

China's life satisfaction, 1990–2010

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Despite its unprecedented growth in output per capita in the last two decades, China has essentially followed the life satisfaction trajectory of the central and eastern European transition countries—a U-shaped swing and a nil or declining trend. There is no evidence of an increase in life satisfaction of the magnitude that might have been expected to result from the fourfold improvement in the level of per capita consumption that has occurred. As in the European countries, in China the trend and U-shaped pattern appear to be related to a pronounced rise in unemployment followed by a mild decline, and an accompanying dissolution of the social safety net along with growing income inequality. The burden of worsening life satisfaction in China has fallen chiefly on the lowest socioeconomic groups. An initially highly egalitarian distribution of life satisfaction has been replaced by an increasingly unequal one, with decreasing life satisfaction in persons in the bottom third of the income distribution and increasing life satisfaction in those in the top third.

economic growth | happiness | well-being

The main purpose of this article is to describe the trend in subjective well-being (SWB) of the Chinese population during China's transition from socialism to capitalism, and to identify differences in SWB by socioeconomic status (SES). To support our findings on SWB, we report likely causal factors, drawing on evidence in both China and the European transition countries.

Many believe that well-being is increased by economic growth, and that the higher the growth rate, the greater the increase in well-being. There could hardly be a better country than China for testing these expectations of increased well-being. China's transition has been marked by perhaps the highest two-decade rate of growth in gross domestic product (GDP) per capita ever seen, a remarkable $\geq 8\%$ per year (1).^{*} Between 1990 and 2009, per capita GDP and consumption in China (in constant dollar terms) increased by at least fourfold.

The principal measure of well-being used here is self-reported feelings of satisfaction with life, one of the SWB measures recommended in the recent Stiglitz-Sen-Fitoussi report (2): 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”.

We do not claim that this measure is the best single or most comprehensive index of well-being, but examining the Chinese population's reported feelings of well-being during a period of such momentous change is surely of considerable interest.

Previous studies have reported mixed results, from life satisfaction “falling” to “constant” to “rising.” On the downtrend side, there is an article by Brockmann et al. (3). Kahneman and Krueger's (4) reading of the evidence tends toward “constant” but “declining” is also considered within the realm of possibility. Two Gallup reports offered a “flat line” conclusion (5, 6), as did a study by Knight and Gunatilaka (7). The basis of the latter authors' conclusion is a previous collaborative article by one of the current authors (8). A recent report of the Pew Research Center identified increasing life satisfaction along with rising incomes in China.[†]

The number of studies of life satisfaction by Chinese investigators is increasing, but the studies focus on point-of-time differences (9). One of China's premier survey organizations, the Horizon Research Consultancy Group, has conducted a number

of valuable quality of life surveys that include questions on life satisfaction. These data are reported in the “Blue Books” issued annually by the Chinese Academy of Social Sciences (10); however, there is virtually no discussion of longer-term movements.

The surveys conducted to date[‡] have tended to be disproportionately urban (e.g., the Pew and Asiabarometer surveys). Economic growth was disproportionately urban during this period, with urban incomes rising markedly relative to rural incomes (10–12). Thus, even though the life satisfaction data have an urban bias during this period, economic growth does as well, and comparing the two factors seems reasonable. In all but one of the series that we analyzed, total data rather than solely urban data were used, chiefly to maximize sample size in a country as vast as China. For the Horizon surveys, the series for cities (that with the longest time span) was analyzed.

The analysis of trends in life satisfaction differences by SES is based on the World Values Survey (WVS). Following Inglehart et al. (13), respondent answers on decile of income are arrayed from high to low and divided approximately into thirds, yielding upper, middle, and lower segments of the income distribution.

Historical research on a developing country like China is almost always like solving a jigsaw puzzle. Typically, few if any comprehensive and tested time series are available on economic and social magnitudes, but numerous (and sometime substantial) pieces of quantitative and qualitative data are available. It is the task of the economic historian to find these pieces of data and evaluate whether they can be assembled to show a coherent picture.

Results

Longer-Term Movement. According to the surveys that we analyzed, life satisfaction in the Chinese population declined from 1990 to around 2000–2005 and then turned upward, forming a U-shaped pattern for the period as a whole (Fig. 1). Although a precise comparison over the full study period is not possible, there appears to be no increase and perhaps some overall decline in life satisfaction. A downward tilt along with the U-shape is evident in the WVS, the series with the longest time span.

The other series shown in Fig. 1 each cover shorter periods of study. In all series with observations reported before 2000, including the WVS, pre-2000 life satisfaction was greater than that

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^{*}Output statistics reported in this paper are from the Penn World Table (pwt.econ.upenn.edu/cic_main.html).

[†]From the Pew Research Center's 2011 Global Attitudes Project (<http://www.pewglobal.org/category/datasets/>).

[‡]The following surveys were used: the World Values Survey (www.worldvaluessurvey.org), the Asiabarometer (www.asiabarometer.org), two surveys by Gallup (5, 6) (www.gallup.com), a survey by Horizon Research Consultancy Group (www.agmr.com/members/horizon.html), and the Pew Research Center's 2011 Global Attitudes Project (<http://www.pewglobal.org/category/datasets/>).

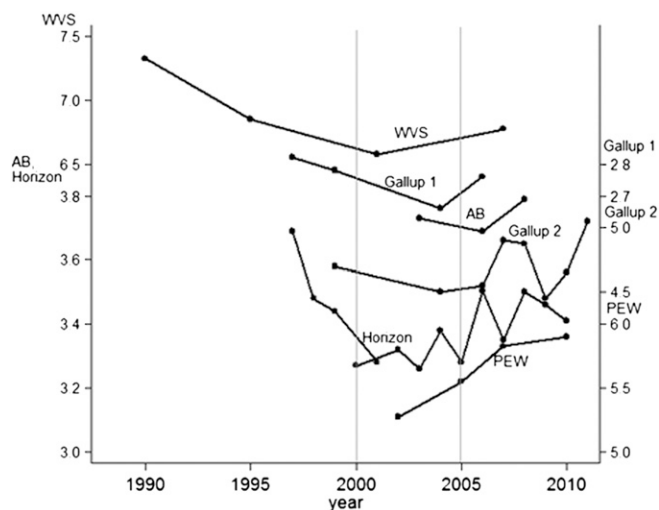


Fig. 1. Mean life satisfaction in six series, 1990–2010 (Table S1). The integer response options of the series are WVS, 1–10; Gallup 1, 1–4; AB, 1–5; Gallup 2, 0–10 except 1999 and 2004, 1–10; Horizon, 1–5, except 1997–1999 and 2001, 1–4; Pew, 0–10. Series with response options of 1–4 or 1–5 are plotted to twice the scale of series with response options of 1–10 and 0–10. Survey questions are provided in *SI Text*.

in the 2000–2005 trough. Similarly, life satisfaction was greater after 2005 than during the 2000–2005 trough, with the slight exception of the Asiabarameter series. For series with observations reported before and after the trough, the posttrough life satisfaction values are almost always lower than the pretrough values. The sole exception is the Gallup 2 series, but in this case the pretrough date, 1999, is virtually part of the trough.

The WVS series registered a decline in life satisfaction of 0.53 point on a scale of 1–10 from 1990 to 2007. To get a better idea of the trend for the full study period, we can examine how the likely change from 2007 to 2010 compares with the 0.53-point decline before 2007. An estimate of the post-2007 change may be based on three series. Extrapolating the 2007 WVS value to 2010 based on the increases in these series (*SI Text*) yields options from a low of 0.03 point in the Pew series to 0.18 point using the Gallup 2 series 2011 value for the terminal observation. These post-2007 increases are much smaller than the 0.53-point decline from 1990 to 2007, supporting the conclusion of a nil or declining trend over the full study period.

Indeed, it might be argued that the trend from 1990 to 2010 suggested by the present data is overstated in a positive direction, because of relatively poor coverage of the “floating population” (i.e., persons living in places other than where they are officially registered) in urban areas. The life satisfaction of persons who migrate to urban areas is typically lower than that of the urban-born population (14); thus, an increase in the proportion of the floating population in urban areas would tend to lower average life satisfaction for the urban population as a whole. Between 1990 and 2010, the floating population rose substantially, from perhaps 7% to 33% of the total urban population (15–17), exerting an increasingly negative impact on average urban life satisfaction. If the floating population is not as well covered in the life satisfaction surveys as their urban-born counterparts, then this negative impact is understated, and thus the full period trend is biased upward.

Of note, there is no evidence of a substantial uptrend in life satisfaction of the magnitude that might have been expected given the fourfold increase in GDP per capita over the study period. In the happiness literature, the point-of-time (cross-sectional) relationship of happiness to GDP per capita is often used to infer the likely life satisfaction changes over time as GDP per capita

increases (18–20). Based on the international cross-sectional regression relationship between life satisfaction and GDP per capita in the 1990 WVS data, life satisfaction in China would have been expected to increase by 0.60 point from 1990 to 2010 due to the fourfold increase in GDP per capita during this period. If alternatively, the relationship of life satisfaction to GDP per capita proposed by Stevenson and Wolfers (21) is used, then the expected increase would be approximately 1 full point. There is little indication of such a sizeable full-period increase in the present data.

Recognition of the U-shape of the Chinese population’s changing life satisfaction leads to a consistent explanation for the mixed results of previous studies. The series analyzed by those inferring a declining trend tend to fall in the early, declining segment of the U-shaped curve (3, 4), whereas those finding a pattern of constancy straddle the 2000–2005 trough (5–8). In the Pew series, an upward trend resulted from the survey start date falling in the 2000–2005 trough.

The finding of a life satisfaction trough for China around 2000–2005 is reminiscent of a similar result reported for Latin America, in which life satisfaction in 1994–2006 also showed a U-shape, bottoming out around 2002 (22). It is possible that similar life satisfaction troughs occurred around this time in other developing countries given the serious setback to world economic growth in general in the first part of the decade of 2000–2010 (23, 24).

China’s long-term movement of life satisfaction is similar to that seen in other transition countries, with a decline early in the transition followed by recovery. China’s initial decline in life satisfaction of 0.76 point from 1990 to the 2001 trough WVS observation is of the same order of magnitude as, but a little smaller than, the average value of 0.91 point in the six European transition countries for which similar peak-to-trough changes can be calculated (i.e., the former German Democratic Republic, Estonia, Latvia, Lithuania, Belarus, and Russia). Such sizeable declines in life satisfaction are quite rare (25).

In the European transition countries, as for China, it is doubtful that the recovery raises life satisfaction above pretransition values (25). In China, however, the average level of life satisfaction from 1990 to 2007 (>6.5 according to the WVS) was higher than that in most of the European transition countries during that period.

As noted previously, life satisfaction and GDP per capita are significantly positively correlated in point-of-time international comparisons. The 1990 WVS value for life satisfaction in China is high relative to its GDP per capita. Of the 35 countries in the 1990 WVS for which GDP per capita estimates are available, China ranks 18th in terms of life satisfaction, just below most of the developed countries. In terms of GDP per capita, it ranks 33rd.

The 1990 WVS value supports the argument that life satisfaction in China has not increased and might have even declined in the last two decades. But is this value credible? One reason to believe that it is credible, is that in 1990 virtually all socioeconomic groups in China, from the lowest stratum to the highest stratum, reported high and fairly similar mean levels of life satisfaction, all exceeding 7.0. These high levels were seen across the distributions by education, occupation, and income. Thus, the high overall average cannot be attributed to a disproportionate representation of groups with high life satisfaction in the survey.

In addition, China’s 1990 mean life satisfaction value of 7.29 is virtually identical to the value of 7.26 in the fragmentary pretransition data for the Soviet Union, whose labor and wage policies served as the model for communist China (11, 25). Moreover, life satisfaction inequality was also similar in the two countries in 1990 (Table S2).

Confidence in the 1990 WVS data is further bolstered by the fact that the internal structure of the dataset is much like that observed in happiness datasets for other countries. A microeconomic happiness regression of the usual type (18, 26, 27) yields

coefficients on such variables as age, marital status, income, health, and unemployment with signs similar to those commonly reported in other countries. These coefficients are not always significant, probably because of the low degree of variability in life satisfaction in the 1990 data for China. A 1990 microeconomic regression for Russia yielded results similar to those for China in terms of both the signs and lack of significance of the coefficients.

Finally, as discussed in more detail later, the high 1990 level of life satisfaction in China was consistent with the low unemployment rate and extensive social safety net prevailing at that time. Urban workers were essentially guaranteed life-time positions and associated benefits, including subsidized food, housing, health care, child care, and pensions, as well as jobs for grown children (11, 28).

Historical Context. The U-shaped pattern of life satisfaction in China for 1990–2010 largely mirrors an inverted U-shape in the urban unemployment rate (29–31) (Fig. 2). The unemployment rate rose markedly in the 1990s, peaked in 2000–2005, and then declined somewhat thereafter, although remaining above its initially very low level. (For a valuable assessment of China's unemployment data, including the officially registered unemployed, see ref. 30).

The growth rate of GDP moved somewhat inversely to the unemployment rate but bottomed out earlier, at 1997–2001, at a still-healthy average of 3.6% per year (32). The inflation rate, as measured by the Consumer Price Index, trended upward in 1990–1997, leveled off through 2003, and then increased again thereafter, albeit at a slower rate (33). Based on the literature (34), low inflation would be expected to be associated with increased life satisfaction; however, reported life satisfaction was lowest during the period of lowest inflation in China.

The causality suggested by the inverse swings in life satisfaction and the unemployment rate is consistent with the association between unemployment and decreased life satisfaction reported in the happiness literature (26, 35–37). Moreover, the evidence indicates that life satisfaction is decreased not only for those who become unemployed, but also for employed persons, presumably due to the anxiety created by a worsening labor market (34).

The apparent link between life satisfaction and unemployment is also supported by the Chinese population's sensitivity to economic conditions evidenced by their responses to the following question asked in the Pew surveys: "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 the unemployment

rate was at or near its highest point, almost half (48%) of the respondents answered "somewhat bad" or "very bad." In 2007, when the unemployment rate had decreased substantially, although still exceeding the 1990 level, this percentage had decreased to 14%, and in 2010 it had dropped to 7%. In those years, life satisfaction according to the responses to the Pew survey's question on "ladder of life" rose from 5.27 in 2002 to 5.82 in 2007 and to 5.85 in 2010.

It might be conjectured that the U-shaped pattern of life satisfaction is related not to the movement in the unemployment rate, but rather to the U-shaped swing in the growth rate of GDP per capita described earlier. A problem with this supposition is that it raises the question of why the growth rate of GDP per capita, which showed a trough in 1997–2001, would affect life satisfaction with a lag of several years. Moreover, this supposition cannot account for the similar life satisfaction trajectories seen in China and the European transition countries despite markedly dissimilar output patterns. The explanation for the U-shaped life satisfaction pattern that fits the situations in both China and Europe is the movement of labor market conditions, as indexed by the unemployment rate, not the growth of output.

The movement of China's unemployment rate is partly a reflection of the world economy. As noted, there was a significant slowdown in world economic growth at the start of the millennium, and countries substantially dependent on exports, such as China, felt the impact of declining foreign demand (23, 24). More importantly, however, the movement in China's unemployment rate is a result of government policies and reflects the deterioration of the social safety net that had prevailed under socialism. China's urban labor market before reform has been characterized as an "iron rice bowl" and "mini welfare state" (11). As was mentioned, workers in state-owned enterprises (SOEs), the firms that accounted for the bulk of urban employment, had permanent jobs and an extensive employer-provided social safety net (11, 28). From an economic standpoint, this system was highly inefficient and lacked incentives, but it did ensure income security for urban workers and was very egalitarian.

In 1994, in the face of continuing inefficiency and unprofitability of SOEs, the government initiated a restructuring program that quickly evolved into what has been called "a draconian policy of labor shedding" (11). The resulting rise in unemployment, although cushioned somewhat by an urban layoff program that provided some temporary safety net benefits (*xiagang*), was aggravated by increasing rural-to-urban movement as policies restricting internal migration were gradually relaxed (28). As noted in a World Bank report, "by all measures, SOE restructuring had a profound effect on the functioning of the labor market and the welfare of millions of urban workers. Most urban centers experienced a sharp rise in unemployment and a large reduction in labor force participation as many older and discouraged workers left the workforce" (38). SOE restructuring also meant "the end of the 'iron rice bowl' of guaranteed lifetime employment and benefits for urban workers" (38).

Beginning around 2004, the rate at which SOEs were downsized 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 declined somewhat (29, 31).

Labor market developments are similar in China and the European transition countries, including the emergence of significant unemployment, a decline in the proportion of employed persons in the working age population due to a substantial drop in the labor force participation rate of women and older workers (25, 38), and a greatly diminished social safety net with the transition to free market conditions. A recent World Bank report (39) on China's unemployment insurance system states that "the level of benefits remains low and provides a much lower income replacement rate than other countries." Much the same is true of

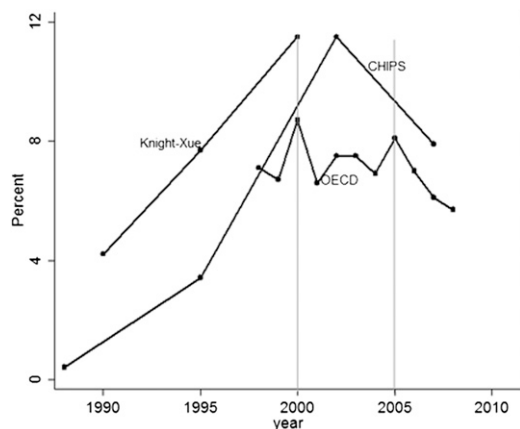


Fig. 2. Urban unemployment rate (percent of labor force) in three series, 1988–2008 (Table S3). (Source: refs. 29–31.)

the present pension system, which has been characterized as a “patchwork of arrangements” whose “effective replacement rates are fairly low and projected to decline further” (40). Rural migrants to urban areas, numbering well over 100 million, typically have little or no safety net coverage (41).

Unlike in Europe, average real wages in China rose markedly in the course of the transition, in concert with the very high rate of GDP growth. The fact that life satisfaction in China failed to increase noticeably along with income and output and has a similar U-shape as that in the European transition countries is indicative of the fundamental importance of employment and the social safety net in determining the course of life satisfaction.

Socioeconomic Differentials. In terms of life satisfaction, China has moved from one of the most egalitarian countries to one of the least. The beneficiaries of the transition have been the higher-income and better-educated segments of the population, whose life satisfaction has increased. The lower-income segments of the population have experienced a substantial decline in life satisfaction, however. In 1990, the proportion of respondents reporting a high level of life satisfaction (i.e., a value of 7–10 on a scale of 1–10) was similar in those in the top third of income distribution and those in the bottom third (68% vs. 65%). By 2007, this percentage had risen slightly to 71% for the top income group, but had plummeted to 42% for the bottom income group (Fig. 3, *Upper*). China’s trend of life satisfaction differences by SES is typical of transition countries (25) and closely parallels that seen in Russia (Table S2).

Although incomes have increased for all income groups, China’s transition has been marked by a sharp increase in income inequality (11, 42–44). This increasing income inequality is related to the growing urban–rural disparity in income, increased income differences in both urban and rural areas, and the significant increase of unemployment in urban areas associated with restructuring (44). Knight and Song (11) pointed out that “in adopting its reform policies. . . [China’s] leadership espoused output objectives above all else. Where there was a conflict between efficiency objectives and equality objectives, egalitarianism was played down.” The trend toward increasing SES-related differences in life satisfaction and income is consistent with this observation.

One indication of the close association between increased inequality of life satisfaction and increased income inequality is the pattern of responses to the WVS question “How satisfied are

you with the financial situation of your household?” in the three income groups. This pattern closely followed that for life satisfaction, with a clustering in 1990 and a marked divergence by 2007 (Fig. 3, *Bottom Left*). As in the case of life satisfaction, the trend in financial satisfaction is upward for the highest income group and noticeably downward for the lowest income group.

The growing disparity in life satisfaction also reflects the dissolution of the social safety net, which provided universal health care among other benefits. This is evidenced by the responses to the WVS question: “How would you describe your health these days? Would you say it is very good, good, fair, poor, or very poor?” In 1990, the proportion responding “very good” or “good” was clustered around 56% in all three income categories, with a difference of only 4 percentage points between the top and bottom tertiles (Fig. 3, *Bottom Right*). By 2007, this difference had widened to 28 percentage points, with the upper third improving and the lower third worsening. It seems plausible that these disparate trends reflect the adverse impact on the lower income population of the increased costs of health care resulting from the marketization of health care services. According to an Organization for Economic and Development Cooperation report, “economic restructuring undermined the health care system, which became increasingly privately financed, though remaining largely publicly-provided. While the population’s health status was improving, a rising number of people were priced out of treatment or fell into poverty because of health care costs” (40).

Discussion

Despite an unprecedented rate of economic growth, China’s life satisfaction over the last two decades has largely followed the trajectory seen in the central and eastern European transition countries—a decline followed by a recovery, with no change or a declining trend over the period as a whole. There is no evidence of a marked increase in life satisfaction in China of the magnitude that might have been expected based on the fourfold increase in the level of per capita consumption during that period. In its transition, China has shifted from one of the most egalitarian countries in terms of distribution of life satisfaction to one of the least egalitarian. Life satisfaction has declined markedly in the lowest-income and least-educated segments of the population, while rising somewhat in the upper SES stratum.

The time series data on SWB underlying these conclusions are derived from six surveys conducted by five different survey organizations, and together they show a remarkably consistent

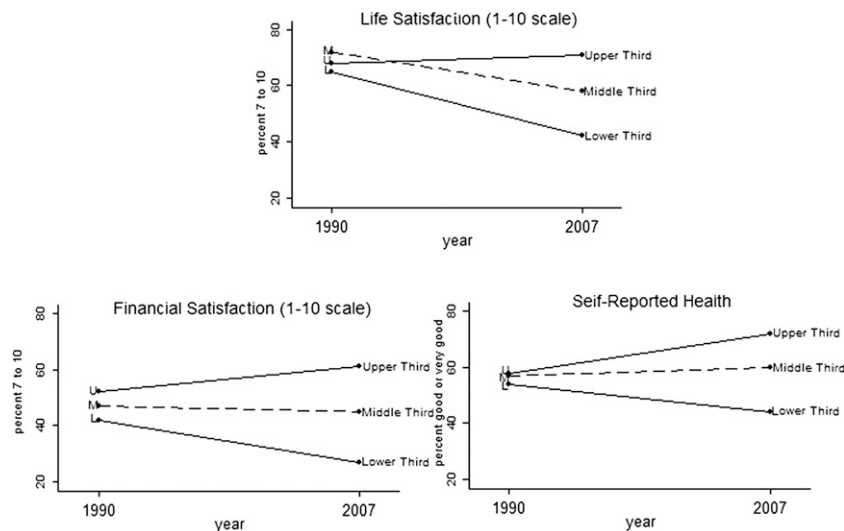


Fig. 3. Life satisfaction, financial satisfaction, and self-reported health by income group, 1990 and 2007 (Table S4). (Source: WVS; www.worldvaluessurvey.org.)

pattern. The similarity of China's experience to that of the European transition countries and particularly its role model under communism, the Soviet Union, lends credence to these results. China's pattern is also consistent with that seen in other high-export countries that are subject to the vicissitudes of the world economy. It is pertinent to note that China's apparently nil trend is reminiscent of that seen in Japan after its takeoff from a quite low initial level of GDP per capita in the late 1950s (8, 25).

Moreover, the life satisfaction pattern in China fits with the historical context. The factors shaping life satisfaction in China appear to be essentially the same as those in the European transition countries – the emergence and rise of substantial unemployment, dissolution of the social safety net, and growing income inequality. The failure of China's life satisfaction to increase despite its differing output experience—a rapid increase versus the collapse and recovery of output in the European countries—suggests that employment and the social safety net are critically important factors in determining life satisfaction.

One may reasonably ask how it is possible for life satisfaction not to improve in the face of such a marked advance in per capita GDP from a very low initial level? In answer, it is pertinent to note the growing evidence of the importance of relative income comparisons and rising material aspirations in China, which tend to negate the effect of rising income (3, 7, 45–48). These findings are consistent with the view common in the happiness literature that the growth in aspirations induced by rising income undercuts the increase in life satisfaction related to rising income itself (49–53).

Moreover, there is more to life satisfaction than material goods. Other factors include home life and the need for a secure job to support it, health, friends and relatives, and the like. It is possible that the lack of a marked uptrend in overall life satisfaction in China might reflect an adverse impact on life satisfaction of changes in such factors as these, as has been true of the transition experience of East Germany, for which data on such circumstances are available (25).

A common assertion, based on point-of-time comparisons of nations, is that at low levels of GDP per capita, economic growth increases life satisfaction, but this effect diminishes beyond some point (18–20, 54). It would be hard to find a better historical test of this than China, where the material quality of life has soared in the last two decades from a very low initial level. However, China's experience demonstrates once again that the cross-sectional relationship of life satisfaction to GDP per capita is a poor and misleading predictor of actual historical experience, as has been reported previously (8, 22, 25, 55).

In policy circles, subjective well-being is receiving increasing attention as a complement or alternative to GDP per capita as a measure of well-being (2). There could hardly be a more dramatic example than China for testing the comparative significance of the two measures. The GDP measure registers the spectacular average improvement in material living conditions, whereas the measure of life satisfaction demonstrates that among ordinary people, especially the less-educated and lower income segments of the population, life satisfaction has declined noticeably as material aspirations have soared and concerns have arisen about such critical matters as finding and holding a job, securing reliable and affordable health care, and providing for children and the elderly. Clearly, life satisfaction is the more comprehensive and meaningful indicator of people's life circumstances and well-being.

It would be a mistake to conclude from the life satisfaction experience of China, and the transition countries more generally, that a return to socialism and the gross inefficiencies of central planning would be beneficial. However, our data suggest an important policy lesson, that jobs and job and income security, together with a social safety net, are of critical importance to life satisfaction. In the last few years, the government of China has begun serious efforts to repair the social safety net (39, 40, 56). These efforts are an encouraging portent for the future life satisfaction of the Chinese population, particularly for the least advantaged segments.

Materials and Methods

The life satisfaction data used here are from six surveys conducted by five different survey organizations and span various segments of the years 1990–2010. Most of the surveys ask about overall life satisfaction, but several refer to roughly equivalent concepts, such as “happiness” and “ladder of life.” The questions vary somewhat in their specific wording and particularly in the number of response options (*SI Text*); thus, we examined the surveys individually rather than pooling the data. The survey dates are typically intermittent (only two surveys include annual data), and thus we focused on longer-term movement over the two decades. Sample sizes run from approximately 1,000 to more than 5,000 respondents, with most surveys exceeding 2,500.

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