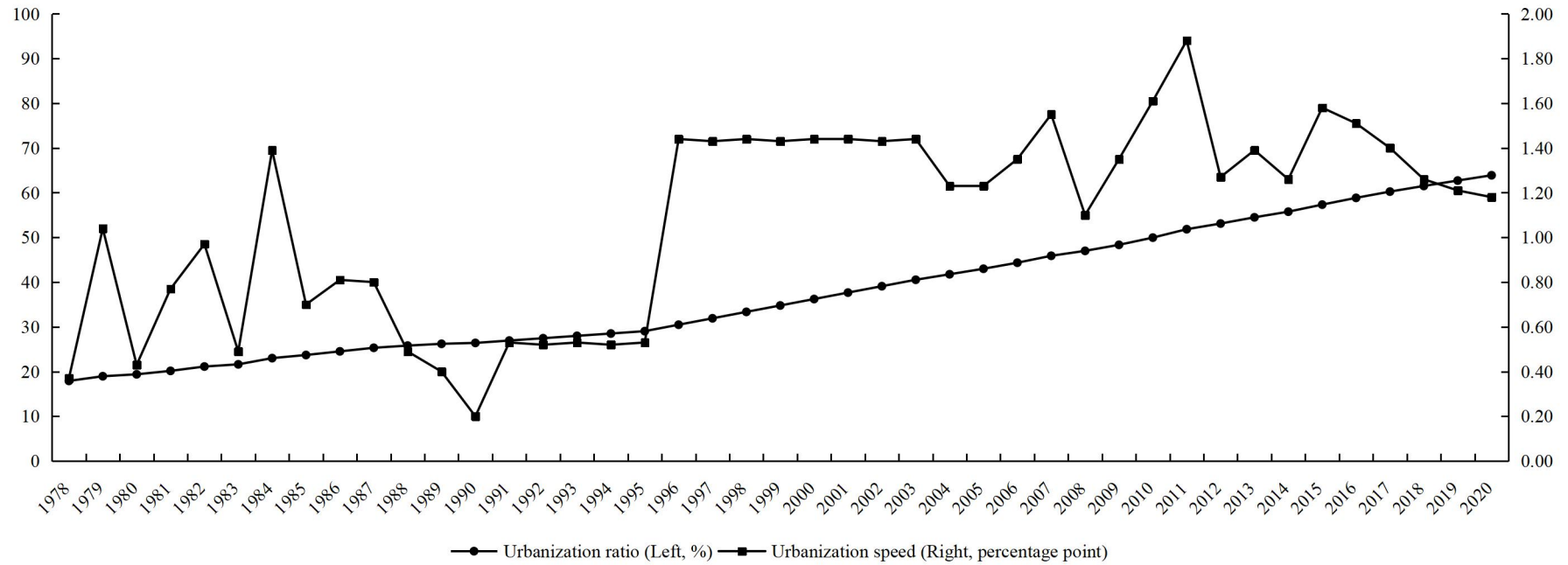
Appendix 2.

Fig. A2 China's urbanization development since 1978. (Source: *China Statistical Yearbook*, http://www.stats.gov.cn/tjsj/ndsj/)

Appendix 3.

Table A1 The standard deviation of happiness of provinces in China from 2003 to 2018

	2003	2005	2006	2008	2010	2011	2012	2013	2015	2017	2018
Beijing	0.704	0.760	0.671	0.941	0.758	0.804	0.734	0.673	0.817	0.733	0.747
Tianjin	0.866	0.698	0.573	0.990	0.823	0.962	0.763	0.750	0.681	0.712	0.766
Hebei	0.856	0.719	0.802	0.799	0.831	0.640	0.759	0.696	0.939	0.801	0.788
Shanxi	0.853	0.732	0.688	1.032	0.716	0.796	0.804	0.761	0.822	0.809	0.785
Inner Mongolia	1.021	0.789	0.747	1.012	0.769	-	1.033	1.133	0.951	0.729	0.502
Liaoning	0.888	0.785	0.684	0.887	0.690	0.821	0.759	0.951	0.789	0.768	0.847
Jilin	0.749	0.973	0.792	1.271	0.829	0.948	0.914	0.825	0.821	0.852	0.771
Heilongjiang	0.803	0.715	0.884	0.839	0.867	1.011	0.862	0.800	0.984	0.863	0.920
Shanghai	0.651	0.794	0.706	0.801	0.824	0.867	0.800	0.815	0.899	0.678	0.678
Jiangsu	0.695	0.794	0.695	0.865	0.823	0.825	0.741	0.827	0.880	0.762	0.706
Zhejiang	0.770	0.813	0.707	0.733	0.834	0.747	0.821	0.921	0.763	0.744	0.717
Anhui	0.841	0.792	0.696	0.998	0.844	0.856	0.851	0.810	0.812	0.837	0.760
Fujian	0.763	0.697	0.740	0.958	0.948	1.000	0.990	0.839	0.868	0.695	0.781
Jiangxi	0.785	0.576	0.703	1.047	0.977	0.967	0.959	0.876	0.796	0.911	0.801
Shandong	0.680	0.778	0.723	0.779	0.747	0.801	0.740	0.802	0.716	0.694	0.752
Henan	0.759	0.712	0.697	1.058	0.867	0.927	0.847	0.815	0.752	0.706	0.818
Hubei	0.896	0.786	0.790	0.789	0.864	0.890	0.797	0.796	0.929	0.862	0.797
Hunan	0.730	0.634	0.743	1.011	0.853	0.822	0.798	0.871	0.848	0.907	0.819
Guangdong	0.729	0.700	0.698	0.877	0.834	0.894	0.695	0.794	0.753	0.747	0.710
Guangxi	0.812	0.791	0.671	1.042	0.788	0.957	0.890	1.092	0.921	0.989	0.779
Hainan	0.786	0.711	0.745	-	0.675	-	-	-	-	-	-
Chongqing	0.938	0.733	0.702	0.955	0.829	0.821	0.942	0.787	0.886	0.857	0.924
Sichuan	0.916	0.769	0.688	0.946	0.879	0.744	0.885	0.815	0.729	0.797	0.777
Guizhou	0.734	0.748	0.520	1.072	0.995	1.062	1.083	1.000	0.759	0.879	0.722
Yunnan	0.768	0.753	0.740	1.090	0.925	0.892	0.953	1.062	0.794	0.824	0.808
Tibet	-	-	-	-	1.214	-	-	-	-	-	-
Shaanxi	0.713	0.693	0.880	0.915	0.917	0.890	0.889	0.886	0.899	0.890	0.894
Gansu	0.814	0.806	0.696	0.890	1.128	0.929	1.030	1.034	1.196	1.068	1.010
Qinghai	-	-	-	-	0.878	0.884	0.947	0.888	1.024	0.834	0.610
Ningxia	-	-	-	1.137	0.883	-	1.094	0.909	1.224	0.913	0.907
Xinjiang	0.788	0.887	0.840	0.921	0.897	-	1.023	-	-	-	-
Hong Kong	-	-	-	-	-	-	-	-	-	-	-
Macao	-	-	-	-	-	-	-	-	-	-	-
Taiwan	-	-	-	-	-	-	-	-	-	-	-

Note: "-" means data missing.

Appendix 4.

Table A2 Descriptive statistics results of micro-data

Variables	Description	Mean	S.D.
Dependent Variable			
Happiness	1 = very unhappy, 2 = unhappy, 3 = normal, 4 = happy, 5 = very happy.	3.666	0.910

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Independent Variables

Urbanization Rate	Urbanization rate in the region where the respondents are located.	0.563	0.154

Control Variables

Age	The actual age of the respondent at the time of the interview.	48.21	16.22
Age_2	The square of the respondent's actual age divided by 100.	25.87	16.34
Gender	1 = male, 0 = female.	0.478	0.500
Hukou	1 = rural, 0 = urban.	0.502	0.500
Health	1 = very unhealthy, 2 = unhealthy, 3 = normal, 4 = healthy, 5 = very healthy.	3.495	1.140
Income	Total annual household income.	10.19	1.639
Education	1 = uneducated, 2 = primary school, 3 = middle school, 4 = high school, 5 = college, 6 = graduate student.	3.061	1.274
Marriage	1 = married, 0 = other.	0.791	0.407
Employ	1 = employed, 0 = other.	0.571	0.495
Politics Status	1 = CPC, 0 = other.	0.182	0.386

Note: "-" means not applicable; the "*Income*" in the table are the results after logarithms are taken.

Table A3　RIF regression results and regression results excluding data from 2008

	(I)	(II)	(III)
	Fixed-effect model	*Fixed-effect model with instrumental variable*	*RIF*
U	0.544***	0.905**	0.255**
	(0.185)	(0.370)	(0.108)
Controls	Yes	Yes	Yes
Constant	Yes	Yes	Yes
Fixed-effects	Yes	Yes	Yes
R^2	0.564	0.163	0.155
N	250	250	94,336

Table A4　Descriptive statistics results of macro-data

Variables	Description	Mean	S.D.
Urbanization and income gap			
Per Capita GDP	Per capita regional gross domestic product.	10.360	0.668
Square of Per Capita GDP	The square of per capita GDP divided by 100.	1.078	0.137
Industrial Structure	The proportion of the output value of the secondary industry and the tertiary industry to the regional gross domestic product.	0.882	0.0620
Open	The proportion of total imports and exports in GDP.	0.314	0.383
Financial Development	The proportion of total imports and exports in GDP.	3.002	1.086
Fiscal Expenditure	Total public expenditure in the general government budget.	7.678	0.950
Urbanization and house price disparity			
Urban Population	Number of permanent residents in urban areas.	7.718	0.645
Per Capita GDP	Per capita regional gross domestic product.	10.390	0.518
Industrial Structure	The proportion of the output value of the secondary industry and the tertiary industry to the regional gross domestic product.	0.881	0.0470

Disposable Income	Per capita disposable income in urban areas	10.01	0.350
Government Intervention	The ratio of government fiscal expenditure to GDP.	0.092	0.023
Financial Development	The proportion of total imports and exports in GDP.	2.647	0.677
Sales Area of Commercial Housing	-	7.945	0.880
Land price	The real estate land transaction price.	5.249	1.091
Urbanization and public service gap			
Per Capita GDP	Per capita regional gross domestic product.	10.36	0.668
Square of Per Capita GDP	The square of per capita GDP divided by 100.	1.078	0.137
Rural Population	Number of permanent residents in rural areas.	7.298	0.976
Industrial Structure	The proportion of the output value of the secondary industry and the tertiary industry to the regional gross domestic product.	0.882	0.0620
Fiscal Expenditure	The proportion of total imports and exports in GDP.	7.678	0.950
Open	The proportion of total imports and exports in GDP.	0.314	0.383

Note: "-" means not applicable; the "*Per Capita GDP*", "*Square of Per Capita GDP*", "*Fiscal Expenditure*", "*Disposable Income*", "*Sales Area of Commercial Housing*", "*Land price*", and "*Rural Population*" in the table are the results after logarithms are taken.

Reference

Wan, G. (2011). China's Urbanization by 2030. International Economic Review, 6, 99–111 (in Chinese). doi: CNKI:SUN:GJPP.0.2011-06-014

United Nations. (2018). Revision of World Urbanization Prospects. address: https://population.un.org/wup/Download/

Fan, Y., Wang, J., & Zhang, X. (2020). Thoughts and Suggestions on Promoting the High-quality Development of County Economy. Macroeconomic Management, 9, 60–62 (in Chinese). doi: 10.19709/j.cnki.11-3199/f.2020.09.021

Zhu, K., Li, J., & Yue, F. (2011). Empirical Analysis on the Relationship Between China Urbanization and Economic Growth. Statistical Research, 28(9), 80–87 (in Chinese). doi: 10.19343/j.cnki.11-1302/c.2011.09.013

Yang, J., Liu, K., & Zhang, Y. (2018). Happiness Inequality in China. Journal of Happiness Studies. doi: 10.1007/s10902-018-0067-z

Cai, J., Zhang, L., Zhao, Y., & Coyte, P. (2018). Psychological Mechanisms Linking County-Level Income Inequality to Happiness in China. International Journal of Environmental Research and Public Health, 15(12), 2667. doi: 10.3390/ijerph15122667

Wang, H., Cheng, Z., & Smyth, R. (2019). Wealth, Happiness and Happiness Inequality in China. Wealth(s) and Subjective Well-Being, 445–461. doi: 10.1007/978-3-030-05535-6_20

Kollamparambil, U. (2019). Happiness, Happiness Inequality and Income Dynamics in South Africa. Journal of Happiness Studies. doi: https://doi.org/10.1007/s10902-019-00075-0

Veenhoven, R. (2005). Inequality Of Happiness in Nations. Journal of Happiness Studies, 6(4), 351–355. doi: 10.1007/s10902-005-0003-x

Helliwell, J. F., Huang, H., & Wang, S. (2017). The Social Foundations of World Happiness. World Happiness Report. address: https://worldhappiness.report/ed/2017/

Stevenson, B., & Wolfers, J. (2008). Happiness Inequality in the United States. The Journal of Legal Studies, 37(S2), S33–S79. doi: 10.1086/592004

Dutta, I., & Foster, J. (2012). Inequality of Happiness in the U.S.: 1972-2010. Review of Income and Wealth, 59(3), 393–415.

doi: 10.1111/j.1475-4991.2012.00527.x

Niimi, Y. (2016). What Affects Happiness Inequality? Evidence from Japan. Journal of Happiness Studies. doi: 10.1007/s10902-016-9835-9

Easterlin, R. A., McVey, L. A., Switek, M., Sawangfa, O., & Zweig, J. S. (2010). The happiness-income paradox revisited. Proceedings of the National Academy of Sciences, 107(52), 22463–22468. doi: 10.1073/pnas.1015962107

Li, H., & Zhang, X. (2022). The distribution effect of urbanization: Theoretical deduction and evidence from China. Habitat International, 123, 102544. doi:10.1016/j.habitatint.2022.102544

Yao, Y., & Wu, P. (2019). The Income Distribution Effect of China's Urbanization: Theoretical and Empirical Evidence. Economist, 9, 5–14 (in Chinese). doi: 10.16158/j.cnki.51-1312/f.2019.09.001

Wu, D., & Rao, P. (2016). Urbanization and Income Inequality in China: An Empirical Investigation at Provincial Level. Social Indicators Research, 131(1), 189–214. doi: 10.1007/s11205-016-1229-1

Taylor, J. R. (2015). The China Dream is an Urban Dream: Assessing the CPC's National New-Type Urbanization Plan. Journal of Chinese Political Science, 20(2), 107–120. doi:10.1007/s11366-015-9341-7

Su, J., & Wei, H. (2018). The Course, Inspiration and Expectation of China's Urbanization over the Past 40 Years of Reform and Opening-Up. Reform, 49-29 (in Chinese). address: https://kns.cnki.net/kcms2/article/abstract?v=3uoqIhG8C44YLTlOAiTRKibYlV5Vjs7i0-kJR0HYBJ80QN9L51zrP3MvesL zhvajD4FvQgxBcMMmPYSAsA-0t5CSxJyboM3n&uniplatform=NZKPT

Zhao, J., & Zhang, X. (2021). Reform of Household Registration System in China: A Historical Review, Reform Valuation and Trend Judgment. Macroeconomics, 9, 125-132+160 (in Chinese). doi:10.16304/j.cnki.11-3952/f.2021.09.011

Xiao, Y., Song, Y., & Wu, X. (2018). How Far Has China's Urbanization Gone? Sustainability, 10(8), 2953. doi: 10.3390/su10082953

Huang, Y. (2002). Can money buy happiness? Sichuan People's Publishing House, 227–228. ISBN: 9787220057946

Brockmann, H., Delhey, J., Welzel, C., & Yuan, H. (2008). The China Puzzle: Falling Happiness in a Rising Economy. Journal of Happiness Studies, 10(4), 387–405. doi: 10.1007/s10902-008-9095-4

Easterlin, R. A., Morgan, R., Switek, M., & Wang, F. (2012). China's life satisfaction, 1990-2010. Proceedings of the National Academy of Sciences, 109(25), 9775–9780. doi: 10.1073/pnas.1205672109

Liu, J., Xiong, M., & Su, Y. (2012). National Sense of Happiness in the Economic Growth Period: A Study Based on CGSS Data. Social Science in China, 12, 82–102 (in Chinese). address: https://kns.cnki.net/kcms/detail/detail.aspx?dbcode=CJFD&dbname=CJFD2012&filename=ZSHK201212005&uniplatform =NZKPT&v=6CD6zkuergWL4PB-9wiAUHADcw30heo-qqXL8FUXRM2mJf-8vjn60JmpBZFXNimd

Lam, K.-C. J., & Liu, P.-W. (2013). Socio-Economic Inequalities in Happiness in China and U.S. Social Indicators Research, 116(2), 509–533. doi: 10.1007/s11205-013-0283-1

Kang, W. C., Lee, J. S., & Song, B. (2020). Envy and Pride: How Economic Inequality Deepens Happiness Inequality in South Korea. Social Indicators Research. doi:10.1007/s11205-020-02339-2

Ferrer-i-Carbonell, A. (2005). Income and well-being: an empirical analysis of the comparison income effect. Journal of Public Economics, 89(5-6), 997-1019. https://doi.org/10.1016/j.jpubeco.2004.06.003

Oishi, S., Kesebir, S., & Diener, E. (2011). Income Inequality and Happiness. Psychological Science, 22(9), 1095–1100. doi: 10.1177/0956797611417262

Lakshmanasamy, T., & Maya, K. (2020). The Effect of Income Inequality on Happiness Inequality in India: A Recentered Influence Function Regression Estimation and Life Satisfaction Inequality Decomposition. Indian Journal of Human Development, 14(2), 161–181. doi: 10.1177/0973703020948468

Lewis, W. A. (1954). Economic Development with Unlimited Supplies of Labour. The Manchester School, 22(2), 139–191. doi: 10.1111/j.1467-9957.1954.tb00021.x

S. Kuznets. (1955). Economic growth and income inequality. American Economic Review, 45, 1-28.

Headey, B., Muffels, R., & Wooden, M. (2007). Money Does not Buy Happiness: Or Does It? A Reassessment Based on the Combined Effects of Wealth, Income and Consumption. Social Indicators Research, 87(1), 65–82. doi:10.1007/s11205-007-9146-y

Li, S., & Wan, H. (2015). Evolution of wealth inequality in China. China Economic Journal, 8(3), 264–287. doi:10.1080/17538963.2015.1110338

Li, X., Hong, G., & Huang, L. (2013). the Mystery of Land Finance Growth in China: Tax-sharing Reform, Strategic Interaction of Land Finance. China Economic Quarterly, 12, 1141–1160 (in Chinese). doi: 10.13821/j.cnki.ceq.2013.04.001

Tao, R., & Xu, Z. (2005). Urbanization, Rural Land System and Migrant's Social Security. Economic Research Journal, 12, 45–56 (in Chinese). address: https://kns.cnki.net/kcms/detail/detail.aspx?dbcode=CJFD&dbname=CJFD2005&filename=JJYJ200512005&uniplatform= NZKPT&v=u6IAwgcxgsOLZ4Fy91UhdJAcYMN0c0xZqqScINIj_kYMZ9OK7jwHVZBIDAhOBdaz

Han, H., Shu, X., & Ye, X. (2018). Conflicts and regional culture: the general features and cultural background of illegitimate housing demolition in china. Habitat International, 75, 67–77. doi: 10.1016/j.habitatint.2018.04.008

Li, C., & Fan, Y. (2020). Housing wealth inequality in urban China: the transition from welfare allocation to market differentiation. The Journal of Chinese Sociology, 7(1). doi:10.1186/s40711-020-00129-4

Guo, Y., Zhu, J., & Liu, X. (2018). Implication of rural urbanization with place-based entitlement for social inequality in China. Cities, 82, 77-85. https://doi.org/10.1016/j.cities.2018.05.007

Wang, Y., Li, Y., Huang, Y., Yi, C., & Ren, J. (2020). Housing wealth inequality in China: An urban-rural comparison. Cities, 96, 102428. doi:10.1016/j.cities.2019.102428

Zhang, Y., & Zhang, J. (2016). The Impact of Urbanization on Housing Price: Theory and Empirical Analysis. Public Finance Research, 6, 95e102 (In Chinese). doi:10.19477/j.cnki.11-1077/f.2016.06.009

Wang, X., Hui, E. C. M., & Sun, J. (2017). Population migration, urbanization and housing prices: Evidence from the cities in China. Habitat International, 66, 49-56. https://doi.org/10.1016/j.habitatint.2017.05.010

Wan, G., Wang, C., & Wu, Y. (2021). What Drove Housing Wealth Inequality in China? China & World Economy, 29(1), 32–60. doi:10.1111/cwe.12361

Baldini, M., Peragine, V., & Silvestri, L. (2017). Quality of Government and Subjective Poverty in Europe. CESifo Economic Studies. doi:10.1093/cesifo/ifx023

Easterlin, R. A. (2012). Happniess, growth, and public policy . Economic Inquiry, 51(1), 1–15. doi:10.1111/j.1465-7295.2012.00505.x

Chan, K. W. (2009). The Chinese Hukou System at 50. Eurasian Geography and Economics, 50(2), 197–221. doi:10.2747/1539-7216.50.2.197

Keung Wong, D. F., Li, C. Y., & Song, H. X. (2006). Rural migrant workers in urban China: living a marginalised life. International Journal of Social Welfare, 16(1), 32–40. doi:10.1111/j.1468-2397.2007.00475.x

Guan, X., Wei, H., Lu, S., Dai, Q., & Su, H. (2018). Assessment on the urbanization strategy in China: Achievements, challenges and reflections. Habitat International, 71, 97-109. https://doi.org/10.1016/j.habitatint.2017.11.009

Meng, X., & Zhang, J. (2001). The Two-Tier labour Market in Urban China. Journal of Comparative Economics, 29(3), 485–504. doi:10.1006/jcec.2001.1730

Wu, W. (2004). Sources of Migrant Housing Disadvantage in Urban China. Environment and Planning A, 36(7), 1285–1304. doi:10.1068/a36193

Li, Y., Liu, N., Chen, H., & Shen B. (2022). Hasthe Integrated MedicalInsurance Relieved the Overwork of Migrant Workers? Chinese Rural Economy, 7, 124-144 (in Chinese). https://kns.cnki.net/kcms/detail/detail.aspx?dbcode=CJFD&dbname=CJFDAUTO&filename=ZNJJ202207007&uniplatform =NZKPT&v=CREj9z6n57R4oERlrnWBON8ipJQI7DQDhoh3DdMuRfgDRWgPECOhF-O7_ALPWPmp

Yang, C., & Zhang, Z. (2022). Research on Employment Quality Differences between Migrant Population and Local Population:

Status Quo, Sources and Causes. Journal of Finance and Economics, 2022, 48(4), 19-33 (in Chinese). doi: 10.16538/j.cnki.jfe.20211218.401

Combes, P., Démurger, S., Li, S., & Wang, J. (2020). Unequal migration and urbanisation gains in China. Journal of Development Economics, 142, 102328. https://doi.org/10.1016/j.jdeveco.2019.01.009

Lu, M., & Chen, Z. (2006). Urbanization, Urban-Biased Policies, and Urban-Rural Inequality in China, 1987-2001. The Chinese Economy, 39(3), 42–63. doi:10.2753/ces1097-1475390304

Yu, B. (2021). Ecological effects of new-type urbanization in China. Renewable and Sustainable Energy Reviews, 135, 110239. doi:10.1016/j.rser.2020.110239

Shan, Z., & Huang, Y. (2013). An Analysis of the Concept, Goals, Contents, Planing Strategies and Misunderstandings of New Urbanization. Urban Planning Forum, 2, 16–22 (in Chinese). address: https://kns.cnki.net/kcms/detail/detail.aspx?dbcode=CJFD&dbname=CJFD2013&filename=CXGH201302005&uniplatform=NZKPT&v=c-5ljmaAjkZw9iUA12wYZONwTV4oEB7N7BVVH3nSAQE1AdDK1USsTd-hGxsR602f

Chen, J., & Dai, D. (2011). Accelerate Urbanization Process and Improve Income Inequality. Public Finance Research, 2, 48–52 (in Chinese). doi: 10.19477/j.cnki.11-1077/f.2011.02.011

Wan, G., & Zhang, Y. (2021). Accelerating Urbanization Explained: The Role of Information. China Economic Quarterly, 2, 465–492 (in Chinese). doi: 10.13821/j.cnki.ceq.2021.02.05

Kanbur, R., & Zhuang, J. (2013). Urbanization and Inequality in Asia. Asian Development Review, 30(1), 131–147. doi: 10.1162/adev_a_00006

Oyvat, C. (2016). Agrarian Structures, Urbanization, and Inequality. World Development, 83, 207–230. doi:10.1016/j.worlddev.2016.01.019

He, L., & Zhang X. (2022). The distribution effect of urbanization: Theoretical deduction and evidence from China. Habitat International, 123, 102544. doihttps://doi.org/10.1016/j.habitatint.2022.102544.

Chen, Y., & Zhang, Y. (2015). The Inequality Effect and social Integration in Urbanization. Social Sciences in China, 6, 78-95 (in Chinese).

Ding, H., Chen, Q., & Ni, R. (2018). The Inequality Effect of Urbanization, Citizenization and the Health of Residents. Nankai Economic Studies, 6, 23-35 (in Chinese). doi:10.14116/j.nkes.2018.06.002

De Bruin, A., & Liu, N. (2019). The urbanization-household gender inequality nexus: Evidence from time allocation in China. China Economic Review. doi:10.1016/j.chieco.2019.05.001

Hua, W., Wang, L., & Fang, X. et al. (2023). Urbanization and energy equity: an urban-rural gap perspective. Environmental Science and Pollution Research, 30, 46847–46868. doi:https://doi.org/10.1007/s11356-023-25139-w

Chen, J., Davis, D. S., Wu, K., & Dai, H. (2015). Life satisfaction in urbanizing China: The effect of city size and pathways to urban residency. Cities, 49, 88–97. doi:10.1016/j.cities.2015.07.011

Chen, M., Liu, W., Lu, D., Chen, H., & Ye, C. (2018). Progress of China's new-type urbanization construction since 2014: A preliminary assessment. Cities, 78, 180–193. doi:10.1016/j.cities.2018.02.012

Chen, W., Wang, G., Xu, N., Ji, M., & Zeng, J. (2023). Promoting or inhibiting? New-type urbanization and urban carbon emissions efficiency in China. Cities, 140, 104429. doi:https://doi.org/10.1016/j.cities.2023.104429.

Lin, Y. (2002). China's urban development and rural modernization. Journal of Peking University(Philosophy and Social Sciences), 4, 12-15 (in Chinese).

Yue, X., & Ying, C. (2022). Changes in Inequality of Household Housing Wealth in China(1995—2018). Nankai Economic Studies, 12, 97-116 (in Chinese). doi:10.14116/j.nkes.2022.12.006

Miu, X., Wang, T., & Gao, Y. (2017). The Effect of Fiscal Transfer on the Gap Between Urban-rural Public Services Based on a Grouping Comparison of Different Economic Catching-up Provinces. Economic Research Journal, 52(2), 52-66 (in Chinese).

Li, D., & Pei, Yu. (2019). A Research on the Impact of Urban-Rural Public Service Gap on Urban-Rural Income Gap. Journal of

Finance and Economics, 45(4), 111-123 (in Chinese). doi:10.16538/j.cnki.jfe.2019.04.009

Pischke, J. S., & Velling, J. (1997). Employment effects of immigration to germany: an analysis based on local labor markets. Review of Economics & Statistics, 79(4), 594-604. doi:10.1162/003465397557178.

Tao, Y. (2020). Urbanization and Urban-rural Labor Income Gap: Based on the Provincial Panel Data. Inquiry into Economic Issues, 8, 87-96 (in Chinese).

Firpo, S., Fortin, N., & Lemieux, T. (2009). Unconditional quantile regressions. Econometrica, 77(3), 953–973.

Zhu, Y., & Lv, G. (2020). Research on the Subjective Welfare Effect of Population Mobility in the Process of Urbanization. Statistical Research, 37(10), 115-128 (in Chinese). doi:10.19343/j.cnki.11-1302/c.2020.10.010

Xie, E. (2020). Urbanization and Poverty Reduction in Rural China. Economic Science, 3, 5-16 (in Chinese). doi:10.12088/PKU.jjkx.2020.03.01

Lu, M., & Chen, Z. (2004). Urbanization, Urban-biased Economic Policies, and Urban-rural Inequality. Economic Research Journal, 6, 50-58 (in Chinese).

Ye, Z., Chen, X., & Zhang, S. (2019). Can Financial Development reduce the urban-rural income gap? — Evidence from China. Journal of Financial Research, 2, 42-56 (in Chinese).

Zhang, Y., & Wang, H. (2019). Determinants and Forecast on Urban-rural Household Income Gap in China. Journal of Quantitative & Technological Economics, 36(3), 59-75 (in Chinese). doi:10.13653/j.cnki.jqte.2019.03.004

Dong, Z., Guan, H., & Ming, Y. (2010). Factor Analysis on China's Real Estate Price: An Empirical Research of Panel Data. Journal of China University of Geosciences(Social Sciences Edition), 10(2), 98-103 (in Chinese). doi:10.16493/j.cnki.42-1627/c.2010.02.021

Zhang, Y., & Zhang, J. (2016). The Impact of Urbanization on Housing Price: Theory and Empirical Analysis. Public Finance Research, 6, 95-102 (in Chinese). doi:10.19477/j.cnki.11-1077/f.2016.06.009

Li, J. (2017). Research on Influencing factors of housing price fluctuation: An empirical analysis based on data from 2005 to 2015. Inquiry into Economic Issues, 9, 30-37 (in Chinese).

Zhang, F., Wu, J., & Gong, M. (2020). Fiscal Imbalances and the Equalization of Urban-rural Public Service in China: A Theoretical Analysis and an Empirical Test. Economic Theory and Business Management, 12, 28-42 (in Chinese).

Si, W. (2021). Chinese Agricultural and Rural Modernization in the Process of Economic Transformation. Journal of Nanjing Agricultural University(Social Sciences Edition), 21(5), 11-19 (in Chinese). doi:10.19714/j.cnki.1671-7465.2021.0068

Wu, W., Yi, J., & Zheng, J. (2010). Household Portfolios in China: Empirical Analysis on the Effect of Life cycle, Wealth and House. Economic Research Journal, 45(S1), 72-82 (in Chinese).

Cui, Z., & Han, Q. (2016). Research on Interactive Relationship Between Basic Public Service Equalization Level and Urbanization. Journal of Huazhong Agricultural University(Social Sciences Edition), 2, 118-125 (in Chinese). doi:10.13300/j.cnki.hnwkxb.2016.02.017

Shourjya Deb, & Adam Okulicz-Kozaryn. (2023). Exploring the association of urbanisation and subjectivewell-being in India. Cities, 132, 104068. doi:https://doi.org/10.1016/j.cities.2022.104068.

Dang, Y., Chen, L., Zhang, W., Zheng, D., & Zhan, D. (2020). How does growing city size affect residents' happiness in urban China? A case study of the Bohai rim area. Habitat International, 102120. doi:10.1016/j.habitatint.2020.102120

Ye, C., & Feng, H. (2014). Is City 'The Besieged City' of Happiness? — An Analysis of the Happiness Paradox Between Urban and Rural China Using CGSS data. China Population,Resources and Environment, 24(6), 16-21 (in Chinese).