

Zhang, Junlai; Chen, Simiao; Prettnner, Klaus

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Measuring “High-Quality Development” and Progress Toward “Common Prosperity” in China

Junlai Zhang^{1,2} · Simiao Chen^{2,3} · Klaus Prettner¹ 

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Abstract

In 2017, the 19th National Congress of the Communist Party of China introduced the concept of “high-quality development” to shift China’s focus from high-speed growth to a more inclusive concept. In August 2021, the Chinese leadership emphasized “common prosperity” as an essential goal for modernization. However, measuring “common prosperity” in the context of “high-quality development” is challenging and requires reliable and practical indicators. Apart from income, such indicators should include other important aspects of human well-being and they should be easy to calculate and interpret. To this end, we build on recent research and use Lifetime Income (LI), Inequality-Adjusted Lifetime Income (ILI), Healthy Lifetime Income (HLI), and Inequality-Adjusted Healthy Lifetime Income (IHLI) for the first time to assess China’s performance. We calculate the four indicators for China for the period 1990 to 2019 at a national level and employ the ILI indicator at a provincial level for the years 1998, 2008, and 2018. In addition, we calculate the LI indicator for all 31 of Mainland China’s provinces for the years 1990, 2000, 2010, and 2020. Compared with other indicators such as the Human Development Index, the measures we use: (i) take into account health and equality as important components of well-being; (ii) have a mathematically defined unit of measurement that allows for a straightforward interpretation; (iii) do not depend on arbitrary weights; (iv) are able to capture tradeoffs that follow directly from their definitions; (v) are not mathematically bounded from above; and (vi) come with limited data requirements. We show that progress towards “common prosperity” was remarkable from 1990 to 2020, but there is still substantial inequality across Chinese provinces. Finally, we discuss several policy measures that could foster “common prosperity”.

Keywords Beyond GDP · High-quality development · Common prosperity · Lifetime income · Inequality · Health

✉ Klaus Prettner
klaus.prettner@wu.ac.at

¹ Department of Economics, Vienna University of Economics and Business (WU), Vienna, Austria

² Faculty of Medicine and University Hospital, Heidelberg Institute of Global Health, Heidelberg University, Heidelberg, Germany

³ Chinese Academy of Medical Sciences & Peking Union Medical College, Beijing, China

1 Abbreviations

GDP	Gross Domestic Product
LI	Lifetime Income
ILI	Inequality-Adjusted Lifetime Income
HLI	Healthy Lifetime Income
IHLI	Inequality-Adjusted Healthy Lifetime Income
LEXP	Life Expectancy
HALE	Healthy Life Expectancy
HDI	Human Development Index
CPI	Consumer Price Index
PPP	Purchasing Power Parity
GDPpc	Per Capita GDP
pppGDPpc	GDP per capita adjusted for PPP

1 Introduction

With the reforms and opening of China's economy from 1978 onwards, China's economic growth has attracted plenty of attention. In 2019, China's per capita gross domestic product (GDP) reached around 16,000 purchasing power parity (PPP) adjusted international dollars, an increase by a factor of 10 since 1990 (World Bank, 2024). However, drawbacks such as increasing environmental degradation and pollution, an underfunded healthcare system, and barriers to internal migration (see, for example, Chen et al., 2023) signal that the overall well-being of the Chinese population improved by less than its material well-being (see also Zhao & Liang, 2020). Notably, and in addition, income inequality has increased. Approaching what some define as an inequality warning line – a Gini coefficient of 0.4 – in 1993, China has become one of the countries with the most unequal income distributions (Tian, 2012a). Also, the development of Chinese provinces is unbalanced, with coastal urban provinces enjoying much higher income levels than rural landlocked provinces. High levels of inequality in the population and unbalanced development across provinces could spell social problems (Keng, 2006) and could undermine the goal of the Chinese leadership to foster “common prosperity” through “high-quality development”.

In an effort to ameliorate the issues mentioned above, various economic policies were implemented over time as outlined in Fig. 1. These policies mainly concerned internal reforms and liberalization. They shared the goal of opening China to the outside world and strengthening international cooperation. To achieve sustainable development, the policies addressed the need for a higher standard of living, for example, by improving medical care and education, and by fostering a more equal income distribution.

The report of the 19th National Congress of the Communist Party of China in 2017 claimed that China had shifted from a stage of rapid growth to a stage of “high-quality development” (Government of China, 2017). Since then, “high-quality development” has become the overarching goal of China's development strategy, and promoting “high-quality development” is now China's official stance as the guiding principle of economic policy (Xinhua News Agency, 2017). However, it is not entirely clear how progress towards “common prosperity” through “high-quality development” could be measured. In our contribution, we follow Bloom et al. (2021) and Zhang et al. (2023) and propose four different indicators for this purpose: Lifetime Income (LI), Inequality-Adjusted Lifetime

Income (ILI), Healthy Lifetime Income (HLI), and Inequality-Adjusted Healthy Lifetime Income (IHLI). We calculate these indicators from 1990 to 2019 for Mainland China and show that, when considering longevity and health in addition to income by using LI and HLI, the well-being thus measured grows faster than per capita GDP; by contrast, considering longevity, health, and the Gini coefficient as a measure for inequality, the well-being thus measured through ILI and IHLI has increased, but the rise was less steep than suggested by per capita GDP growth. Compared with other indicators, LI, ILI, HLI, and IHLI have the following advantages: (i) they take into account health and equality as important components of well-being; (ii) their natural unit of measurement allows for a straightforward interpretation; (iii) they do not depend on arbitrary weights; (iv) any tradeoffs among their different components follow directly from the definition of these measures; (v) they are not mathematically bounded from above; and (vi) they come with limited data requirements. These advantages render the proposed indicators uniquely suited for the purpose of measuring high-quality development, particularly compared to

- dashboards of indicator systems; they often duplicate measures, imply more demanding data requirements, do not have a defined tradeoff among different indicators/components, and sometimes rely on highly subjective sub-indicators;
- the human development index (HDI, see, for example, ul Haq 2003; Lind, 2004; Klugman et al., 2011); it does not have an economic interpretation, includes components that are measured in different units such as life expectancy and education, which raises the need for imposing arbitrary weights on the different components, and it is restricted to the range between zero and one, which complicates cross-country comparisons and tracing progress over time when countries cluster at high index values.

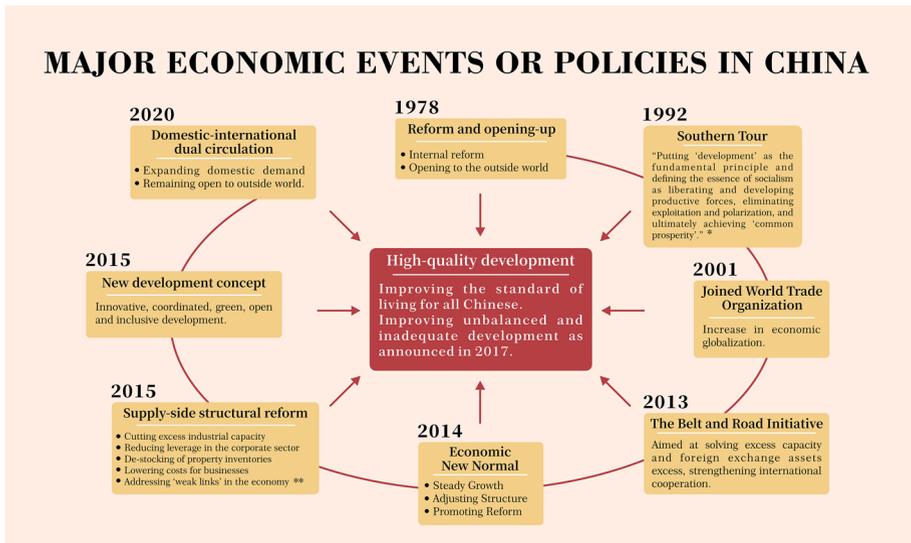


Fig. 1 Major economic events and policies in China. *Southern Tour speeches were published in Selected Works of Deng Xiaoping in 1993. **Quoted from Boulter 2018

The remainder of the article is organized as follows. In Section 2, we discuss existing indicator systems that are used to evaluate “high-quality development” in China. In Section 3, we define and describe the LI, ILI, HLI, and IHLI indicators. In Section 4, we compute these indicators for Mainland China from 1990 to 2019 and illustrate their development. In Sections 5 and 6, we discuss the ILI and LI results with a particular view on inter-provincial development across China. Finally, in Section 7, we discuss the advantages and disadvantages of LI, ILI, HLI, and IHLI and provide some general policy recommendations to foster “common prosperity”.

2 Existing Indicator Systems

As far as existing approaches to measuring “high-quality development” in China are concerned, Li et al. (2019), Ma et al. (2019), Nie and Jian (2020), and Liu et al. (2021) created indicator systems consisting of 27, 5,¹ 19, and 71 indicators, respectively. While such indicator systems portray China’s economy comprehensively, they come with the aforementioned disadvantages of a dashboard of indicators in the sense that they are data intensive, difficult to evaluate, and cumbersome to use as a guide for economic policy. In addition, the different sub-components are not combined, which renders comparisons over time and across regions very difficult. Finally, some of the indicators are based on surveys and are therefore highly subjective.

Wei and Li (2018) consider 10 aspects and 53 indicators in their measurement system, which includes—among others—indicators on structural change, innovation-driven development, allocative efficiency, stable economic growth, infrastructure improvements, and environmental protection. However, the resulting index does not lend itself to direct economic interpretation and using 53 sub-indicators complicates data collection and leads to difficulties in monitoring progress.

Xu (2018) suggests indicators that are based on the International Monetary Fund’s (IMF) Quality of Growth Index (QGI), which includes the three areas “growth fundamentals”, “social development”, and “environmental protection” to measure the quality of growth in China between 1980 and 2017. However, this indicator system does not include inequality and lacks an economic interpretation.

Finally, Shi and Ren (2018) present an index for Chinese provinces that is based on indicators of economic growth and social achievement. However, the resulting index again does not have an economic interpretation. Furthermore, its 8 sub-indicators complicate data-collection and lead to difficulties in monitoring progress. In addition, Shi and Ren (2018) do not consider health, which is arguably an important aspect of “high-quality development”. Finally, their index depends on arbitrary weights of the sub-components.

¹ These are five first-level indicators (high-quality supply, high-quality demand, economic efficiency, economic stability, and opening up), which are further complemented by 15 second-level indicators and 28 third-level indicators.

Table 1 LI, ILI, HLI and IHLI in Mainland China from 1990 to 2019

Year	pppGDPpc	LEXP	HALE	Gini	LI	ILI	HLI	IHLI
1990	1,424	68.01	60.48	0.321	96,832	65,749	86,118	58,474
1991	1,535	68.17	60.75	0.328	104,619	70,304	93,230	62,650
1992	1,732	68.73	61.07	0.337	119,024	78,913	105,760	70,119
1993	1,950	69.22	61.40	0.345	134,939	88,385	119,708	78,409
1994	2,179	69.52	61.71	0.352	151,479	98,158	134,470	87,136
1995	2,391	70.01	62.03	0.356	167,423	107,820	148,338	95,530
1996	2,601	70.27	62.34	0.359	182,787	117,167	162,164	103,947
1997	2,813	70.67	62.71	0.364	198,780	126,424	176,382	112,179
1998	3,004	71.17	63.00	0.371	213,831	134,500	189,289	119,063
1999	3,207	71.42	63.24	0.379	229,021	142,222	202,808	125,944
2000	3,452	71.88	63.42	0.388	248,110	151,843	218,896	133,964
2001	3,712	72.61	63.73	0.399	269,538	161,992	236,605	142,199
2002	4,024	72.99	64.03	0.410	293,718	173,293	257,666	152,023
2003	4,401	73.37	64.30	0.415	322,893	188,892	282,976	165,541
2004	4,817	73.75	64.49	0.419	355,260	206,406	310,646	180,486
2005	5,335	74.11	64.86	0.422	395,356	228,516	345,984	199,979
2006	5,980	74.50	65.42	0.424	445,518	256,618	391,175	225,317
2007	6,795	74.76	65.87	0.427	508,021	291,096	447,575	256,461
2008	7,413	74.87	66.00	0.429	555,017	316,915	489,277	279,377
2009	8,069	75.34	66.38	0.430	607,969	346,543	535,620	305,304
2010	8,885	75.60	66.58	0.429	671,666	383,521	591,552	337,776
2011	9,680	75.90	66.88	0.428	734,748	420,276	647,368	370,295
2012	10,371	76.19	67.21	0.422	790,166	456,716	697,019	402,877
2013	11,102	76.45	67.50	0.414	848,765	497,377	749,338	439,112
2014	11,851	76.72	67.74	0.416	909,204	530,975	802,818	468,846
2015	12,612	76.98	67.99	0.416	970,861	566,983	857,495	500,777
2016	13,399	77.22	68.12	0.416	1,034,655	604,238	912,802	533,077
2017	14,244	77.25	68.28	0.417	1,100,284	641,466	972,587	567,018
2018	15,134	77.74	68.42	0.418	1,176,577	684,768	1,035,540	602,684
2019	15,978	77.97	68.53	0.418	1,245,754	725,029	1,094,894	637,228

pppGDPpc refers to purchasing power-adjusted per capita GDP in international dollars with a base year of 2017 (2017 INT\$), LEXP refers to life expectancy at birth, HALE refers to healthy life expectancy at birth, and Gini refers to the Gini coefficient of disposable income. LI represents Lifetime Income, ILI represents Inequality-Adjusted Lifetime Income, HLI represents Healthy Lifetime Income, and IHLI represents Inequality-Adjusted Healthy Lifetime Income. All values are provided in 2017 international dollars

3 Proposed Indicators to Measure the “Quality of Development”: LI, ILI, HLI, and IHLI

To address the shortcomings of existing indicators, we build upon Bloom et al. (2021), Fan et al. (2018) and Zhang et al. (2023) and propose using Lifetime Income (LI), Inequality-Adjusted Lifetime Income (ILI), Healthy Lifetime Income (HLI), and Inequality-Adjusted Healthy Lifetime Income (IHLI), as measures for “high-quality development” in China. LI

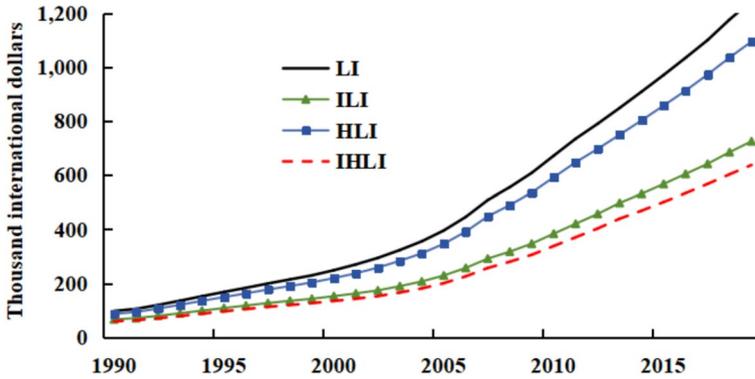


Fig. 2 LI, ILI, HLI and IHLI in Mainland China with a base year of 1977 *Note:* LI represents Lifetime Income, ILI represents Inequality-Adjusted Lifetime Income, HLI represents Healthy Lifetime Income, and IHLI represents Inequality-Adjusted Healthy Lifetime Income. All values are in 2017 international dollars



Fig. 3 ILI of 27 provinces in 1998 (left), 24 provinces in 2008 (middle), and 14 provinces in 2018 (right)

is defined as the product of per capita GDP (GDPpc), to capture material well-being, and life expectancy (LEXP), to capture longevity such that

$$LI = GDPpc \times LEXP. \tag{1}$$

This indicator represents the income that a person can expect to earn over the whole life cycle. The outcome is naturally expressed in the same unit as per capita GDP and, thus, has a straightforward economic meaning. This stands in sharp contrast to the indicators discussed above and to the Human Development Index (HDI), which lacks an economic interpretation. In addition, the weight of the different components of LI is a consequence of its formal definition: Lifetime Income cannot be defined differently than via the duration of life multiplied by the period income level. This implies that no need arises for imposing any (necessarily) arbitrary weights. Finally, and again in contrast to the HDI, LI is not bounded from above, which is an advantage because it allows tracing economic progress for sustained rises in life expectancy and income. In the case of the HDI, index values start to cluster between values of 0.9 and 1 for highly developed

economies such that further progress, as well as country differences, become difficult to assess (for a discussion of these problems and extensions of the HDI to address them, see, for example, Lind (2019) and Zirotgiannins et al. (2019). In contrast to per capita GDP alone, LI takes into account the important dimension of health through the duration of life. Given the same level of income, a country with better health and higher life expectancy would score higher according to this measure, which is a reasonable adjustment. From all the indicators that we use, LI is the least data intensive indicator and therefore it is available for all provinces we are interested in.

ILI considers, in addition to income and life expectancy, an inverse measure of the Gini coefficient (1-Gini) as a proxy for (in-)equality and, thus, unbalanced development. Formally, the indicator is defined as

$$ILI = GDPpc \times LEXP \times (1 - Gini) \tag{2}$$

and is the purchasing power adjusted income that a person can expect to earn over the whole life cycle but additionally adjusted for the level of inequality.

To better capture the aspect of health – and thereby partly also pollution – we define the HLI as a refinement of LI

$$HLI = GDPpc \times HALE. \tag{3}$$

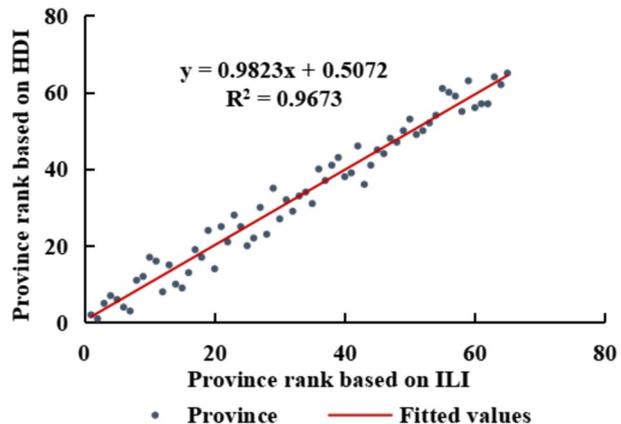
In this expression, healthy life expectancy (HALE) substitutes for LEXP, which means that only the years a person is expected to be in good health show up in the calculation. Thus, the interpretation of the indicator becomes the income that a newborn can be expected to earn during the life years they spend in good health.

Finally, we merge ILI and HLI to get the most comprehensive but also most data-intensive indicator, IHLI as

$$IHLI = GDPpc \times HALE \times (1 - Gini) \tag{4}$$

This indicator represents the income a newborn can expect to earn during the years they spend in good health but additionally adjusted for inequality. IHLI and ILI are primarily restricted by the scarce availability in past decades of Gini coefficient data for various countries and regions. Thus, LI and HLI will lead to much wider data coverage.

Fig. 4 Comparison between ILI and HDI rankings *Notes:* HDI refers to the Human Development Index, and ILI refers to Inequality-Adjusted Lifetime Income. HDI data source: Global Data Lab’s (2024) Human Development Indices (5.0). The red line represents the linear regression result with a slope of 0.9823 (p-value < 0.001) and an R² of 0.9673



Overall, the LI, ILI, HLI, and IHLI indicators have the following advantages over other indicators and dashboards of indicators that make them particularly suitable to measure “high-quality development” in China:

1. They require no more than straightforward computation and data input.
2. They have a direct economic interpretation because the units of measurement are compatible and allow for multiplication. This removes entirely the need for attaching arbitrary weights to the different sub-indicators.
3. They can reflect the quality of China’s economic development, particularly the aspects of “a good life for the people” (via the component of health incorporated in life expectancy and healthy life expectancy) and “balanced and adequate development” (via the component of the Gini index).
4. The sub-indicators are all objective outcome indicators, in contrast to subjective measures (e.g., happiness) or input measures (e.g., R&D expenditures).
5. Due to their units of measurement and the fact that they are not bounded from above, the indicators can be straightforwardly used for international and interregional comparisons and for tracing a country’s or region’s economic development over a long time horizon.

4 Construction of LI, ILI, HLI, and IHLI for Mainland China

To construct LI, ILI, HLI, and IHLI for Mainland China, we use the World Bank’s (2024) World Development Indicators data on life expectancy at birth (LEXP), GDP per capita adjusted for purchasing power (pppGDPpc) in international dollars with a base year of 2017, the Global Burden of Disease (GBD) Study 2019 on healthy life expectancy (HALE) (GBD, 2020) and both Solt (2020) and the World Inequality Database (2020) on the Gini coefficient of disposable income. Table 1 displays the results. The first column shows each year, while the second through fifth columns show the four components, pppGDPpc, LEXP, HALE, and Gini. The sixth to ninth columns display LI, ILI, HLI, and IHLI in international dollars with a base year of 2017.

Since 1990, China’s economy has experienced rapid growth overall. Per capita GDP grew by more than a factor of 10 from 1990 to 2019, with an average annual real growth rate of 8.69%. As far as LEXP is concerned, we observe that in 30 years’ time, China experienced an increase of nearly ten years, and in 2019, LEXP was close to 78 years. Only with respect to income inequality we observe a widening gap over the considered time span because the Gini coefficient was 0.321 in 1990 and rose to a peak of 0.430 in 2009.

From the perspective of the “quality” of economic development, we now turn to the combined evolution of the different indicators as displayed in Fig. 2. China’s LI increased 11.86 times from 1990 to 2019, with an average annual growth rate of 9.21%. The average annual growth rate of ILI amounts to 8.63%, that of HLI to 9.16% and that of IHLI to 8.59%. Overall, LI increased by less than HLI, and similarly, ILI experienced less growth than IHLI because healthy life expectancy rose at a slower rate than life expectancy. LI experienced a smaller increase compared to ILI, and HLI grew less than IHLI, because the Gini index (and hence inequality) rose. Such downward adjustments, which are a consequence of considering health and inequality, are reasonable if the aim is to consider the “quality” of development.

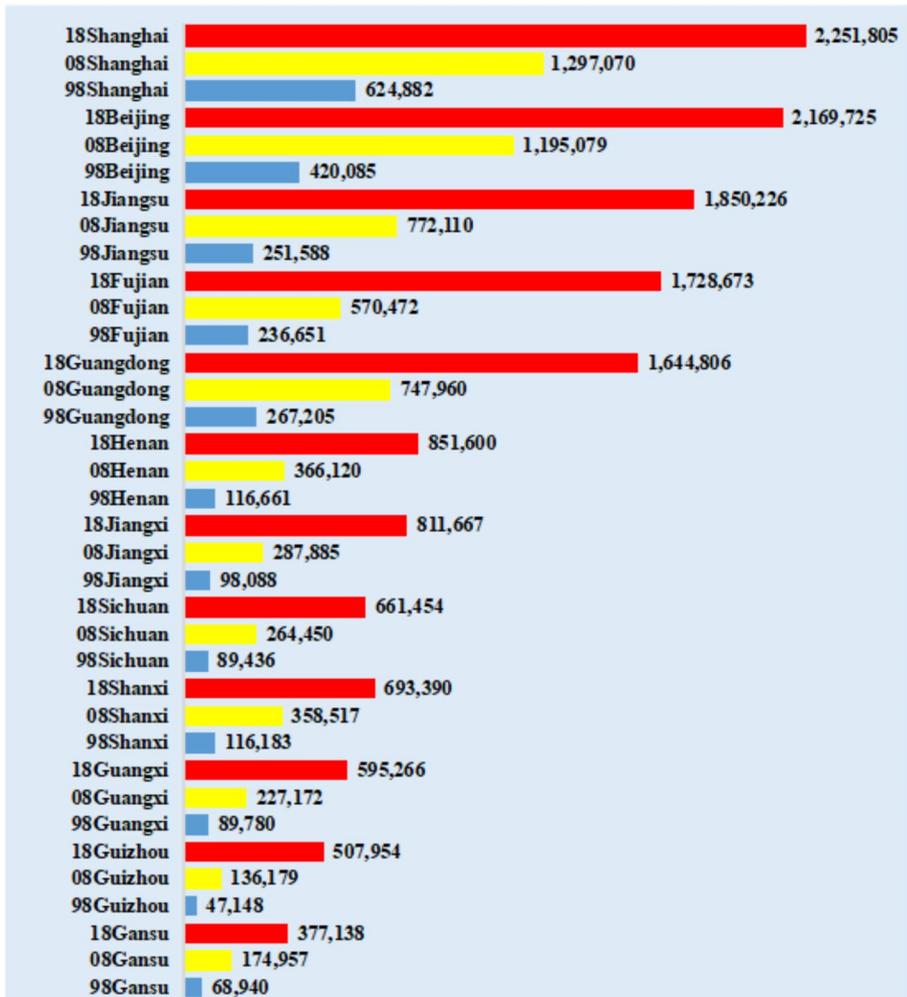


Fig. 5 ILI of 12 provinces of Mainland China in 1998, 2008 and 2018

5 Construction of ILI for Chinese Provinces

5.1 Data Sources

To construct the ILI for the provinces of Mainland China, we use the Global Data Lab’s (2024) Human Development Indices (5.0) data on life expectancy at birth. GDP per capita in Chinese yuan (GDPpc) for the different provinces is taken from the Wind Database (2023) with a base year of 1990.² The Gini coefficients for 27 provinces

² The corresponding PPP-adjustment calculations do not exist at China’s provincial level. In the Wind Database (2023), the GDP per capita is in current RMB prices. We adjust the current price GDPpc using the CPI to get the GDP per capita in constant 1990 prices. The data source of CPI is also from the Wind Database (2023).

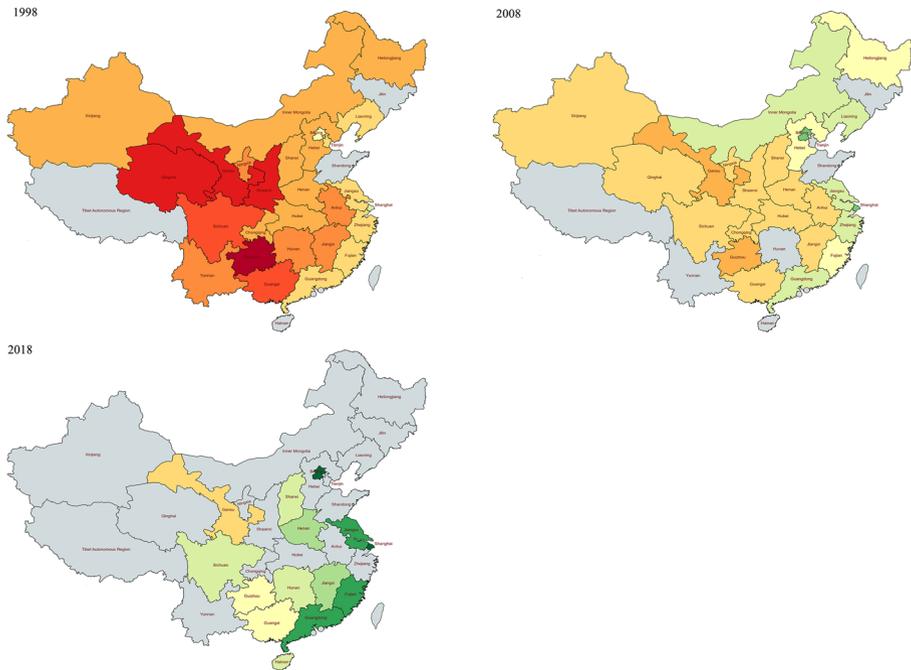


Fig. 6 ILE Map (top left map: ILE in 1998; top right map: ILE in 2008; bottom left map: ILE in 2018) *Note:* Provinces in grey had insufficient data to compute ILE for the particular year

in 1998 and of 24 provinces in 2008 are from *The Calculation of Gini Coefficient of Provincial Residents' Income and Analysis of Its Changing Trend* (Tian, 2012b), and the Gini coefficients in 2018 of Mainland China and of 14 provinces were taken from the *Study on Income Gap between Provinces in China: A comparative Analysis Based on Gini Coefficient Calculation of Provinces* (Sheng, 2021). Unfortunately, we do not have data on healthy life expectancy at the provincial level of Mainland China, so we can only calculate ILE, not IHLE for the different provinces.

5.2 Calculations

In the Appendix, Tables 4, 5, and 6 display the results. The first column shows the rank of the different provinces in terms of the ILE, the second column shows the province names, and the third through fifth columns show the three components of ILE: GDPpc, Gini, and LEXP. The final column displays ILE in Chinese yuan with a base year of 1990.

5.3 Results

In Fig. 3, we display the results for the different provinces in relation to the ILE of Mainland China. In 1998, nine provinces out of the 27 for which we had the necessary data for the calculations had an ILE that exceeded the mean ILE across these provinces. In 2008, eight out of 24 had a value above the mean ILE, and in 2018 there were only five provinces out of 14 above the average. In each of the three years, the number of provinces below the

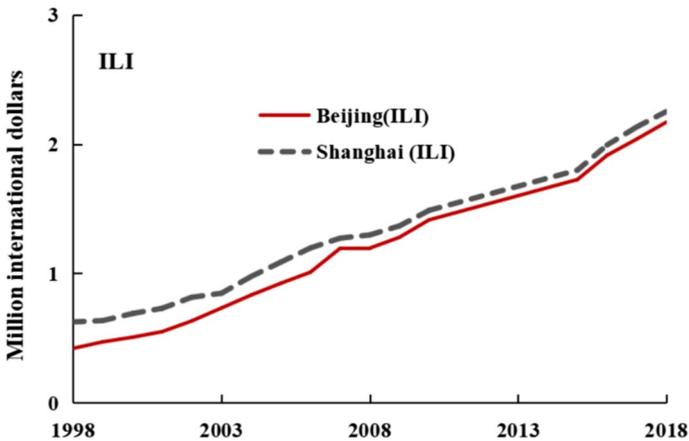


Fig. 7 Beijing and Shanghai's ILI from 1998 to 2018

mean, indicated by the brown markers, is consistently higher than the number of provinces above it, expressed as orange bars. The reason is that the average is strongly influenced by the high ILI values of Shanghai and Beijing, which further emphasizes the unbalanced nature of prosperity among Chinese provinces.

5.3.1 A Comparison of ILI & HDI by Province (1998, 2008, 2018)

Figure 4 displays the correlation between the ILI-based ranking and HDI-based ranking among the total 65 provincial measurements of Mainland China (27 provinces in 1998, 24 provinces in 2008, and 14 provinces in 2018). The correlation coefficient of 0.9673 shows a strong relation between them, which implies that ILI can be used as an indicator for measuring development. However, HDI is more data-intensive, and comes with the problems mentioned above, that it has no economic interpretation, no natural unit of measurement, depends on arbitrary weights on its components, and is bounded from above such that index values cluster below the upper bound. ILI preserves the advantages of per capita GDP, but also includes health and equality as additional dimensions (cf. Jones and Klenow, 2016; Bloom et al., 2021).

Figure 5 illustrates the increase of ILI in 12 provinces over the twenty-year span from 1998 to 2018. Shanghai has surpassed Beijing throughout the period, and both “provincial cities” greatly outpace the other provinces.

5.3.2 Comparing the Coastal Region with the Inland Region

Figure 6 shows maps of China filled with colors based on the provincial ILI data that are contained in Tables 4, 5, and 6 in the Appendix and refer to the years 1998, 2008, and 2018. The colors indicate the level of the ILI with red and orange shades referring to a lower value and green shades to a higher value. There is an obvious clustering because ILI gradually decreases from the coast eastward to the Central Region, and again from the

Table 2 LI values over time for the 31 provinces of Mainland China

Province	LI			
	1990	2000	2010	2020
Anhui	82,125	163,260	601,733	1,504,642
Beijing	337,706	683,332	1,937,701	3,463,681
Chongqing	83,768	175,584	743,979	1,736,819
Fujian	120,889	409,417	1,292,335	2,817,577
Gansu	73,897	132,876	416,065	765,058
Guangdong	180,148	486,931	1,533,791	2,417,471
Guangxi	73,266	156,802	570,424	996,346
Guizhou	52,075	85,619	346,198	1,022,344
Hainan	109,356	243,492	723,823	1,301,960
Hebei	103,063	292,768	914,391	1,260,851
Heilongjiang	135,815	294,894	807,193	1,036,326
Henan	76,534	209,502	755,724	1,385,976
Hubei	103,644	203,174	742,417	1,590,806
Hunan	82,190	168,463	640,693	1,344,283
Inner Mongolia	97,075	217,425	1,344,453	1,689,505
Jiangsu	150,519	422,422	1,587,275	2,916,661
Jiangxi	74,980	163,949	636,272	1,376,425
Jilin	118,658	279,475	1,002,504	1,298,000
Liaoning	189,454	402,171	1,310,478	1,483,880
Ningxia	93,234	182,492	721,598	1,209,258
Qinghai	94,368	155,005	536,840	895,158
Shaanxi	83,643	161,328	747,174	1,493,487
Shandong	128,085	337,643	1,250,682	1,784,750
Shanghai	444,507	923,886	2,066,939	3,366,871
Shanxi	105,432	190,668	732,734	1,172,177
Sichuan	75,218	163,960	562,691	1,254,224
Tianjin	252,180	571,775	2,094,453	2,347,801
Tibet	76,101	125,225	404,462	1,006,634
Xinjiang	107,268	221,180	618,530	1,078,181
Yunnan	77,712	140,931	386,929	1,061,687
Zhejiang	153,508	468,206	1,565,581	2,461,109

LI represents Lifetime Income. All values are provided in 1990 constant RMB values

Central Region to the Western Region. The Coastal Region has fared better than the Inland Region of China over twenty years.³

³ There are different approaches to the division of regions in China. In Sect. 5, we chose to divide China into the following three regions: the Coastal Region, the Central Region, and the West Region. The Coastal Region consists of nine coastal provinces: Liaoning, Hebei, Shandong, Jiangsu, Zhejiang, Fujian, Guangdong, Guangxi, and Hainan, as well as three municipalities (known as provincial cities): Beijing, Tianjin, and Shanghai. The Central Region consists of nine provinces: Heilongjiang, Jilin, Inner Mongolia, Shanxi, Henan, Hubei, Hunan, Jiangxi, and Anhui; and the West Region consists of ten provinces: Shanxi, Ningxia,

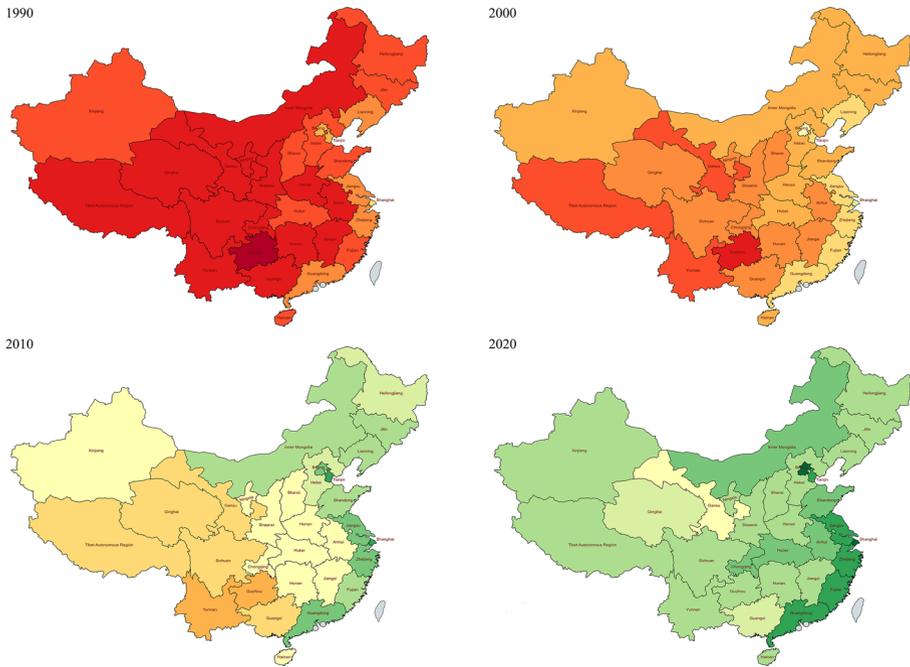


Fig. 8 LI Maps for 1990, 2000, 2010 and 2020 *Note:* LI represents Lifetime Income. All values are provided in 1990 constant RMB price (yuan)

In 1998, in the ranking of the top ten ILI provinces in China, all but one province were in the Coastal Region. Of the twenty-seven listed, the six least-developed provinces include five in the West (Shaanxi, Qinghai, Gansu, Guizhou, and Sichuan); and one in the Coastal Region (Guangxi). Because of lower GDPpc, lower life expectancy, and higher inequality, the Western provinces Gansu and Guizhou showed the worst performance in 1998. Ten years later, in 2008, in the ranking of the top ten provinces according to ILI, most of them were, again, in the Coastal Region. Again, the Western provinces Gansu and Guizhou, although they improved considerably, still exhibited the worst performance. In 2018, partially due to a lack of data, nearly all the highest ILI provinces were Coastal; Gansu and Guizhou were still the least developed of all.

5.3.3 Comparing Beijing with Shanghai

Next, we use Fig. 7 to compare Beijing and Shanghai’s development in 1998, 2008, and 2018. In 1998, GDP per capita was markedly lower in Beijing, which had a GDPpc of 7,414 yuan. In contrast, Shanghai’s was nearly 40.9% higher at 10,450 yuan. At that time, life expectancy at birth was 75.55 years in Beijing. In contrast, life expectancy in Shanghai was 77.59. In addition, the data show an imbalance in equality between the two

Footnote 3 (continued)

Qinghai, Gansu, Xinjiang, Sichuan, Yunnan, Guizhou and Tibet, plus Chongqing. The term Inland Regions includes the Central Region, and the West Region (Keng, 2006).

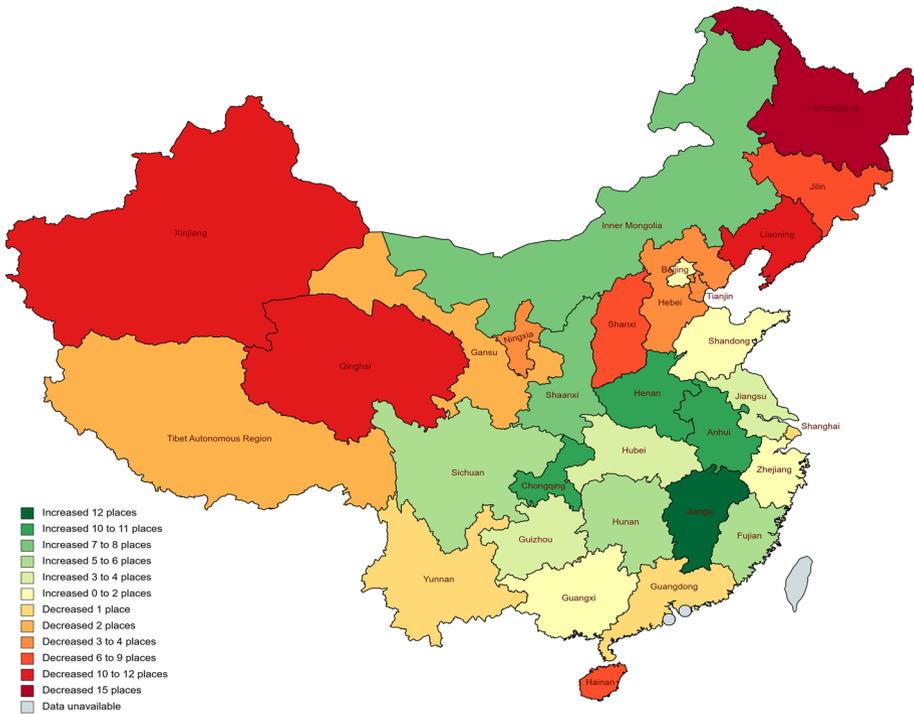


Fig. 9 Changes in province rank between 1990 and 2020

cities expressed by the Gini coefficient. 1998’s Gini coefficient was 0.250 in Beijing, much higher than the 0.229 in Shanghai. As a result, Shanghai’s ILI (624,882 yuan) towered over Beijing’s (420,085 yuan) by 48.7%.

Up to 2008, GDPpc in Beijing rose by more than Shanghai’s, thus narrowing the gap. Impressively, life expectancy in Beijing increased by 4.18 years over one decade, at a faster rate than Shanghai’s. Inequality in Shanghai rose by nearly 7 Gini points, which reflects negatively on “common prosperity”, while Beijing’s rose only by 4 Gini points. As a result,

Fig. 10 Comparison of LI and HDI rankings. Note: HDI data sources: Global Data Lab’s (2024) Human Development Indices (5.0)

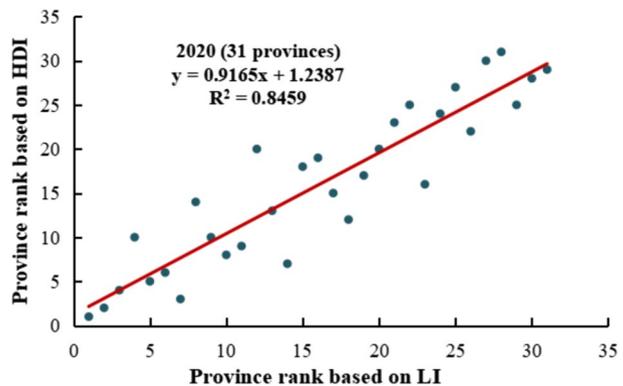


Table 3 Median to mean ratio and coefficient of variation from 1990 to 2020

Year	Median LI	Mean LI	Median to mean ratio	Standard deviation	Mean LI	Coefficient of variation
1990	103,063	126,981	0.812	82,961	126,981	0.653
2000	209,502	284,963	0.735	186,559	284,963	0.655
2010	743,979	954,712	0.779	504,808	954,712	0.529
2020	1,376,425	1,630,321	0.844	727,598	1,630,321	0.446

Source: Own calculations. Median to mean ratio = $\frac{\text{Median of LI}}{\text{Mean of LI}}$, variation = $\frac{\text{Standard deviation of LI}}{\text{Mean of LI}}$

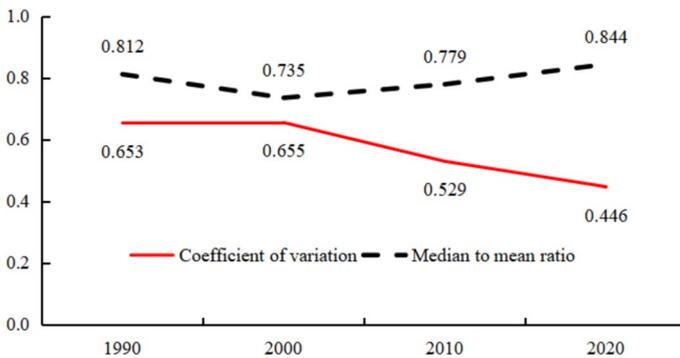


Fig. 11 Mainland China median to mean ratio and sigma convergence in terms of LI in 31 provinces from 1990 to 2020

Shanghai’s ILI (1,297,070 yuan) only surpassed Beijing’s ILI (1,195,079 yuan) by 8.53% in that year. Remarkably, in a ten-year span, Beijing’s ILI approached that of Shanghai. During the second decade of our analysis, the development gap was narrowed significantly between China’s political center, Beijing, and its center of commerce, Shanghai.

In 2018, GDP per capita in Beijing surpassed the corresponding value of Shanghai: 37,147 yuan versus 36,843 yuan, respectively. Life expectancy at birth became nearly the same at 82.85 years in Beijing and 82.93 years in Shanghai. However, in between 2008 and 2018, the Gini coefficient for Beijing remained stable, whereas in Shanghai it decreased. As a result, Beijing’s ILI (2,169,725 yuan) in 2018 was less than Shanghai’s (2,251,805 yuan) with Beijing’s ILI amounting to 96.35 percent of Shanghai’s ILI.

In Table 7 (see Appendix), when taking into account all three of ILI’s components (GDPpc, Gini, LEXP), Beijing and Shanghai were more prosperous than the rest of China in all three years examined. The data show that residents there can expect the longest lives. Also, both cities have low Gini coefficients compared to China overall. Indeed, Beijing and Shanghai witnessed a faster pace of development than other places in Mainland China. Many people want to move from lower-performing provinces to Beijing or Shanghai, which has resulted in government-imposed barriers to internal migration (Chen et al, 2023). These barriers have become more insurmountable in recent years and are managed via what is known as the Hukou system (Song, 2014).

5.3.4 Comparing Shanghai with Gansu

The least-developed Inland provinces exhibit a much lower ILI in comparison to the Coastal provinces due to a combination of shorter lifespans and high inequality. In 1998, Shanghai's ILI was more than 10 times that of Gansu, and in both 2008 and 2018, a substantial gap remains, as can be seen in Figs. 3 and 5, and in Tables 4, 5, and 6 in the Appendix. From 1998 to 2018, Gansu grew at a faster rate than Shanghai. Shanghai's average annual growth in terms of the ILI was 6.62% and Gansu's was 8.87%. The key driving force behind this pace of growth was a rise in GDPpc. Although Gansu's ILI climbed at a faster rate than Shanghai's, after 20 years of development, Gansu's ILI still did not reach the level that Shanghai enjoyed in 1998.

6 Construction of LI for all 31 Provinces of Mainland China

In this section, we analyze the robustness of our main results with respect to the use of a different indicator, LI. Since LI does not rely on inequality and, thus, does not require data on the Gini coefficient, using LI increases the data availability substantially such that we can compute the figures for all provinces, as well as more years (including 2020).

6.1 Data Sources

To construct LI for all 31 provinces of Mainland China, we use the Wind Database (2023), which provides life expectancy in ten-year intervals and Global Data Lab's Human Development Indices 5.0 (2024), which provide data on life expectancy at birth in yearly intervals. After adjusting for inflation using the Consumer Price Index (CPI)⁴, per capita GDP (GDPpc) in Chinese yuan for 31 provinces, sourced from the Wind Database (2023), is presented in 1990 constant prices.

6.2 Calculations

Table 2 contains LI calculations for 31 provinces at ten-year intervals from 1990 to 2020, illustrating the evolution of LI values across these years. Tables 8, 9, 10, and 11 in the Appendix contain the calculations in ten-year intervals, offering a detailed calculation for each decade. Furthermore, Tables 15, 16, 17, 18, 19, 20, and 21 in the Appendix provide calculations at five-year intervals, enabling a more frequent assessment.

6.3 Results

LI values, which reflect the average person's income over their expected lifespan, are presented in constant 1990 Chinese yuan (RMB). In analyzing data from Table 2, and Tables A5 to A8, we observe that in 1990 Shanghai had the highest LI at 444,507 yuan, while Guizhou had the lowest at 52,075 yuan, making Shanghai's LI 8.53 times that of Guizhou. By 2020, Beijing, with an LI of 3,463,681 yuan, marginally surpassed Shanghai, which had an LI of 3,366,871 yuan, making it the province with the highest

⁴ Provincial-level PPP-adjusted data for China appear to be currently unavailable.

LI. In the same year, Beijing’s LI was 4.53 times higher than that of Gansu, which had the lowest LI at 765,058 yuan.

Figure 8 displays the LI maps for the 31 provinces in 1990, 2000, 2010, and 2020, corresponding to the values in Table 2. In these maps, red indicates the lowest values, yellow represents intermediate values, and green represents highest values. It is evident that the 1990 map is predominantly red, shifting to orange-yellow in 2000, to yellow-green in 2010, and it is primarily green in 2020. This color progression visually illustrates the 31 provinces’ development from 1990 to 2020. However, it also reveals substantial ongoing regional imbalances.

In Fig. 9 and Table 12 in the Appendix, we depict the shifts in development rankings of the 31 provinces from 1990 to 2020. The color spectrum ranges from dark red (indicating a decrease of 15 places) to dark green (representing an increase of 12 places). The three northeastern provinces (Liaoning, Jilin, and Heilongjiang) and Northwestern Regions (Xinjiang and Qinghai) experienced significant declines. Notably, Heilongjiang plummeted from 8th place in 1990 to 26th in 2020. The most substantial advancements were seen in inland provinces like Jiangxi, Anhui, Chongqing, and Henan. Jiangxi, for instance, rose from 28th in 1990 to 12th in 2020, offering a stark contrast to Heilongjiang. Additionally, Coastal Regions, already ranking high, maintained their top positions. Furthermore, the western regions, impacted by geographical and structural problems (Wei & Fang, 2006), have consistently held lower rankings.

Figure 10 illustrates the Spearman correlation between provincial rankings based on LI and HDI in 2020. The figure demonstrates that LI-generated rankings are broadly in alignment with those derived from HDI, indicating again a high degree of consistency between these two measures across provinces.

To measure the convergence of Chinese regions, we calculated the ratio of the median to the mean LI (median of LI/mean of LI) and the coefficient of variation and tracked their evolution over time. The results are shown in Table 3 and in Fig. 11. A higher ratio of the median to the mean suggests a more equitable distribution across regions because the mean is influenced by outliers, whereas the median remains unaffected. The disparity among the 31 provinces initially decreases and then grows from 1990 to 2020, with the overall disparity in 2020 being lower than in 1990. This is consistent with the evolution of the coefficient of variation, which shows an inverse relation to the median to mean ratio. Thus, according to both measures, we observe convergence from 1990 to 2020, demonstrating a general move towards more balanced development among the 31 provinces (see, for example, Kufenko et al., 2020; Young et al., 2008, for the use of the coefficient of variation in assessing convergence processes).

Overall, the results obtained using LI are very much consistent with the results obtained using ILI in the previous section. While LI maximizes data coverage (due to the fact that it does not rely on the Gini coefficient), ILI is arguably a more nuanced measure of the quality of regional development due to the inclusion of the inequality component. Overall, we believe that using both measures comes with advantages and disadvantages so that displaying both of them yields additional important insights.

7 Discussion

We propose Lifetime Income (LI), Inequality-Adjusted Lifetime Income (ILI), Healthy Lifetime Income (HLI), and Inequality-Adjusted Healthy Lifetime Income (IHLI) to measure “common prosperity” and “high-quality development” in China. Compared with other indicators such as the HDI, these four indicators have many advantages: (i) they take into account health and equality, (ii) their given unit of measurement implies a straightforward interpretation, (iii) they do not depend on arbitrary weights, (iv) they are able to capture a natural tradeoff among their components and this tradeoff follows directly from the mathematical definition of these four indicators, (v) they are not mathematically bounded from above, and (vi) they require only limited data inputs and computation efforts. All these advantages render these four indicators uniquely suited to measuring “common prosperity” and “high-quality” development. Of course, as is true for all indicators, these four indicators come with limitations, for example: (i) they do not capture education, (ii) they only capture environmental aspects via the effect of pollution on life expectancy or healthy life expectancy, and (iii) they require more data than per capita GDP by construction. However, we hope that by removing some of the shortcomings of other indicators, these four indicators will prove useful in the discussion of “high-quality” development in China.

Our computation of these four indicators (LI, ILI, HLI, and IHLI) for China shows that all four have been rising substantially over the relevant time period from 1990 to 2019. LI increased by less than HLI, and similarly, ILI experienced less growth than IHLI because healthy life expectancy rose at a slower rate than life expectancy. LI experienced a smaller increase compared to ILI, and HLI grew less than IHLI, because the Gini index (and hence inequality) rose. Such a downward adjustment, which is a consequence of considering health and inequality, is warranted when measuring the “quality” of development.

In addition, Fig. 14 and Table 13 in the Appendix reveal the similarity in development trends from 1990 to 2019 between China and India when applying LI, ILI, HLI, and IHLI indicators. China’s LI witnessed nearly a 12-fold increase over the period, with a notable annual growth rate of 9.21%, outpacing India’s more moderate growth. This observation highlights China’s rapid progress compared to India’s. From 1990 to 2019, both countries experienced higher average growth rates in LI and HLI compared to GDPpc, while ILI and IHLI grew at a slower pace than GDPpc. During the 1990–2019 period, economic growth of China and India was accompanied by significant improvements in health and lifetime duration, substantially enhancing individual well-being and quality of life. However, the increase in income inequality, even amidst material well-being improvements, suggests that the fruits of economic growth have not been equitably distributed, leaving the income and well-being of lower-income groups without proportionate enhancement. A focus solely on GDPpc growth may obscure the widening gap between the rich and the poor. In other words, the surpassing of material indicators by well-being indicators emphasizes the quality of economic growth, offering a more comprehensive measure of societal well-being and sustainable development. Therefore, the adjustment of the indicator values is a (desired) consequence of the shift of focus from material well-being to a broader concept.

Turning to regional disparities, China’s provincial-level ILI and LI show a clustering that reflects historical regional characteristics. Coastal regions exhibit the highest values, whereas the values of the indicators decrease when moving inland from the east to the west. Overall, this implies that China’s economic development is unbalanced. The

Northeast region is notably an outlier; its ranking is decreasing over the entire period, and, unlike all other regions, its indicator values decreased between 2015 and 2020.

To achieve the goal of “high-quality development” and move toward “common prosperity” in China, the following policy measures may be helpful:

- 1) First, we recommend using indicators such as LI and ILI in addition to per capita GDP for assessing progress. Although China has long-term GDP goals and assesses development accordingly, such a perspective does not account for health or (in-)equality. If ILI and LI are used as performance assessment indicators, they will better reflect equality and health, and thereby helping foster awareness and leading to additional attention to these important aspects of well-being.
- 2) While the Chinese population benefited from economic growth in the past, the gains were distributed unequally: high-income groups benefited more than low-income groups. Thus, measures should be taken to increase the income of low-income people so that they can share in the gains of development (Tian, 2012a). While many policies that reduce inequality tend to reduce efficiency, there are also policies for which this is not the case. For example, reducing corruption and rent-seeking has a strong potential for raising efficiency and reducing inequality at the same time (Prettner & Rostam-Afschar, 2020). Expanding subsidies for education of the children of poor families, e.g., in terms of stipends and student housing, also tends to foster economic growth and reduce inequality (Bloom et al., 2021; Prettner & Schäfer, 2021). Reducing distortive income taxation and substituting it by taxing land (which is of almost inelastic supply) or by taxing pollution (a negative externality) can also go a long way in increasing efficiency and reducing inequality (Prettner and Rostam-Afschar, 2020). Finally, abandoning the restrictions on migration could lead to a more efficient allocation of labor within China, while, at the same time, it would allow low-income parts of the population to move to high-income places, and thereby raise their incomes substantially (Chen et al., 2023). Overall, removing restrictions on migration would also contribute to reducing unbalanced development across regions.
- 3) With respect to increasing life expectancy, which is one of the most important determinants of individual well-being, reducing non-communicable diseases and their economic impact, investing in health screening, taxing alcohol, tobacco, and sugar at higher rates, reducing air pollution, and improving the efficiency of health expenditure utilization have all been identified as policies that can deliver a high impact at a comparatively low cost (Bloom et al., 2011; Luo et al., 2024; Chen et al., 2019, 2021).

Appendix

Figures 23, 25, and Table A19 indicate that East China leads in LI performance, while West China (encompassing Northwest and Southwest) lags behind. Between 2015 and 2020, the Southwest surpassed the Northwest, and Central China began outpacing Northeast China (see Fig. 23). Northeast China uniquely experienced a decline in LI, greatly contrasting against the rapid economic growth and quality of development observed in other regions of China (Gong and Wang, 2022; Gao & Taniguchi, 2023).

(See Figs. 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, and 26 and Tables 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21 and 22).

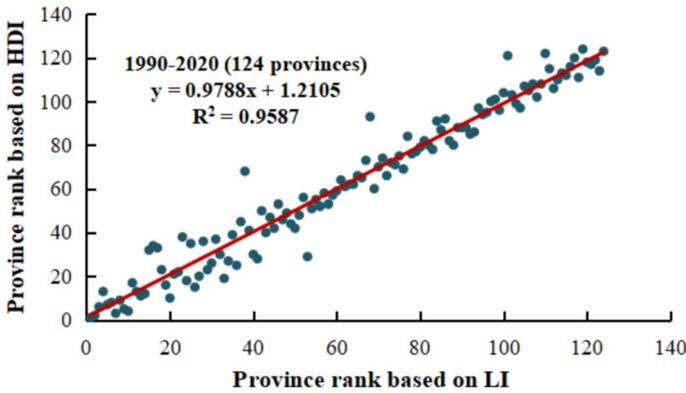


Fig. 12 Comparison between LI and HDI rankings for 1990, 2000, 2010 and 2020

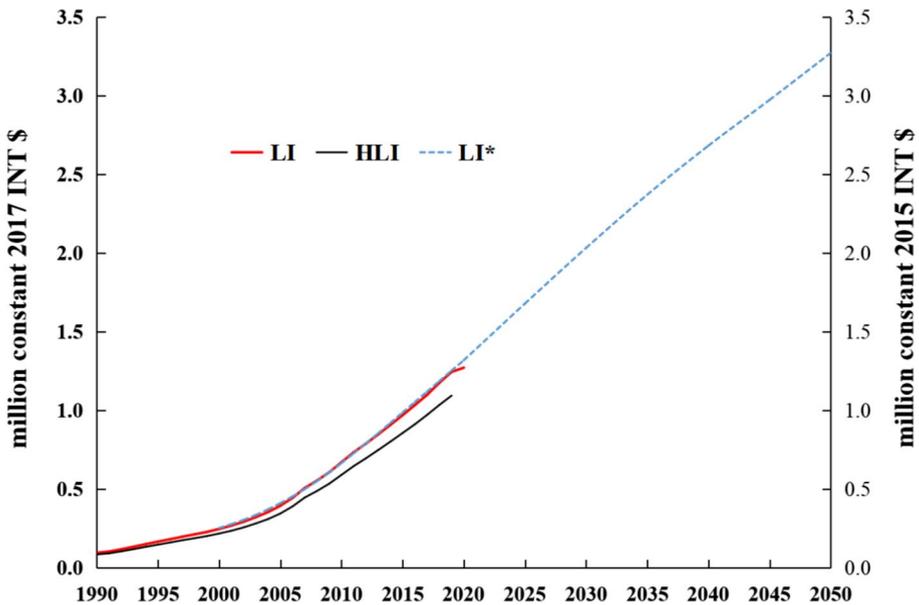


Fig. 13 LI and HLI in Mainland China from 1990 to 2050. Data sources: OECD (2023). PPP GDP per capita in 2015 international dollars. OECD Data. Retrieved from <https://www.compareyourcountry.org/> (accessed on January, 2023). Statista. (2023). Life expectancy retrieved from <https://www.statista.com/statistics/> (accessed January 2023). Note: LI and HLI values are in 2017 INT\$. LI* values are in 2015 INT\$

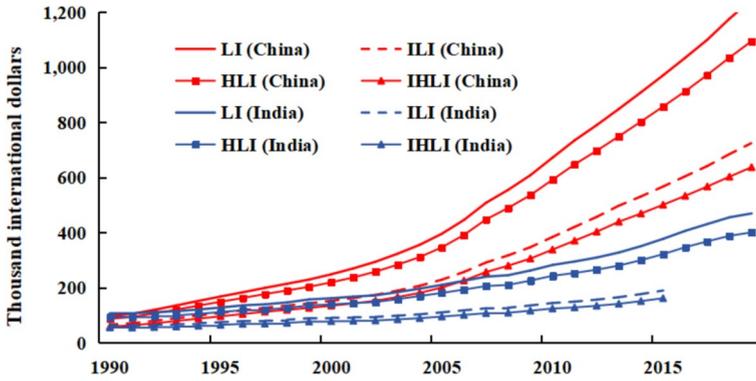


Fig. 14 LI, ILI, HLI and IHLI in Mainland China and India from 1990 to 2019 *Note:* ILI represents Inequality-Adjusted Lifetime Income, HLI represents Healthy Lifetime Income, and IHLI represents Inequality-Adjusted Healthy Lifetime Income. All values are provided in 2017 international dollars

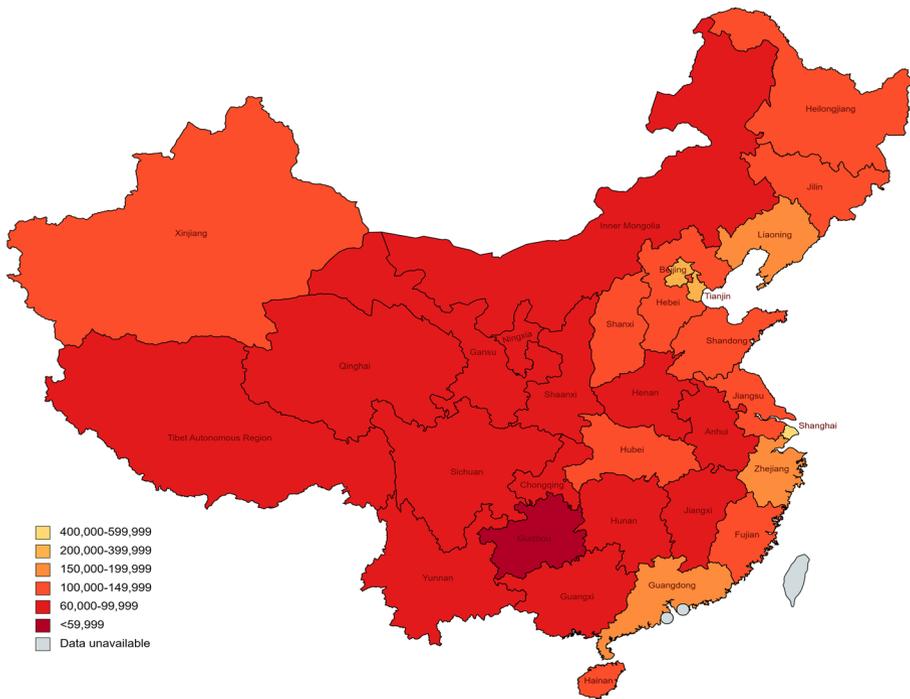


Fig. 15 LI values of 31 provinces, 1990

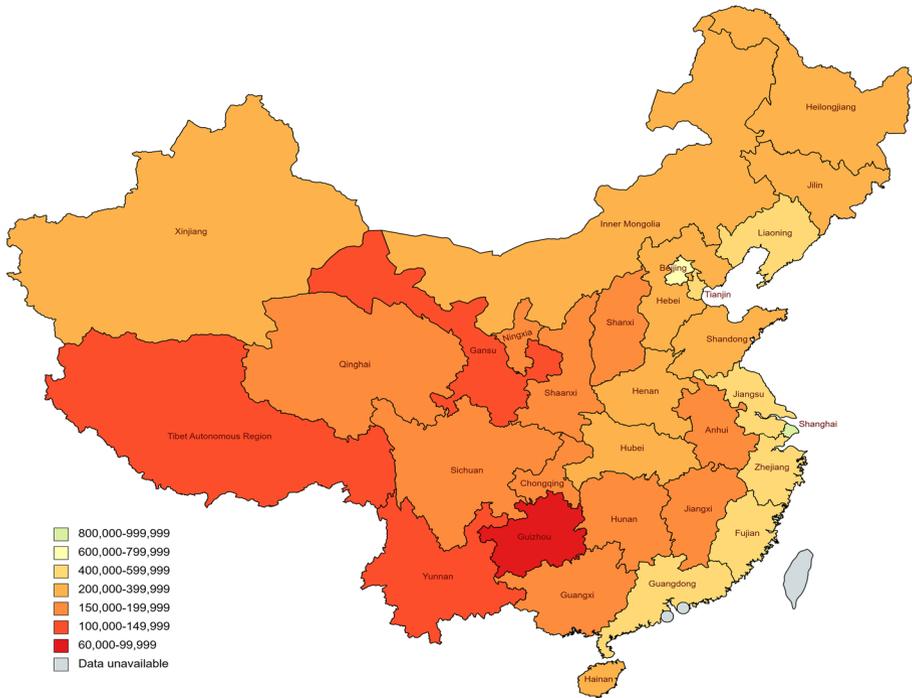


Fig. 17 LI values of 31 provinces, 2000

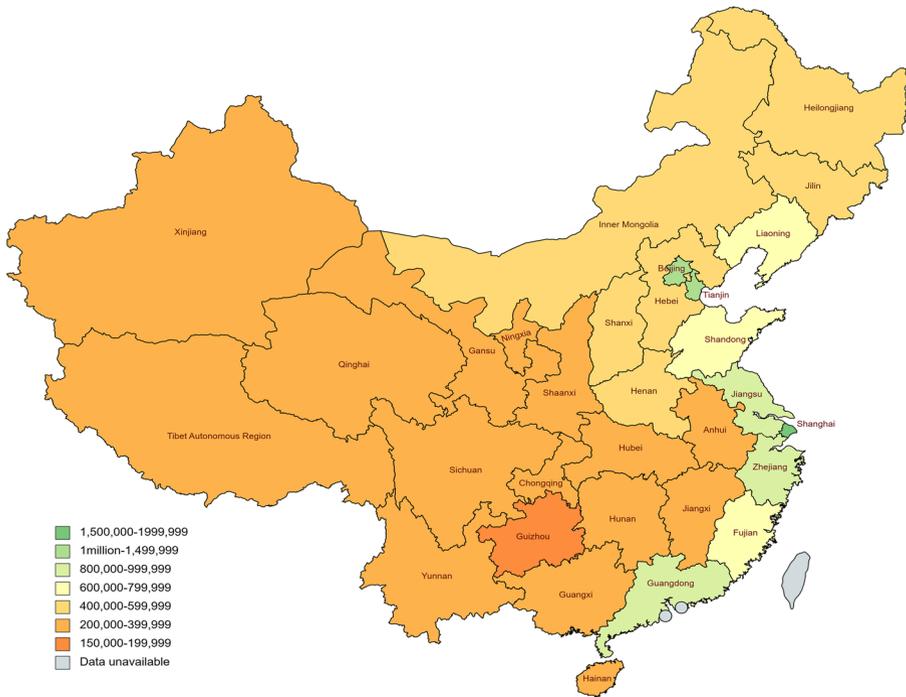


Fig. 18 LI values of 31 provinces, 2005

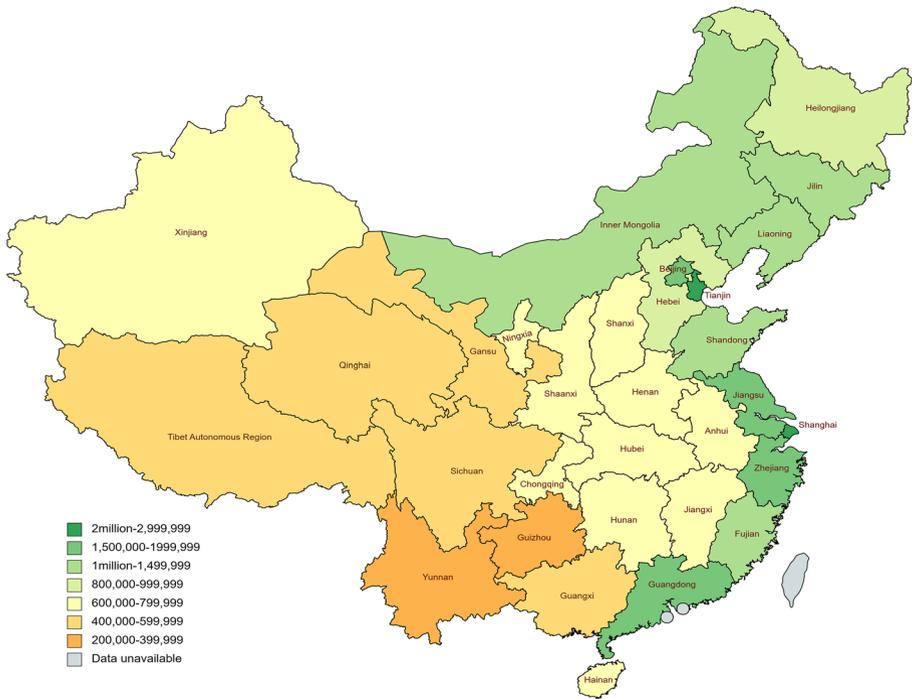


Fig. 19 LI values of 31 provinces, 2010

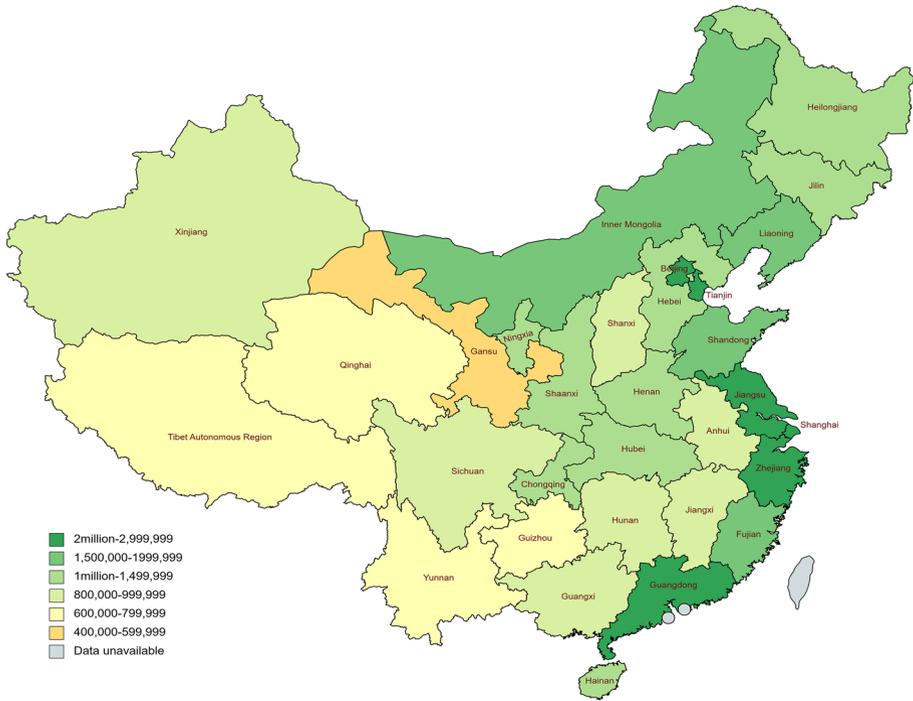


Fig. 20 LI values of 31 provinces, 2015

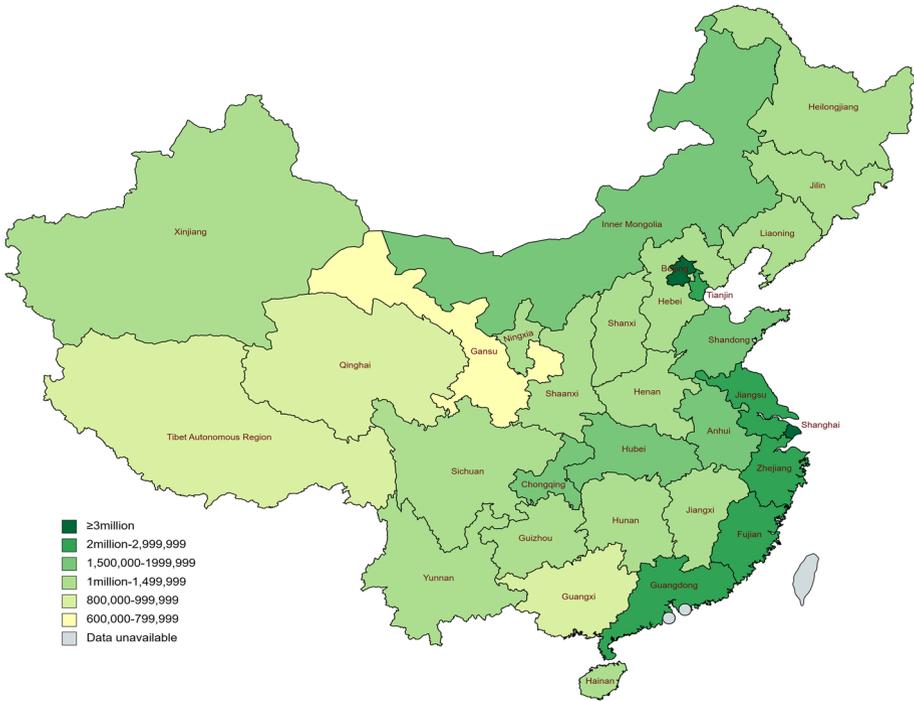


Fig. 21 LI values of 31 provinces, 2020

Fig. 22 Mainland China median to mean ratio and sigma convergence in terms of LI in 31 provinces from 1990 to 2020 (every 5 years) Sources: Author’s calculation

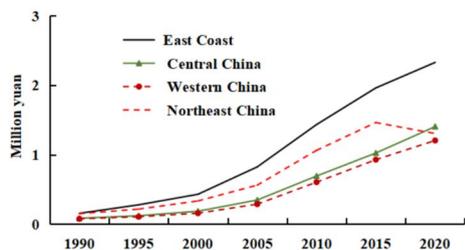
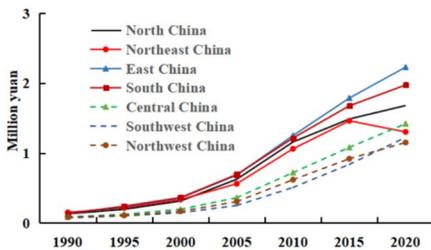
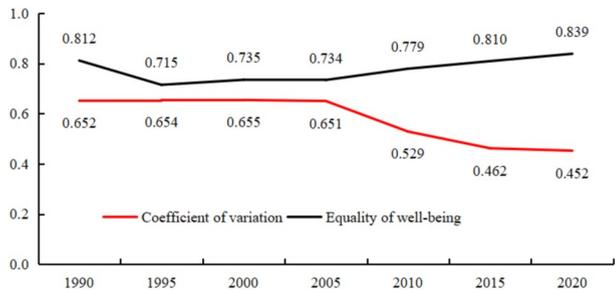


Fig. 23 LI by seven regions in 5-year intervals from 1990 to 2020 (left); LI by four regions in 5-year intervals from 1990 to 2020 (right)

Fig. 24 Comparison between LI and HDI rankings for 1990, 1995, 2000, 2005, 2010, 2015 and 2020

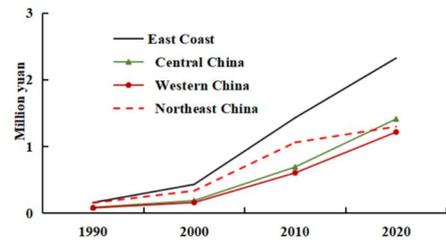
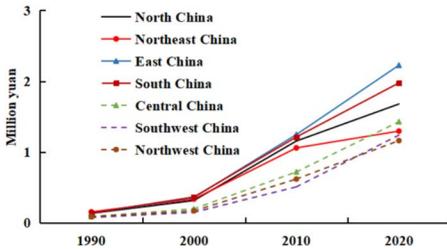
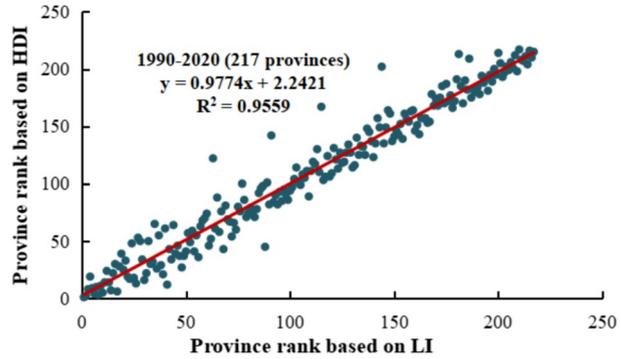


Fig. 25 LI for seven regions in 10-year intervals from 1990 to 2020 (left); LI for four regions in 10-year intervals from 1990 to 2020 (right). *Note:* Seven regions (Wang et al., 2022): North China, Northeast China, East China, South China, Central China, Southwest China, and Northwest China. **North China** (5 provinces): Beijing, Tianjin, Hebei, Shanxi, and Inner Mongolia. **Northeast China** (3 provinces): Liaoning, Jilin, and Heilongjiang. **East China** (7 provinces): Shanghai, Jiangsu, Zhejiang, Anhui, Fujian, Jiangxi, and Shandong. **South China** (3 provinces): Guangdong, Guangxi, and Hainan. **Central China** (3 provinces): Henan, Hubei, and Hunan. **Southwest China** (5 provinces): Chongqing, Sichuan, Guizhou, Yunnan, and Tibet. **Northwest China** (5 provinces): Shaanxi, Gansu, Qinghai, Ningxia, and Xinjiang. There are four economic regions: East Coast, Central China, Western China, Northeast China (Wang, 2016). These regions were created through the following policies: China Western Development, Northeast Area Revitalization Plan, and the Rise of Central China Plan. **Western China**, consists of twelve provincial regions: Gansu, Guizhou, Qinghai, Sichun, Yunan, Guangxi, Inner Mongolia, Ningxia, Tibet, Xinjiang, Shaanxi and Chongqing (Zhang et al., 2019). **Central China**, consists of 6 provinces: Shanxi, Henan, Anhui, Hubei, Hunan, and Jiangxi (Zhang et al., 2018). **Northeast China**, consists of Heilongjiang, Jilin, and Liaoning. **East Coast** consists of Beijing, Fujian, Guangdong, Hainan, Hebei, Jiangsu, Shandong, Shanghai, Tianjin, and Zhejiang

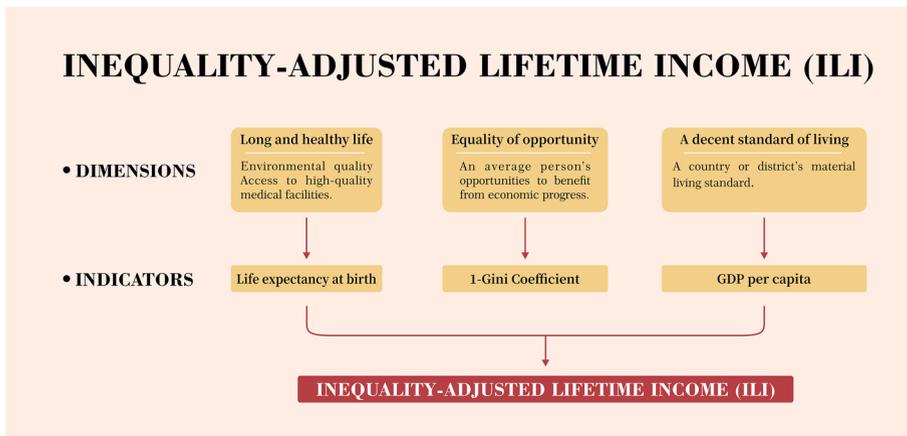


Fig. 26 A Flow Chart of ILI

Table 4 Ranking of 27 Provinces according to the ILI Indicator in 1998

Rank	Province	GDPpc	Gini	LEXP	ILI
1	Shanghai	10,450	0.229	77.59	624,882
2	Beijing	7,414	0.250	75.55	420,085
3	Tianjin	6,171	0.275	74.49	333,506
4	Guangdong	5,596	0.348	73.21	267,205
5	Zhejiang	5,312	0.329	74.21	264,425
6	Jiangsu	4,823	0.290	73.49	251,588
7	Liaoning	4,550	0.277	72.81	239,417
8	Fujian	4,898	0.328	71.84	236,651
9	Heilongjiang	3,448	0.280	71.38	177,167
10	Hebei	3,380	0.310	72.19	168,466
11	Inner Mongolia	2,616	0.336	69.12	120,085
12	Henan	2,398	0.318	71.35	116,661
13	Shanxi	2,456	0.336	71.20	116,183
14	Hubei	2,325	0.328	70.40	109,966
15	Xinjiang	2,660	0.410	66.53	104,393
16	Chongqing	2,335	0.384	71.82	103,387
17	Ningxia	2,191	0.356	69.61	98,293
18	Jiangxi	1,999	0.283	68.47	98,088
19	Anhui	1,983	0.328	71.47	95,256
20	Hunan	2,090	0.352	70.00	94,881
21	Yunnan	1,958	0.284	65.17	91,372
22	Guangxi	2,003	0.367	70.86	89,780
23	Sichuan	1,967	0.353	70.31	89,436
24	Shaanxi	1,835	0.386	69.62	78,461
25	Qinghai	2,002	0.402	65.02	77,869
26	Gansu	1,640	0.377	67.51	68,940
27	Guizhou	1,098	0.346	65.71	47,148

GDPpc refers to per capita GDP in constant RMB with a base year of 1990, LEXP refers to life expectancy at birth, and Gini refers to the Gini coefficient of disposable income. LI represents Lifetime Income in constant RMB with a base year of 1990

Table 5 Ranking of 24 Provinces according to the ILI Indicator in 2008

Rank	Province	GDPpc	Gini	LEXP	ILI
1	Shanghai	23,268	0.305	80.21	1,297,070
2	Beijing	21,276	0.296	79.73	1,195,079
3	Zhejiang	16,490	0.374	77.48	799,808
4	Jiangsu	16,213	0.377	76.44	772,110
5	Guangdong	16,988	0.422	76.20	747,960
7	Liaoning	13,255	0.377	76.12	629,070
6	Inner Mongolia	13,690	0.405	73.87	601,324
8	Fujian	12,853	0.412	75.47	570,472
9	Hebei	10,012	0.376	74.83	467,180
10	Heilongjiang	8,880	0.374	75.61	420,101
14	Henan	8,184	0.398	74.31	366,120
11	Shanxi	8,210	0.415	74.61	358,517
12	Hubei	7,232	0.388	74.46	329,553
13	Chongqing	7,411	0.434	75.25	315,807
17	Shaanxi	7,592	0.464	74.10	301,529
16	Ningxia	7,528	0.453	73.08	300,975
19	Jiangxi	6,555	0.403	73.60	287,885
15	Xinjiang	7,106	0.437	71.69	286,707
18	Sichuan	5,727	0.379	74.38	264,450
21	Anhui	5,666	0.413	74.78	248,797
22	Guangxi	5,546	0.452	74.69	227,172
20	Qinghai	6,339	0.486	69.50	226,577
23	Gansu	4,680	0.478	71.61	174,957
24	Guizhou	3,716	0.480	70.40	136,179

GDPpc refers to per capita GDP in constant RMB with a base year of 1990, LEXP refers to life expectancy at birth, and Gini refers to the Gini coefficient of disposable income. LI represents Lifetime Income in constant RMB with a base year of 1990

Table 6 Ranking of 14 Provinces according to the ILI Indicator in 2018

Rank	Province	GDPpc	Gini	LEXP	ILI
1	Shanghai	36,843	0.263	82.93	2,251,805
2	Beijing	37,147	0.295	82.85	2,169,725
3	Jiangsu	36,915	0.367	79.18	1,850,226
4	Fujian	35,053	0.370	78.28	1,728,673
5	Guangdong	31,678	0.343	79.03	1,644,806
7	Henan	17,109	0.354	77.05	851,600
8	Jiangxi	15,611	0.323	76.80	811,667
9	Hainan	16,418	0.406	78.84	768,881
6	Hunan	15,295	0.371	77.19	742,625
11	Shanxi	14,263	0.372	77.41	693,390
10	Sichuan	14,441	0.407	77.24	661,454
12	Guangxi	12,741	0.398	77.61	595,266
13	Guizhou	12,733	0.457	73.47	507,954
14	Gansu	9,188	0.450	74.63	377,138

GDPpc refers to per capita GDP in constant RMB with a base year of 1990, LEXP refers to life expectancy at birth, and Gini refers to the Gini coefficient of disposable income. LI represents Lifetime Income in constant RMB with a base year of 1990

Table 7 Beijing and Shang’s ILI from 1998–2018

Year	GDPpc	LEXP	Gini	ILI(Beijing)	GDPpc	LEXP	Gini	ILI(Shanghai)
1998	7,414	75.55	0.250	420,085	10,450	77.59	0.229	624,882
1999	8,248	75.83	0.248	470,503	11,057	77.87	0.263	634,827
2000	8,979	76.33	0.261	506,303	11,823	78.38	0.256	689,483
2001	9,748	77.13	0.270	549,225	12,832	78.99	0.280	729,873
2002	11,339	77.56	0.281	632,420	14,008	79.22	0.265	815,421
2003	12,803	78.00	0.267	732,216	15,499	79.47	0.313	846,298
2004	14,932	78.43	0.289	832,407	17,960	79.70	0.318	975,777
2005	16,274	78.84	0.280	923,416	19,761	79.91	0.312	1,087,032
2006	17,572	79.29	0.276	1,009,300	21,738	80.16	0.313	1,196,413
2007	20,829	79.59	0.280	1,193,461	22,814	80.26	0.305	1,272,206
2008	21,276	79.73	0.296	1,195,079	23,268	80.21	0.305	1,297,070
2009	22,430	80.26	0.290	1,278,859	24,143	80.54	0.297	1,366,954
2010	24,167	80.56	0.274	1,413,633	25,753	80.64	0.284	1,487,169
2015	29,879	82.03	0.296	1,725,507	30,207	82.11	0.275	1,798,209
2016	32,704	82.29	0.289	1,913,475	32,870	82.37	0.264	1,992,744
2017	35,026	82.32	0.293	2,038,527	35,114	82.40	0.263	2,132,418
2018	37,147	82.85	0.295	2,169,725	36,843	82.93	0.263	2,251,805

GDPpc refers to per capita GDP in constant RMB with a base year of 1990, LEXP refers to life expectancy at birth, and Gini refers to the Gini coefficient of disposable income. LI represents Lifetime Income in constant RMB with a base year of 1990

Table 8 LI values of 31 provinces, 1990

Province	GDPpc	LEXP	LI	Ranking
Shanghai	5,911	75.20	444,507	1
Beijing	4,635	72.86	337,706	2
Tianjin	3,487	72.32	252,180	3
Liaoning	2,698	70.22	189,454	4
Guangdong	2,484	72.52	180,148	5
Zhejiang	2,138	71.80	153,508	6
Jiangsu	2,109	71.37	150,519	7
Heilongjiang	2,028	66.97	135,815	8
Shandong	1,815	70.57	128,085	9
Fujian	1,763	68.57	120,889	10
Jilin	1,746	67.96	118,658	11
Hainan	1,562	70.01	109,356	12
Xinjiang	1,713	62.62	107,268	13
Shanxi	1,528	69.00	105,432	14
Hubei	1,541	67.25	103,644	15
Hebei	1,465	70.35	103,063	16
Inner Mongolia	1,478	65.68	97,075	17
Qinghai	1,558	60.57	94,368	18
Ningxia	1,393	66.94	93,234	19
Chongqing	1,181	70.93	83,768	20
Shaanxi	1,241	67.40	83,643	21
Hunan	1,228	66.93	82,190	22
Anhui	1,182	69.48	82,125	23
Yunnan	1,224	63.49	77,712	24
Henan	1,091	70.15	76,534	25
Tiebet	1,276	59.64	76,101	26
Sichuan	1,134	66.33	75,218	27
Jiangxi	1,134	66.12	74,980	28
Gansu	1,099	67.24	73,897	29
Guangxi	1,066	68.73	73,266	30
Guizhou	810	64.29	52,075	31

GDPpc refers to per capita GDP in constant RMB with a base year of 1990, LEXP refers to life expectancy at birth, and LI represents Lifetime Income in constant RMB with a base year of 1990

Table 9 LI values of 31 provinces, 2000

Province	GDPpc	LEXP	LI	Ranking
Shanghai	11,823	78.14	923,886	1
Beijing	8,979	76.10	683,332	2
Tianjin	7,633	74.91	571,775	3
Guangdong	6,646	73.27	486,931	4
Zhejiang	6,268	74.70	468,206	5
Jiangsu	5,715	73.91	422,422	6
Fujian	5,643	72.55	409,417	7
Liaoning	5,484	73.34	402,171	8
Shandong	4,568	73.92	337,643	9
Heilongjiang	4,075	72.37	294,894	10
Hebei	4,036	72.54	292,768	11
Jilin	3,823	73.10	279,475	12
Hainan	3,339	72.92	243,492	13
Xinjiang	3,281	67.41	221,180	14
Inner Mongolia	3,112	69.87	217,425	15
Henan	2,928	71.54	209,502	16
Hubei	2,858	71.08	203,174	17
Shanxi	2,661	71.65	190,668	18
Ningxia	2,601	70.17	182,492	19
Chongqing	2,448	71.73	175,584	20
Hunan	2,384	70.66	168,463	21
Sichuan	2,303	71.20	163,960	22
Jiangxi	2,378	68.95	163,949	23
Anhui	2,272	71.85	163,260	24
Shaanxi	2,302	70.07	161,328	25
Guangxi	2,200	71.29	156,802	26
Qinghai	2,348	66.03	155,005	27
Yunnan	2,152	65.49	140,931	28
Gansu	1,969	67.47	132,876	29
Tibet	1,945	64.37	125,225	30
Guizhou	1,298	65.96	85,619	31

GDPpc refers to per capita GDP in constant RMB with a base year of 1990, LEXP refers to life expectancy at birth, and LI represents Lifetime Income in constant RMB with a base year of 1990

Table 10 LI values of 31 provinces, 2010

Province	GDPpc	LEXP	LI	Ranking
Tianjin	26,550	78.89	2,094,453	1
Shanghai	25,753	80.26	2,066,939	2
Beijing	24,167	80.18	1,937,701	3
Jiangsu	20,713	76.63	1,587,275	4
Zhejiang	20,141	77.73	1,565,581	5
Guangdong	20,052	76.49	1,533,791	6
Inner Mongolia	18,062	74.44	1,344,453	7
Liaoning	17,157	76.38	1,310,478	8
Fujian	17,059	75.76	1,292,335	9
Shandong	16,357	76.46	1,250,682	10
Jilin	13,160	76.18	1,002,504	11
Hebei	12,197	74.97	914,391	12
Heilongjiang	10,624	75.98	807,193	13
Henan	10,134	74.57	755,724	14
Shaanxi	10,005	74.68	747,174	15
Chongqing	9,828	75.70	743,979	16
Hubei	9,916	74.87	742,417	17
Shanxi	9,780	74.92	732,734	18
Hainan	9,486	76.30	723,823	19
Ningxia	9,834	73.38	721,598	20
Hunan	8,577	74.70	640,693	21
Jiangxi	8,560	74.33	636,272	22
Xinjiang	8,550	72.35	618,530	23
Anhui	8,015	75.08	601,733	24
Guangxi	7,595	75.11	570,424	25
Sichuan	7,528	74.75	562,691	26
Qinghai	7,674	69.96	536,840	27
Gansu	5,761	72.23	416,065	28
Tiebet	5,933	68.17	404,462	29
Yunnan	5,564	69.54	386,929	30
Guizhou	4,869	71.10	346,198	31

GDPpc refers to per capita GDP in constant RMB with a base year of 1990, LEXP refers to life expectancy at birth, and LI represents Lifetime Income in constant RMB with a base year of 1990

Table 11 LI values of 31 provinces, 2020

Province	GDPpc	LEXP	LI	Ranking
Beijing	41,989	82.49	3,463,681	1
Shanghai	40,786	82.55	3,366,871	2
Jiangsu	36,771	79.32	2,916,661	3
Fujian	35,897	78.49	2,817,577	4
Zhejiang	30,691	80.19	2,461,109	5
Guangdong	30,481	79.31	2,417,471	6
Tianjin	28,878	81.30	2,347,801	7
Shandong	22,540	79.18	1,784,750	8
Chongqing	22,108	78.56	1,736,819	9
Inner Mongolia	21,783	77.56	1,689,505	10
Hubei	20,395	78.00	1,590,806	11
Anhui	19,300	77.96	1,504,642	12
Shaanxi	19,196	77.80	1,493,487	13
Liaoning	18,860	78.68	1,483,880	14
Henan	17,861	77.60	1,385,976	15
Jiangxi	17,728	77.64	1,376,425	16
Hunan	17,261	77.88	1,344,283	17
Hainan	16,470	79.05	1,301,960	18
Jilin	16,554	78.41	1,298,000	19
Hebei	16,217	77.75	1,260,851	20
Sichuan	16,123	77.79	1,254,224	21
Ningxia	15,791	76.58	1,209,258	22
Shanxi	15,045	77.91	1,172,177	23
Xinjiang	14,252	75.65	1,078,181	24
Yunnan	14,343	74.02	1,061,687	25
Heilongjiang	13,244	78.25	1,036,326	26
Guizhou	13,595	75.20	1,022,344	27
Tibet	13,944	72.19	1,006,634	28
Guangxi	12,764	78.06	996,346	29
Qinghai	12,103	73.96	895,158	30
Gansu	10,114	75.64	765,058	31

GDPpc refers to per capita GDP in constant RMB with a base year of 1990, LEXP refers to life expectancy at birth, and LI represents Lifetime Income in constant RMB with a base year of 1990

Table 12 Changes in province rank between 1990 and 2020

Province	1990LI	Rank	2020LI	Rank	Changes in province rank
Jiangxi	74,980	28	1,376,425	16	12
Anhui	82,125	23	1,504,642	12	11
Chongqing	83,768	20	1,736,819	9	11
Henan	76,534	25	1,385,976	15	10
Shaanxi	83,643	21	1,493,487	13	8
Inner Mongolia	97,075	17	1,689,505	10	7
Fujian	120,889	10	2,817,577	4	6
Sichuan	75,218	27	1,254,224	21	6
Hunan	82,190	22	1,344,283	17	5
Guizhou	52,075	31	1,022,344	27	4
Hubei	103,644	15	1,590,806	11	4
Jiangsu	150,519	7	2,916,661	3	4
Beijing	337,706	2	3,463,681	1	1
Guangxi	73,266	30	996,346	29	1
Shandong	128,085	9	1,784,750	8	1
Zhejiang	153,508	6	2,461,109	5	1
Guangdong	180,148	5	2,417,471	6	-1
Shanghai	444,507	1	3,366,871	2	-1
Yunnan	77,712	24	1,061,687	25	-1
Gansu	73,897	29	765,058	31	-2
Tibet	76,101	26	1,006,634	28	-2
Ningxia	93,234	19	1,209,258	22	-3
Hebei	103,063	16	1,260,851	20	-4
Tianjin	252,180	3	2,347,801	7	-4
Hainan	109,356	12	1,301,960	18	-6
Jilin	118,658	11	1,298,000	19	-8
Shanxi	105,432	14	1,172,177	23	-9
Liaoning	189,454	4	1,483,880	14	-10
Xinjiang	107,268	13	1,078,181	24	-11
Qinghai	94,368	18	895,158	30	-12
Heilongjiang	135,815	8	1,036,326	26	-18

Table 13 LI, ILI, HLI, and IHLI in Mainland China and India from 1990 to 2019

Year	China				India			
	LI	ILI	HLI	IHLI	LI	ILI	HLI	IHLI
1990	96,832	65,749	86,118	58,474	106,689	62,947	92,868	54,792
1991	104,619	70,304	93,230	62,650	106,300	62,610	92,173	54,290
1992	119,024	78,913	105,760	70,119	110,564	65,011	95,574	56,198
1993	134,939	88,385	119,708	78,409	114,162	67,013	98,975	58,098
1994	151,479	98,158	134,470	87,136	120,128	70,154	104,431	60,988
1995	167,423	107,820	148,338	95,530	127,477	73,937	111,016	64,389
1996	182,787	117,167	162,164	103,947	135,313	78,075	117,719	67,924
1997	198,780	126,424	176,382	112,179	139,031	79,526	120,038	68,662
1998	213,831	134,500	189,289	119,063	145,822	82,973	125,589	71,460
1999	229,021	142,222	202,808	125,944	156,860	88,626	135,135	76,351
2000	248,110	151,843	218,896	133,964	161,131	90,395	138,620	77,766
2001	269,538	161,992	236,605	142,199	166,994	92,348	143,458	79,332
2002	293,718	173,293	257,666	152,023	171,711	93,411	147,479	80,229
2003	322,893	188,892	282,976	165,541	183,410	97,941	157,885	84,310
2004	355,260	206,406	310,646	180,486	195,964	102,685	169,251	88,688
2005	395,356	228,516	345,984	199,979	209,647	109,855	180,367	94,512
2006	445,518	256,618	391,175	225,317	224,548	117,214	192,677	100,577
2007	508,021	291,096	447,575	256,461	239,600	124,592	205,329	106,771
2008	555,017	316,915	489,277	279,377	244,844	126,584	209,579	108,352
2009	607,969	346,543	535,620	305,304	261,877	134,867	225,235	115,996
2010	671,666	383,521	591,552	337,776	281,912	143,775	242,594	123,723
2011	734,748	420,276	647,368	370,295	294,644	148,795	252,897	127,713
2012	790,166	456,716	697,019	402,877	309,012	156,051	264,910	133,779
2013	848,765	497,377	749,338	439,112	327,247	164,933	279,748	140,993
2014	909,204	530,975	802,818	468,846	350,278	176,190	299,500	150,649
2015	970,861	566,983	857,495	500,777	376,861	189,184	321,228	161,257
2016	1,034,655	604,238	912,802	533,077	405,955		346,517	
2017	1,100,284	641,466	972,587	567,018	430,699		367,710	
2018	1,176,577	684,768	1,035,540	602,684	455,100		387,911	
2019	1,245,754	725,029	1,094,894	637,228	469,221		400,475	
Mean	502,761	295,437	443,203	260,460	234,100	107,680	200,896	92,608
Median	375,308	217,461	328,315	190,232	202,805	95,676	174,809	82,269
Max	1,245,754	725,029	1,094,894	637,228	469,221	189,184	400,475	161,257
Min	96,832	65,749	86,118	58,474	106,300	62,610	92,173	54,290
Max/Min	12.8651	11.0272	12.7139	10.8976	4.4141	3.0216	4.3448	2.9703
Average Growth rate, %	9.21	8.63	9.16	8.59	5.24	4.50	5.17	4.41

ILI represents Inequality-Adjusted Lifetime Income, HLI represents Healthy Lifetime Income, and IHLI represents Inequality-Adjusted Healthy Lifetime Income. All values are provided in 2017 international dollars

Table 14 LI values over time for 31 provinces in China every five years

Province	LI						
	1990	1995	2000	2005	2010	2015	2020
Anhui	81,203	112,748	163,760	285,140	604,636	932,328	1,503,677
Beijing	333,952	439,523	685,398	1,283,057	1,946,885	2,451,004	3,493,494
Chongqing	83,768	128,543	176,122	334,387	747,517	1,263,388	1,736,598
Fujian	119,531	251,458	410,658	668,307	1,298,517	1,958,134	2,822,243
Gansu	73,073	80,869	133,290	229,663	418,041	594,246	758,079
Guangdong	178,136	326,432	488,459	928,603	1,541,010	2,054,060	2,419,300
Guangxi	72,435	110,491	157,286	284,702	573,158	877,035	994,815
Guizhou	51,492	60,919	85,879	153,403	347,854	697,749	1,003,039
Hainan	108,137	180,141	244,227	386,828	727,222	1,090,228	1,304,101
Hebei	101,905	179,521	293,656	541,662	918,831	1,146,637	1,261,662
Heilongjiang	134,294	196,918	295,790	500,346	811,046	1,050,580	1,044,140
Henan	75,683	134,120	210,146	407,824	759,231	1,075,749	1,382,046
Hubei	102,488	123,683	203,803	346,897	745,987	1,190,386	1,584,483
Hunan	81,269	114,467	168,987	309,435	643,781	994,323	1,338,069
Inner Mongolia	95,996	137,694	218,078	523,978	1,350,849	1,789,871	1,682,752
Jiangsu	148,832	281,087	423,737	844,103	1,594,732	2,353,753	2,924,015
Jiangxi	74,130	105,555	164,448	316,423	639,268	976,336	1,367,384
Jilin	117,314	171,552	280,316	485,085	1,007,293	1,441,029	1,308,595
Liaoning	187,349	262,867	403,432	666,660	1,316,661	1,811,274	1,494,819
Ningxia	92,189	124,246	183,064	331,820	725,086	1,041,430	1,202,468
Qinghai	93,309	117,264	155,475	282,851	539,373	783,492	878,697
Shaanxi	82,713	103,664	161,835	316,185	750,776	1,167,802	1,487,536
Shandong	126,651	224,115	338,693	693,643	1,256,538	1,766,169	1,788,356
Shanghai	437,769	631,239	926,724	1,579,071	2,076,761	2,480,288	3,396,645
Shanxi	104,210	130,073	191,253	403,579	736,268	876,259	1,169,620
Sichuan	74,379	109,358	164,467	280,765	565,395	873,356	1,250,677
Tianjin	249,355	347,393	573,531	1,154,720	2,104,616	2,756,869	2,363,973
Tibet	75,246	70,628	125,614	245,400	406,339	658,333	986,415
Xinjiang	106,018	150,738	221,869	383,126	621,469	861,845	1,070,057
Yunnan	76,843	100,670	141,361	223,800	388,760	624,737	1,035,009
Zhejiang	151,755	306,780	469,647	938,117	1,573,020	2,109,340	2,475,533

LI represents Lifetime Income in constant RMB with a base year of 1990

Table 15 LI values of 31 provinces, 1990

Province	GDPpc	LEXP	LI	Ranking
Shanghai	5,911	74.06	437,769	1
Beijing	4,635	72.05	333,952	2
Tianjin	3,487	71.51	249,355	3
Liaoning	2,698	69.44	187,349	4
Guangdong	2,484	71.71	178,136	5
Zhejiang	2,138	70.98	151,755	6
Jiangsu	2,109	70.57	148,832	7
Heilongjiang	2,028	66.22	134,294	8
Shandong	1,815	69.78	126,651	9
Fujian	1,763	67.8	119,531	10
Jilin	1,746	67.19	117,314	11
Hainan	1,562	69.23	108,137	12
Xinjiang	1,713	61.89	106,018	13
Shanxi	1,528	68.2	104,210	14
Hubei	1,541	66.5	102,488	15
Hebei	1,465	69.56	101,905	16
Inner Mongolia	1,478	64.95	95,996	17
Qinghai	1,558	59.89	93,309	18
Ningxia	1,393	66.19	92,189	19
Chongqing	1,181	70.93	83,768	20
Shaanxi	1,241	66.65	82,713	21
Hunan	1,228	66.18	81,269	22
Anhui	1,182	68.7	81,203	23
Yunnan	1,224	62.78	76,843	24
Henan	1,091	69.37	75,683	25
Tibet	1,276	58.97	75,246	26
Sichuan	1,134	65.59	74,379	27
Jiangxi	1,134	65.37	74,130	28
Gansu	1,099	66.49	73,073	29
Guangxi	1,066	67.95	72,435	30
Guizhou	810	63.57	51,492	31

GDPpc refers to per capita GDP in constant RMB with a base year of 1990, LEXP refers to life expectancy at birth, and LI represents Lifetime Income in constant RMB with a base year of 1990

Table 16 LI values of 31 provinces, 1995

Province	GDPpc	LEXP	LI	Ranking
Shanghai	8,274	76.29	631,239	1
Beijing	5,919	74.26	439,523	2
Tianjin	4,733	73.4	347,393	3
Guangdong	4,491	72.68	326,432	4
Zhejiang	4,201	73.02	306,780	5
Jiangsu	3,881	72.42	281,087	6
Liaoning	3,673	71.57	262,867	7
Fujian	3,574	70.35	251,458	8
Shandong	3,111	72.03	224,115	9
Heilongjiang	2,835	69.46	196,918	10
Hainan	2,528	71.25	180,141	11
Hebei	2,520	71.23	179,521	12
Jilin	2,440	70.32	171,552	13
Xinjiang	2,326	64.81	150,738	14
Inner Mongolia	2,038	67.57	137,694	15
Henan	1,899	70.63	134,120	16
Shanxi	1,856	70.1	130,073	17
Chongqing	1,797	71.52	128,543	18
Ningxia	1,818	68.35	124,246	19
Hubei	1,794	68.96	123,683	20
Qinghai	1,858	63.11	117,264	21
Hunan	1,669	68.59	114,467	22
Anhui	1,600	70.45	112,748	23
Guangxi	1,583	69.8	110,491	24
Sichuan	1,595	68.56	109,358	25
Jiangxi	1,568	67.33	105,555	26
Shaanxi	1,513	68.53	103,664	27
Yunnan	1,566	64.3	100,670	28
Gansu	1,204	67.15	80,869	29
Tibet	1,142	61.82	70,628	30
Guizhou	938	64.93	60,919	31

GDPpc refers to per capita GDP in constant RMB with a base year of 1990, LEXP refers to life expectancy at birth, and LI represents Lifetime Income in constant RMB with a base year of 1990

Table 17 LI values of 31 provinces, 2000

Province	GDPpc	LEXP	LI	Ranking
Shanghai	11,823	78.38	926,724	1
Beijing	8,979	76.33	685,398	2
Tianjin	7,633	75.14	573,531	3
Guangdong	6,646	73.5	488,459	4
Zhejiang	6,268	74.93	469,647	5
Jiangsu	5,715	74.14	423,737	6
Fujian	5,643	72.77	410,658	7
Liaoning	5,484	73.57	403,432	8
Shandong	4,568	74.15	338,693	9
Heilongjiang	4,075	72.59	295,790	10
Hebei	4,036	72.76	293,656	11
Jilin	3,823	73.32	280,316	12
Hainan	3,339	73.14	244,227	13
Xinjiang	3,281	67.62	221,869	14
Inner Mongolia	3,112	70.08	218,078	15
Henan	2,928	71.76	210,146	16
Hubei	2,858	71.3	203,803	17
Shanxi	2,661	71.87	191,253	18
Ningxia	2,601	70.39	183,064	19
Chongqing	2,448	71.95	176,122	20
Hunan	2,384	70.88	168,987	21
Sichuan	2,303	71.42	164,467	22
Jiangxi	2,378	69.16	164,448	23
Anhui	2,272	72.07	163,760	24
Shaanxi	2,302	70.29	161,835	25
Guangxi	2,200	71.51	157,286	26
Qinghai	2,348	66.23	155,475	27
Yunnan	2,152	65.69	141,361	28
Gansu	1,969	67.68	133,290	29
Tibet	1,945	64.57	125,614	30
Guizhou	1,298	66.16	85,879	31

GDPpc refers to per capita GDP in constant RMB with a base year of 1990, LEXP refers to life expectancy at birth, and LI represents Lifetime Income in constant RMB with a base year of 1990

Table 18 LI values of 31 provinces, 2005

Province	GDPpc	LEXP	LI	Ranking
Shanghai	19,761	79.91	1,579,071	1
Beijing	16,274	78.84	1,283,057	2
Tianjin	14,882	77.59	1,154,720	3
Zhejiang	12,199	76.9	938,117	4
Guangdong	12,291	75.55	928,603	5
Jiangsu	11,114	75.95	844,103	6
Shandong	9,143	75.87	693,643	7
Fujian	8,932	74.82	668,307	8
Liaoning	8,826	75.53	666,660	9
Hebei	7,278	74.42	541,662	10
Inner Mongolia	7,198	72.8	523,978	11
Heilongjiang	6,686	74.84	500,346	12
Jilin	6,441	75.31	485,085	13
Henan	5,533	73.71	407,824	14
Shanxi	5,458	73.94	403,579	15
Hainan	5,139	75.28	386,828	16
Xinjiang	5,434	70.51	383,126	17
Hubei	4,711	73.63	346,897	18
Chongqing	4,496	74.38	334,387	19
Ningxia	4,582	72.42	331,820	20
Jiangxi	4,378	72.28	316,423	21
Shaanxi	4,330	73.03	316,185	22
Hunan	4,220	73.33	309,435	23
Anhui	3,846	74.13	285,140	24
Guangxi	3,855	73.86	284,702	25
Qinghai	4,123	68.61	282,851	26
Sichuan	3,813	73.63	280,765	27
Tibet	3,670	66.87	245,400	28
Gansu	3,259	70.48	229,663	29
Yunnan	3,285	68.12	223,800	30
Guizhou	2,218	69.15	153,403	31

GDPpc refers to per capita GDP in constant RMB with a base year of 1990, LEXP refers to life expectancy at birth, and LI represents Lifetime Income in constant RMB with a base year of 1990

Table 19 LI values of 31 provinces, 2010

Province	GDPpc	LEXP	LI	Ranking
Tianjin	26,550	79.27	2,104,616	1
Shanghai	25,753	80.64	2,076,761	2
Beijing	24,167	80.56	1,946,885	3
Jiangsu	20,713	76.99	1,594,732	4
Zhejiang	20,141	78.1	1,573,020	5
Guangdong	20,052	76.85	1,541,010	6
Inner Mongolia	18,062	74.79	1,350,849	7
Liaoning	17,157	76.74	1,316,661	8
Fujian	17,059	76.12	1,298,517	9
Shandong	16,357	76.82	1,256,538	10
Jilin	13,160	76.54	1,007,293	11
Hebei	12,197	75.33	918,831	12
Heilongjiang	10,624	76.34	811,046	13
Henan	10,134	74.92	759,231	14
Shaanxi	10,005	75.04	750,776	15
Chongqing	9,828	76.06	747,517	16
Hubei	9,916	75.23	745,987	17
Shanxi	9,780	75.28	736,268	18
Hainan	9,486	76.66	727,222	19
Ningxia	9,834	73.73	725,086	20
Hunan	8,577	75.06	643,781	21
Jiangxi	8,560	74.68	639,268	22
Xinjiang	8,550	72.69	621,469	23
Anhui	8,015	75.44	604,636	24
Guangxi	7,595	75.47	573,158	25
Sichuan	7,528	75.11	565,395	26
Qinghai	7,674	70.29	539,373	27
Gansu	5,761	72.57	418,041	28
Tibet	5,933	68.49	406,339	29
Yunnan	5,564	69.87	388,760	30
Guizhou	4,869	71.44	347,854	31

GDPpc refers to per capita GDP in constant RMB with a base year of 1990, LEXP refers to life expectancy at birth, and LI represents Lifetime Income in constant RMB with a base year of 1990

Table 20 LI values of 31 provinces, 2015

Province	GDPpc	LEXP	LI	Ranking
Tianjin	34,158	80.71	2,756,869	1
Shanghai	30,207	82.11	2,480,288	2
Beijing	29,879	82.03	2,451,004	3
Jiangsu	30,022	78.4	2,353,753	4
Zhejiang	26,526	79.52	2,109,340	5
Guangdong	26,250	78.25	2,054,060	6
Fujian	25,263	77.51	1,958,134	7
Liaoning	23,180	78.14	1,811,274	8
Inner Mongolia	23,501	76.16	1,789,871	9
Shandong	22,580	78.22	1,766,169	10
Jilin	18,489	77.94	1,441,029	11
Chongqing	16,312	77.45	1,263,388	12
Hubei	15,540	76.6	1,190,386	13
Shaanxi	15,285	76.4	1,167,802	14
Hebei	14,950	76.7	1,146,637	15
Hainan	13,967	78.06	1,090,228	16
Henan	14,101	76.29	1,075,749	17
Heilongjiang	13,516	77.73	1,050,580	18
Ningxia	13,873	75.07	1,041,430	19
Hunan	13,011	76.42	994,323	20
Jiangxi	12,840	76.04	976,336	21
Anhui	12,138	76.81	932,328	22
Guangxi	11,414	76.84	877,035	23
Shanxi	11,432	76.65	876,259	24
Sichuan	11,421	76.47	873,356	25
Xinjiang	11,643	74.02	861,845	26
Qinghai	10,947	71.57	783,492	27
Guizhou	9,592	72.74	697,749	28
Tibet	9,440	69.74	658,333	29
Yunnan	8,782	71.14	624,737	30
Gansu	8,041	73.9	594,246	31

GDPpc refers to per capita GDP in constant RMB with a base year of 1990, LEXP refers to life expectancy at birth, and LI represents Lifetime Income in constant RMB with a base year of 1990

Table 21 LI values of 31 provinces, 2020

Province	GDPpc	LEXP	LI	Ranking
Beijing	41,989	83.2	3,493,494	1
Shanghai	40,786	83.28	3,396,645	2
Jiangsu	36,771	79.52	2,924,015	3
Fujian	35,897	78.62	2,822,243	4
Zhejiang	30,691	80.66	2,475,533	5
Guangdong	30,481	79.37	2,419,300	6
Tianjin	28,878	81.86	2,363,973	7
Shandong	22,540	79.34	1,788,356	8
Chongqing	22,108	78.55	1,736,598	9
Inner Mongolia	21,783	77.25	1,682,752	10
Hubei	20,395	77.69	1,584,483	11
Anhui	19,300	77.91	1,503,677	12
Liaoning	18,860	79.26	1,494,819	13
Shaanxi	19,196	77.49	1,487,536	14
Henan	17,861	77.38	1,382,046	15
Jiangxi	17,728	77.13	1,367,384	16
Hunan	17,261	77.52	1,338,069	17
Jilin	16,554	79.05	1,308,595	18
Hainan	16,470	79.18	1,304,101	19
Hebei	16,217	77.8	1,261,662	20
Sichuan	16,123	77.57	1,250,677	21
Ningxia	15,791	76.15	1,202,468	22
Shanxi	15,045	77.74	1,169,620	23
Xinjiang	14,252	75.08	1,070,057	24
Heilongjiang	13,244	78.84	1,044,140	25
Yunnan	14,343	72.16	1,035,009	26
Guizhou	13,595	73.78	1,003,039	27
Guangxi	12,764	77.94	994,815	28
Tibet	13,944	70.74	986,415	29
Qinghai	12,103	72.6	878,697	30
Gansu	10,114	74.95	758,079	31

GDPpc refers to per capita GDP in constant RMB with a base year of 1990, LEXP refers to life expectancy at birth, and LI represents Lifetime Income in constant RMB with a base year of 1990

Table 22 LI calculated for seven regions and calculated for four regions in ten-year intervals from 1990 to 2020

LI					
Seven regions	1990	2000	2010	2020	Average
North China	131,752	313,169	1,154,043	1,677,194	819,040
Northeast China	152,809	333,073	1,057,160	1,294,058	709,275
East China	133,529	354,431	1,245,348	2,224,768	989,519
South China	135,683	362,879	1,210,613	1,974,606	920,945
Central China	85,545	195,553	717,390	1,426,262	606,187
Southwest China	72,936	145,616	506,423	1,237,383	490,589
Northwest China	86,566	166,412	616,610	1,159,792	507,345
Four regions	1990	2000	2010	2020	Average
East Coast	157,434	428,749	1,426,748	2,320,749	1,083,420
Central China	85,485	185,747	689,485	1,408,877	592,399
Western China	77,954	157,031	601,594	1,213,180	512,440
Northeast China	152,809	333,073	1,057,160	1,294,058	709,275

LI represents Lifetime Income. All values are in 1990 constant RMB prices

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Declarations

Conflict of interest ² no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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