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China's growing but slowing inequality of household wealth, 2013–2018: A challenge to 'common prosperity'?☆

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ABSTRACT

By examining the period 2013–2018, this paper follows up a previous one which analysed the increase in the inequality of China's wealth per capita over the period 2002–2013. It finds that the Gini coefficient, having risen rapidly over the earlier period, continued to grow but did so more slowly in the later period, at the national level and in both urban and rural China. Counterfactual analysis identifies the lower rate of house price inflation as an important reason for the slowdown. Policies and policy options are examined, both directly on wealth inequality and indirectly through control of house price inflation. Nevertheless, the rising inequality of wealth per capita among households does indeed pose a challenge to the achievement of 'common prosperity' in China. It deserves more policy attention.

1. Introduction

Previous research on the China Household Income Project (CHIP) surveys for the years 2002 and 2013 has reported a dramatic increase in the inequality of household wealth over these first eleven years of the twenty-first century. Knight, Li, and Wan (2020) in a descriptive paper posed the question: 'Has the inequality of household wealth increased between 2002 and 2013?', and documented this increase in several dimensions. Knight, Li, and Wan (2022) in an analytical paper asked: 'Why has the inequality of household wealth increased?', and found that several forces were at work, related in particular to the housing market.

The availability of the most recent CHIP survey, for 2018, enables us to bring the research on this topic more up to date. Our objective is to compare 2013 and 2018. Has the inequality of household wealth continued to rise, and if so has it risen at the same pace as in the previous eleven years. The question is an important one, not only in itself, but also because a continuing rise would pose a challenge for the policy emphasis now being placed on the achievement of 'common prosperity'.

The evidence on the rising inequality of household wealth in recent years appears to contrast with the evidence on the inequality of household income, which increased strongly over the period 1985–2010 but has subsequently stabilized. Can wealth inequality be expected to follow income inequality and become constant, or are different forces at work?

In Section 2 we provide the context by reporting briefly on the results of the research conducted for the period 2002–2013; that is our starting point. In Section 3 we briefly describe the data and our use of it in this paper. Section 4 presents the evidence, showing that wealth inequality has continued to rise somewhat, and in several dimensions. In Section 5 we consider why the rise in wealth

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inequality has slowed down in the period 2013–2018. Section 6 provides a couple of robustness checks. This leads on to the challenge, posed in Section 7: what policies are available to reverse this rise in the future? Section 8 concludes. A data appendix is added.

2. Previous CHIP research

The Gini coefficient of household wealth per capita, expressed in nominal terms, rose from 0.50 in 2002 to 0.61 in 2013, i.e. by 22%. Wealth inequality did indeed increase sharply, by some 11 Gini percentage points, i.e. by one percentage point a year (Knight et al., 2020, 2022). Has the upward trend continued during the period 2013–2018, and at what pace?

To put China's inequality of wealth in international perspective we draw on Davies, Sandstrom, and Shorrocks (2008). The authors report estimates of the Gini coefficient of household wealth in major economies, centring on the year 2000. The degree of wealth inequality is generally higher than that of income inequality. China's unadjusted wealth Gini of 0.62 in 2013 is exceeded by no fewer than 20 of the 26 countries. The average value of the Gini for all the countries is 0.68. China's degree of wealth inequality is moderated by its remarkably high rate of home ownership in both urban and rural areas compared to most countries, and by its relatively high – almost universal - rate of land 'ownership' in rural areas. The inequality of wealth in China is not exceptional. What might be exceptional, however, is its rate of increase.[1]

At the national level, overall net real wealth per capita increased by 16.6% per annum between 2002 and 2013, and net housing was the asset type that increased fastest (19.9%). Very similar patterns were found in urban and rural China. The share of net housing rose from 53% to 73% of China's total wealth. Housing clearly plays a central role in China's accumulation of wealth.

A Lorenz curve for household wealth per capita for China as a whole showed that the 2013 curve was more bowed than the 2002 curve over the full range, indicating a rise in inequality throughout the wealth distribution. Nevertheless, the share of the richest decile rose from 37% to 48%, a remarkable increase of 11 percentage points. In fact, only the top decile experienced an increase in share over the period. The ratio of the highest to the lowest decile was 33 times in 2002 and no less than 91 times in 2013.

A standard decomposition of inequality among different components, in this case forms of wealth holding, was conducted. The contribution of net housing to the inequality of wealth rose, being 64% in 2002 and a remarkable 79% in 2013. The only other form of wealth holding to make an important contribution was financial assets, and this fell between 2002 and 2013, from 25% to 13%, reflecting the rising contribution of net housing. Have these trends continued over the next five years?

Knight et al. (2022) attempted to explain the rise in wealth inequality. The tendency for the saving rate to increase with income provides a mechanism for wealth inequality to grow, with those having more income (who also happen to have more wealth) saving more proportionately and thus accumulating wealth more rapidly. China's conventionally measured income from wealth as a share of total income is still small, and so its effects on saving and wealth can be only minor. However, there are reasons why wealth inequality rises via differential house price increases and thus via differential real capital gain. Real capital gain, being part of income from wealth, raises the saving rate of the wealthy and accrues disproportionately to the wealthy. House prices rise proportionately more in the areas with initially high house prices – helping to explain why the real rate of return on housing increases with housing wealth. Disproportionate house price inflation, disproportionate increases in the volume of housing, differential saving rates, and growth in the urban-rural wealth-income ratio each appeared to make an important contribution to disequalising household wealth per capita.

3. The data

Being members of the team that designed and implemented the China Household Income Project (CHIP), we utilise three rounds (2002, 2013, and 2018) of the CHIP national sample surveys. The CHIP surveys are representative sub-samples of the National Bureau of Statistics household surveys for these years. Some information is obtained directly from the NBS questionnaires and much is obtained from the CHIP questionnaires, which are designed with research hypotheses in mind. The year 2018 is the latest for which we have data. Our objective is to examine the change in the inequality of household wealth over the period 2013–2018, but it is helpful to make comparisons with the earlier period, 2002–2013.

A strength of the CHIP surveys is that the three years are rigorously comparable, and changes in wealth inequality, and their causes, can be precisely examined. Fortunately, the variables relating to wealth are identical or very similar in the three surveys. Thus, the estimates of wealth distribution can be compared given appropriate weighting. The weights used were effectively the same as those applied generally in the CHIP surveys to achieve national representativeness.

A detailed account of the wealth data and their use is provided in Knight et al. (2022) and in the Data Appendix below. Here we concentrate on the most important data issues. Valuing wealth – in particular housing and land wealth – inevitably encountered problems given China's marketising, but still semi-marketised, economy. Net housing is housing value minus housing loan. This is based on respondents' reported values (of both owner-occupied and other houses) in each year, despite the weakness of the housing market in rural China. No information was gathered in the surveys on the asset value of rural land: households merely have user rights to their land. It is possible to base the valuation of rural land (defined as cultivated land, pasture and forest) on reported net agricultural income, as explained in the Data Appendix.

[1] Knight et al. (2020) used the Pareto distribution to correct the estimate of wealth inequality in 2013 for under-reporting and under-representation, and concluded on plausible assumptions that the Gini coefficient might be raised by nine percentage points, from 0.62 to 0.71. It is possible that the scope and incentive to hide wealth at the top increased over the period, in which case our estimate of the increase in wealth inequality is understated.

Missing values had to be interpolated. For instance, where a housing value is missing, the imputation of housing value is on the basis of price per square metre at the local (county, city, or municipal district) level. Where consumer durables are listed but not valued, they are valued by using local consumer durable prices, derived from households which reported both values and quantities.

Comparative real wealth is obtained by inflating 2002 and 2013 nominal wealth by the NBS's consumer price indexes, so as to express their values in 2018 prices. We use province-level consumer price indexes, distinguishing also between urban and rural indexes. Throughout the paper our discussion of wealth is real wealth, i.e. measured at 2018 constant cpi-adjusted prices. The wealth concept of most interest is not total household wealth but household wealth per capita. Thus, when we refer to the term wealth, we mean real household wealth per capita.

It will become evident below that the growth of housing wealth has made a considerable contribution to the growth in inequality of household wealth. It is therefore important to examine the role of house price inflation in this process. The task is complicated by the fact that our two data sets do not constitute a panel. It was necessary to create a pseudo-panel. Our approach was to calculate house prices from the CHIP surveys for each of the urban and rural areas within each included province. Cities or districts within cities (in the case of metropolitan areas) were used for urban areas and the local city in rural areas. Each subsample was divided into ranked subgroups based on average house value per square metre, and these subgroups were compared in the three years. If an area was not included in the two years being compared, another location in the province with very similar house price was substituted. The resultant house price inflation index was then applied to all households in each area.[2]

It was necessary to use the rise in house value per square metre as the measure of house price inflation. It should be recognised that this measure necessarily contains an unknown element representing the value of costly house improvement per square metre. Our interest is in relative house price inflation, measured as house price inflation deflated by consumer price inflation. We shall refer to this measure as relative house price inflation or real capital gain from house ownership.

Details of the various components of wealth are reported in the Data Appendix. The asset most important to our story is housing wealth. As a few households (3.5% of all households) report having more than one house, we sum the net value for each household - the reported market value of both owner-occupied and any other owned housing. In contrast to the earlier surveys, the 2018 survey lacks information on additional houses. Wealth in the form of additional houses in 2018 was simulated on the basis of household characteristics in 2018 by predicting their value from the estimated relationship between household characteristics and additional house ownership in the 2013 sample.

The 2013 and 2018 urban surveys contained rural-*hukou* migrants settled in the urban areas. Because these households are likely to be unrepresentative of the larger urban sample, and the proportion owning an urban house was tiny, they were excluded from the urban samples.

The data set is a rich source of information with which to answer the question posed in our title. Nevertheless, certain limitations should be noted. First, there is no information on capital gain in 2002, 2013 or 2018, only average capital gain over the two periods. Second, there is a danger that wealth at the top is under-represented or under-reported. This issue is addressed, and resolved, in Section 6.

4. The rising inequality of household wealth

Table 1 reports values of the Gini coefficient of household wealth per capita in the years: 2002, 2013, and 2018. This enables us to calculate the rise in the Gini over three periods: 2002–2018, 2002–2013, and 2013–2018. Over the full sixteen-year period the Gini increased by 27%, or by 13 percentage points, implying an annual increase of 0.8 percentage points. However, there is a marked contrast when this period is divided into two. Although wealth inequality grew in both periods, it grew much more slowly in the later period. The annual average percentage point increase in the years 2013–2018 was only 0.6, whereas it had been almost 1.0 in the years 2002–2013.

It is therefore possible to take both a pessimistic and an optimistic view. 'The glass is half-empty', i.e. wealth inequality has continued to rise; 'the glass is half-full', i.e. this rise was slower than in the earlier period. It is important to explore the reasons why wealth inequality grew more slowly over the period 2013–2018; this we do in Section 5.

Table 2 documents the rapid growth of household wealth per capita, both in total and by the different classes of wealth asset, in our three periods. It also shows the share of each asset class in the total for each year. Wealth per capita continued to grow fast but not as fast as before, the growth rate being 8.9% per annum in 2013–2018 and 15.2% per annum in 2002–2013. This slower growth of household wealth might itself be less disequalising. If household wealth in the economy is growing slowly, greater inequality implies a redistribution of wealth, for instance, owing to differences in portfolios and relative price changes. If wealth is accumulating rapidly, there is more scope for wealth inequality to grow, provided that the more rapid accumulators are the wealthier households.

The main direct reason for the deceleration is that the dominant component, housing wealth, now grew by 9.6% per annum whereas it had previously grown by 18.3% per annum. The share of housing wealth increased by less than one percentage point, to 72.8% of total wealth. We do not expect the growth of housing wealth to continue to play such a crucial role in disequalising household wealth per capita. The other main form of household wealth holding was financial assets. Their sum rose but their share again fell, by 2.0% points to 14.3% of the total. Note also that in the later period wealth per capita no longer grew much faster than income per

[2] As an alternative method, we used data published by the Ministry of Housing and Construction which shows the value of sales of commercialised buildings and the corresponding sold floor space, at district and county level. It was thus possible to construct a set of house price inflation indexes. As the estimates obtained from the two sources were similar, we chose to use the estimates based on CHIP.

Table 1
The Gini coefficient of wealth, 2002, 2013, and 2018, and its growth, 2002–2018, 2002–2013, and 2013–2018: %, and % point, % and % point per annum.

	Level	Change			
		%	% point	% p.a.	% point p.a.
2002	0.494				
2013	0.596				
2018	0.625				
2002–2018		27	13.1	1.5	0.8
2002–2013		21	10.2	1.9	0.9
2013–2018		5	2.9	1.0	0.6

Table 2
Wealth per capita and its components, growth rate per annum of wealth per capita and its components, and share of components in total wealth, 2002, 2013, 2018.

	Mean wealth (yuan)			Growth rate per annum (%)			Share of total (%)		
	2002	2013	2018	2002–2018	2002–2013	2013–2018	2002	2013	2018
Overall net wealth p.c.	31,725	151,018	231,064	13.2	15.2	8.9	100.0	100.0	100.0
Net housing	16,804	106,300	168,203	15.5	18.3	9.6	53.0	70.4	72.8
Financial assets	6880	24,572	32,975	10.3	12.3	6.1	21.7	16.3	14.3
Consumer durables	2456	9972	17,560	13.1	13.6	12.0	7.7	6.6	7.6
Productive fixed assets	1234	4813	7687	12.1	13.2	9.8	3.9	3.2	3.3
Land	3824	5124	4389	0.9	2.7	−3.1	12.1	3.4	1.9
Other assets	837	1079	4969	11.8	2.3	35.7	2.6	0.7	2.2
Non-housing debt	−310	−842	−4719	18.5	9.5	41.2	−1.0	−0.6	−2.0
Income per capita	6837	19,137	26,749	8.9	9.8	6.9	–	–	–

capita (8.9% versus 6.9% per annum).

The distribution of real household wealth by real wealth per capita decile is reported in Table 3. The years 2002, 2013, and 2018 are reported so as to compare the 2002–2013 and the 2013–2018 periods; as are the urban and rural distributions as well as the national distribution, because they contain interesting differences.

For China as a whole, the share of the nine poorest wealth deciles fell between 2002 and 2013: it was only the top decile that experienced an increase in share, by 9.7% to as much as 46.4% of total wealth. The share of the top 5% and the top 1% also grew, by 9.3% and 5.5% points respectively. The wealthiest households benefited most during the 2002–2013 period. The 2013–2018 period presents a different picture. Although the shares of eight deciles fell, these falls were tiny and the rise in the share of decile 10 was only by 1.9% points. The largest increase, by 1.1% points, went to the wealthiest 1%. Redistribution was on a much smaller scale in this later period.

Table 3 shows the pattern for both the earlier and the later periods in urban China to be remarkably similar to that in China as a whole; the same is true in rural China during the earlier period. By contrast, there is a process of rural wealth equalisation over the years 2013–2018. The only deciles to lose share were the first and the tenth. Decile 10 lost share by 0.9% points, down to 37.7% of rural wealth, and the top 5% and 1% also lost share. It would be interesting to enquire what forces were at work to reduce rural wealth inequality over those five years.

It might be argued that the new policy objective, introduced in 2020 more or less, of promoting 'common prosperity' is not simply to place more emphasis on the reduction of inequality in Chinese society but also to raise the share of those in the middle of the distribution. In that case, consider the application of the new objective to household wealth. The wealth deciles of Table 3 illustrate. Over the years 2013–2018 the share of the poorest deciles 1 and 2 fell by 0.9% points, that of the richest deciles 9 and 10 rose by 2.1% points, and the share of the middle deciles 3–8 fell by 1.2% points. Wealth polarisation – the movement of household wealth away from the middle – was still apparent. However, polarisation was much slower than it had been in the period 2002–2013 - when the share of deciles 1 and 2 fell by 1.6% points, that of deciles 9 and 10 rose by 8.9% points, and the middle share fell by 7.3% points.

Table 4 employs the standard method of decomposing inequality among different components, in this case forms of wealth holding. The first column shows the share of each component in total wealth, the second column the Gini coefficient for that component, and the third column the concentration ratio, reflecting the correlation between the wealth of that component and total wealth. The final column, derived from the product of these three variables, yields the result of most interest: the contribution of each component to overall wealth inequality.

The contribution of net housing to the inequality of wealth initially rose, being 64% in 2002 and 76% in 2013: all three of its components increased. Meanwhile, its contribution then stabilized at 77% in 2018: although all three components rose in absolute terms, their share were almost the same. By contrast, the contribution of financial assets, having previously fallen from 24.9% in 2002 to 13.7% in 2013 because of the growing contribution of housing, fell slightly to 12.1% in 2018. No other asset made a notable contribution or increase in contribution.

Table 3
Share of each wealth decile in total wealth, national, urban and rural, 2002, 2013, 2018 (%).

	National					Urban					Rural				
	2002	2013	2018	02–13	13–18	2002	2013	2018	02–13	13–18	2002	2013	2018	02–13	13–18
Lowest Decile	1.3	0.6	−0.1	−0.6	−0.7	0.6	0.7	0.2	0.2	−0.5	2.2	1.0	−0.5	−1.2	−1.6
Decile 2	2.6	1.6	1.4	−1.0	−0.2	2.1	2.1	1.8	−0.0	−0.3	3.8	2.7	2.6	−1.1	−0.0
Decile 3	3.6	2.4	2.2	−1.2	−0.2	3.6	3.1	2.8	−0.5	−0.4	5.0	3.7	3.9	−1.3	0.2
Decile 4	4.5	3.3	3.0	−1.3	−0.3	5.1	4.1	3.8	−1.0	−0.3	6.1	4.7	5.1	−1.4	0.3
Decile 5	5.6	4.3	4.0	−1.3	−0.3	6.7	5.2	5.0	−1.4	−0.2	7.3	5.9	6.3	−1.4	0.4
Decile 6	7.0	5.7	5.4	−1.3	−0.3	8.6	6.7	6.5	−1.9	−0.2	8.6	7.3	7.7	−1.3	0.4
Decile 7	8.9	7.7	7.5	−1.2	−0.2	10.7	8.7	8.5	−2.0	−0.2	10.2	9.0	9.4	−1.2	0.4
Decile 8	12.0	10.9	10.8	−1.1	−0.0	13.8	11.7	11.6	−2.0	−0.1	12.3	11.3	11.8	−1.0	0.4
Decile 9	17.9	17.2	17.4	−0.8	0.2	18.8	17.2	17.5	−1.6	0.3	16.0	15.8	16.1	−0.1	0.3
Decile 10	36.7	46.4	48.3	9.7	1.9	30.1	40.4	42.3	10.3	1.9	28.6	38.6	37.7	10.0	−0.9
Top 5%	23.2	32.5	33.9	9.3	1.4	17.5	27.1	28.7	9.6	1.6	17.8	26.8	26.2	9.0	−0.6
Top 1%	6.5	12.0	13.1	5.5	1.1	4.6	9.2	10.6	4.7	1.4	5.4	11.1	11.0	5.7	−0.1

Table 4
Decomposition of household wealth inequality, 2002, 2013, and 2018.

	Category	Wealth structure	Gini index	Concentration ratio	Contribution to overall wealth inequality
2002	Net housing	0.530	0.647	0.915	63.9
	Financial assets	0.215	0.702	0.809	24.9
	Consumer durables	0.078	0.543	0.659	5.7
	Productive fixed assets	0.040	0.772	0.257	1.6
	Land	0.122	0.635	0.040	0.6
	Other assets	0.026	0.845	0.652	2.9
	Non-housing debt	−0.010	−0.935	0.204	0.4
2013	Net housing	0.692	0.691	0.955	75.9
	Financial assets	0.160	0.666	0.773	13.7
	Consumer durables	0.064	0.758	0.712	5.8
	Productive fixed assets	0.036	0.937	0.635	3.6
	Land	0.049	0.700	0.011	0.1
	Other assets	0.006	0.921	0.724	0.6
	Non-housing debt	−0.007	−1.195	0.223	0.3
2018	Net housing	0.722	0.709	0.958	76.6
	Financial assets	0.142	0.712	0.764	12.1
	Consumer durables	0.076	0.694	0.633	5.2
	Productive fixed assets	0.035	0.926	0.521	2.6
	Land	0.024	0.973	0.092	0.3
	Other assets	0.023	0.985	0.824	2.9
	Non-housing debt	−0.022	−0.948	0.075	0.2

5. Why has the rise in wealth inequality slowed down?

The stability in the contribution of net housing to household wealth inequality is likely to be an important cause of the slower growth of wealth inequality. It suggests that lower house price inflation might be the reason. Rapid house price inflation in the period 2002–2013 increased housing wealth as the relative price of housing increased. It also raised the inequality of housing wealth and total wealth because the capital gain accrued mainly to the rich. Lower house price inflation in 2013–2018 should have reduced both the growth of wealth and the growth of wealth inequality.

We conduct a counterfactual analysis to measure the effect of slower house price inflation on the growth and inequality of household wealth per capita. The average rate of actual house price inflation during the period 2013–2018 was 8.9% per annum, whereas the corresponding rate for the 2002–2013 had been 15.2% per annum. Relative house price inflation (relative to the consumer price index, i.e. capital gain attributable to house price inflation) for the two periods was 4.8% and 9.2% per annum respectively. The counterfactual simulation replaces the rate of relative house price inflation in the period 2013–2018 with the rate of relative house price inflation in the period 2002–2013. The difference between actual and counterfactual thus measures its contribution to the growth of relative wealth per capita and the growth of the Gini coefficient of wealth per capita.

We use the ratio of relative house price inflation in 2002–2013 to that in 2013–2018. Each household had its own rate of house price inflation over the period 2013–2018 depending on its locality. We apply the ratio to each household's rate of house price inflation. On that basis we calculate the counterfactual growth of housing wealth (per capita) and hence total wealth, and also the change in wealth inequality, to compare with the actual growth of wealth and the actual growth of wealth inequality.

Table 5 reports the results of the exercise for the growth of wealth. Consider the national case. The actual annual growth rate of wealth fell by 6.3% from 2002 to 2013 to 2013–2018. According to the counterfactual, this fall would be changed to a rise of 15.1%. Very similar results are obtained for urban and rural China. The counterfactual relative house price inflation can explain all of the differences in actual wealth growth. The slower growth of wealth in the later period can be attributed to the difference in housing real capital gain.

The counterfactual results for changes in the Gini coefficient are shown in Table 6. At the national level, the actual rise in the Gini between 2013 and 2018 was 0.029, whereas the counterfactual difference was 0.046, implying that the simulation can account for more than the actual rise in the inequality of wealth over those five years. The same is true of both urban and rural China. We have found an explanation for the growing but slowing increase in the Gini between 2013 and 2018: house price inflation was rapid but not

Table 5
Wealth per capita based on the change that is attributable to house price inflation: simulation analysis.

	Actual value			Counterfactual value	Actual annual growth rate(%)		Counterfactual annual growth rate(%)
	2002	2013	2018	2018	02–13	13–18	13–18
National	31,725	151,018	231,064	442,728	15.2	8.9	24.0
Urban	53,832	242,299	346,532	678,631	14.7	7.4	22.9
Rural	20,236	70,086	85,066	144,451	12.0	4.0	15.6

Notes: The method of calculation is explained in the text. In the counterfactual cases the changes are those attributable only to (relative) house price inflation, i.e. they are based on differences in house price inflation.

Table 6
The Gini coefficient of wealth per capita based on the change that is attributable to house price inflation: simulation analysis.

	Actual value			Counterfactual value	Actual change		Counterfactual change
	2002	2013	2018	2018	02–13	13–18	13–18
National	0.494	0.596	0.625	0.642	0.102	0.029	0.046
Urban	0.460	0.534	0.564	0.569	0.075	0.029	0.035
Rural	0.380	0.498	0.509	0.516	0.117	0.011	0.019

Notes: As for Table 5.

as rapid as before.

It is possible by means of a counterfactual simulation to decompose the rise in the wealth Gini into the parts that are due to a change in the urban-rural wealth ratio and to the change that would occur if the ratio remained constant (Table 7). In each period both the ratio and the Gini increased. We see that the rise in the ratio itself raised the Gini, accounting for 63% of the increase in the earlier period and for 53% of the smaller increase in the later period. There is a positive association between the urban-rural ratio and the Gini coefficient. However, this does not weaken our conclusion that house price inflation explained both the growing and the slowing of the wealth Gini over the period 2013-2018. House price inflation contributed to both components of our urban-rural decomposition because the sector which had both higher house prices and more rapidly rising house prices grew in share.

There might be other explanations for the slower rise in wealth inequality: the possibilities that the wealth of rich people was increasingly under-reported, or that rich people increasingly emigrated with their wealth. Our concern is with the change in the Gini coefficient between the two years: the same degree of underestimation would not affect the analysis. Wan and Yu (2022), using a power law distribution technique, calculated the underestimation to be about the same in 2013 and 2018: 6.7 and 7.4 percentage points respectively. This small increase cannot explain the slower growth of the Gini coefficient.[3]

Part of the wealth that is not reported by the rich has been transferred abroad. In this respect, China does not stand out. An examination of offshore wealth suggests that Chinese households held offshore the equivalent to 2.3% of China's GDP in 2007, whereas the world total was about 10% of world GDP (Alstadsaeter, Johannsen, & Zucman, 2017).

Some people have accompanied their wealth and have emigrated. In that case they no longer qualify to be in the national survey. The Gini coefficient is reduced by the emigration of rich people. If emigration increased over the period 2013–2018, this would reduce the reported rise in wealth inequality, and might contribute to the 'slowing' of the Gini. Without measures of emigration and the wealth of emigrants, we cannot measure the size of this possible effect. In any case, we have shown that the slower rate of house price inflation can explain a large part of the decline in the increase in the Gini coefficient.

6. Robustness tests

We provide two checks on the robustness of the results: one on our exclusive use of the CHIP data, and the other on our omission of rural-urban migrants from the urban sample. Our results prove to be robust.

We check on the CHIP results by comparing them with those of two other surveys that also provide recent evidence on inequality of household wealth: the China Family Panel Survey (CFPS) and the China Household Finance Survey (CHFS). As these data sources commenced only in 2010 or 2011, we can test our 'growing' but not our 'slowing' hypothesis. We compare the change in the Gini coefficient of household wealth per capita over the period 2013–2018 for CHIP with that over the periods 2012–2018 for CFPS and 2013–2017 for CHFS. The annual percentage point rise and annual percentage rise for CHIP are 0.6 and 1.0% respectively, for CFPS 0.9 and 1.4%, and for CHFS 0.5 and 0.7%. Thus, the rise in wealth inequality is confirmed. Moreover, the two others straddle the CHIP estimates and their spread is reasonably narrow. Our result is supported.

Prior to 2018, the urban sample contained only households with urban *hukou*. Although there was also a separate rural-urban migrant sample (urban households with rural *hukou*), this was excluded from the analysis of all three years, for several reasons. Most in the rural *hukou* sample were in rented or employer-provided accommodation, many had a house and wealth in their village, yet the questionnaire sought information only on their urban house and urban wealth. A mere 0.1% of migrants owned an urban house in 2002, and this proportion rose only to 0.8% in 2013, and 1.0% in 2018; the corresponding sample numbers were very small. If a household in the rural sample contained migrants, their wealth was reported as part of the household's wealth.

It is misleading to measure migrants' wealth inequality when only their urban wealth is available. However, we can estimate the annual rate of real house price inflation (value per square metre deflated by the consumer price index) for the sample of rural-urban migrants over the periods 2002–13 and 2013–18: 15.8% and 8.5% respectively. These annual house price inflation rates are similar to those for urban-*hukou* households (14.2% and 7.4% respectively), and a very similar slowdown occurred.

[3] Similarly, Li, Luo, Lu, Deng, and Gan (2016) and Li, Yi, and He (2021), applying the method of generalised Pareto interpolation to CHFS data, estimated very similar under-reporting of the share of the wealthiest 10% in 2013 and 2015: 3.5 and 3.6 percentage points respectively.

Table 7
The effect of change in the urban-rural ratio of household wealth per capita on the Gini coefficient of household wealth per capita, 2002, 2013, 2018: counterfactual analysis.

	2002	2013	2018
Urban-rural wealth ratio	2.660	3.457	4.074
Gini coefficient	0.494	0.596	0.625
Counterfactual Gini	0.532	0.596	0.611

	2002–13	2013–18
Change in Gini	0.102	0.029
Change in Gini if ratio constant: percentage share	37	47
Change in Gini due to change in ratio: percentage share	63	53

Notes: 2013 is the base year. The counterfactuals are for 2002 and 2018. The counterfactual simulation is the change in the Gini coefficient if the ratio of urban to rural wealth had remained constant.

7. Policies to prevent rising wealth inequality

7.1. The policy challenge

China has achieved rapid economic growth but economic inequality has also grown. Government has recently adjusted its policy objectives from achieving rapid economic growth towards securing more equality. This is summed up by the political term ‘common prosperity’. Since 2020 common prosperity has become an important policy strategy. Several fields of policy have been adjusted towards that objective. Even within the inequality domain, in past years, whereas importance was placed on the distribution of flows (that is, income), the distribution of stocks (that is, wealth) was almost ignored. Since about 2010 the trend in income inequality has not been upwards but in the twenty-first century, and even in the period 2013–2018, the inequality of household wealth per capita has continued to rise. Accordingly, policies to curb and reverse the rise in wealth inequality have become increasingly important for the new common prosperity strategy.

The rapid accumulation of household wealth and its increasing inequality is important because it has economic, social and political implications. Not only is wealth more unequally shared among households but also rising wealth inequality can change the nature of society. It can generate a more class-based society, both for the present generation and, through inheritance, for subsequent generations. High inequality of wealth also has the potential to unbalance political influence (Piketty, 2020). These are powerful reasons to regard the distribution of wealth among households as central to the promotion of common prosperity.

There are three major forms of state intervention aimed at curbing or reducing the inequality of wealth among households. These are taxes on wealth, taxes on capital gains, and taxes on inheritance (Meade, 1976). The particular importance of China’s inequality of housing wealth suggests that action specifically on housing wealth may be appropriate: taxes on housing values, on housing capital gains, and on the inheritance of houses. A different policy option is to target house prices in order to curb or reverse house price inflation. Below we examine the prospects for these policy options in China.

7.2. Policy options

The taxation of wealth is notoriously difficult. China does not appear to tax wealth, either directly or indirectly. Nevertheless, some countries have wealth taxes in place. For instance, in the United Kingdom, a rich capitalist market economy, there is agreement across the political parties that the inequality of wealth should be curbed, arguably as a requirement for maintaining a stable democracy. The policy is implemented by means of two long-established taxes. There is an inheritance tax at 40% on an entire estate on death, with a threshold and only minor exemptions for transfers before death. There is also a capital gains tax at 28% (houses) or 20% (other assets) on the sale of wealth assets, the only exceptions being an owner-occupied house and a small maximum annual allowance (for instance, Yarker, 2022).

Piketty (2014: 572-3) argues that the right solution to the challenge posed by increasing inequality of wealth is a progressive annual tax on capital. He recognises that there are two severe difficulties. One is the need, however burdensome, continuously to value individual wealth in all its asset forms. The other is the mobility of wealth across countries and the consequent need, albeit improbable, for effective international cooperation. Despite China’s capital controls, it is claimed that some rich Chinese people have managed to move part of their wealth abroad (Alstadsaeter et al., 2017; Zucman, 2017), and that recently some cases have done so to protect against possible future confiscatory common prosperity policies.

7.3. China’s wealth policies

In general, the Chinese government does not yet have an effective policy to curb or reduce the rise in wealth inequality, although this topic attracts growing policy debate. There is no wealth tax in China, nor a capital gains tax, nor an inheritance tax. Nevertheless, certain actions have been taken.

There is a tax on income from wealth but the rate of tax is only 20% - lower than the marginal tax on income from labour, which rises to 45% (State Taxation Administration, 2016). An increase in the rate of tax on income from wealth should help to reduce the inequality of household wealth without serious distortion of incentives. An 'estate tax' is currently being trialled in several cities, with the possibility of it becoming general (but temporarily stopped owing to the economic slowdown). This is effectively a housing tax, levied on other than owner-occupied houses (in one city) or on the area of a house above a minimum square metres per household member (in another).

We see in Table 3 that the share of the top 1% in total wealth – albeit probably inaccurate and under-reported - rose between 2002 and 2013 and rose again, to 13%, from 2013 to 2018. Action has been taken against the very rich. The anti-corruption campaign, from 2013 onwards, has reduced the wealth of those whose wealth was derived from corruption and has deterred corrupt wealth accumulation. Measures against tax avoidance and evasion have been strengthened, and many rich people have been investigated for tax evasion. Nevertheless, as in other countries, the very rich are often able to protect, disguise or hide their wealth. For instance, they do so by holding individual wealth in the name of corporate assets, by transferring such assets to tax havens, and - despite China's controls on capital mobility – by transferring individual wealth abroad. Recent government actions to encourage or compel the very rich or their firms to make donations to charities are unlikely to reduce the inequality of wealth (as opposed to income) among households, and in any case they represent less than 0.02% of GDP (Yang, 2019).

7.4. House price inflation

Recently government has attempted to suppress house price inflation. On the supply side, the release of land for house-building is the key variable. On the demand side, house price inflation can be curbed by restricting access to credit. Although these central and local government policies work through administrative controls, by shifting supply or demand for housing they should influence the market-determined rate of house price inflation. The release of land for urban house building is under the control of local governments, subject to central government restrictions on urban land expansion and usage (Gyourko, Shen, Wu, & Zhang, 2022). Local governments have an incentive to raise local revenue but some use their monopoly position to maximise revenue by restricting land supply (Gyourko et al., 2022:17). The tardy supply of housing land has contributed to house price inflation (Wang & Hou, 2021).

There has been growing concern about house price inflation: its effect on the affordability of house purchase, and on speculative demand that in turn accelerates the rise. During the period 2013–2018 central government required local governments to supply more housing land and set targets for maximum house price inflation, enforced by its control over local officials' career prospects. It also restricted the demand for house purchase by curbing access to loans. In the years since our study period, further action has been taken. House price inflation also reflected the ready availability of loans to property developers, many obtained off-shore. Central government has recently restricted the credit available to developers, in order to curb supply. In fact, the intervention helped to bring many heavily indebted developers to the edge of bankruptcy, forcing them to find funds - so reducing land prices, house prices, and house construction. There is now a threat of a housing market crash (*The Economist*, 17 September 2022). A housing crash is hardly the ideal policy with which to confront rising wealth inequality!

An important reason for the housing boom in the period 2002–2013 was the monetary policy of quantitative easing in the wake of the 2008 global financial crisis. The increased funding, which continued until 2013, fed house price inflation. The importance of macroeconomic policies for the inequality of wealth should be recognised.

8. Conclusion

Government's new emphasis on the strategy of achieving common prosperity for China's people implies, among other objectives, a new objective to reduce the inequality of household wealth, especially by centralising the wealth distribution.

The CHIP national household surveys of 2002, 2013, and 2018 permit detailed comparative analysis of household wealth (per capita). We estimate changes in both wealth level and wealth inequality over those years. The Gini coefficient of household wealth rose rapidly over the period 2002–2013, by 0.9 percentage points per annum. It continued to rise over the period 2013–2018, but it did so less rapidly, by 0.6 percentage points per annum.

Knight et al. (2022) explained the reasons why the inequality of household wealth had risen dramatically over the period 2002–2013. It is likely that each of those forces continued to operate over the later period. The main difference lay in the rate of house price inflation. This result was established by means of counterfactual analysis. Relative house price inflation was rapid in the period 2013–2018, but not as rapid as before. Government has recently intervened to curb house price inflation, with its implications for the distribution of wealth among households.

The inequality of wealth is a recent, twenty-first century, phenomenon in China. Government has not yet introduced substantive policies to tackle the problem directly. The increasing inequality of wealth among households does indeed pose a challenge to the achievement of common prosperity in China. It deserves greater policy attention. The recent strategy document for the 20th CPC Congress, specifically mentioning wealth accumulation of the wealthy and its regulation, indicates that this is now recognised.

Data availability

Data will be made available on request.

Appendix A. Data Appendix

We divide each component of wealth by the number of household members to obtain the corresponding household wealth per capita. For 2002 we follow very closely the definitions in the data appendix to Zhao and Ding (2008. pp.140–4). The definitions used in 2013 and 2018 are set out below.

A.1. Net housing value

Net housing value is calculated as housing value minus housing loan. As a few households (3.5% of all households) have more than one house, we sum the net value for each household - the reported market value of both owner-occupied and any other owned housing. For those who report housing area but not housing value, we multiply by the average value per square metre in the sampled area. Those who have no ownership rights but report housing area are recorded as having a housing value of zero.

A.2. Net financial assets

The questionnaire asks separately for the total value of financial assets and for the separate components. Where the sum of the components is not equal to the reported total value, we use the sum of the components. Financial assets include spot cash, demand deposits, time deposits, endowment insurance, government bonds, other bonds, stocks, funds, futures, money lent (not including business loans), and other financial assets.

A.3. Non-housing debt

If the reported gross non-housing debt differs from the sum value of its components, we use the latter. Missing values are treated as zero.

A.4. Fixed productive assets

We take the reported net present value of agricultural and non-agricultural fixed productive assets as the measure of fixed productive assets.

A.5. Consumer durables

The reported market value of household 'movable properties' is taken to be the value of consumer durables, comprising several consumer durables including private (non-business) cars.

A.6. Rural land value

Household net agricultural income, recorded in the NBS survey, is used to calculate rural land value in 2013 and 2018. Because we lack direct information on net household agricultural income in 2002, we follow Zhao and Ding (2008) in assuming that one acre of irrigated land equals two acres of dry land, and calculating net household agricultural income as gross agriculture income minus production costs. Following earlier research, we assume that 25% of net agricultural income comes from land and the rate of return on land is 8% (Zhao and Ding, 2008). Therefore, land value is measured as net household agricultural income multiplied by 25/8.

A.7. Other assets

The questionnaire items 'other precious metals and jewellery (including gold ornaments)', and 'other assets' are not included in financial assets or fixed productive assets or consumer durables. Accordingly, we define these items as our variable 'other assets'.

A.8. Total net wealth

The total value of net wealth is the sum of the wealth components listed and defined above.

Table A1 reports the numbers of responding individuals and their weighted percentages in the samples.

Table A1
Number and Percentage of Individuals in the Samples.

		Rural	Urban	National
Not weighted	2002	37,969	20,363	58,332
	2013	39,592	20,395	59,987

(*continued on next page*)

Table A1 (*continued*)

		Rural	Urban	National
	2018	33,930	28,688	62,618
	2002	65.8	34.2	100
Weighted (%)	2013	53.0	47.0	100
	2018	44.2	55.8	100

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