



Chapter 3

GROWTH AND HAPPINESS IN CHINA, 1990-2015

RICHARD A. EASTERLIN, FEI WANG AND SHUN WANG

Richard A. Easterlin, University Professor and Professor of Economics, University of Southern California

Fei Wang, Assistant Professor, School of Labor and Human Resources, Renmin University of China

Shun Wang, Associate Professor, KDI School of Public Policy and Management (Korea)

The authors are grateful for the assistance of Kelsey J. O'Connor, and for the helpful comments of Jan-Emmanuel DeNeve, John F. Helliwell, John Knight, Matthew Kahn, and Kelsey J. O'Connor. Financial assistance was provided by the University of Southern California.

Can't get no satisfaction!

Rolling Stones, 1965

In the past quarter century China's real GDP per capita has multiplied over five times, an unprecedented feat.¹ By 2012 virtually every urban household had, on average, a color TV, air conditioner, washing machine, and refrigerator. Almost nine in ten had a personal computer, and one in five, an automobile. Rural households lagged somewhat behind urban, but these same symptoms of affluence, which were virtually nonexistent in the countryside in 1990, had become quite common by 2012.² In the face of such new-found plenitude, one would suppose that the population's feelings of well-being would have enjoyed a similar multiplication. Yet, as will be discussed, well-being today is probably less than in 1990.

This chapter, which builds on a prior study³, describes the evolution of China's well-being in the quarter century since 1990 and suggests the likely reasons for the disparate trajectories of subjective well-being (SWB) and GDP per capita (hereafter, simply GDP). The terms subjective well-being, life satisfaction, and happiness are used here interchangeably, and refer to people's overall evaluation of their lives. The chapter also describes important differences in subjective well-being among various groups in the population and notes some possible reasons for these differences.

As in any historical study of a developing country, quantitative data are in short supply—though typically expanding and improving with time. The task of empirical study is to assemble and evaluate the quantitative evidence available and assess its fit with the broader historical context, as is attempted here. Although the available measures of China's SWB in the period under study tend to be biased toward the urban sector, the same is true of economic growth.⁴ Hence the present data should provide a reasonable perspective on the course of well-being in an area experiencing an unparalleled increase

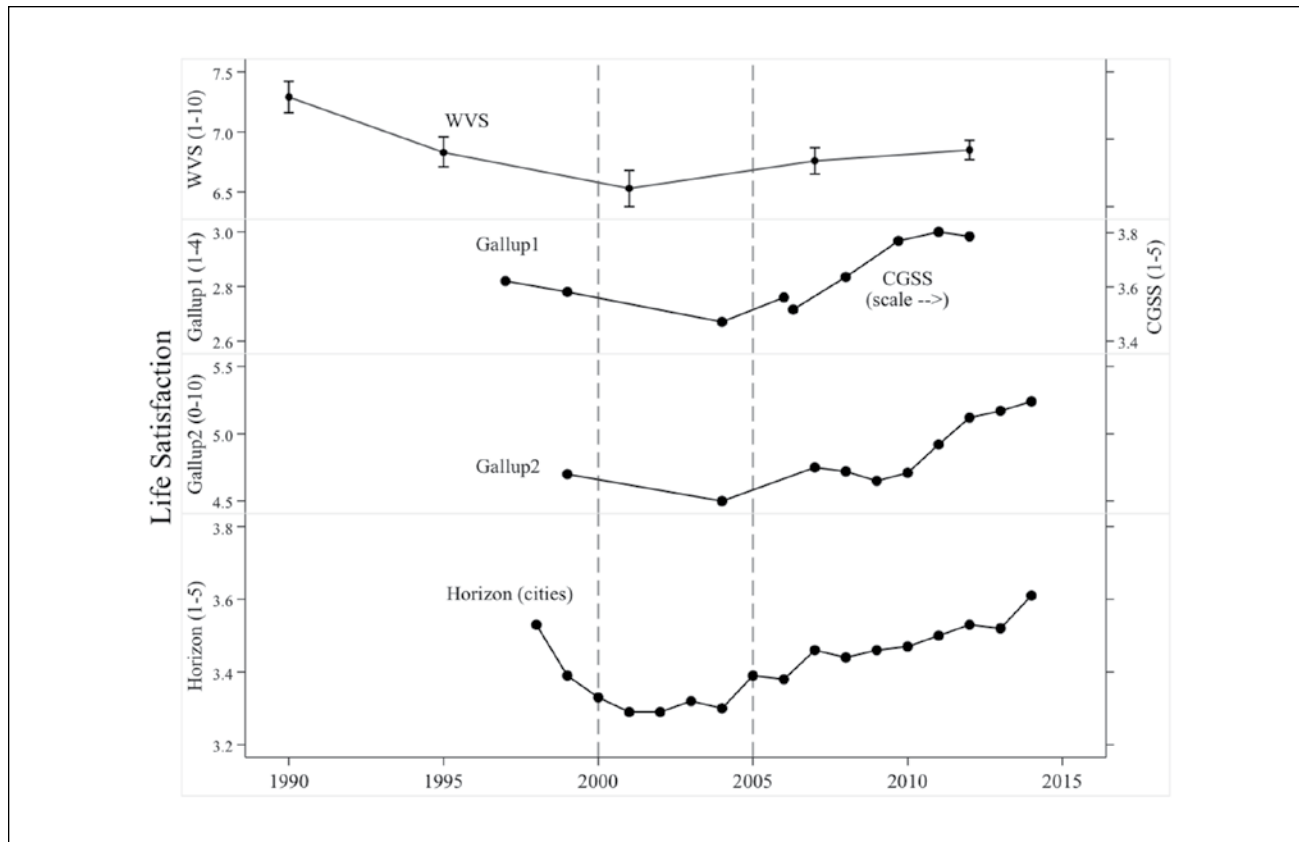
in the per capita output and consumption of goods and services.

Long Term Movement

Since 1990 China's SWB has been U-shaped over time, falling to a 2000-2005 trough and subsequently recovering (Fig. 3.1).⁵ This pattern is found in four different series that reach back into the 1990s—WVS, Gallup1 and 2, and Horizon. The fifth series in Figure 3.1, based on the China General Social Survey (CGSS) only starts in the 2000s, and trends upward, like the other series in the same time span. The series that include 1990s data come from three different survey organizations, two American and one Chinese. In every series both pre- and post-trough values are higher than those in 2000-2005, even though the series differ in their origin, measure of SWB, and sample size (see Technical Box 1). The consistency of the results from these different series strengthens the finding on the overall movement. Lack of annual data prevents more precise dating of the trough in SWB. Additional support for the U-shape is provided by the 95% confidence interval bars presented for the WVS data. There is no overlap between the confidence interval at the 2000-2005 trough and the corresponding intervals for the initial value of the series in 1990 and the terminal value in 2012.

The 1990 WVS value of 7.29 for SWB seems high for what was then a poor country, but several considerations point to its plausibility.⁶ China's urban labor market at that time has been described as a "mini-welfare state," its workers as having an "iron rice bowl."⁷ Concerns about one's current and future job and family security were virtually non-existent. Those employed by public enterprises (which accounted for the bulk of urban employment) were essentially guaranteed life-time jobs and had benefits that included subsidized food, housing, health care, child care, and pensions, as well as assurance of jobs for their grown children. Russia's

Fig. 3.1. Mean Subjective Well-Being, Five Series, 1990-2015



Source: Appendix, Table A3.1.

Notes: Horizon series is 3-year moving average, centered, of annual data for 1997-2015; Gallup 2, after 2004, is three-year moving average, centered, of annual data for 2006-2015; CGSS is three item moving average for dates given in Technical Box 1. Series with response options of 1-4 or 1-5 are plotted to twice the scale of series with response options of 1-10 and 0-10. For survey questions and response options, see Technical Box 1.

labor and wage policies served as the model for communist China, and China's value of 7.29 is almost identical to the 7.26 value found in the available data for pre-transition Russia.⁸ In 1990 life satisfaction differences by socio-economic status in China were very small, as was true also of former Soviet Union countries prior to transition.⁹ In the 1990 survey data for China, mean values exceeding 7.0 are found across the distributions by education, occupation, and income; hence the high overall average cannot be attributed to a disproportionate representation in the 1990 survey of those with high life satisfaction.

It is doubtful that the recovery in SWB by the end of the period reaches a value equal to that in 1990. In the WVS series, the one covering the longest time span, the terminal value of 6.85 in 2012 is significantly less than the 1990 value of 7.29. The upper bound of the 95% confidence interval in 2012 is 6.93, well below the lower bound of 7.16 in 1990. Another indication that China has not recovered to its 1990 value is the slippage in its worldwide ranking by SWB. If the 2012 high-to-low array of 100 countries with recent WVS data is taken as a reference,¹⁰ China falls from 28th to 50th between 1990 and 2012. The middling position of China in the 2012

Technical Box 3.1. Surveys and Measures of Subjective Well-Being

World Values Survey (Sample Size: c. 1,000–c. 2,000). Life satisfaction: All things considered, how satisfied are you with your life as a whole these days? Please use this card to help with your answer. 1 (dissatisfied) 2 3 4 5 6 7 8 9 10 (satisfied)

Gallup1 (Sample Size: c. 3,500). Life satisfaction: Overall, how satisfied or dissatisfied are you with the way things are going in your life today? Would you say you are 4, very satisfied; 3, somewhat satisfied; 2, somewhat dissatisfied; or 1, very dissatisfied?

Gallup2 1999, 2004 (Sample Size: c. 4,000). Ladder of life: Please imagine a ladder with steps numbered from 0 at the bottom to 10 at the top. Suppose we say that the top of the ladder represents the best possible life for you, and the bottom of the ladder represents the worst possible life for you. On which step of the ladder would you say you personally stand at this time?

Gallup2: Gallup World Poll 2006-2015 (Sample Size: c. 4,000, except 2012 c. 9,000) Ladder of life: Please imagine a ladder with steps numbered from zero at the bottom to ten at the top. Suppose we say that the top of the ladder represents the best possible life for you, and the

bottom of the ladder represents the worst possible life for you. On which step of the ladder would you say you personally stand at this time, assuming that the higher the step the better you feel about your life, and the lower the step the worse you feel about it? Which step comes closest to the way you feel?

Horizon 1997–1999, 2001 (Sample Size: c. 5,000). (In Chinese) In general, are you satisfied with your current life: very satisfied, fairly satisfied, fairly dissatisfied, or very dissatisfied? (Single answer). Coded 5, 4, 2, or 1.

Horizon 2000, 2002–2010 (Sample Size: c. 2,500–c. 5,500). (In Chinese) In general, are you satisfied with your current life: very satisfied, fairly satisfied, average, fairly dissatisfied, or very dissatisfied? (Single answer). Coded 5, 4, 3, 2, or 1.

Chinese General Social Survey (CGSS) 2003, 2005, 2006, 2008, 2010-2013 (Sample Size: c. 5,500–c. 12,000). (In Chinese) On the whole, do you feel happy with your life: very unhappy, unhappy, so-so, happy, or very happy? (Single answer). Coded 1, 2, 3, 4, or 5.

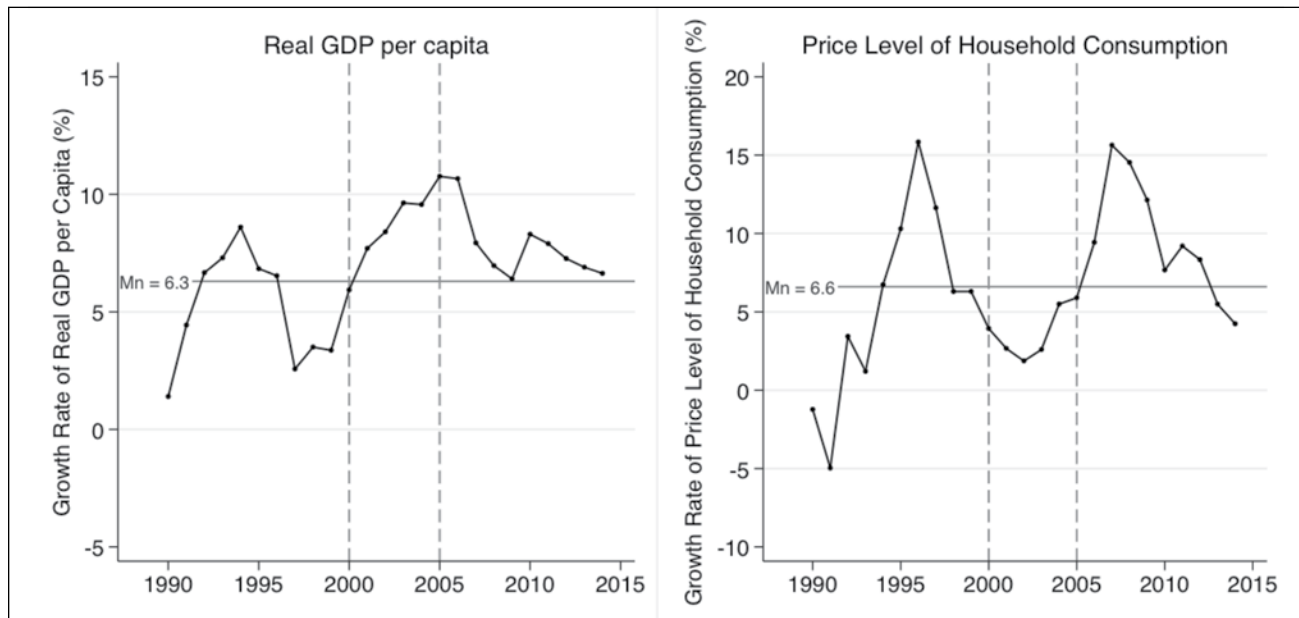
WVS ranking is fairly consistent with that in the current Gallup World Poll ladder-of-life array for 157 countries—in 2013-15 China was 83rd.¹¹

In the research literature on SWB, cross section studies typically find that happiness varies positively with GDP, and this finding is frequently cited as evidence that economic growth increases subjective well-being.¹² The SWB data for China call into question the validity of this assertion. Based on the regression results of such cross section studies, China's

striking five-fold multiplication of GDP since 1990 would be expected to increase SWB by upwards of a full point or more on a 1–10 life satisfaction scale. It is noteworthy that four different surveys reaching back to the 1990s fail to give evidence of an overall increase approaching this magnitude (Figure 3.1).

The positive cross section relation of SWB to GDP reported in prior happiness research implies that the growth rates of GDP and SWB are positively related. Yet China's GDP growth

Fig. 3.2. Growth Rate of Real GDP per Capita and Price Level, 1988-2015 (3-year moving average, centered)



Sources: PWT and NBS. See Appendix, Table A3.2, cols. 3 and 6.

rate goes through three cycles between 1990 and 2012 while SWB goes through only one (compare Figure 3.2, left panel with Figure 3.1). Moreover, the growth rate of GDP is highest in 2000-2005 when SWB is bottoming out with a growth rate close to zero. Also noteworthy is the disparate course of the rate of inflation, which has typically been found to have an inverse relation to SWB.¹³ In China in 2000-2005, when SWB was at its lowest, the rate of inflation was also low—lower than in any other years between 1994 and 2015 (Figure 3.2, right panel and Table A3.2). Neither GDP nor inflation has a time series pattern that might by itself explain the course of SWB. As will be seen below, the explanation of China’s SWB rests on different factors.

A number of Eastern European countries have been transitioning from a socialist to free market economy at the same time as China, and it is of interest to ask how China’s transition pattern

of life satisfaction compares with that of these other countries. Indeed, China’s overall trajectory of SWB is quite similar. For those European countries whose SWB data extend back into the socialist period, SWB invariably follows a U- or V-shaped pattern in the transition.¹⁴ Unlike China, however, where GDP grows at an unprecedented rate, in the European countries GDP collapses and recovers in a pattern much like that of SWB, a difference between China and Europe to be discussed subsequently.

Determinants of the SWB Trajectory

Two factors appear to have been of critical importance in forming the U-shaped course of subjective well-being in China—unemployment and the social safety net. In the 1990s severe unemployment emerged, and the social safety net broke down. The “iron rice bowl” was smashed, giving rise to urgent new concerns

about jobs, income security, family, and health. Although incomes rose for most of those who had jobs, the positive effect on well-being of income growth was offset by a concurrent rise in material aspirations. The counteracting effect to income growth of increasing aspirations has been pointed out by a number of China specialists. Shenggen Fan et al observe: “Happiness draws from relative comparisons. As income increases, people’s aspirations aim for a new target.”¹⁵ Research by John Knight and his collaborators further provides valuable insights into the effect of reference groups on happiness in China.¹⁶

In its survey of findings on subjective well-being, the high profile Stiglitz-Sen-Fitoussi Commission states: “One aspect where all research on subjective well-being does agree concerns the high human costs associated with unemployment.”¹⁷ The reason why unemployment has a major adverse effect on well-being is straightforward—jobs are of critical importance for sustaining people’s livelihood, family, and health, and it is concerns with these personal circumstances that are foremost in shaping people’s happiness.¹⁸

The quantitative evidence on unemployment is consistent with the view that unemployment has been an important determinant of China’s SWB trajectory. The unemployment rate rose sharply from near-zero shortly before 1990 to double-digit levels in 2000-2005, and then declined moderately. Although the unemployment estimates are somewhat rudimentary,¹⁹ this pattern appears consistently in unemployment data from several different sources (Fig. 3.3). Subjective well-being largely inversely mirrors the path of the unemployment rate. As the unemployment rate rises, SWB declines; as the rate falls, SWB increases. The 2000-2005 trough in SWB occurs when the unemployment rate reaches its peak.

The term “massive” is used repeatedly by China specialists in describing the precipitous upsurge

in unemployment that began in the 1990s.²⁰ In little more than a decade (1992-93 to 2004) 50 out of 78 million lost their jobs in state-owned enterprises (SOEs), and another 20 million were laid off in urban collectives.²¹ Knight and Song aptly describe this period as one of “draconian ... labor shedding.”²²

The impact of unemployment on SWB was not confined to those who lost their jobs. As has been demonstrated in the SWB literature,²³ increased unemployment also reduces the well-being of those who remain employed as they fear for their own jobs as layoffs increase. An indication of the widespread anxiety associated with a high level of unemployment in China is the answer to a nationally representative survey question that asked, “Now thinking about our economic situation, how would you describe the current economic situation in China: is it very good, somewhat good, somewhat bad or very bad?” In 2002 when unemployment was at two-digit levels, almost half of respondents (48 per cent) answered somewhat or very bad; by 2014, when the unemployment rate had markedly improved, only six per cent fell in these two categories.²⁴ The survey responses demonstrate that employment is what matters for SWB, not growth of GDP. The growth rate of GDP was considerably higher in 2002 than in 2014 (Table A3.2), but respondents assessed the state of the economy as much worse in 2002.

Along with the upsurge in unemployment, the social safety net (with employer-provided benefits) broke down, aggravating the decline in SWB. As workers lost jobs, their benefits disappeared, though for a modest fraction temporary support was provided through an urban layoff program. Those who found jobs in private firms no longer enjoyed the benefits that they previously had in the public sector. Even for those who retained public jobs, new government policies abolished guaranteed employment and life-time benefits. This positive relationship between the social safety net and SWB has been demonstrated by both economists and political scientists.²⁵

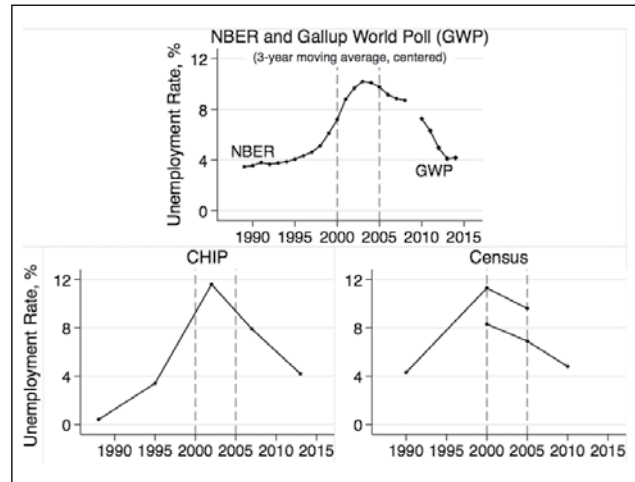
The unemployment rate is itself an indicator of safety net coverage because benefits were employment-dependent. Survey data on pension and health care coverage provide additional quantitative evidence of the course of safety net benefits (Figure 3.4). Note that the pattern in these safety net indicators tends to be U-shaped, and the trough in coverage occurs in 2000-2005 when unemployment peaks and SWB reaches its lowest point.

The emergence of extensive unemployment and dissolution of the social safety net were due to the government-initiated comprehensive policy of restructuring SOEs, many of which were inefficient and unprofitable. Although the new policy was successful in stimulating economic growth, it marked an abrupt end to the era of “reform without losers.” As Naughton points out, urban SOE workers “bore the brunt of reform-related costs.”²⁶ According to a World Bank report, “by all measures, SOE restructuring had a profound effect on ... the welfare of millions of urban workers.”²⁷ The quantitative unemployment, safety net, and SWB patterns here are consistent with these statements.

Faced with massive and rising urban unemployment, government policy shifted gears. Beginning in 2004 the rate at which SOEs were down-sized diminished sharply. Between 1995 and 2003, reduced employment in SOEs far exceeded increased employment elsewhere in the urban sector; thereafter, the situation was reversed, and the unemployment rate improved (Figure 3.3).²⁸ The safety net, as indexed by healthcare and pension coverage, also started to improve (Figure 3.4). The result was a turnaround and gradual recovery of SWB.

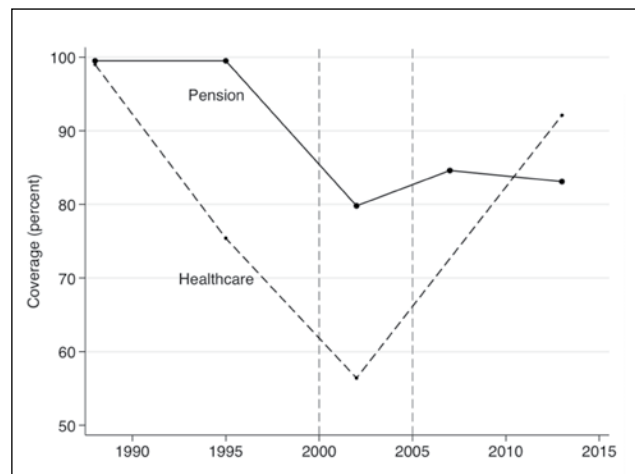
In 2000-2005 the growth rate of GDP was approaching its highest level at the same time that unemployment was peaking. How could output be growing, and so rapidly, when employment was falling? China’s restructuring policy involved greatly expanded support for a relatively

Fig. 3.3. Urban Unemployment Rate, Four Series, 1988-2015 (percent of labor force)



Source: Appendix, Table A3.3.

Fig. 3.4. Safety Net Indicators: Pension and Healthcare Coverage, 1988-2013 (urban households)



Source: CHIP. See Appendix, Table A3.4.

small proportion of large, capital-intensive, and high productivity SOEs at the expense of numerous small, labor-intensive, and low productivity SOEs, a policy officially labeled “Grasping the big and letting go of the small.” As described by Huang:²⁹

“Grasping the big” meant restructuring, consolidating, and strengthening China’s largest SOEs.... “Letting go of the small” meant that the government supported privatization of individually small but numerically numerous SOEs. These are labor-intensive firms and singling them out for privatization, with no established social protection in place, led to massive unemployment, social instability, and wrenching human costs.... Instead of managing tens of thousands of small firms scattered around the country, the Chinese state could now focus on only a few thousand firms [which benefitted from] a massive reallocation of financial, human, and managerial resources away from the small SOEs to a handful of the largest SOEs.

This redistribution of resources from low productivity small SOEs to high productivity large SOEs resulted in a strong upsurge in output at the same time that small SOEs shed labor, creating a large pool of unemployed. As Huang points out, “...GDP growth in the 1990s increasingly was disconnected from the welfare of Chinese citizens.”³⁰ The survey responses reported above on the state of the economy in 2002 and 2014 provide concrete evidence of the continuation of this disconnect. The economy was viewed by the public as much worse in 2002, even though the GDP growth rate was considerably higher than in 2014.

As previously noted, China’s GDP in transition has grown at an unprecedented rate while that of European transition countries collapsed and recovered in a pattern similar to SWB. The difference between China’s GDP trajectory and that of the European countries appears to be due

to the difference in restructuring policies. In both cases restructuring led to massive unemployment. While the European transition countries abandoned the entire public sector to privatization and experienced a major GDP collapse, however, China invested heavily in the most productive SOEs and was rewarded with significant output growth.

Other Social and Economic Factors

Is China’s SWB trajectory also a reflection of societal conditions such as social capital, income inequality, or environmental pollution? What about the “predictors” of SWB differences among countries identified in previous World Happiness Reports—material, social, and institutional supports for a good life—do they explain the time series course of SWB in China?³¹ To answer these questions, this section examines whether changes over time in these variables conform as expected to the movement in SWB since 1990. This is the same procedure as that followed in the previous section on unemployment and the social safety net.

The measures of social capital examined here—trust in others and civic cooperation—are those used in a recent article that seeks to explain the change in China’s life satisfaction from 1990 to 2007, one of the rare articles addressing change over time.³² The specific questions and responses are given in Technical Box 2. The two indicators of social capital are treated separately in what follows.

Trust has an overall trajectory fairly similar to SWB, falling at the beginning of the period and rising at the end (Figure 3.5). It is plausible that in the 1990s, as restructuring led to the emergence and growth of unemployment and job competition, a decline in interpersonal trust occurred. Correspondingly, the upswing in employment during the 2000s recovery may have helped restore trust. The decline and

Technical Box 3.2. Measures of Social Capital and Freedom of Choice

World Values Survey 1990, 1995, 2001 (Sample Size: ~1,000–1,500). Trust: General speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people? 1, most people can be trusted; 2, can't be too careful. Recoded 1 or 0.

World Values Survey 2007, 2012 (Sample Size: ~2000). Trust: General speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people? 1, most people can be trusted; 2, need to be very careful. Recoded 1 or 0.

World Values Survey (Sample Size: ~1,000–2000). Civic cooperation: Please tell me for each of the following statements whether you think it can always be justified, never be justified, or something in between, using this card.

A) Claiming government benefits which you are not entitled to

Never 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 Always

B) Avoiding a fare on public transport

Never 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 Always

C) Cheating on tax if you have the chance

Never 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 Always

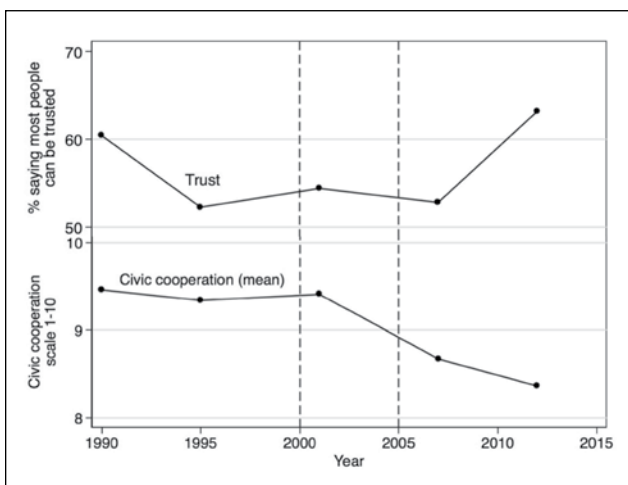
D) Someone accepting a bribe in the course of their duties

Never 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 Always

Recoded 10, 9, 8, 7, 6, 5, 4, 3, 2, or 1 for each item.

World Values Survey (Sample Size: ~1,000–2000). Freedom of choice: Some people feel they have completely free choice and control over their lives, and other people feel that what they do has no real effect on what happens to them. Please use the scale to indicate how much freedom of choice and control you feel you have over the way your life turns out. None at all 1 2 3 4 5 6 7 8 9 10 A great deal

Fig. 3.5. Measures of Social Capital, 1990-2012



Source: WVS. See Appendix, Table A3.5.

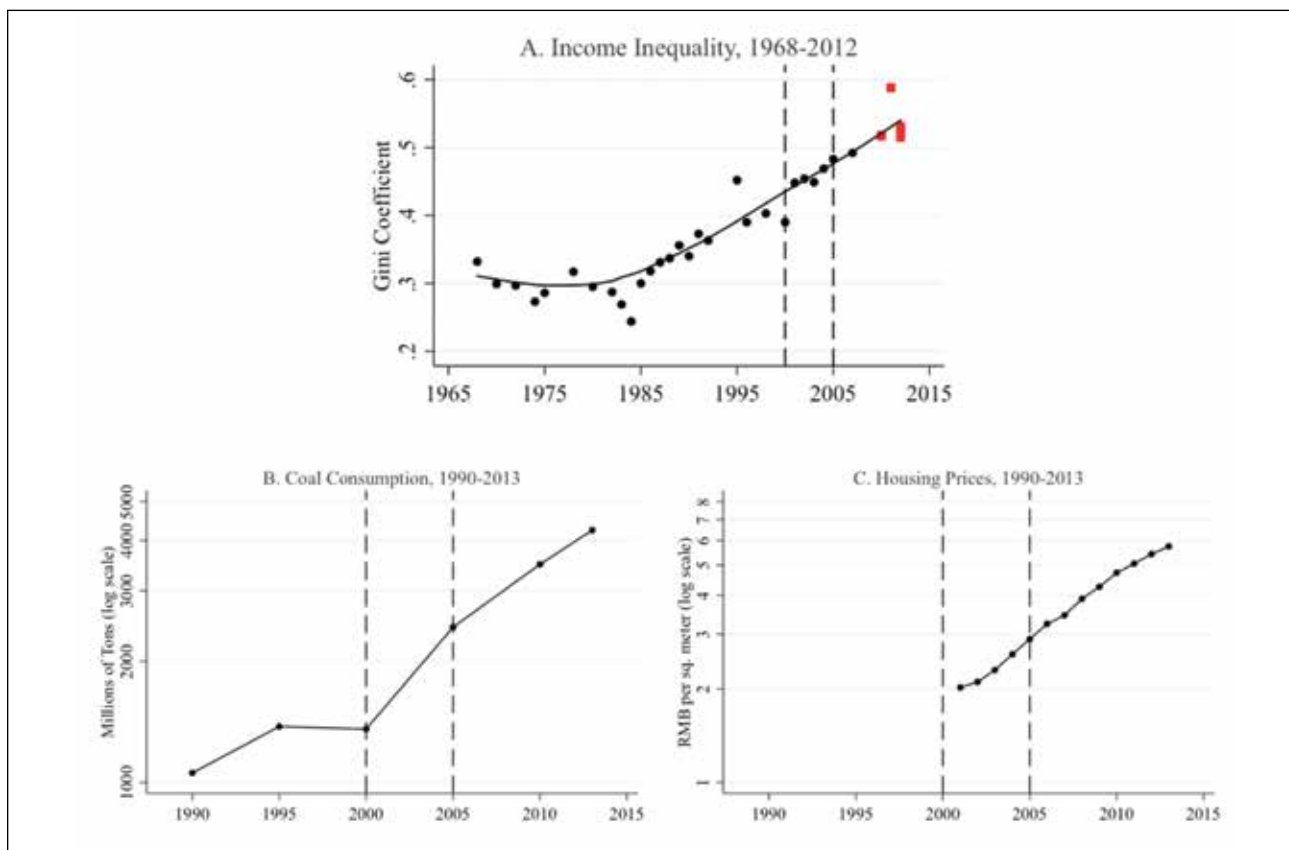
recovery of interpersonal trust may, in turn, have reinforced the U-shaped trajectory of SWB. The biggest difference between trust and SWB centers on the value in the 2000-2005 period. Trust is slightly higher, but not much different from that in adjacent years, while SWB is lower. As noted previously, the lower value of SWB in the 2000-2005 period is credible because it is found in four different surveys conducted independently of each other.

Another measure of social capital is civic cooperation, a term reflecting disapproval of cheating or bribery in circumstances such as paying taxes or claiming government benefits (see Technical Box 2). The composite measure presented here is the

average of four components, each of which has “a pattern fairly similar to that in the summary measure (Technical Box 3.2 and Table A3.5). In each interval from 1990 to 2007, the summary measure of civic cooperation moves in the same direction as trust, though the movements in civic cooperation through 2001 are slight. After 2001, however, trust and civic cooperation begin to diverge noticeably and, from 2007 on, in seemingly contradictory directions—a rise in trust being accompanied by a decline in civic cooperation, i.e., increased acceptance of cheating and bribery. Unlike trust, the overall pattern of change in civic cooperation consequently differs considerably from that in SWB, and casts doubt on any causal connection between the two.

The results in the general literature on the relation between income inequality and happiness are mixed—some studies report no relationship, while others find that an increase in inequality reduces happiness.³³ In China, income inequality as measured by the Gini coefficient has trended upward since the early 1980s, increasing when SWB is both falling and rising (Figure 3.6, panel A).³⁴ It is hard to see how the course of income inequality could solely explain the U-shaped movement of SWB. Indeed, as will be seen subsequently, since the beginning of the millennium the life satisfaction difference between the lowest and highest income groups has diminished despite an increase in income inequality.

Figure 3.6. Indicators of Trends in Income Inequality, Environmental Pollution, and Housing Prices



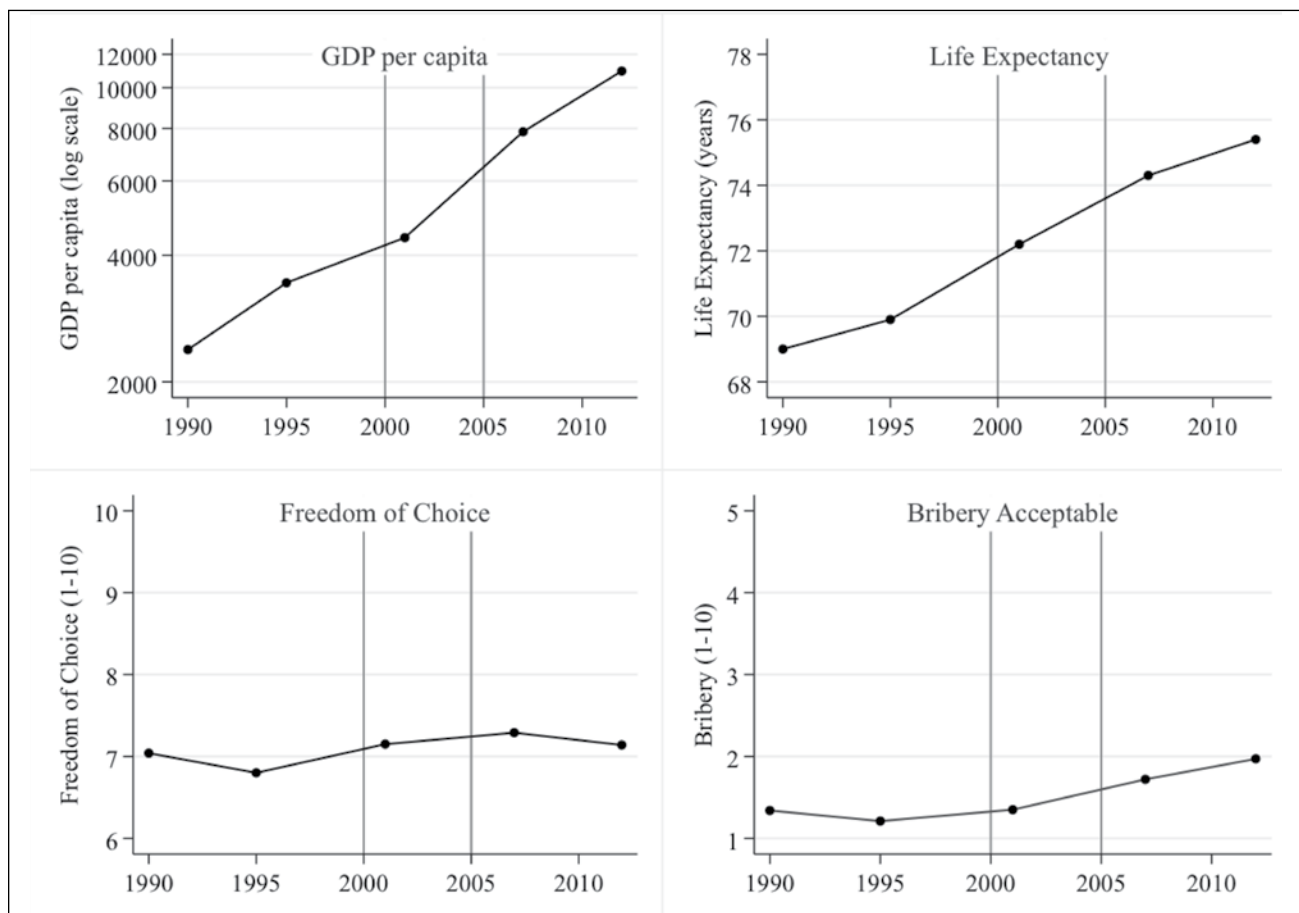
Sources: Panel A, reproduced from Xie and Zhou (2014); panels B and C, NBS. See Appendix, Table A3.6.

One might expect that the widely-publicized environmental pollution problem in China would have had an adverse impact on happiness. A recent study based on cross sectional data, however, finds no relation between pollution and overall life satisfaction, although there is a shorter-term effect on day-to-day moods.³⁵ The time series finding in the present analysis turns out to be much like the nil cross section finding. If the trend in coal consumption is taken as a measure of the course of environmental pollution, one finds that coal consumption trends upward throughout most of the period, rising after 2005 at close to its highest rate, while life satisfaction also rises, rather than falls (Figure 3.6, panel B).

Housing prices are also sometimes mentioned as a determinant of life satisfaction. The housing price data only start in 2000, not long after a housing market becomes widely established in China.³⁶ Housing prices trend steadily upward from 2000 onward (Figure 3.6, panel C), a development that might be expected to reduce life satisfaction; in fact, life satisfaction rises, not falls.

There are six “predictors” of the annual national evaluations of SWB presented in the World Happiness Reports—GDP per capita (in log form), healthy life expectancy, freedom to control one’s life, corruption, social support, and giving to charity. Of these it is possible to obtain time series measures for China that span the

Figure 3.7. Predictors of SWB in World Happiness Reports, 1990-2012



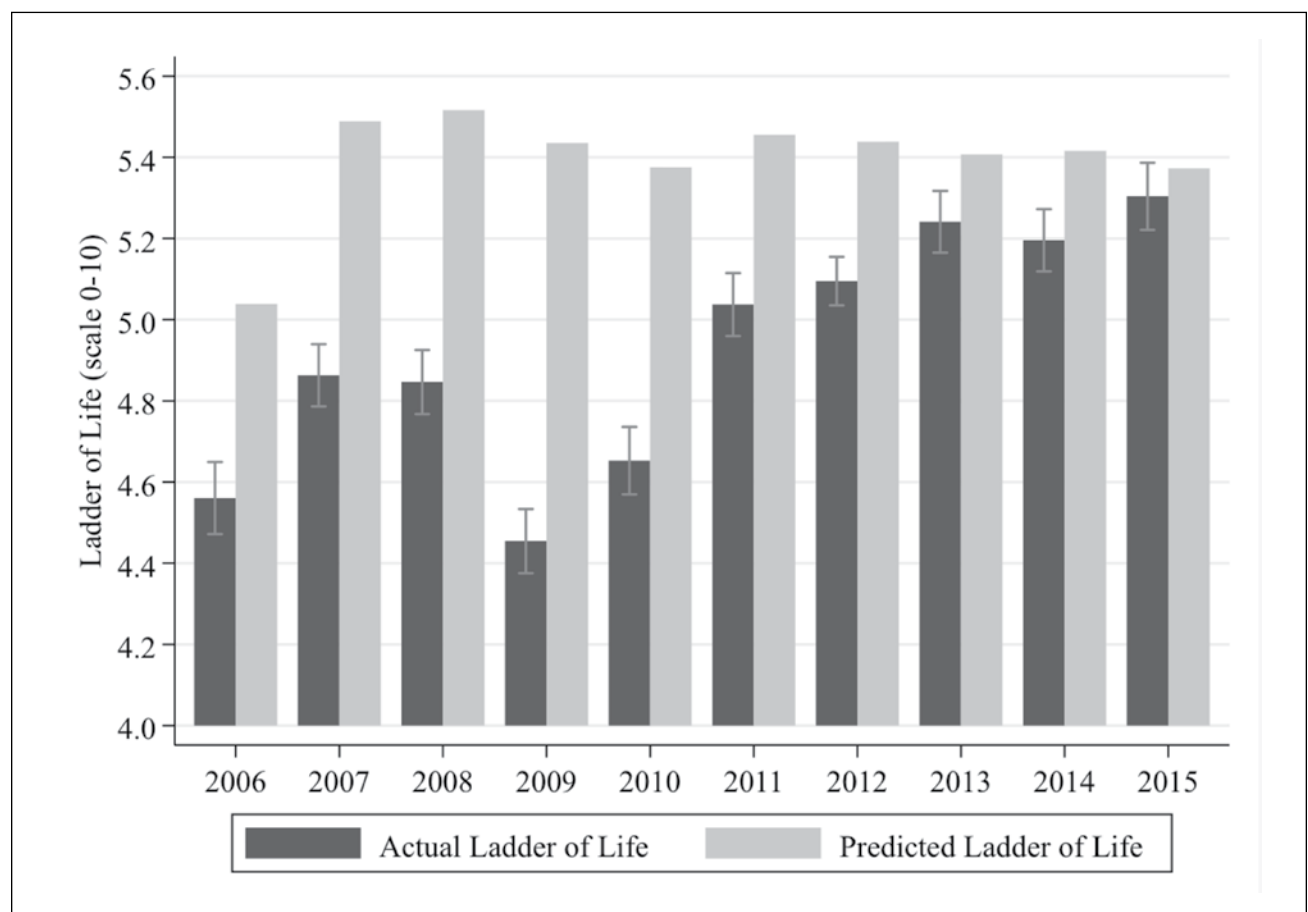
Sources: PWT, WB, and WVS. See Appendix, Table A3.7.

period covered here for the first four. (In the 2016 *World Happiness Report* the time series course of healthy life expectancy is based on that in life expectancy at birth, and the latter is consequently used in the present analysis.)³⁷ None of these “predictors” has a time series pattern suggestive of a causal relation to SWB. GDP and life expectancy, themselves highly correlated, both trend upward throughout the period (Figure 3.7). Freedom to choose the course of one’s life changes very little over time, and its movements do not conform to those in SWB. Corruption, approximated here by the acceptability of bribery, increases somewhat after 2001, but remains at a very low level. The two measures with the greatest changes—GDP and

life expectancy—reach their highest values at the end of the period, but SWB does not.

The 2016 World Happiness Report presents a pooled time series and cross section regression equation based on data for 156 countries in the period 2006-2015, in which the six predictors are found to fit national ladder-of-life evaluations with an R-squared of 0.74.³⁸ Another way of examining the predictors here is to ask how accurately this equation predicts China’s actual ladder-of-life values from 2006 to 2015. The answer is, not very well. If China’s values for the independent variables are entered into the equation, the predicted values are uniformly higher, often by a substantial amount (Figure

Figure 3.8. Actual and Predicted Mean Ladder of Life, 2006-2015



Source: GWP. See Appendix, Table A3.8.

3.8). Moreover, if one leaves aside the year 2006 (for which values for China are available for only three of the six independent variables) the predicted values in SWB exhibit a nil trend, while the actual trend is upward.

As pointed out in the 2016 World Happiness Report, the choice of “predictors” is constrained by the limited availability of comparable data for a large number of countries worldwide, and the variables that are in fact chosen “may be taking credit properly due to other better variables.”³⁹ The advantage of a country study, like the present one, is that it is not inhibited by the requirement of comparable international data. This makes it possible to explore the possible role in determining SWB of a wider range of variables and consequently develop a deeper understanding of the mechanisms at work. Indeed, an analysis of selected countries in the 2016 report moves in the direction of the present study. In evaluating the reasons for a decline in life satisfaction in four Eurozone countries hard hit by the Great Recession, the unemployment rate is added to the analysis and found to have an explanatory effect equal to that of all six of the present “predictors” combined,⁴⁰ a result more similar to the present findings. Unfortunately, it is not possible to include unemployment as a predictor in the pooled regression equation for all countries due to lack of comparable international data.

As a brief summary of the results to this point, Table 3.1 presents the bivariate correlation and corresponding p-value between life satisfaction and each of the variables discussed in this and the preceding section. (The housing price variable is not included because the series spans only half the period). There are, at best, only five observations available for computing each correlation, which means each variable is evaluated singly in a bivariate analysis. Subject to the qualification that a multivariate analysis might give a fuller picture, the pattern of results is generally consistent with the observations based on the graphs. The unemployment rate and

safety net indicators come quite close to the 0.10 level of significance. Trust and income inequality have the next highest correlation coefficients, but the p-values are above 0.30. The remaining variables have even worse p-values, and in some cases, the sign of the correlation coefficient is contrary to what might be expected. As a whole, the correlations uphold the conclusion that unemployment and the safety net have been the important forces shaping the course of China’s life satisfaction.

Table 3.1. Time Series Correlation with WVS Life Satisfaction of Indicated Variable, 1990-2012

	Correlation Coefficient	p-value
Unemployment rate	-0.76	0.13
Pension coverage	0.74	0.15
Healthcare coverage	0.89	0.11
Trust	0.52	0.37
Civic cooperation	0.17	0.79
Gini coefficient	-0.57	0.31
Coal Consumption	-0.21	0.73
Log GDP per capita	-0.46	0.44
Life expectancy at birth	-0.50	0.40
Freedom of choice	-0.27	0.67
Bribery acceptable	-0.10	0.87

n = 5, except healthcare coverage, n = 4.

Note: The basic data are given in the Online Appendix Table A3.1, col.1; Table A3.3, col. 3; Table A3.4 rows 1, 6; Table A3.5, rows 1, 2; and Table A3.6a, cols. 1-4.

Why are unemployment and the social safety net so important? These two factors bear most directly on the concerns foremost in shaping personal happiness—income security, family life, and the health of oneself and one’s family. It is these concerns that are typically cited by people worldwide when asked an open-ended question as to what is important for their happiness.⁴¹ In contrast, broad societal matters such as inequality, pollution, political and civil liberties, international relations, and the like, which

most individuals have little ability to influence, are rarely mentioned. Abrupt changes in these conditions may affect happiness, but for the most part, such circumstances are taken as given. The things that matter most are those that take up most people's time day after day, and which they think they have, or should have, some ability to control.

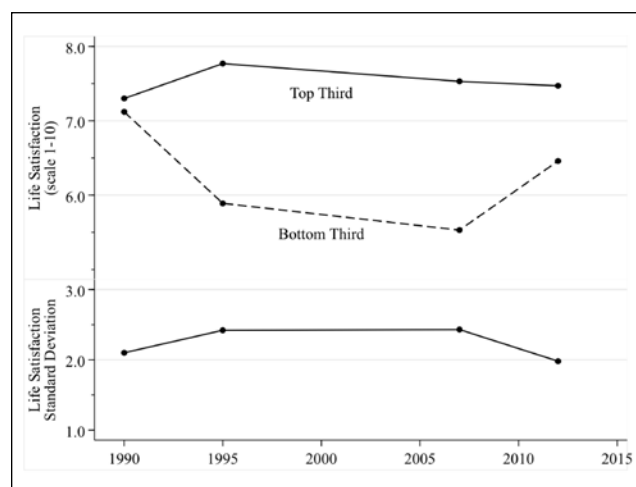
Differences by Socio-Economic Status

Although China's well-being declined on average and then somewhat recovered, there were significant differences among various groups in the population. Perhaps most striking was the severe impact of restructuring on those of lower socio-economic status (SES). In 1990 the difference in life satisfaction between the third of the population with the lowest incomes and that with the highest was quite small (Figure 3.9). Subsequently life satisfaction of the lowest third plunged markedly, while that of the highest actually improved slightly. The result was the emergence of a marked disparity in life satisfaction by socio-economic status. Toward the end of the

period, life satisfaction of the lowest stratum somewhat recovered, and by 2012 the disparity in life satisfaction, though still sizeable, had shrunk considerably.⁴² The standard deviation of life satisfaction, a measure reflecting all sources of life satisfaction differences, not just SES, follows the SES pattern of rising and decreasing inequality in life satisfaction (Figure 3.9, bottom).

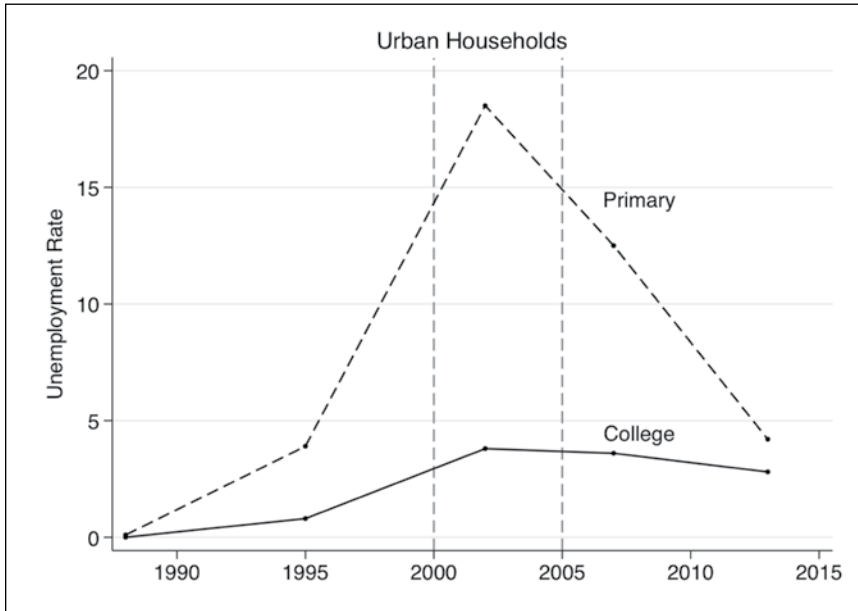
The course of the life satisfaction difference by socio-economic status demonstrates the critical importance of full employment and safety net policies for the well-being of the most disadvantaged segment of the population. As these policies were abandoned in the 1990s, the lowest socio-economic group was the one that suffered severely. Data by level of education are indicative of the differential employment and safety net effects. The unemployment rate of those with a primary education or less soared to almost 20 per cent in 2000-2005, while that of the college-educated group remained at less than 5 per cent (Figure 3.10). Similarly, pension and healthcare coverage of the less-educated declined much more than that of the more-educated (Figure 3.11). Consistent with these differences, satisfaction with finances and self-rated health increased for the highest income stratum and decreased for the lowest (Figure 3.12).⁴³ Eventually, as economic policy reversed and brought unemployment down, and substantial efforts were initiated to repair the social safety net,⁴⁴ these disparities diminished. Life satisfaction of the lowest third of the population recovered as employment and the safety net improved, though in 2012 it was still less than in 1990 (Figure 3.9).

Fig. 3.9. Mean Life Satisfaction, Top and Bottom Income Terciles, and Standard Deviation of Life Satisfaction, 1990 – 2012



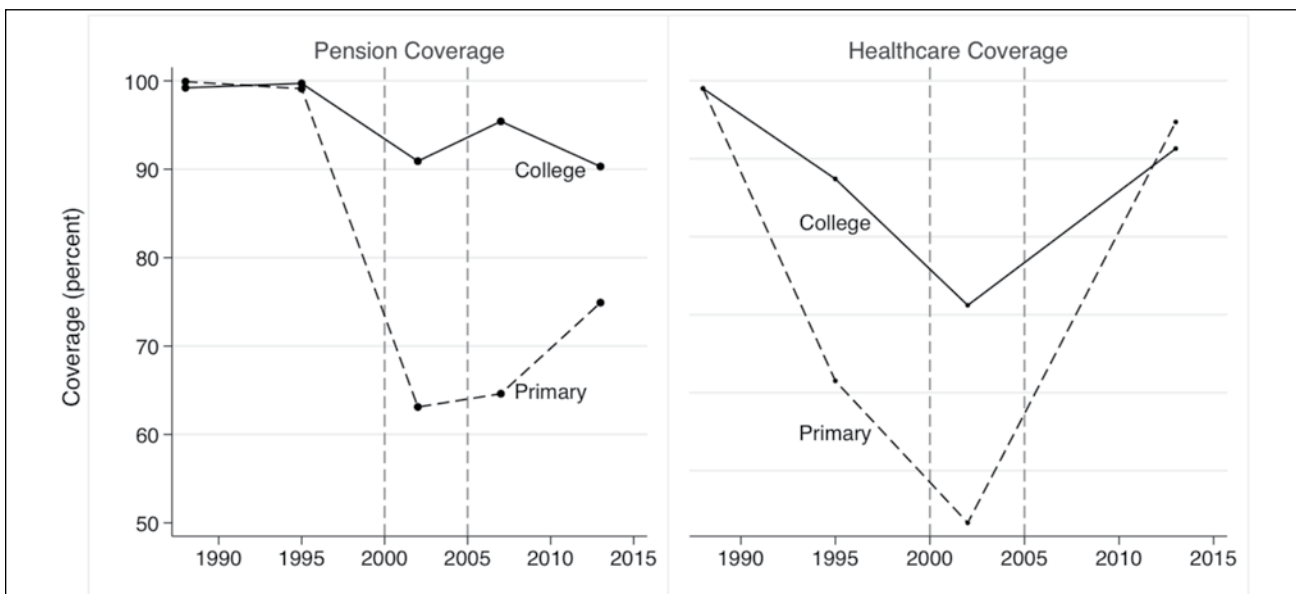
Source: WVS. See Appendix, Table A3.9.

Fig. 3.10. Unemployment Rate by Level of Education,^a 1988-2013 (percent of labor force)



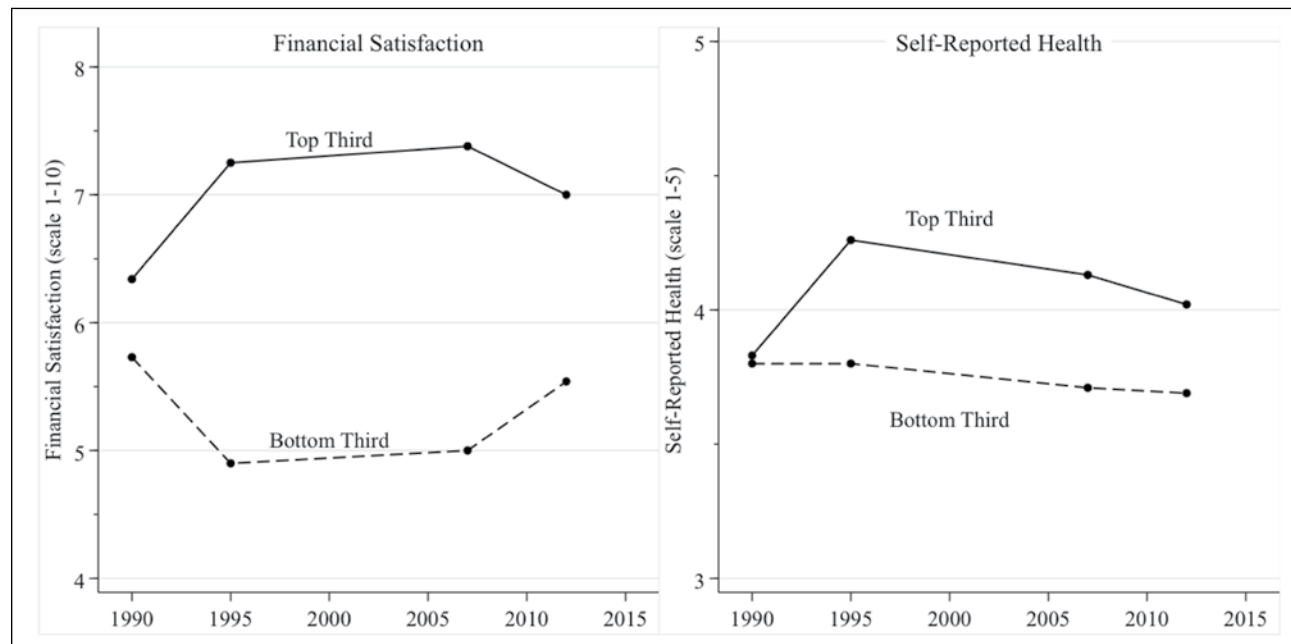
Source: CHIP. See Appendix, Table A3.10.
 a. Persons with college education or more and primary school education or less.

Fig.3.11. Safety Net Indicators by Level of Education,^a 1988-2013 (urban households)



Source: CHIP. See Appendix, Table A3.4.
 a. Persons with college education or more and primary school education or less.

Fig. 3.12. Mean Financial Satisfaction and Mean Self-Reported Health, Top and Bottom Income Terciles, 1990 – 2012



Source: WVS. See Appendix, Tables A3.11 and A3.12.

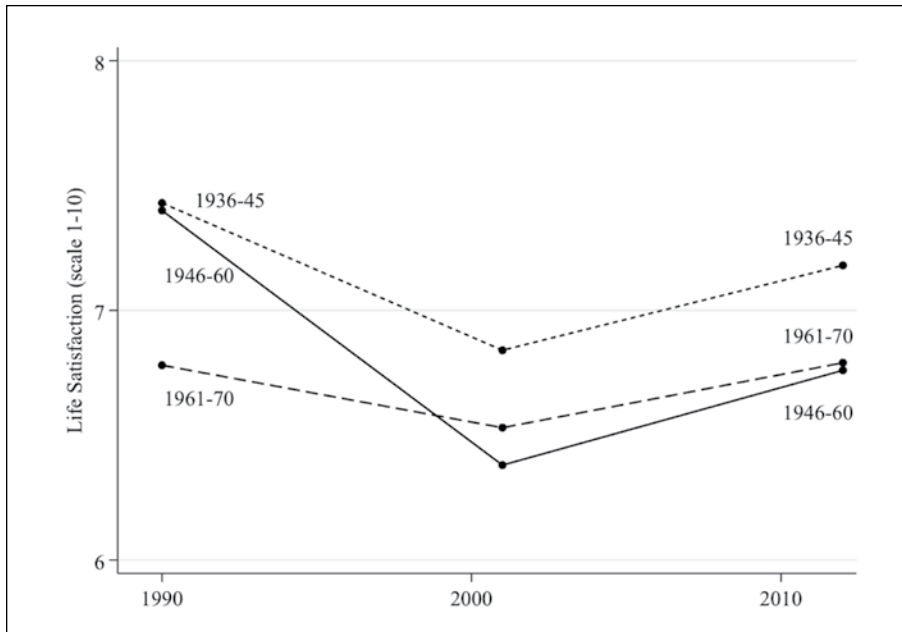
Differences by Age and Cohort

Those aged 30 and over experienced large declines in life satisfaction over the quarter century studied here; men and women were about equally affected. In 1990 those aged 30 and over were already on a life course set under “iron rice bowl” conditions. The collapse of the traditional environment severely disrupted their lives, and substantially reduced their well-being. As economic restructuring took hold, the cohort of 1946-60, which spanned ages 30-44 in 1990, suffered the biggest decline in life satisfaction (Figure 3.13). From an initial situation in which virtually everyone had jobs, men and women alike, in 2002 fewer than 70 per cent were employed. Most of the remainder of the cohort, 21 per cent, had been forced into early retirement, and six per cent were unemployed.⁴⁵

The next oldest cohort, that of 1936-45, also had a considerable initial drop in life satisfaction. The overall decline was somewhat cushioned, however, as by 2012 most of this cohort had reached retirement age (55 for women, 60 for men) and qualified for pensions, though these were sometimes reduced or in arrears.⁴⁶

In contrast, the cohort of 1961-70, which in 1990 was merely in its twenties, experienced only a mild decline in life satisfaction between 1990 and 2002 and ended up with life satisfaction about the same as initially. The members of this and the successor cohorts were less wedded to traditional ways and better able to adapt to the new “free market” conditions, most notably by acquiring a college education. Thirty-five per cent of the cohort of 1961-70 had completed a

Fig. 3.13. Mean Life Satisfaction by Birth Cohort, 1990-2012



Note: In 1990 the birth cohort of 1961-70 was 20 to 29 years old; the birth cohort of 1946-60, 30 to 44; and the birth cohort of 1936-45, 45 to 54.
Source: WVS. See Appendix, Table A3.13.

college education by the time they were in their thirties; for the successor cohort, that of 1971-80, the corresponding figure was 40 per cent. Among the cohorts born before the 1960s, however, the percentage with a college education was only 11 to 15 per cent.⁴⁷ As seen above, those belonging to the higher SES group—which includes those with a college education—largely escaped the adverse impact on life satisfaction of economic restructuring; clearly young adults were among the beneficiaries.

A comparison with the European transition countries is once again of interest. As has been seen, the trajectory of life satisfaction for the population as a whole is quite similar in China and the European countries. This similarity is also true of the differentials in life satisfaction that emerged in both areas. For both China and the European countries, small SES differences at the start of the transition were replaced by large disparities.⁴⁸ The lowest SES group experienced

a severe decline in life satisfaction, while the upper tier typically enjoyed a mild improvement. Those under age 30 fared better than their older counterparts.⁴⁹ In both China and Europe adaptation to the new environment was greatly facilitated by a college education.⁵⁰

Differences by Residence and Migration Status

Subjective well-being in China's urban areas has been greater than in rural on average, a pattern typical of developing countries.⁵¹ The principal evidence for China is from three sources—the 1995 World Values Survey, CGSS surveys done almost annually since 2005, and surveys conducted annually since 2006 by the Gallup World Poll (Table A3.14).⁵² The urban-rural life satisfaction differential in the 1995 WVS—about half a point (1-10 scale)—is just about the same as the average differential in the Gallup World Poll

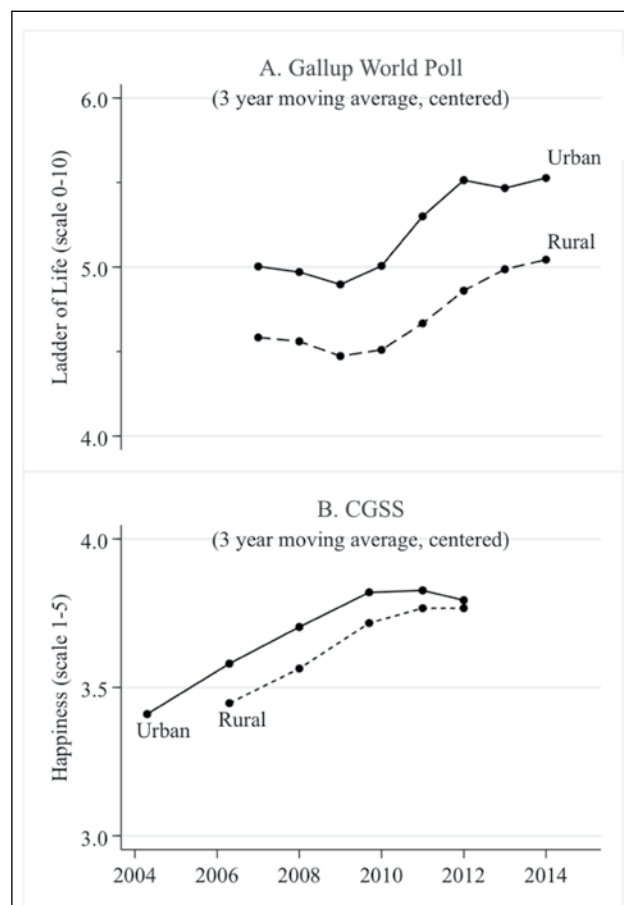
over the period 2006-15 (0-10 scale). Starting in 2010, a wider range of surveys is available—some continue to show the usual excess of urban over rural SWB, but in a few the urban and rural areas are about equal.⁵³

Since 2005, when fairly continuous data become available, the trend in rural life satisfaction appears to have largely paralleled urban. Two different surveys give a highly consistent picture (Figure 3.14). The improvement in rural life satisfaction may have been partly due to new policies strengthening the social safety net in rural areas. Also, there was a change in government policies that significantly lessened the burden placed on agriculture to support industrialization.⁵⁴ Lack of comparable data prevents generalization of the trend prior to 2005.

The 1990s saw the onset of a substantial population movement from rural to urban areas, as government restrictions on migration were increasingly relaxed. According to census data, between 1990 and 2010 the proportion of people in cities that had a rural *hukou* (identifying the holder as a resident of a rural place) rose from 17 to 36 per cent.

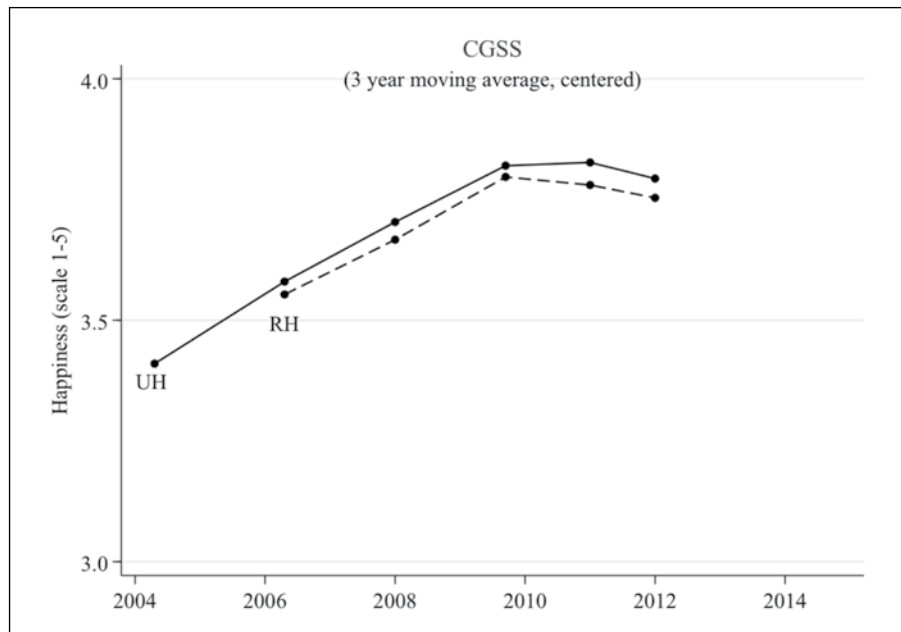
Rural *hukou* holders in urban areas were initially treated as second-class citizens but are gradually being assimilated.⁵⁵ The few life satisfaction surveys in the early 2000s that classified the urban population by *hukou* status uniformly found urban *hukou* holders with higher SWB than rural migrants.⁵⁶ The upward trend in life satisfaction since then has been fairly similar for the two groups (Figure 3.15). The evidence is mixed on whether or not the gap in urban areas between urban and rural *hukou* holders has closed. In several surveys the gap persists, but in others it has disappeared.⁵⁷ A comparison between rural migrants and those remaining in rural areas is less ambiguous—initially the migrant group was higher, but in recent years there is no difference.⁵⁸

Fig. 3.14. Mean Life Satisfaction by Urban-Rural Residence, 2003-2015



Source: Appendix, Table A3.14.

Fig. 3.15. Mean Life Satisfaction, Urban and Rural *Hukou* Holders in Urban Areas, 2003-2013



Source: Appendix, Table A3.15.
 Legend: UH = Urban *hukou* holders in urban areas
 RH = Rural *hukou* holders in urban areas

Summary and Implications

China's soaring GDP growth over the past quarter century is viewed by many analysts as the hallmark of a successful transition from socialism to capitalism. But if the welfare of the "common man" is taken as a criterion of success, the picture is much less favorable and more like that of European transition countries. From 1990 to 2000-2005, life satisfaction in China, on average, declined. Since then it has turned upward, but at present it is probably less than a quarter century ago. China's ranking in the international array of countries by SWB appears to have declined considerably since 1990, although it has improved as of late. There is no evidence of an increase in China's life satisfaction of the sizeable magnitude that would be expected based on the international point-of-time bivariate relationship of happiness to GDP.

The lower income and older segments of the population have suffered most, and their life satisfaction remains below that in 1990. The upper income and youngest population groups have, in contrast, enjoyed a fairly constant or modest improvement in life satisfaction. The rather small life satisfaction differential by socio-economic-status that prevailed in 1990 has been replaced by a considerably larger one, though there has been some lessening since the SWB trough of 2000-2005.

The evidence on subjective well-being comes from four surveys conducted independently by three different survey organizations and shows quite consistent results. Further support derives from the similarity between the course of SWB during China's transition and that in the European transition countries. The U-shaped pattern of SWB is a transition phenomenon common to both Europe and China.

To understand the course of well-being in China, one must recognize that few societies have undergone such wrenching change in such a short period of time. Isabelle Attané and Baochang Gu succinctly convey the essence of this transformation:

[T]he dismantling of collective structures under the reform and opening-up policy ... overturned the social organization that had prevailed in previous decades, producing an impact that extended far beyond the economy alone. Previously, each individual had depended on the state, through his or her work unit, for all aspects of daily life. Everyone enjoyed guaranteed access to employment, housing, health, education of children, and for urban dwellers, retirement and social insurance. Gradually transferred to the private sector, these areas are now governed by the market, which makes access to them less systematic, and therefore increasingly unequal.⁵⁹

The data on life satisfaction herein provide a summary indication of the overall impact of this social transformation on people's lives. The circumstances through which SWB was most directly affected were labor market conditions and the social safety net. Briefly put, the dynamics of change are as follows. In the first part of the transition, as economic restructuring is undertaken, jobs and safety net benefits shrink markedly for the disadvantaged members of the population, and their well-being suffers severely, especially for those who are older or in the lowest economic stratum. In contrast, life satisfaction of those who are in the highest economic stratum tends to improve slightly, while that of young adults, who are typically more-educated and better able to cope with the new economic environment, remains fairly constant. The difference in life satisfaction by socio-economic status, which initially was quite small, widens substantially. Eventually, as economic recovery takes hold, the job market improves. In addition, the government, in

response to symptoms of economic distress, starts to mend the social safety net. The result is that life satisfaction, on average, turns upward, and the disparity in life satisfaction between the more and less affluent shrinks somewhat. Life satisfaction of the disadvantaged, however, remains below its 1990 level.

The evidence supporting this interpretation is three-fold. The first is quantitative time series on unemployment and the social safety net. These series move as one might expect in relation to SWB, in terms of both average levels and differences by SES. The second type of evidence is qualitative - descriptions by China specialists of the state of the economy and society, especially the job market and social protection. These qualitative accounts are consistent with the time series pattern in the quantitative data and contribute to its understanding. The third is the fact that the same factors explain the U-shaped trajectory of life satisfaction in the European transition countries.

Plausible causal variables other than GDP that fail the time series test of conformity to the SWB pattern are civic cooperation (one of the proxies for social capital), income inequality, environmental pollution, housing prices, life expectancy, freedom to control one's life, and corruption (as indexed by acceptance of bribery). Trust in others, another social capital proxy, is a borderline case, moving somewhat similarly to SWB, but less so than unemployment and the social safety net. The six predictors of differences in SWB in the World Happiness Reports do not explain the time series change in China's SWB.

The preeminence of employment and the safety net in explaining SWB lies in the evidence that it is these circumstances that bear most immediately on the concerns that are at the heart of people's personal happiness—jobs and income security, family life, and health. In the 1990s, the emergence of massive unemployment and dissolution of the social safety net led to growing

anxiety regarding these concerns and a marked decline in overall life satisfaction. Since the 2000-2005 trough, employment conditions and the social safety net have improved, and life satisfaction has returned to near its 1990 level. There remains, however, considerable opportunity for further progress. Of particular importance is attention to increasing the well-being of the disadvantaged segment of the population through improved employment opportunities and safety net policies.

Within policy circles, subjective well-being is receiving increasing attention as an alternative or complement to GDP as a measure of well-being.⁶⁰ There could hardly be a better test case than China for comparing the two measures. As indexed by GDP, well-being in China has multi-

plied over five-fold; based on SWB, well-being is, on average, less than a quarter of a century ago. These disparate results reflect the different scope of the two measures. GDP relates to the economic aspect of life, and to just one dimension—the output of goods and services. SWB, in contrast, is a comprehensive measure of individual well-being, taking into account the variety of economic and noneconomic concerns and aspirations that principally determine people’s well-being. There is no hint in GDP of the enormous structural changes that impacted people’s lives in China. In contrast, SWB captures the increased anxiety and new concerns that emerged as a result of growing dependence on the labor market. If the objective of policy is to improve people’s well-being, then SWB is a more meaningful measure than GDP, as China’s experience attests.⁶¹

Abbreviations	Explanation
CFPS.	China Family Planning Studies.
CGSS.	Chinese General Social Survey.
CHFS.	China Household Finance Survey.
CHIP.	China Household Income Project.
GWP.	Gallup World Poll.
NBER.	National Bureau of Economic Research (United States).
NBS.	National Bureau of Statistics of China.
OECD.	Organization for Economic Cooperation and Development.
PWT.	Penn World Table.
WB.	World Bank, World Development Indicators.
WVS.	World Values Survey.

- 1 Penn World Table (2016).
- 2 National Bureau of Statistics of China (2013).
- 3 See Easterlin et al (2012). There has been a welcome increase in studies of China's subjective well-being. The journal, *Social Indicators Research*, recently devoted an entire issue to the subject (see also Abbott et al (2016), Steele & Lynch (2013)). The article in *Social Indicators Research* by Cheng et al (2016) provides a valuable survey of recent research. Almost all of this work, however, comprises cross section studies. With the important exception of Bartolini and Sarracino (2015), there are virtually none that focus on the principal concern here, the nature and determinants of the change over time in SWB. For a discussion of time series studies prior to 2012 see Easterlin et al (2012). Good overviews of the Chinese economy are Brandt and Rawski (2008), Fan et al (2014a), and Naughton (2007).
- 4 Knight and Song (2005), Xu (2011). Speaking of the period of policy reforms initiated in 1993, Cai et al. (2008), p. 181, observe that "a large amount of resources have been extracted from the agricultural and rural sector to support urban industrialization."
- 5 Here and in subsequent figures, vertical broken lines delimit the period when SWB troughs. Also, in order to highlight the longer-term movement, a three-year moving average is plotted for series with annual data.
- 6 Data and sources for the graphs and numbers cited in the text are presented in the Appendix.
- 7 Knight and Song (2005), p. 19.
- 8 Easterlin (2014).
- 9 Easterlin (2012).
- 10 Helliwell et al. (2012), p. 39.
- 11 Helliwell et al (2016), p.21.
- 12 Arrow and Dasgupta (2009), Deaton (2008), Diener et al (2010), Frey and Stutzer (2002), Guriev and Zhuravskaya (2009), Inglehart (2002), Stevenson and Wolfers (2008), Veenhoven (1991).
- 13 DiTella et al. (2001).
- 14 Easterlin (2009).
- 15 Fan et al. (2014b), p. 10. See also Akay et al (2012), Carlsson and Qui (2010), Chen (2014), and Chapter 5, Table 5.8 in this Report.
- 16 For a good summary, see Knight and Gunatilaka (2011).
- 17 Stiglitz, Sen, and Fitoussi (2008), p.149. See also Helliwell and Huang (2014), Layard et al (2012), and chapter 7 in this Report.
- 18 See Cantril (1965), Easterlin (2013), and Radcliff (2013).
- 19 Feng, Hu, and Moffitt (2015); Gustafson and Ding (2011); Knight and Xue (2006).
- 20 See Cai, Park, and Zhao (2008), p.182; Naughton (2008), pp.121-122; Huang (2014), p. 294.
- 21 Naughton (2008), p. 121.
- 22 Knight and Song (2005), p. 22.
- 23 DiTella, MacCulloch, and Oswald (2001), Helliwell and Huang (2014).
- 24 Pew Research Center (2014).
- 25 DiTella et al. (2003), O'Connor (2016), Pacek and Radcliff (2008), Radcliff (2013).
- 26 Naughton (2008), p. 121.
- 27 World Bank (2007). See Giles, Park, and Cai (2006) for a comprehensive study of the impact of economic restructuring on urban workers.
- 28 OECD 2010, Gustafsson and Ding (2011).
- 29 Huang (2014), p. 294. Cf. also Huang (2008), pp. 169 ff.
- 30 Huang (2008), p. 273.
- 31 Helliwell et al. (2012) pp. 13 ff.; (2013) pp. 11 ff.; (2016), p. 17.
- 32 See Bartolini and Sarracino (2015). The authors include a third measure of social capital, social participation, which is measured as the percentage of the population reporting (a) membership in or (b) unpaid voluntary work for various associations. Unfortunately, this measure is not comparable over time. The number of associations named in the WVS surveys varies between 8 and 15, and the question on voluntary work is asked in only two surveys. As a result, the total number of options presented to a respondent varies from lows of 8 to 15 (in 1995, 2007, and 2012) to highs of 29 and 30 in 1990 and 2001. Not surprisingly the highest values for participation occur in the latter two years, those with the largest number of respondent options.
- 33 Layard et al. (2012), pp. 70-71.
- 34 Xie and Zhou (2014); we are grateful to Professors Xie and Zhou for providing the data needed to reproduce the China series in Figure 1 of their paper. See also Cai et al. (2010), Gustafsson et al. (2008), Knight and Song (2000).
- 35 Zhang et al. (2015).
- 36 Wang and Zhou (2016).

- 37 Helliwell et al. (2016), p. 17.
- 38 Ibid., p.16.
- 39 Ibid., p. 19.
- 40 Helliwell et al. (2013), pp. 15ff., Table 2.2.
- 41 Cantril (1965), p. 162, Table VIII: 6.
- 42 In this and subsequent figures depicting differences by SES based on WVS data, the 2001 WVS observations are omitted, because the highest and lowest education groups were not covered in the 2001 survey. Due to this omission, SES differences in 2001 are much smaller than in the two adjacent surveys, 1995 and 2007. The mean value of SWB in 2001, however, does not seem to be affected by the omission of the highest and lowest education groups. If the highest and lowest education groups are dropped from the 1995 and 2007 surveys, one finds that the overall means in both surveys are virtually identical to those when the two education groups are included.
- 43 Graham et al. (2015) report an increase in mental illness from 2002 to 2012.
- 44 For a comprehensive overview of China's new social protection system see Cai and Du (2015); see also Fang (2014), Frazier (2014), and Ravallion (2014).
- 45 See CHIP surveys of 1988 and 2002.
- 46 Giles, Park, and Cai (2006).
- 47 Cohort data on percentage completing college education are from CHIP surveys 1988, 2002, and 2013.
- 48 Easterlin (2012).
- 49 Easterlin (2009).
- 50 Demographic changes in China differed somewhat from Europe, primarily because China's 1990 situation was governed by public policies and traditional strictures regarding marriage, divorce, and childbearing. See Davis (2015) and Attané & Gu (2014).
- 51 Easterlin et al. (2011).
- 52 The 1995 WVS figures for mean life satisfaction are: places <5,000 population, 6.52; places 5,000+, 7.00). Unfortunately 1995 is the only WVS survey in which comprehensive size-of-place data are available.
- 53 The 2002 CHIP survey is noticeably different from all other surveys in that rural happiness (3.68 on a 1-5 scale) considerably exceeds urban (3.47). Unlike the 2013 CHIP survey, the 2002 survey contained a special rural module on SWB in which the question preceding that on happiness asked respondents with whom they compared themselves, offering eight options (Knight and Gunatilaka 2017, p. 20). This question elicited valuable information on reference groups, but probably tended to channel responses to the subsequent happiness question toward social comparison, precluding comparison with one's past experience. Neither the 2002 CHIP urban module nor the 2013 CHIP urban and rural modules had this reference group question before the question on happiness. In the 2013 CHIP survey, urban happiness exceeds rural by 0.14 points, a more typical result.
- 54 Anderson (2014), pp. 152-153. See also Cai et al. (2008), p. 181.
- 55 Henderson (2014).
- 56 See CGSS (2003), CHIP (2002), and Horizon (2003).
- 57 Surveys showing the persistence of the gap are the CGSS (2010-2013), CFPS (2012), and CHIP (2013); those showing no gap are CFPS (2010) and (2014), and CHFS (2011).
- 58 See CGSS (2005-2013) and CFPS (2010-2014).
- 59 Attané and Gu (2014), p. 3.
- 60 See OECD (2013) and Layard and O'Donnell (2015).
- 61 An objection to SWB sometimes voiced is that the SWB scale is bounded, while GDP is not. In response, one might note, first, that there is substantial agreement that international differences in self-reported SWB, such as those reported in the series of World Happiness Reports, are meaningful. The Nordic countries are invariably leaders in SWB with values in the neighborhood of 8 on scales with an upper limit of 10, while the lowest values are down around 3. This suggests that there is plenty of opportunity to improve the happiness of people worldwide even in the Nordic countries. Moreover, if well-being is the goal of public policy, then reaching a value of 10 with everyone "completely satisfied" would seem to be a sign of remarkable policy success. By contrast, if GDP is the measure of well-being, there is no clear mark of achievement other than an ever-higher growth rate, which, as evidenced by China's experience, says little about what is really happening to people's lives.

References

- Abbott, P., Claire, W., Lin, K., & Haerpfer, C. (2016). The quality of society and life satisfaction in China. *Social Indicators Research*, 127(2), 653-670.
- Akay, A., Bargain, O., & Zimmermann, K. (2012). Relative concerns of rural-to-urban migrants in China. *Journal of Economic Behavior & Organization*, 81, 421-441.
- Anderson, K. (2014). China's evolving trade composition. In S. Fan, Kanbur, R., Wei, S.-J., and Zhang, X. [Eds.], *The Oxford Companion to the Economics of China*. Oxford, UK: Oxford University Press, pp. 150-155.
- Arrow, K. J., & Dasgupta, P. S. (2009). Conspicuous consumption, inconspicuous leisure. *The Economic Journal*, 119(541), F500-F513.
- Attané, I. & Gu, B. (2014). Eds. *Analysing China's Population: Social Change in a New Demographic Era*. New York: Springer.
- Bartolini, S., & Sarracino, F. (2015). The dark side of Chinese growth: Declining social capital and well-being in times of economic boom. *World Development*, 74, 333-351.
- Brandt, L., & Rawski, T. G. (Eds.) (2008). *China's great economic transformation*. New York: Cambridge University Press.
- Cai, F., & Du, Y. (2015). The social protection system in ageing China. *Asian Economic Policy Review*, 10(2), 250-270.
- Cai, F., Park, A., & Zhao, Y.H. (2008). The Chinese labor market in the reform era. In L. Brandt & T. G. Rawki (Ed.), *China's Great Economic Transition* (pp. 167-214). New York: Cambridge University Press.
- Cai, H. B., Chen, Y. Y., & Zhou, L. A. (2010). Income and consumption inequality in urban China: 1992-2003. *Economic Development and Cultural Change*, 58(3), 385-413.
- Cantril, H. (1965). *The Pattern of Human Concerns*. New Brunswick, NJ: Rutgers University Press.
- Carlsson, F., & Qin, P. (2010). It is better to be the head of a chicken than the tail of a phoenix: Concerns for the relative standing in rural China. *Journal of Socio-Economics*, 39(2), 180-186.
- Census of China 1990. 1% Random Sample, National Bureau of Statistics of China.
- Census of China 2000. 0.1% Random Sample, National Bureau of Statistics of China.
- Census of China 2000. Tabulation of the 2000 Population Census of the People's Republic of China, National Bureau of Statistics of China (2002), <http://www.stats.gov.cn/tjsj/pcsj/rkpc/5rp/index.htm>.
- Census of China 2005. 20% Random sample of the 1% National Population Sample Survey, National Bureau of Statistics of China.
- Census of China 2010. Tabulation of the 2010 Population Census of the People's Republic of China, National Bureau of Statistics of China (2012), <http://www.stats.gov.cn/tjsj/pcsj/rkpc/6rp/indexch.htm>.
- CFPS (2010-) Institute of Social Science Survey at Peking University, China Family Panel Studies, <http://www.issse.edu.cn/cfps>.
- CGSS (2003-) National Survey Research Center at Renmin University of China, Chinese General Social Survey, <http://www.chinagss.org/index.php?r=index/index&hl=en>.
- Chen, X. (2014). Relative deprivation in China. In S. Fan, R. Kanbur, S. J. Wei, & X., Zhang (Eds.), *The Oxford Companion to The Economics of China* (pp. 406-410). Oxford and New York: Oxford University Press.
- Cheng, Z., Mishra, V., Nielsen, I., Smyth, R. & Wang, B. Z. (2016). Wellbeing in China. *Social Indicators Research*, 1-10.
- CHFS (2011-) Survey and Research Center for China Household Finance at Southwestern University of Finance and Economics, China Household Finance Survey, <http://www.chfsdata.org/chfs.html>.
- CHIP (1988-) China Institute for Income Distribution, China Household Income Project, <http://www.ciidbnu.org/chip/index.asp>.
- Davis, D. R. (2015). *Continuity and Change in Mainland China's Recent Marital History*. Ph. D. dissertation in sociology. University of California, Los Angeles.
- Deaton, A. (2008). Income, health, and well-being around the World: Evidence from the Gallup World Poll. *Journal of Economic Perspectives*, 22(2), 53-72.
- Diener, E., Ng, W., Harter, J., & Arora, R. (2010). Wealth and happiness across the world: Material prosperity predicts life evaluation, whereas psychosocial prosperity predicts positive feeling. *Journal of Personality and Social Psychology*, 99(1), 52-61.
- Di Tella, R., MacCulloch, R. J., & Oswald, A. J. (2001). Preferences over inflation and unemployment: Evidence from surveys of happiness. *American Economic Review*, 91(1), 335-241.
- Di Tella, R., MacCulloch, R. J., & Oswald, A. J., (2003). The macro-economics of happiness. *Review of Economics and Statistics*. 85 (4), 809-27.
- Easterlin, R. A. (2009). Lost in transition: Life satisfaction on the road to capitalism, *Journal of Economic Behavior and Organization*, 71(2), 130-145.
- Easterlin, R. A. (2012). Life satisfaction of rich and poor under socialism and capitalism. *International Journal of Happiness and Development*, 1(1), 112-126.

Easterlin, R. A. (2013). Happiness, growth, and public policy. *Economic Inquiry*, 51 (1), 1-15.

Easterlin, R. A. (2014). Life satisfaction in the transition from socialism to capitalism: Europe and China. In A. Clark & C. Senik (Ed.), *Happiness and Economic Growth: Lessons from Developing Countries* (pp. 6-31). Oxford: Oxford University Press.

Easterlin, R. A., Angelescu-McVey, L., & Zweig, J. S. (2011). The Impact of Modern Economic Growth on Urban-Rural Differences in Subjective Well-Being. *World Development*, 39 (12), 2187-2198.

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

Fan, S., Kanbur, R., Wei, S.-J., & Zhang, X. (Ed.). (2014a). *The Oxford companion to the economics of China*. Oxford and New York: Oxford University Press.

Fan, S., Kanbur, R., Wei, S. J., & Zhang, X. (2014b). Overview: The economics of China: Success and challenges. In S. Fan, R. Kanbur, S.-J. Wei, & X. Zhang (Ed.), *The Oxford Companion to The Economics of China* (pp. 1-27). Oxford and New York: Oxford University Press.

Fang, H. (2014). Insurance Markets in China. In S. Fan, R. Kanbur, S.-J. Wei, & X. Zhang (Ed.), *The Oxford Companion to The Economics of China* (pp. 279-284). Oxford and New York: Oxford University Press.

Feng, S., Hu, Y., & Moffitt, R. (2015). *Long run trends in unemployment and labor force participation in China*. National Bureau of Economic Research Working Paper no. 21460.

Frazier, M. W. (2014). State Schemes or Safety Nets? China's Push for Universal Coverage. *Daedalus*, 143(2), 69-80.

Frey, B. S., & Stutzer, A. (2002). *Happiness and Economics: How the economy and institutions affect well-being*. New Jersey: Princeton University Press.

Giles, J., Park, A., & Cai, F. (2006). How has economic restructuring affected China's urban workers?. *The China Quarterly*, 185, 61-95.

Graham, C., Zhou, S., & Zhang J., (2015). Happiness and health in China: The paradox of progress, *Global Economy & Development Working Paper* 89.

Guriev, S., & Zhuravskaya, E. (2009). (Un)happiness in transition. *Journal of Economic Perspectives*, 22(2), 143-168.

Gustafsson, B., & Ding, S. (2011). Unemployment and the rising number of non-workers in urban China: Causes and distributional consequences. In S. Li, H. Sato, & T. Sicular (Ed.), *Rising Inequality in China: Challenge to a Harmonious Society* (pp. 289-331). New York: Cambridge University Press.

Gustafsson, B. A., Li, S., & Sicular, T. (2008). *Inequality and public policy in China*. New York: Cambridge University Press.

Helliwell, J. F. & H. Huang (2014). New Measures on the Costs of unemployment: Evidence from the subjective well-being of 3.3 million Americans. *Economic Inquiry*, 52 (4), 1485-1502.

_____, H. Huang, & S. Wang (2016). The Distribution of World Happiness. In J. f. Helliwell, R. Layard, and J. Sachs (eds.) *World Happiness Report 2016 Update* (Vol. 1), New York: Sustainable Development Solutions Network.

Helliwell, J. F., R. Layard, & J. Sachs (2012), eds. *World Happiness Report 2012*. New York: Sustainable Development Solutions Network.

_____, (2013), eds. *World Happiness Report 2013*. New York: Sustainable Development Solutions Network.

_____, (2016), eds. *World Happiness Report 2016, Update* (Vol. 1), New York: Sustainable Solutions Network.

Henderson, J. V. (2014). Urbanization in China. In S. Fan, R. Kanbur, S.-J. Wei, & X. Zhang (Ed.),

The Oxford Companion to the Economics of China (pp.225-229). Oxford and New York: Oxford University Press.

Horizon Research Consultancy Group (1997-2015). <www.agmr.com/members/horizon.html>

Huang, Y. (2008). *Capitalism with Chinese characteristics: Entrepreneurship and the State*. New York: Cambridge University Press.

Huang, Y. (2014). Political economy of privatization in China. In S. Fan, R. Kanbur, S.-J. Wei, & X. Zhang (Ed.), *The Oxford Companion to The Economics of China* (pp. 291-295). Oxford and New York: Oxford University Press.

Inglehart, R. F. (2002). Globalization and postmodern values, *The Washington Quarterly*, 23(1), 215-228.

Inglehart, R., Basanez, M., & Moreno, A. (1998). *Human values and beliefs: A cross-cultural sourcebook*. Ann Arbor, MI: University of Michigan Press.

Knight, J., & Gunatilaka, R. (2011). Does economic growth raise happiness in China? *Oxford Development Studies*, 39 (1), 1-24.

_____, (2017). Is Happiness Infectious? *Scottish Journal of Political Economy*, 64 (1), 1-24.

Knight, J., & Song, L. (2000). *The rural-urban divide: Economic disparities and interactions in China*. New York: Oxford University Press.

Knight, J. & Song, L. (2005). *Towards a labour market in China*. New York: Oxford University Press.

Knight, J. & Xue, J. J. (2006). How high is urban unemployment in China?. *Journal of Chinese Economic and Business Studies*, 4, 91-107.

- Layard, R., Clark, A. & Senik, C. (2012). The Causes of Happiness and Misery. In J. Helliwell, R. Layard, & J. Sachs (eds.) *World Happiness Report*. New York: The Earth Institute, Columbia University.
- Layard, R. & O'Donnell, G. (2015). How to make policy when happiness is the goal. In J. F. Helliwell, R. Layard, & J. Sachs (eds.), *World Happiness Report 2015* (pp. 76-87). New York: UN Sustainable Development Solutions Network.
- National Bureau of Statistics of China. (2013). *China statistical yearbook 2013*. Beijing: China Statistics Press.
- National Bureau of Statistics of China. (2016). Statistical communiqué of the People's Republic of China on the 2015 national economic and social development. http://www.stats.gov.cn/english/PressRelease/201602/t20160229_1324019.html, Released on February 29, 2016.
- Naughton, B. (2007). *The Chinese Economy: Transitions and Growth*. Cambridge, MA: MIT Press.
- Naughton, B. (2008). The demographic factor in China's transition. In L. Brandt & T. G. Rawski (Ed.), *China's Great Economic Transformation* (pp. 91-135). New York: Cambridge University Press.
- O'Connor, K. J. (2016). Happiness and Welfare State Policy around the World. Working Paper, University of Southern California Department of Economics.
- OECD (2010). *Economic surveys: China*. Vol. 2010/6. Paris: OECD Publishing.
- OECD (2013). *OECD guidelines for measuring subjective well-being*. Paris: OECD Publishing.
- Pacek, A. & B. Radcliff (2008). "Assessing the welfare state." *Perspectives on Politics*, 6 (2), 267-277.
- Penn World Table 9.0, (2016). <http://www.rug.nl/research/ggdcd/data/pwt/pwt-9.0>, Released on: June 9, 2016, DOI: 10.15141/S5J01T.
- Pew Research Center (2014). Spring 2014 Global Attitudes Survey. Accessed July 2016: <http://www.pewglobal.org/2014/06/05/spring-2014-survey-data/>.
- Radcliff, B. (2013). *The political economy of human happiness: How voters' choices determine the quality of life*. Cambridge: Cambridge University Press.
- Ravallion, M. (2014). An emerging new form of social protection in 21st Century China. In S. Fan., R. Kanbur, S.-J. Wei, & X. Zhang (Ed.), *The Oxford Companion to The Economics of China* (pp. 441-445). Oxford and New York: Oxford University Press.
- Steele, L. G., & Lynch, S. M. (2013). The pursuit of happiness in China: Individualism, collectivism, and subjective well-being during China's economic and social transformation. *Social Indicators Research*, (114)2, 441-451.
- Stevenson, B., & Wolfers, J. (2008). Economic growth and subjective well-being: Reassessing the Easterlin Paradox. *Brookings Papers on Economic Activity*, 39 (1), 1-87.
- Stiglitz, J. E., Sen, A., & Fitoussi, J. P. (2008). Report of the Commission on the Measurement of Economic Performance and Social Progress. Available at www.stiglitz-sen-fitoussi.fr.
- Veenhoven, R. (1991). Is happiness relative? *Social Indicators Research*, 24(1), 1-34.
- Wang, S. & W. Zhou (2016). Family Structure and Home Ownership: Evidence from China. Working Paper, Korean Development Institute.
- World Bank. (2007). *China's modernizing labor market: Trends and emerging challenges*. Washington: World Bank.
- Xie, Y., & Zhou, X. (2014). Income inequality in today's China. *Proceedings of the National Academy of Sciences*, 111(19), 6928-6933.
- Xu, C. G. (2011). The fundamental institutions of China's reforms and development. *Journal of Economic Literature*, 49(4), 1076-1151.
- Zhang, X., Zhang, X., & Chen, X. (2015). Happiness in the air. How does dirty sky affect subjective well-being? IZA Discussion Papers 9312.

APPENDIX

(EASTERLIN, WANG AND WANG, GROWTH AND HAPPINESS IN CHINA,
1990-2015)

Table A3.1. Mean Subjective Well-Being, Five Series, Total Population, China, 1990-2015^a

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	WVS	Gallup1	CGSS	CGSS	Gallup2	Gallup2	Horizon	Horizon
	(1-10)	(1-4)	(1-5)	(MA ^b)	(0-10)	(MA ^b)	(Cities)	(MA ^b)
				(1-5)		(0-10)	(1-5)	(1-5)
1990	7.29							
1995	6.83							
1997		2.82					3.69 ^d	
1998							3.48 ^d	3.54
1999		2.78			4.7 ^c		3.44 ^d	3.40
2000							3.27	3.33
2001	6.53						3.28 ^d	3.29
2002							3.33	3.29
2003							3.26	3.32
2004		2.67			4.5 ^c		3.38	3.31
2005			3.41				3.28	3.39
2006		2.76	3.46	3.52	4.56		3.52	3.38
2007	6.76				4.86	4.76	3.35	3.46
2008			3.68	3.64	4.85	4.72	3.51	3.44
2009					4.45	4.65	3.47	3.46
2010			3.77	3.77	4.65	4.71	3.41	3.47
2011			3.86	3.80	5.04	4.93	3.53	3.50
2012	6.85		3.78	3.79	5.09	5.12	3.57	3.53
2013			3.72		5.24	5.18	3.49	3.52
2014					5.20	5.25	3.51	3.61
2015					5.30			

Sources: WVS (World Values Survey: www.worldvaluessurvey.org); Gallup1 and Gallup2: (www.gallup.com); Horizon Research Consultancy Group, series for "cities" (www.agmr.com/members/horizon.html)

a. For specific questions and response options, see text, Technical Box 1. The scale for each survey is shown above in parentheses.

b. Three-year moving average, centered.

c. 1-10 scale

d. 1-4 scale, mean computed from 5, 4, 2, 1 coding.

Table A3.2. Real GDP per Capita and Price Level of Household Consumption, 1988-2015

Year	Real GDP per Capita (2011 US dollars)			Price Level (US 2005 = 100)		
	(1)	(2)	(3)	(4)	(5)	(6)
	Rate of Change (%)			Rate of Change (%)		
	Annual	Annual	MA ^c	Annual	Annual	MA ^c
1988	2408			13.3		
1989	2361	-1.94		15.6	17.45	
1990	2386	1.08	1.37	12.8	-18.05	-1.28
1991	2505	4.98	4.43	12.4	-3.24	-5.00
1992	2687	7.24	6.66	13.2	6.29	3.40
1993	2896	7.78	7.31	14.1	7.16	1.19
1994	3095	6.90	8.59	12.7	-9.87	6.74
1995	3439	11.09	6.82	15.6	22.95	10.32
1996	3523	2.45	6.52	18.4	17.89	15.86
1997	3735	6.00	2.56	19.7	6.74	11.63
1998	3706	-0.76	3.50	21.7	10.27	6.29
1999	3901	5.26	3.35	22.1	1.86	6.27
2000	4118	5.56	5.90	23.5	6.67	3.92
2001	4401	6.87	7.66	24.3	3.23	2.67
2002	4866	10.56	8.39	23.8	-1.90	1.87
2003	5243	7.75	9.62	24.9	4.27	2.60
2004	5796	10.56	9.58	26.2	5.41	5.51
2005	6400	10.43	10.77	28.0	6.84	5.93
2006	7126	11.33	10.68	29.6	5.54	9.47
2007	7858	10.29	7.95	34.3	16.02	15.66
2008	8034	2.23	6.97	43.0	25.43	14.54
2009	8709	8.41	6.41	44.0	2.18	12.15
2010	9456	8.58	8.30	47.8	8.85	7.68
2011	10205	7.92	7.92	53.6	12.02	9.22
2012	10945	7.25	7.27	57.2	6.81	8.35
2013	11673	6.66	6.92	60.8	6.22	5.49
2014	12473	6.85	6.63	62.9	3.45	4.23
2015	13271 ^a	6.40		64.8 ^b	3.03	

Sources: Real GDP per capita 1988-2014 (Penn World Table 9.0, <http://www.rug.nl/research/ggdc/data/pwt/>), Real GDP per capita 2015 (NBS of China, <http://www.stats.gov.cn/>), Price level 1988-2014 (Penn World Table 9.0, <http://www.rug.nl/research/ggdc/data/pwt/>), Price level 2015 (NBS of China, <http://www.stats.gov.cn/>).

a. Extrapolated by the NBS series, assuming the 2015 growth rate is the same (6.4%) in both series.

b. Extrapolated by the NBS series, assuming the ratio of the NBS CPI (1978=100) to the PWT price level in 2015 is 9.5, following the decreasing trend of the ratio since 2011.

c. Three-year moving average, centered.

**Table A3.3. Urban Unemployment Rate, Four Series, 1988-2015
(percent of labor force)**

Year	(1) NBER	(2) GWP	(3) NBER (MA ^a)	(4) GWP (MA ^a)	(5) CHIP	(6) Census
1988	3.5				0.4	
1989	3.0		3.5			
1990	3.9		3.6			4.3
1991	3.8		3.8			
1992	3.7		3.7			
1993	3.5		3.8			
1994	4.1		3.9			
1995	4.0		4.1		3.4	
1996	4.1		4.3			
1997	4.9		4.6			
1998	4.9		5.1			
1999	5.6		6.1			
2000	7.8		7.2			11.3/8.3 ^b
2001	8.2		8.8			
2002	10.4		9.7		11.6	
2003	10.4		10.2			
2004	9.9		10.1			
2005	10.0		9.8			9.6/6.9 ^b
2006	9.4		9.2			
2007	8.1		8.9		7.9	
2008	9.1		8.7			
2009	8.9	8.2				
2010		8.7		7.3		4.8 ^b
2011		4.9		6.3		
2012		5.3		5.0		
2013		4.7		4.1	4.2	
2014		2.3		4.2		
2015		5.5				

Sources: NBER (urban *hukou* population): Feng, Hu, and Moffitt 2015; GWP (www.gallup.com); CHIP (urban households, <http://www.ciidbnu.org/chip/index.asp>); Census (random samples of the Census data from the NBS of China, and statistics on <http://www.stats.gov.cn/>).

a. Three-year moving average, centered.

b. Urban (city + town) population; other census values are for urban *hukou* population.

**Table A3.4. Safety Net Indicators by Level of Education, 1988-2013
(urban households)**

		A. Pension Coverage (percent of males ages 60+ and females ages 55+)				
		1988	1995	2002	2007	2013
1	All	99.5	99.5	79.8	84.6	83.1
2	College or more	99.2	99.7	90.9	95.4	90.3
3	Middle school or high school	99.8	99.7	88.7	90.6	86.8
4	Primary school or less	99.9	99.1	63.1	64.6	74.9
5	Row 2 - Row 4	-0.7	0.6	27.8	30.8	15.4
		B. Healthcare Coverage (percent of population ages 15+)				
		1988	1995	2002	2007	2013
6	All	(99) ^a	75.4	56.4		92.1
7	College or more	(99)	87.4	71.2		91.3
8	Middle school or High School	(99)	74.6	52.8		91.9
9	Primary school or less	(99)	61.5	43.3		94.7
10	Row 7 - Row 9	(0)	25.9	27.9		-3.4

Source: CHIP (urban households, <http://www.ciidbnu.org/chip/index.asp>). Healthcare was not asked in 1988 and 2007.

a. Values for 1988 assume coverage was nearly universal, based on responses on self-rated health (SRH) by income and education in the 1990 WVS which are very close together. Cf. Inglehart et al. 1998, V83.

Table A3.5. Measures of Social Capital, 1990-2012

	1990	1995	2001	2007	2012
Most people can be trusted (% agree)	60.4	52.3	54.4	52.8	63.2
Civic cooperation (10=always; 1=never)					
Wrong to falsely claim benefits	9.30	8.63	8.86	7.48	7.33
Wrong to avoid fare	9.42	9.39	9.66	8.96	8.38
Wrong to cheat on tax	9.46	9.47	9.42	9.00	8.79
Bribing not acceptable	9.66	9.79	9.65	9.28	9.03
Mean	9.46	9.34	9.41	8.67	8.36

Source: WVS. Specific questions and response options are given in Technical Box 2.

Table A3.6. Indicators of Trends in Environmental Pollution and Housing Prices, 1990-2014

Year	Coal		Housing Prices
	Consumption (million tons)	Housing Prices RMB/sq. meter	(MA ^a) RMB/sq. meter
1990	1055		
1991			
1992			
1993			
1994			
1995	1377		
1996			
1997			
1998			
1999			
2000	1357	1948	
2001		2017	2019
2002		2092	2102
2003		2197	2299
2004		2608	2581
2005	2434	2937	2888
2006		3119	3234
2007		3645	3447
2008		3576	3893
2009		4459	4253
2010	3490	4725	4726
2011		4993	5049
2012		5430	5424
2013	4244	5850	5738
2014		5933	

Sources: Coal Consumption, Department of Energy Statistics, National Bureau of Statistics (2015). China Energy Statistical Yearbook 2014. China Statistics Press; Housing Prices, NBS of China.

a. Three-year moving average, centered.

Table A3.7. Predictors of SWB in World Happiness Reports, 1990-2012

	(1) GDP p.c. US\$ 2011	(2) Life Expectancy yrs.	(3) Freedom of Choice (1-10) ^a	(4) Bribery acceptable (1-10) ^b
1990	2386	69.0	7.04	1.34
1995	3439	69.9	6.80	1.21
2001	4401	72.2	7.15	1.35
2007	7858	74.3	7.29	1.72
2012	10945	75.4	7.14	1.97

a. 1 = none; 10 = a great deal.

b. 1 = never; 10 = always.

Source: Col. (1) Table A2, col.1
Col. (2) World Bank, World Development Indicators
Cols. (3), (4) World Values Survey

Table A3.8. Actual and Predicted Mean Ladder of Life, 2006-2015

Year	Actual ladder	Predicted ladder	1.96 s.e.
2006	4.56	5.04	0.09
2007	4.86	5.49	0.08
2008	4.85	5.52	0.08
2009	4.45	5.44	0.08
2010	4.65	5.38	0.08
2011	5.04	5.46	0.08
2012	5.09	5.44	0.06
2013	5.24	5.41	0.08
2014	5.20	5.42	0.08
2015	5.30	5.37	0.08

Sources: Cols. 2 and 4, Gallup World Poll. Col. 3, based on equation in Helliwell et al (2016), p. 16, Table 2.1, col. 1.

Table A3.9. Mean Life Satisfaction, Top and Bottom Income Terciles, and Standard Deviation of Life Satisfaction, 1990-2012 (scale 1-10)

	(1) 1990	(2) 1995	(3) 2007	(4) 2012
All	7.29	6.83	6.77	6.86
Top Tercile	7.30	7.77	7.53	7.47
Bottom Tercile	7.12	5.89	5.53	6.46
Top minus bottom	0.18	1.88	2.00	1.01
Life Satisfaction St. Dev.	2.10	2.42	2.43	1.98

Source: World Values Survey.

Table A3.10. Unemployment Rate, by Level of Education, 1988-2013 (per cent of labor force)

	1988	1995	2002	2007	2013
All	0.4	3.4	11.6	7.9	4
College or more	0.0	0.8	3.8	3.6	2.8
Middle school or high school	0.5	3.7	13.8	8.8	5.2
Primary school or less	0.1	3.9	18.5	12.5	4.2
Primary minus college	0.1	3.1	14.7	8.9	1.5

Source: World Values Survey.

Table A11. Mean Financial Satisfaction, Top and Bottom Income Terciles, 1990-2012 (scale 1-10)

	(1) 1990	(2) 1995	(3) 2007	(4) 2012
All	6.10	6.11	6.06	6.18
Top third	6.34	7.25	7.38	7.00
Bottom third	5.73	4.90	5.00	5.54
Top minus bottom	0.61	2.35	2.38	1.46

Source: World Values Survey.

Table A3.12. Mean Self-Reported Health, Top and Bottom Income Terciles, 1990-2012 (scale 1-5)

	(1) 1990	(2) 1995	(3) 2007	(4) 2012
All	3.82	4.01	3.93	3.86
Top third	3.83	4.26	4.13	4.02
Bottom third	3.80	3.80	3.71	3.69
Top minus bottom	0.03	0.46	0.42	0.33

Source: World Values Survey.

Table A3.13. Mean Life Satisfaction by Birth Cohort, 1990-2012 (scale 1-10)

Cohort	(1) 1990	(2) 2001	(3) 2012
1936-45	7.43	6.84	7.18
1946-60	7.40	6.38	6.76
1961-65	6.78	6.53	6.79

Source: World Values Survey.

Table A3.14. Mean Subjective Well-Being by Urban-Rural Residence, 2003-2015^a

Year	(1) Gallup (0-10) Urban		(2) Rural		(3) Urban		(4) Rural	
	Y	MA	Y	MA	Y	MA	Y	MA
2003					3.28			
2004								
2005					3.45	3.41	3.36	
2006	4.80		4.41		3.50	3.58	3.40	3.45
2007	5.12	5.00	4.70	4.58				
2008	5.09	4.97	4.64	4.56	3.79	3.70	3.58	3.56
2009	4.70	4.90	4.34	4.47				
2010	4.90	5.01	4.44	4.51	3.82	3.82	3.71	3.72
2011	5.42	5.30	4.75	4.67	3.85	3.83	3.86	3.77
2012	5.58	5.51	4.81	4.86	3.81	3.79	3.73	3.77
2013	5.54	5.47	5.02	4.99	3.72		3.71	
2014	5.28	5.53	5.13	5.04				
2015	5.76		4.98					

Legend: Y= yearly

MA = Three item moving average, centered

Sources: Gallup, See Table A1. CGSS (<http://www.chinagss.org/index.php?r=index/index&hl=en>).

a. For specific questions and response options, see Technical Box 1

Table A3.15. Mean Subjective Well-Being, Urban and Rural *Hukou* Holders in Urban Areas, 2003-2013^a

Year	(1) CGSS (1-5) UH		(2) RH	
	Y	MA	Y	MA
2003	3.28		3.19	
2004				
2005	3.45	3.41	3.44	
2006	3.50	3.58	3.43	3.55
2007				
2008	3.79	3.70	3.79	3.67
2009				
2010	3.82	3.82	3.78	3.80
2011	3.85	3.83	3.82	3.78
2012	3.81	3.79	3.74	3.75
2013	3.72		3.70	

Legend: UH = Urban *hukou* holders in urban areasRH = Rural *hukou* holders in urban areas

Y= yearly

MA = Three item moving average, centered

Source: CGSS (<http://www.chinagss.org/index.php?r=index/index&hl=en>).

a. For specific questions and response options, see Technical Box 1