Subjective well-being in China's changing society

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There is now recognition that a population's overall level of well-being is defined not just by income and wealth. Where we live and who we interact with are likely to be equally important in our overall levels of satisfaction with our lives. This thinking has stimulated studies of subjective well-being, or happiness, at both national and local scales. These studies suggest that where you live does matter, although it is health and family status that have the most direct effects on well-being. In this study, we use a detailed dataset on well-being from the China Household Finance Survey to reexamine well-being across China, where profound socioeconomic changes are taking place. The study controls for self-reported health and examines subjective well-being across extensive and varied Chinese urban and rural environments. We find that the earlier pessimism about China's well-being, which emphasized declining happiness, may be misplaced. We make two contributions: first, we show a rising level of subjective well-being, and second, we show that there is a narrowing gap in well-being across different social indicators. Methodologically, we bring in the perspectives of both social capital and geographic context.

China | subjective well-being | life satisfaction | places | social capital

There is a long record of studies of subjective well-being by psychologists who have established the correlates of well-being, how well-being is created, and its connection to social contexts (1, 2). Economists also have been interested in the nature of subjective well-being and the links to the underlying economic conditions of nations (3). That work has argued that after reaching a certain level of affluence, satisfaction may not increase as a simple function of material gains, and we are more likely to be influenced by the social context in which we live. This is often referred to as the paradox of affluence (4). This issue of the link between affluence and well-being has been taken up in discussions of well-being in China, as China has been transformed economically. In just 3 decades, prosperity in China rose dramatically. However, to some, the concomitant increase in well-being did not occur. Both Brockmann and colleagues (5) and Easterlin and colleagues (6) draw attention to the fact that there just was not the increase in life satisfaction that might have been expected from the very dramatic increase in per capita consumption. They emphasize the decline in life satisfaction for the lowest-income groups in particular. We take up this issue and reexamine whether, in fact, well-being in China has stagnated or declined. We extend the analysis in 3 ways. First, we use a large-scale survey to reexamine the changing levels of well-being in China in the most recent period; second, we bring in variables to measure the social fabric of the community; and third, we investigate the geographic dimension of subjective well-being in China. A particular focus in our study is to explore the notion that the social fabric of the community is important for subjective well-being, an insight that was stimulated by the research on social capital by Putnam (7) and explored at the local level by Forrest and Kearns (8) in studies of community–individual interactions.

The majority of the research on subjective well-being has focused on the national relationships of affluence and well-being, and there has been less attention paid to variations in well-being within countries, and fewer studies of how it might be influenced by social connections and the role of environmental contexts. A further motivation of the study is to explore the well-documented regional differences and inequality across rural China (9). Within this context, questions of some importance are whether the community matters, and how do social cohesion and social capital influence our expressions of well-being within the context of the relationship of affluence and well-being? To explore these issues, we use a 5-point scale from very happy to very unhappy. As Diener (10) notes, subjective well-being in colloquial terms is sometimes labeled happiness and refers to people's evaluations of their lives. People experience abundant subjective well-being when they feel many pleasant and few unpleasant emotions, when they are engaged in interesting activities, and when they feel satisfied with their lives. We relate this measure of well-being to a set of independent explanatory variables including specific measures of social capital and the geographic variation across cities and provinces in China. We also emphasize that we have a much larger sample than in most previous studies of subjective well-being in China.

Previous Research

The research to date on the relationship between affluence and subjective well-being has been quite variable, with some studies reporting declining well-being despite rising affluence (5, 6) and others suggesting it is flat (11). Most of these studies did not, however, either examine local variations (some did consider rural/urban differences) or the role of social cohesion. If we accept the conceptual ideas outlined by Putnam (7), in which social cohesion among residents is a key ingredient of healthy societies and communities, we would expect these community relationships to play a role, in addition to affluence, in increasing well-being. While some authors focus on social capital and others on social cohesion, they are often used interchangeably (8, 12).

Significance

We reevaluate the level of subjective well-being in China with data from the China Household Finance Study. The analysis shows that in contrast to the decline in well-being reported in earlier studies, all groups report increased quality of life in the second decade of the 21st century. The analysis shows that the gap across rural and urban respondents is narrowing. Probit models of the levels of well-being show that social capital, measured as the perceived feelings of safety and security, community participation, and whether society is perceived to be fair, influence reported well-being. Household income, assets, health, being married, and the quality of neighborhood infrastructure, measured by availability of parks, primary schools, and hospitals, contributes positively to subjective well-being.

Whether it is common values, social order, social networks, and/or place attachment, in this sense, feelings of trust of getting along with neighbors and being able to rely on the local community can have positive effects on a variety of outcomes.

Subjective well-being has a large research literature, including a growing interest in changes in well-being in China during the period of economic growth. There are comprehensive reviews in Diener and colleagues (2, 13) and Wang and Wang (14), which includes a comprehensive discussion of geographic contexts of subjective well-being. It was the extensive work by Diener (15) and colleagues that substantiated the use of the satisfaction-with-life scale to measure and evaluate well-being. A broad range of studies in psychology (2) economics (16, 17) and sociology and political science (18, 19) increased the interest in using the ideas of life satisfaction as an alternative to objective economic measures. These studies documented that well-being is U shaped over age, and that in general, children and marriage improve well-being, as does good health. In some studies, education is positively related to well-being, as is income, but this is not universal.

The question that has been central in studies of subjective well-being in China is to what extent the rapid increase in material well-being is paralleled with increases in subjective well-being. Bai and colleagues (20) confirm that the subjective well-being scale is relevant in China and that the life scale is capturing an important and measureable characteristic of people's lives. Overall, several dozen studies have documented that happiness is U shaped, as in Western studies; that increases in income bring greater well-being; and that health and the presence of children play important roles (21–24). A specific study of the role of social cohesion provides evidence of effects on well-being (25). There is also some evidence for city size effects, indicating that midsize cities provide the greatest well-being outcomes (23). While some note (2) that there is growing evidence of the role of economic, sociopolitical, and natural environments, there is much still to be uncovered about just how locality matters.

There has always been a sense that smaller towns might provide greater community and more well-being, and that hypothesis has been at the heart of considerable work on local well-being. Does city size have an effect? In fact, that work has suggested that living in a large city is associated with lower cognitive well-being, and studies have shown that life satisfaction is lower in major cities (26) and higher in rural areas (27) and lower in inner-city neighborhoods in London, for example (28). However, the findings are far from uniform, and why large cities should create less well-being is not well understood (29). There are also studies that focus on the local infrastructure, environments, and green-space (30, 31). The majority of these studies have a concern with measuring the impact of accessing and visiting green space, parks, and coastal environments, and in turn how the access to these environments has positive impacts on well-being (32) and life satisfaction (33).

But it is not just measures of objective urban characteristics that matter for well-being; social capital matters, too, as a number of scholars both in China (20, 23, 34–36) and elsewhere (28) have pointed out. There are a range of city effects and effects of social connections on the levels of well-being. The effects of social connection are also apparent in a study of older residents (12). In addition to the role and quality of neighborhood services, social capital and social cohesion are significantly associated with the well-being of older adults.

Data and Variables

The data for the analysis used in the paper come from 3 waves of the CHFS (China Household Finance Survey), conducted in 2013, 2015, and 2017. We graph the changes in the period 2013 to 2017 and estimate models for the large datasets in 2015 and 2017. The CHFS is a nationally comprehensive, household-level survey conducted via face-to-face interviews, based on a standardized questionnaire. The initial sample was 28,000 and increased to 40,000 in 2015 and 2017. The 40,000 households are from 1,397 communities and villages in 29 provincial administrative regions (Xinjiang, Tibet, Macao, Hong Kong, and Taiwan are excluded from these provincial regions). Within the sample, there are 27,279 urban households accounting for 68.2% of total sampled households. There are just a little less than 13,000 rural households. There are 4 parts to the questionnaire: demographics, financial assets and liabilities, insurance and security, and expenditure and income. For the analysis in this paper, the survey records demographic data for all family members including age, education status, hukou status, and home ownership. Importantly, the survey used a standard well-being question: "How happy do you feel now?"

The dependent variable is a common measure of subjective well-being. The question has been asked across a wide range of cities, nations, and other geographical contexts. In general, it is viewed as having considerable robustness. These questions about well-being focus on how happy or unhappy you would say you are: very happy, happy, neutral, unhappy, or very unhappy. The measure of well-being is very much like those found in the Organization for Economic Cooperation and Development countries. Respondents tend to express overall positive general well-being, and we find a greater concentration in the positive end of the scale, as we show in the figures of the distributions of subjective well-being. The distributions here are not unlike those for the United Kingdom and New Zealand (29).

The independent variables capture the 3 important dimensions we hypothesize are related to variations in subjective well-being. Measures of social cohesion/social capital, measures of infrastructure and city size, and demographic controls including measures of self-reported health. In the 2015 survey, we used 4 variables to measure social cohesion: whether society is fair, whether the respondent felt secure, whether the suggestions of the respondent has been accepted by the local government, and how many close family members the respondent had in the same city/village. In 2017, the survey asked about fairness indirectly by measuring opinions about income inequality (whether it was very large to very small). For community participation, the survey asked whether the individual or family participated in the last conference of the community (in essence a measure of participation similar to that for 2015). The 2017 survey did not ask about close family in the same city/village. The sample size in 2015 and 2017 was significantly larger than in 2013, and we estimate regressions only for 2015 and 2017.

Because the questions on community participation, security, and whether society is fair were not consistently asked across waves of the survey, we use slightly different variables in each wave, but we identify their structure and wording here. While these are not perfect substitutes for the questions on neighborhood trust and whether you feel the neighborhood has similar values, they are reasonable questions that capture aspects of social capital.

As in China, the access to primary schools is attached to hukou (the residence permit), parents often purchase homes to gain access for their children's education. Thus, the quality and availability of primary schools is important as a measure of infrastructure. Self-reported health is also a significant factor in quality of life, and the number of the hospitals (as a proportion per 1,000 residents) can represent the public health resources the family can access. Thus, we included the number of the hospitals in our regression as an additional measure of infrastructure. We also put the size of the parks' green land in our model to measure the environmental quality of the city. And for 2015, we asked the interviewer to score the general tidiness of the community's buildings.

The controls include age, (which is hypothesized to have a U shaped relationship with well-being), sex, income (the household's total disposable income, which includes an individual's labor income,
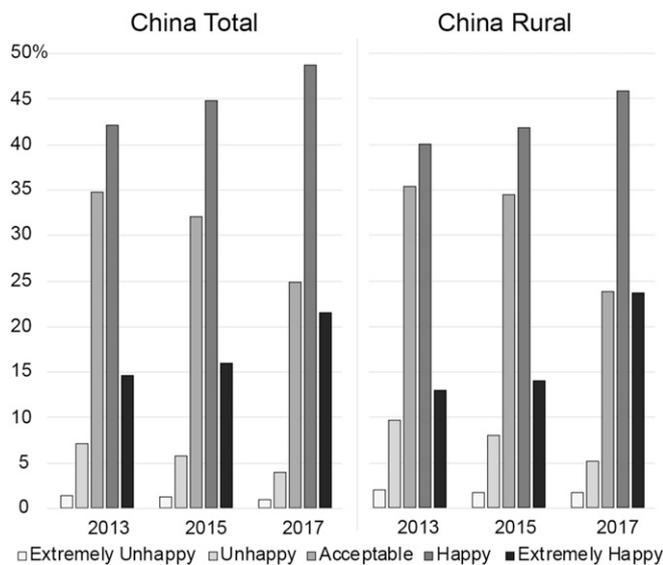
Fig. 1. The distribution of life satisfaction 2013 to 2017.

and happy) of well-being (Fig. 2). The gains for the lowest third of the income distribution are striking. We also stress the findings on the narrowing gap across income and education level and between urban and rural contexts. Of course, further surveys will be important as the society continues to adjust to changing levels of economic development.

We construct models for the dependent variable, subjective well-being, for 2015 and 2017 as a function of the social capital measures, and in successive models, controls include self-reported health, followed by measures for infrastructure and city size (Tables 1 and 2). Overall, the models are significant with acceptable levels of explanation. Because of the relatively high levels of similarity across the models, we present the results for the 2015 and 2017 estimates as a whole and then turn to differences in outcomes across the years. The social capital variables are significant and significant across all levels of the model. They remain strongly positive when we add controls, infrastructure, and city size. They are fundamental explanatory forces for who is happy in China. They account for about half the explanatory power in the model of social capital and controls.

When we add the controls, our explanatory power increases (although we also explored the potential effect of hukou, and our

retirement income, and insurance income and also the household's agricultural income, business income, transfer and other income), assets, education, and measures of whether the household lived with parents, employment, and marital status. We include tenure, which has been shown to have strong links to well-being in some contexts, but may not in China, as home ownership is consistently high. The 2 consistent measures that are allied with well-being are being married and having good health; we include both, as they are strong and consistent predictors of higher levels of well-being. As living with parents in various stages of the life course is common in China, we also explore the role of living with parents and the relationship with well-being.

What Explains Subjective Well-Being in China. The core of the analysis is an evaluation of how well-being is created by both measures of individual characteristics and contextual effects. When we control individual characteristics, how do measures of social capital and infrastructure modify the expressions of subjective well-being? The review noted the importance of social capital and infrastructure: how important are they in China? To answer these questions, we estimate logit models of subjective well-being.

As we noted in the previous section, expressions of well-being in China are similar to other national contexts: they are skewed toward the positive end of the distribution (Fig. 1). The scale for 2017 shows that more than 70% of the sampled population have expressions of extremely happy or happy, and this is true for China as a whole and for both urban and rural China. What is notable is the shift in reported well-being over time. In the relatively short period from 2013 to 2017, there was a significant increase in overall well-being. Respondents in China as a whole reported an increase in well-being from 57% reporting extremely happy or happy to 71%, and rural China respondents reported an increase from 53% to 70%. The graph shows an overall increase in the top 2 categories and a concomitant decline in those reporting neutral responses. Previous research suggested that the transformation of the Chinese economy was narrowly targeted at the better-educated, higher-income segments of the population (6). It may be that this judgement was premature, as it takes a while for transformation to percolate down. In addition, other changes, including the programs to increase opportunities in rural areas, may finally be effective. We find that all segments of the income ranges, education levels, and rural and urban families report increasing levels of the 2 top categories (extremely happy
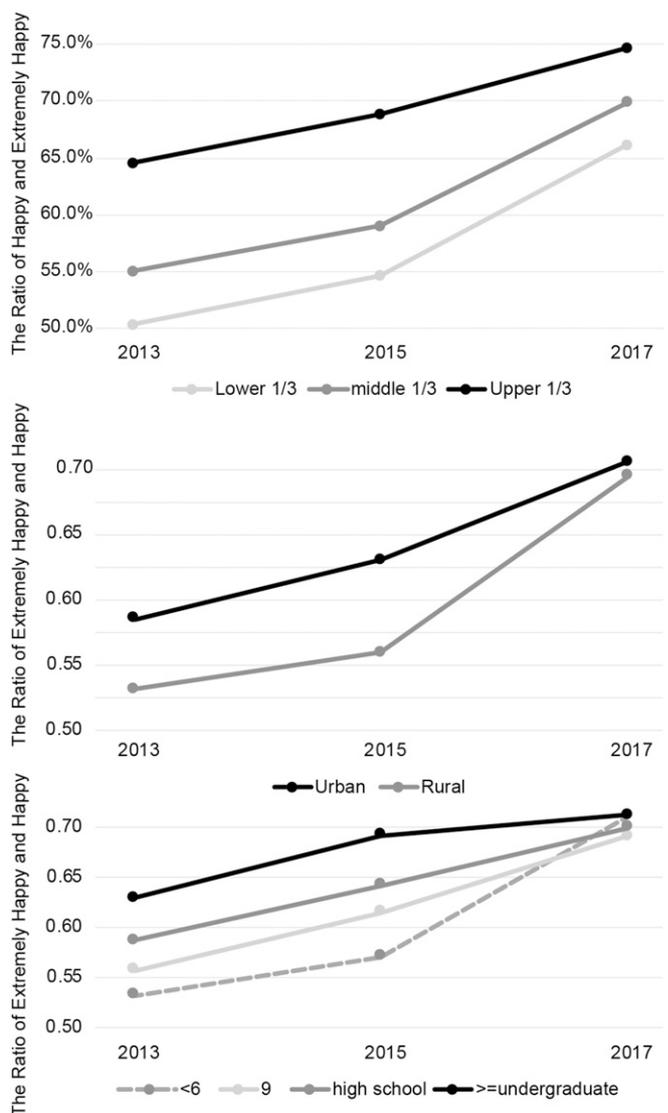

Fig. 2. A narrowing gap across social groups 2013 to 2017.

Table 1.   Ordered logit regression coefficients for subjective well-being (happiness) in 2015

	Social capital	Demographics	Infrastructure	Locality
Fairness (5-point scale)	0.227*** (0.015)	0.257*** (0.016)	0.257*** (0.019)	0.259*** (0.019)
Secure (5-point scale)	0.318*** (0.018)	0.323*** (0.019)	0.332*** (0.023)	0.333*** (0.023)
Relatives nearby	0.097*** (0.012)	0.063*** (0.013)	0.062*** (0.016)	0.060*** (0.016)
Community active	0.173*** (0.032)	0.121*** (0.034)	0.121*** (0.041)	0.124*** (0.041)
Log (income)		0.032*** (0.007)	0.026*** (0.008)	0.025*** (0.008)
Log (asset)		0.112*** (0.009)	0.120*** (0.011)	0.025*** (0.008)
Log (debt)		−0.023*** (0.003)	−0.020*** (0.004)	−0.019*** (0.004)
Head age		−0.070*** (0.007)	−0.068*** (0.008)	−0.068*** (0.008)
Headage^2		0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)
Health		0.490*** (0.018)	0.514*** (0.022)	0.512*** (0.022)
Live w/parents		−0.022 (0.043)	−0.053 (0.052)	−0.049 (0.052)
Education years		0.021*** (0.004)	0.014*** (0.005)	0.012** (0.005)
Male		−0.251*** (0.030)	−0.270*** (0.037)	−0.262*** (0.037)
Head married		0.551*** (0.046)	0.640*** (0.056)	0.639*** (0.056)
Employed		−0.169*** (0.035)	−0.163*** (0.042)	−0.151*** (0.043)
Owner		0.047 (0.043)	0.025 (0.053)	0.030 (0.054)
Primary school availability			0.530** (0.230)	0.600*** (0.233)
Hospital availability			1.788** (0.770)	1.817** (0.776)
Ln (greenspace/parks)			0.053** (0.021)	0.055* (0.031)
Tidiness			0.066*** (0.018)	0.065*** (0.019)
Rural (Ref.: Urban)				−0.066 (0.045)
City (large)				−0.085 (0.117)
City (medium)				0.033 (0.054)
City (small)				Omitted
N	19,766	18,381	12,739	12,739
Pseudo R^2	0.026	0.072	0.076	0.076

SEs in parentheses. Ref., reference.
*$P < 0.10$.
**$P < 0.05$.
***$P < 0.01$.

measures of the hukou effect were not significant). As we expected, age is U-shaped: younger and older respondents report greater subjective well-being in comparison with those in middle ages, and income and assets are both positive and significant explanatory variables. Income and assets matter and are positively and significantly related to well-being. This is consistent with other studies that show that higher-income earners and those with more assets express greater well-being. Certainly in China, in an emerging and strengthening economy, those at the top of the income scale have many more opportunities than rural residents and migrants. In the supplementary material, we provide models for urban and rural respondents separately (*SI Appendix*). However, as we demonstrated, the lowest third of the income distribution also reports increased well-being. In most US and UK studies, ownership is a powerful explanatory measure, but it is not significant for well-being in China. This is, in fact, an expected response because ownership is so widespread: more than 80% of the all households own their home. It is also possible that ownership is less important to well-being in China not because the rate is so high but because living standards have risen generally very rapidly on a number of dimensions.

The 2 variables with high and significant coefficients (being married and good self-reported health) increase the explanation of well-being. Health status is significant and linearly related to subjective well-being. Those reporting excellent health status have significantly greater subjective well-being than middle levels of health status, and those with fair and poor health have significantly lower log odds of expressing high levels of subjective well-being. The coefficient of the ordered logit model indicates that for a 1-unit increase in health, we expect an increase in the log odds of being in a higher level of happiness, given all the other variables in the model are held constant. The other powerful force in the set of controls is being married. The coefficients for

marital status are larger than those for health, and they are positive and significant. Notably, sex is significant, and it is men who are less happy than women.

We hypothesized that education would be positively related to subjective well-being, and the measure is significant and positive in 2015, but notably, it is significant and negative in 2017. Studies in general have suggested a positive relationship of education and well-being. The negative effect in 2017 suggests the role of issues related to the larger social contexts of China and modernity, such as the stresses of a changing labor market and changing work conditions, stagnating wages, and reduced opportunities. The very rapid increase in housing prices during 2015 to 2017 also may have specific impacts on recent well-educated graduates who cannot enter the housing market, and so reduce overall well-being. We note also that those with less than university education all report significant increases in well-being, and in fact there are very small differences across the levels of education in the expression of positive well-being.

Infrastructure matters for well-being. The perception of local services measured by the availability of good education, hospital services, and the availability of parks add to the overall explanation of well-being. This is again truer in 2015 than in 2017.

Given the importance of accessing good schools, it is not surprising to find that the coefficient for primary school is significant in both periods. Parks are also significant, as with Morrison's (29) findings that there is clearly a value in green space, though the infrastructure variables are not especially large contributors to overall well-being. There is a changing relationship with the dummy variable for rural respondents in the total models. That variable is not significant in 2015, but changes to positive and significant in 2017. Rural residents report positive happiness in 2017. As we show in the supplementary material, when we construct the models for urban and rural respondents, it

Table 2. Ordered logit regression coefficients for subjective well-being (happiness) in 2017

	Social capital	Demographics	Infrastructure	Locality
Fairness (5-point scale)	0.199*** (0.020)	0.182*** (0.021)	0.196*** (0.024)	0.195*** (0.024)
Secure (5-point scale)	0.873*** (0.022)	0.837*** (0.023)	0.855*** (0.025)	0.851*** (0.025)
Community active	0.219*** (0.030)	0.201*** (0.031)	0.227*** 0.034)	0.218*** 0.034)
Log (income)		0.044*** 0.010)	0.054*** 0.011)	0.056*** 0.011)
Log (asset)		0.036*** 0.010)	0.054*** 0.011)	0.064*** 0.011)
Log (debt)		−0.018*** 0.003)	−0.018*** 0.003)	−0.019*** 0.003)
Head age		−0.071*** 0.006)	−0.073*** 0.007)	−0.073*** 0.007)
Head age^2		0.001*** 0.000)	0.001*** 0.000)	0.001*** 0.000)
Health		0.320*** 0.017)	0.331*** 0.019)	0.330*** 0.019)
Live with parents		−0.121*** 0.042)	−0.149*** 0.047)	−0.154*** 0.047)
Education years		−0.022*** 0.004)	−0.024*** 0.004)	−0.021*** 0.005)
Male		−0.155*** 0.029)	−0.191*** 0.032)	−0.200*** 0.032)
Head married		0.417*** 0.032)	0.432*** 0.047)	0.428*** 0.047)
Employed		0.027 (0.033)	0.043 (0.036)	0.029 (0.037)
Owner		0.163*** 0.043)	0.115** 0.048)	0.077 (0.049)
Primary school availability			0.490** 0.215)	0.499** 0.219)
Hospital availability			1.279 (0.835)	0.975 (0.853)
Ln (greenspace/parks)			−0.008 (0.016)	0.023 (0.024)
Rural (Ref.: Urban)				0.113*** 0.043)
City (large)				−0.177* (0.094)
City (medium)				0.008 (0.055)
City (small)				Omitted
N	19,460	19,072	15,776	15,776
Pseudo R^2	0.054	0.081	0.084	0.085

SEs in parentheses. Ref., reference.
*$P < 0.10$.
**$P < 0.05$.
***$P < 0.01$.

is clear that rural respondents have positive responses and significant responses to infrastructure, which continues for primary schools in 2017 (*SI Appendix*). Overall, these results may reflect the policy focus of the newly launched government antipoverty program in rural China, and the redistribution of resources to rural areas. The disaggregated models included measures of city size in both urban and rural analyses, even though the urbanization rates are very high; in Beijing and Shanghai, for example, there are still more than 10% of the population of those regions in rural settings.

There is an extensive literature which points to the negative externalities of large cities, and we find some confirmation in this study. While none of the city size measures is significant in 2015, in 2017 it is clear that there are negative externalities associated with the tier 1 cities (the very large cities of Beijing, Shanghai, Shenzhen, and Guangzhou). What it is about the external properties of the largest dense cities that cause lower levels of happiness and satisfaction relative to the smaller cities is unclear and, as Morrison notes, has received far less attention than the internal characteristics of individuals in those cities. There are, of course, the usual possibilities, including large and competing populations, high housing prices (absolutely and relative to wages), and certainly an issue in the very large cities like Beijing and Shanghai, but in Shenzhen as well. The increase in traffic congestion, air pollution, and other big city problems are probably part of the contextual issues.

Discussion: Is China Happy

The research in this paper points to evidence of increasing happiness and a narrowing gap across social groups. Using data from 3 waves of the CHFS, we show evidence of increased subjective well-being in the second decade of the 21st century. The often cited corollaries of well-being, good health, being married, and having children all contribute to a higher level of subjective well-being. Women have higher well-being than men. Income and assets are positively related to subjective well-being, though as in the West, well-being outcomes are U shaped with

lower levels of happiness in the middle-age populations. Most important, the results suggest that the concerns about stagnating or declining well-being may need to be reexamined. We have showed that happiness in China has been rising and suggested explanations for the changes. It does appear that there is evidence that the economic expansion is influencing overall well-being across various social spectra. While the study is limited in time span, it fills in an important gap in the earlier studies, which use data from at least a decade ago or more.

Previous work drew attention to the possibility that the focus on repairing the social safety network and addressing inequality might have important implications for future life satisfaction of the Chinese population, and that appears to be borne out with the findings from this study. There is some evidence that government actions in China are influencing well-being. While it may be too early to make definitive comments about the increase in well-being in rural areas, the graphical presentations portray a rapid increase in reported well-being in rural areas. The focus on eliminating rural poverty and the ongoing government anti-corruption concern may have a cumulative effect on rural well-being.

An additional important contribution of our research is documenting the important role that social cohesion plays in overall well-being. Feeling secure, a perception that society is just, and participating in the local community all play roles in generating well-being. This is a confirmation of similar, but thus far limited, findings in some Western studies. It is, of course, an expected outcome, but one which has had only limited previous documentation. There is some evidence of city size effects on the levels of well-being, but the additive contribution of geography is thus far quite modest. As in at least one other study, it appears that middle-sized cities have evidence of greater well-being, but again although the coefficients are significant, we cannot read too much into those findings. However, the measures of infrastructure, whether there are good schools, healthcare, and greenspace, do matter and are variably significant, depending on the survey panel.

It is too soon to conclude that well-being in China has stagnated. The future is still unfolding, with potentially complex responses to government policy and intervention. This implies, at least in certain contexts, that government can improve China's well-being.

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