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National Happiness at a Time of Economic Growth: A Tracking Study Based on CGSS Data*

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为回应有关中国国民幸福感的争论，并评估过去10年宏观经济和政策变化对普通人的生活的影响，本文利用中国综合社会调查数据（CGSS），分析了近10年国民幸福感的变化趋势。研究基于5个时点、44,166个样本，发现中国国民幸福感在过去10年内一直处于上升趋势，不同政治身份、户口类型、年龄、收入、婚姻状况、民族等群体的幸福感在过去10年都有不同程度的提高。经济增长可能是幸福感提升的动力；如果经济收缩，那么幸福感也可能随之下降。要确保经济社会协调发展，尚需对幸福感进行更多、更细致的追踪和研究。

关键词： 幸福感 不平等 经济增长

In order to respond to the ongoing debate over the Chinese people's sense of happiness and to assess the effects of macro-economic and policy changes on the life of ordinary people over the past decade, this study employs data from the Chinese General Social Survey (CGSS) to analyze the development and trends in the happiness (or subjective well-being) of the Chinese people over this period. Based on 5 time points and 44,166 samples, the study finds that the Chinese people's sense of happiness has risen steadily over the past decade, and that groups with different political affiliations, household registration, age, income, marital status and ethnicity have all witnessed, to varying degrees, a growing sense of happiness. Economic growth may be the crucial driving force here; if the economy contracts, people's sense of happiness may also fall. To maintain the coordinated development of the economy and society, more numerous and more detailed follow-up research on happiness needs to be conducted.

Keywords: sense of happiness, inequity, economic growth

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I. Introduction: Twofold Impressions of China

Do the Chinese feel happy? Economist Larry H.P. Lang holds that no more than 4 percent do.¹ Sociologist Sun Liping also believes that the Chinese people's lives are not happy, mainly because of problems of livelihood and social equity.² However, according to a survey by the journal *China Xiaokang* in 2011, more than 60 percent of Chinese consider themselves happy;³ while the "2011 Chinese Family Happiness Survey" shows that more than 70 percent feel happy.⁴

The results of academic studies are also mixed. After analyzing seven years (2002-2008) of data on Shandong, Xing Zhanjun found that people's happiness had not increased in line with the growth of per capita GDP and residents' income.⁵ Based on Gallup findings, Kahneman *et al.* point out that, despite the increase in households with color TV, telephones and other items indicating improved living standards, the percentage of people who said they were satisfied with their lives decreased by about 15 percent between 1994 and 2005.⁶ Integrating various data, Easterlin and his collaborators found that during the period 1990-2010, China's gross national happiness showed a U-shaped curve: a downward trend during the period 1990-2000 and an upward trend during the period 2001-2010.⁷

These contradictory findings and items of information derive from the twofold impressions left by reform and change in China. On the one hand, reform has driven rapid economic growth, along with a substantial increase in GDP and residents' income. In terms of social security, participation in basic old-age insurance for employees of city and town enterprises was 1.7 times greater than in 2003 and participation in medical insurance was four times greater than in 2003.⁸ The living standards of ordinary people have generally improved.

On the other hand, with rapid economic growth, various social problems have become more prominent. A continuous stream of news stories on food and drug safety, demolition of dwellings, abnormal deaths, etc., claims government and public attention. Mass incidents triggered by the widening gap between rich and poor, workers demanding their pay and

1 Larry H.P. Lang, "Introduction: Our Happiness and Lack of Choice," p. 1.

2 Zhao Yang, "'China Needs a Progressive Social Movement': An Interview with Sociologist Sun Liping," p. A04.

3 Zhang Xu, "Reflection on the One Side, Happiness on the Other: A Major Survey of the Happiness of the Chinese People in 2011."

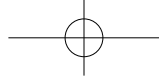
4 Zeng Liming, "Results of a Survey on Family Happiness in China Announced: More Than 70 Percent of Families Feel Happy."

5 Xing Zhanjun, "A Study on the Relationship between Chinese Residents' Income and Their Subjective Well-being."

6 Daniel Kahneman and Alan B. Krueger, "Developments in the Measurement of Subjective Well-being," pp. 3-24.

7 Richard A. Easterlin *et al.*, "China's Life Satisfaction, 1990-2010," pp. 9775-9780.

8 For details, see National Bureau of Statistics of China, "Statistical Communiqué of the People's Republic of China on National Economic and Social Development (2003-2010)."



people seeking redress for grievances are frequent, giving the impression that the Chinese society is “riddled with contradictions.” The widespread publicity given to these problems by the media intensifies the perception that people are not happy.

This is the twofold image that China gives: the contradictory picture of a people that is at once happy and unhappy. How are we to interpret these contradictory results? This article tries to outline the general situation, trends and evolutionary logic of the subjective well-being of the Chinese people using 2003-2010 Chinese General Social Survey data. The reforms that have given rise to the economic boom and improvements in people’s material life have also placed the government’s legitimacy on an unstable “performance” footing.⁹ The subjective well-being or life satisfaction of ordinary people is a “barometer” of governance performance, one that is closely related to people’s identification with the government. At a deeper level, the indicator of subjective well-being concerns political and social stability. Since 2002, the state has put a lot of resources in improving the people’s welfare. After more than ten years, have these macro-level investments in people’s welfare been transformed into a sense of subjective well-being in daily life? How do ordinary people who rarely have the opportunity to express their views in the media feel about their lives? Solid and systematic empirical research will help provide an objective assessment of the policies of the past decade and will promote the balanced development of the economy and society.

II. Economic Growth and Happiness: A Review of Previous Research

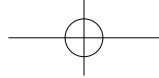
1. *The measurement of subjective well-being*

It is not easy to measure an individual’s subjective well-being. In most studies, especially comparative ones involving large samples and different time periods, the most commonly used method is to place one-off questions (about a single point in time) on a survey questionnaire. The question usually offers a choice of three, four or five responses, or measures responses on a scale of one to ten. The research shows that the results of such surveys are largely able to reflect the individual’s subjective well-being. Are simple questions of this kind a reliable indicator of happiness? After a systematic study of the issue, John P. Robinson and Phillip R. Shaver believe that they exhibit “stable test-retest reliabilities.”¹⁰ Apart from this, the measurement’s validity also merits attention. Comparing the results of self-assessment and expert assessment, Warner R. Wilson finds that most expert assessments are similar to the self-assessments of respondents, indicating that the latter have considerable validity.¹¹ And finally, how comparable are such measurements? The question is a tricky one, but it has not

9 Zhao Dingxin, “The Mandate of Heaven and Performance Legitimation in Historical and Contemporary China,” pp. 416-433.

10 John P. Robinson and Phillip R. Shaver, *Measures of Social Psychological Attitudes (Appendix B to Measure of Political Attitudes)*, p. 17.

11 Warner R. Wilson, “Correlates of Avowed Happiness,” pp. 294-306.



prevented cross-cultural and inter-group comparisons. In 2003, in reviewing more than half a century of research on happiness, Richard A. Easterlin came up with the optimistic assessment that, “A substantial methodological literature has developed on the reliability, validity, and comparability of the answers to such questions. The consensus is that the responses, although not without their problems, are meaningful and reasonably comparable among groups of individuals.”¹²

2. *The Easterlin paradox: 40 years of academic controversy*

Does economic growth bring greater happiness? Does more money mean more happiness? In 1973 Easterlin asked two questions: “Are the wealthier members of society usually happier than the poorer? Does raising the incomes of all increase the happiness of all?” He said: “In all societies, more money for the individual typically means more individual happiness. However, raising the incomes of all does not increase the happiness of all. The happiness-income relation provides a classic example of the logical fallacy of composition—what is true for the individual is not true for society as a whole.”¹³ In his empirical study of 1974, Easterlin proposed and demonstrated the well-known Easterlin paradox.¹⁴

However, the Easterlin paradox has been questioned by a number of empirical studies on happiness. In 1988, Ruut Veenhoven put forward a theory of absolute happiness. He believes that there are no relative and adjustable standards of happiness: happiness is innate, and has the gratification of basic needs as its yardstick.¹⁵ Using Gallup poll data for 1975, Veenhoven found that the correlation between the GNP per capita of the countries surveyed and their average happiness was 0.84 ($p < 0.01$). In response to Veenhoven, Easterlin again demonstrated that subjective well-being in the developed countries of Europe and America had shown a downward trend since 1973 despite their rapid economic growth. He concluded that, “The increase in happiness that one might have expected based on the growth in individual incomes is offset by a decrease in happiness due to the rise in the average, yielding, on balance, no net growth in well-being.”¹⁶ However, research by Veenhoven *et al.* on a number of countries shows that over the past 50 years, average happiness had shown a marked increase in both developed and developing nations.¹⁷ This conclusion gained support from Betsey Stevenson and Justin Wolfers, who found after analyzing data from nearly 100 countries that economic growth and happiness were positively correlated.¹⁸

In view of the growing number of empirical studies finding a positive relationship between

12 Richard A. Easterlin, “Explaining Happiness,” pp. 11176-11183.

13 Richard A. Easterlin, “Does Money Buy Happiness?”, p. 4.

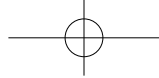
14 Richard A. Easterlin, “Does Economic Growth Improve the Human Lot? Some Empirical Evidence,” pp. 89-125.

15 Ruut Veenhoven, “Is Happiness Relative?”, pp. 1-34.

16 Richard A. Easterlin, “Will Raising the Income of All Increase the Happiness of All?”, pp. 35-47.

17 Ruut Veenhoven and Michael Hagerty, “Rising Happiness in Nations 1946-2004: A Reply to Easterlin,” pp. 421-436.

18 Betsey Stevenson and Justin Wolfers, “Economic Growth and Subjective Well-being: Reassessing the Easterlin Paradox,” pp. 1-102.



economic growth and happiness, Easterlin revised his happiness-income paradox in 2010.¹⁹ The new paradox places more emphasis on the long-term effects of changes in happiness. That is, in the long run, there is limited room for economic growth to raise happiness. Once a country's subjective well-being is raised by economic development to a certain level, it may remain stagnant or even decline, although in the short term, in some countries, including developing countries and the transitional countries of Eastern Europe, economic growth and subjective well-being may rise and fall in tandem. He stressed in particular the imbalance between the decline in subjective well-being and the rise in economic growth in China, Brazil and the Republic of Korea. For this purpose, he undertook a dedicated study of subjective well-being in China, where he found that China's economic growth over the last 20 years had not brought a corresponding increase in life satisfaction.²⁰ All these studies, however, are flawed in terms of both data and representativeness. We therefore need to provide a more systematic analysis and comparison of changes in happiness based on more consistent and representative data.

III. China's Gross National Happiness: Overview and Trends

1. Data description

The data used in this paper come from the Chinese General Social Survey provided by the National Survey Research Center at Renmin University of China. We selected five surveys from 2003-2010 with a total of 44,166 respondents. The ratios between the urban and the rural population and between genders in the samples for 2005, 2006, 2008 and 2010 were weighted together according to annual population data in the *China Population Statistics Yearbook 2011*. The data for 2003 come only from cities and towns, but in order to obtain more observation points, we have retained the 2003 sample in the great majority of analyses. Fortunately, this shortcoming does not influence our main conclusions. In terms of design, the happiness questionnaire for 2003, 2005, 2006 and 2010 asked: "All things considered, how do you feel about your life?" The response options were "very unhappy, unhappy, neither happy nor unhappy, happy, very happy" with the word *xìngfú* (幸福 happy, fortunate) being used for "happy." The wording of the 2008 questionnaire was slightly different, with *kuàilè* (快乐 happy, cheerful) replacing *xìngfú*. Since the two are synonyms, we do not distinguish between them. The answers were scored from 1 to 5 (1 = very unhappy, 2 = unhappy, 3 = neither happy nor unhappy, 4 = happy, 5 = very happy). The paper's analytical data were obtained by using the software Stata to integrate the relevant variables for each year.

2. General situation

As shown in Figure 1, the Chinese General Social Survey indicates that from 2003 to

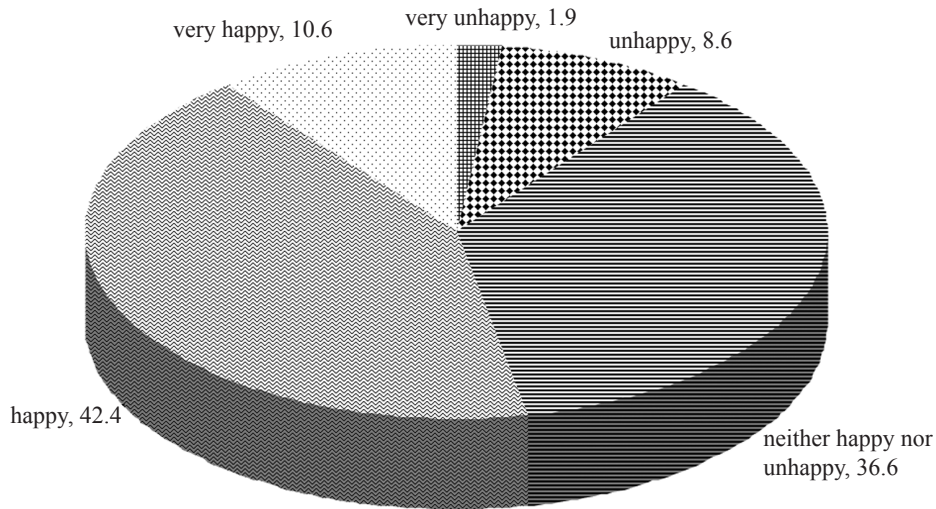
19 Richard A. Easterlin *et al.*, "The Happiness-Income Paradox Revisited," pp. 22463-22468.

20 Richard A. Easterlin *et al.*, "China's Life Satisfaction, 1990-2010," pp. 9775-9780.



2010, overall 53.0 percent of Chinese citizens felt happy or very happy, 36.6 percent felt neither happy nor unhappy, and 10.4 percent felt unhappy or very unhappy. In addition, over this period, the average score of residents' happiness was 3.51 (out of 5). It is apparent that whether we consider the distribution of happiness or its point value, more than half of the Chinese population was happy.

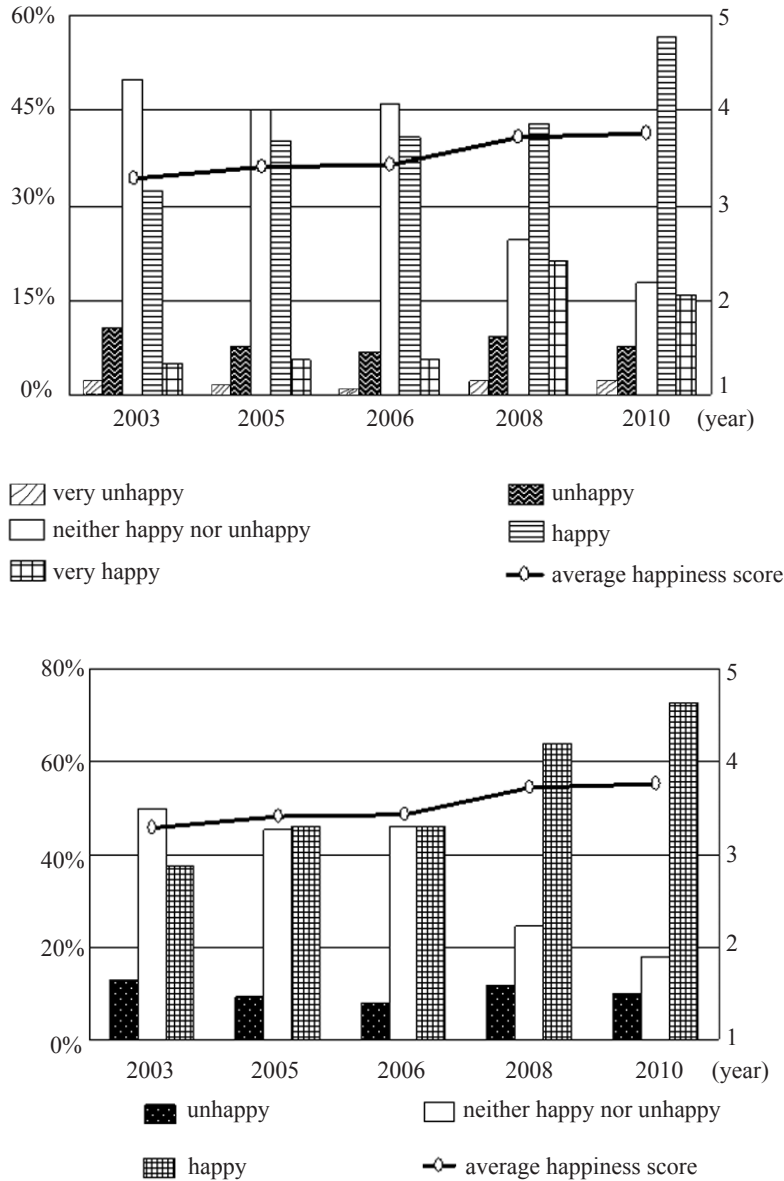
Figure 1 Distribution of the Subjective Well-being of the Chinese (2003-2010) (%)



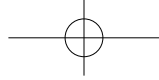
3. Trend of change

Our statistical analysis shows that Chinese citizens' feelings of happiness showed an upward trend between 2003 and 2010 (Figure 2). The percentage of the population responding "happy" rose from 32.2 percent in 2003 to 56.6 percent in 2010 and those responding "very happy" rose from 5.1 percent in 2003 to 16 percent in 2010, while the share of those who were "very unhappy" declined from 2.3 percent in 2003 to 2.1 percent in 2010 and the share of those who were "unhappy" showed a significant decline from 10.6 percent in 2003 to 7.7 percent in 2010. The biggest change occurred in the "neither happy nor unhappy" group, which declined from 49.8 percent in 2003 to 17.7 percent in 2010. The mean annual data for happiness on a scale of 1-5 show that from 2003 to 2010, the average score on happiness of Chinese citizens was over 3. As 3 represents happiness, this is a further indication of the happiness of Chinese citizens. In terms of trends, the mean value of Chinese citizens' sense of happiness rose from 3.27 in 2003 to 3.77 in 2010, further confirming the picture in Figure 2.

Figure 2 Trends in the Distribution of Happiness among Chinese Citizens



We combined the responses “happy” and “very happy” into “happy,” and “very unhappy” and “unhappy” into “unhappy.” The reorganized data show that the share of those who felt themselves “happy” almost doubled from 2003 to 2010, rising from 37.3 percent to 72.6 percent, whereas those who felt “unhappy” decreased from 12.9 percent in 2003 to 9.8 percent in 2010, a fall of one quarter.



IV. The Group Structure of Changes in Happiness

Although the overall circumstances of the 2003-2010 surveys on Chinese happiness reflect citizens' sense of happiness, they do not show differences among groups. In this article we group "happy" and "very happy" responses under "happy," then compare the share of those who feel happy in groups based on socio-economic indicators such as political affiliation, urban or rural household registration, age, income, marital status and ethnicity, with a view to reflecting changes in the happiness of major groups of Chinese citizens over the eight years.

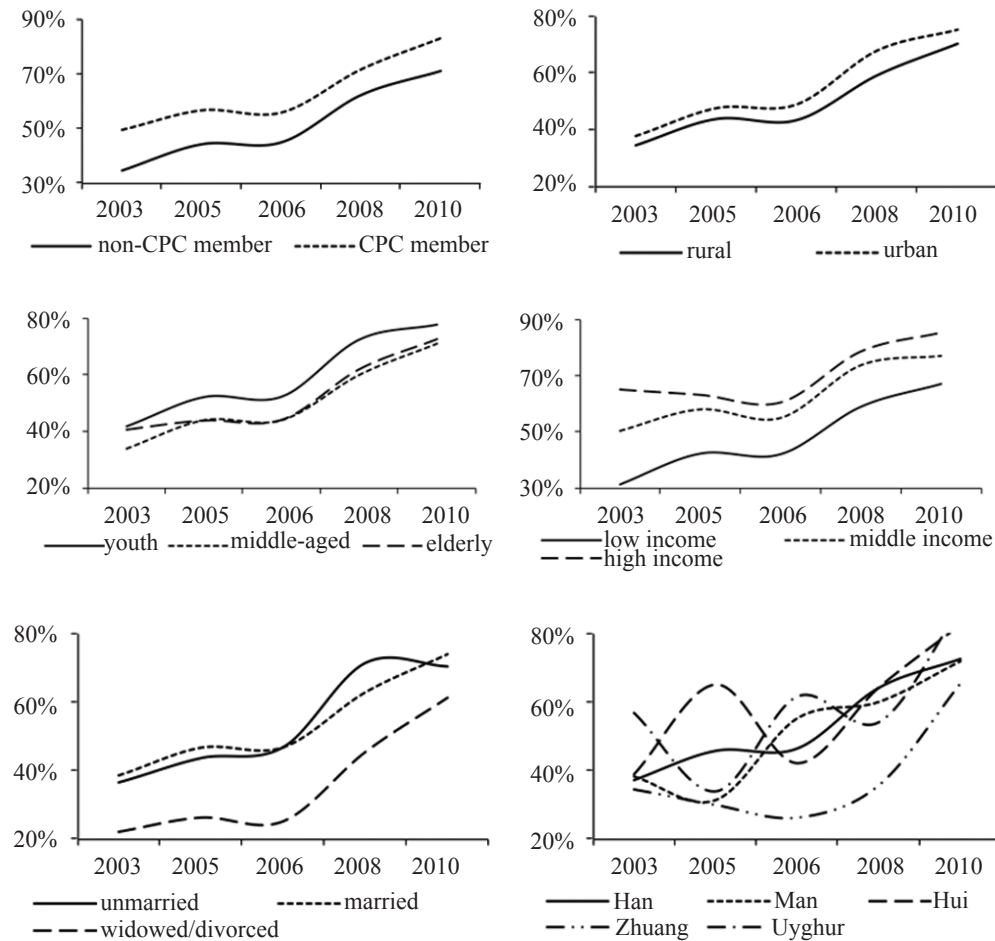
From 2003 to 2010, the proportion of CPC (Communist Party of China) and non-CPC members who identified themselves as happy rose by 33.9 percent and 36.5 percent respectively, indicating that changes in happiness have no association with political affiliation. In terms of household registration, the proportion of rural and urban citizens who felt happy increased by 35.7 percent and 37.6 percent respectively, indicating that the differences between rural and urban registration do not affect the trend toward increasing happiness. Because the sample for 2003 was an exception, two points about its results should be noted: first, as the survey was conducted only in cities and towns that year, the small proportion of respondents from rural households may be migrant workers or rural people visiting urban relatives; they obviously do not represent the rural population. However, the average happiness of this group still has a reference value, and is also consistent with the trends reflected by samples for the other four time points. Second, the curve for urban household registration shows that the trend remains the same without the rural sample.

In terms of age, the proportion responding "happy" among the young, middle-aged and elderly increased by 36.1 percent, 37.0 percent and 31.7 percent respectively. We also classified respondents with an annual personal income of less than 10,000 RMB, between 10,000 and 30,000 RMB and above 30,000 RMB as low income, middle income and high income groups respectively. The data shows that the proportion of these three groups responding that they felt "happy" increased by 35.5 percent, 26.5 percent and 20.4 percent respectively, indicating that all three income groups felt happier. Based on responses, we integrated respondents' marital status into the three variables of never married, married and widowed/divorced. The data shows that the proportion of the three groups responding "happy" increased by 34.2 percent, 35.7 percent and 39.2 percent respectively. On the basis of respondents' ethnicity, we describe the sense of happiness in the five main ethnic groups, which were the ones with most variables: Han, Manchu, Hui, Zhuang, and Uyghur. The share of those who said they were "happy" increased by 35.4 percent, 33.9 percent, 43.9 percent, 30.8 percent and 30.5 percent respectively.

The graph showing trends for various groups (Figure 3) indicates that there are differences in the levels of happiness within groups. Comparing the proportion in each group responding "happy" in 2003 with responses in 2010, we see that the total number of citizens responding "happy" increased over the eight years. By 2010 their share had nearly doubled compared to

2003, which is in line with the overall circumstances of changes in Chinese citizens' sense of happiness.

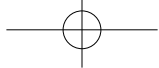
Figure 3 Changing Trends in the Happiness of Different Groups



Our examination of changes among different groups answers the questions we raised at the beginning of the article. In the last ten years, Chinese citizens' happiness has not fallen, but rather has increased, and this increase is not confined to particular groups, but is shared by most.

V. Factors Affecting Happiness: Multiple Regression Analysis

The above descriptive analysis provides a preliminary outline of the yearly increase in



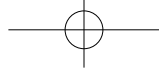
Chinese happiness scores. Is this situation illusory (a spurious correlation between the time variable and happiness, for example) or is it objectively real (statistically significant)? This question can be answered by multiple regression analysis.

1. Research design

Table 1 lists the variables in the regression model. For the dependent variable, we set a continuous variable happiness measurement (1-5) in the OLS regression model and a dummy variable in the logistic regression model to obtain the happiness measurement (1 and 0). For the independent variables, in addition to a number of population and income variables, we also introduce two variables of horizontal and vertical comparison.

Table 1 Variables Used in the Regression Model

Variable		Size of sample	Mean value	Minimum value	Maximum value	Explanation
Happy ^a		44,100	3.513	1	5	1-5 scores sequencing variable
Happy	Unhappy/ Neither happy nor unhappy		Reference group			
	Happy	44,100	0.530	0	1	dummy variable, 1=happy
	2003		Reference group			
	2005	44,100	0.199	0	1	dummy variable, 1=2005
	2006	44,100	0.200	0	1	dummy variable, 1=2006
	2008	44,100	0.202	0	1	dummy variable, 1=2008
	2010	44,100	0.204	0	1	dummy variable, 1=2010
Gender	Male		Reference group			
	Female	44,100	0.486	0	1	dummy variable, 1=female
Age (years)	18-30		Reference group			
	31-40	44,100	0.242	0	1	dummy variable, 1=31-40
	41-50	44,100	0.231	0	1	dummy variable, 1=40-50
	51-60	44,100	0.189	0	1	dummy variable, 1=51-60
	61-70	44,100	0.115	0	1	dummy variable, 1=61-70
	71-100	44,100	0.032	0	1	dummy variable, 1=71-100
Marital status	Married		Reference group			
	Never married	44,026	0.831	0	1	dummy variable, 1=married
	Widowed /divorced	44,026	0.059	0	1	dummy variable, 1=widowed/divorced
Political affiliation	Non-CPC member		Reference group			
	CPC member	42,973	0.121	0	1	dummy variable, 1=CPC member
Type of household registration	Rural		Reference group			
	Urban	44,100	0.553	0	1	dummy variable, 1=urban household registration



Education	44,047	8.964	0	19	continuous variable, schooling years
Personal annual income ^b	36,721	1.117	0	40	continuous variable (10,000 yuan)
Current subjective social status	43,342	2.261	1	5	1-5 points sequence variable
Change of social status compared with the past	42,690	2.014	1	3	1-3 points sequence variable

Note: ^a The number of valid happiness samples for the five points of time is 44,166.

^b Twenty outliers above 500,000 yuan have been removed.

2. The findings of the study

Table 2 shows the results of the six OLS multiple regression models. The dependent variable is the happiness variable with values from 1-5. In model 1, we set the four years from 2005 to 2010 as dummy variables. From the corresponding mean happiness value corresponding to the dummy variables, we can see the annual change. With 2003 as the reference year, the four regression coefficients are positive, indicating a year-by-year increase in the happiness value. The model constant is the mean happiness value for 2003. The results of this model are consistent with the changes in the mean values calculated earlier (see the curve in Figure 2).

Table 2 The OLS Regression Coefficients of the Factors Influencing Chinese Citizens' Happiness

Variable		Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Year	2003	Reference group	Reference group	Reference group	Reference group	Reference group	Excluded
	2005	0.125***	0.186***	0.189***	0.161***	0.097***	Reference
	2006	0.151***	0.221***	0.214***	0.180***	0.251***	0.148***
	2008	0.420***	0.466***	0.455***	0.443***	0.318***	0.226***
	2010	0.495***	0.556***	0.536***	0.473***	0.566***	0.456***
Gender	Male	Reference group					
	Female		0.042***	0.080***	0.096***	0.069***	0.050***
Age (year)	18-30	Reference group					
	31-40		-0.199***	-0.161***	-0.180***	-0.128***	-0.127***
	41-50		-0.285***	-0.224***	-0.220***	-0.148***	-0.151***
	51-60		-0.253***	-0.136***	-0.138***	-0.087***	-0.086***
	61-70		-0.148***	-0.002	-0.017	0.022	-0.002
	71-100		-0.028	0.173***	0.153***	0.169***	0.166***



Marital status	Never married Married Widowed /divorced	Reference group	0.189*** -0.218***	0.217*** -0.167***	0.224*** -0.163***	0.230*** -0.090***	0.233*** -0.075**
Political affiliation	Non-CPC member CPC member	Reference group	0.224***	0.146***	0.141***	0.087***	0.077***
Type of household registration	Rural Urban	Reference group	0.104***	-0.015	-0.042***	0.029***	0.025**
Education				0.032***	0.025***	0.017***	0.019***
Personal annual income					0.043***	0.017***	0.013***
Current subjective social status						0.234***	0.230***
Change in social status compared with the past						0.190***	0.165***
	Constant	3.272***	3.152***	2.831***	2.892***	2.006***	2.170***
N	Sample	44100	42903	42852	36192	34621	29905
	R ²	0.048	0.081	0.096	0.104	0.203	0.177

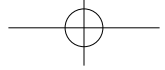
Note: $p^* < 0.1$, $p^{**} < 0.05$, $p^{***} < 0.01$ (two-tailed test).

After gender, age and other variables are introduced into Model 2, the coefficient of the year dummy variable regression becomes more significant, indicating that after controlling for demographic variables, changes in happiness for each year become more noticeable. At the same time, these demographic variables also provide other information on the variable groups. For example, it seems that women are happier than men, rural dwellers happier than urban dwellers, and CPC members happier than non-CPC members, and that those with a higher educational level are somewhat happier. The happiness curve shows a U-shaped pattern in terms of age groups, with those aged 18-30 and 70 and above being happier and those in the middle being less happy. In terms of marital status, the married are happier than those who never married, and the divorced and widowed are less happy.

In Model 4, after the personal annual income variable is added, the rise in the year variable is still significant. From the regression model we can see that personal annual income (calculated in 10,000 RMB units) has a significant influence on happiness, with its influence coefficient reaching 0.043.²¹ For instance, if the income difference between A and B is 100,000 RMB, then difference in their happiness score is $10 \times 0.043 = 0.43$.

In Model 5, the coefficient of the year dummy variable rises rather than falling after the two independent variables of horizontal and vertical comparison are introduced. These two variables have considerable predictive efficacy for the value of the happiness score, increasing the determinant coefficient of the model R^2 from 0.104 to 0.203. Compared with Model 4,

21 After controlling for the CPI, the positive correlation between personal annual income and subjective well-being is still significant.



these two variables alone explain 9.9 percent of the difference in happiness. It should be said that the two variables have a great influence on degree of subjective well-being. The variables of comparison with the happiness of others and with one's own previous happiness are positively correlated with happiness, showing that the pursuit of relative status and the extent to which this is realized is an important factor in happiness.²²

In view of the peculiarity of the sample for 2003 (which covered only the urban population), we added Model 6 for each of two regression analyses. This model analyzes only the data for the years 2005, 2006, 2008 and 2010. The results are consistent with the patterns shown.

In the above analysis (Figures 1 and 2), we use frequencies and percentages to show the increase in the value of the happiness score; that is, the percentage of the citizens who have a subjective feeling of happiness reflects the increase in happiness for the total population of different groups. To demonstrate that this conclusion remains valid in multiple regression, we carry out logistic regression analysis using a dummy variable as the dependent variable (1 = very happy or happy; 0 = neither happy nor unhappy, unhappy or very unhappy). The results of the models shown in Table 3 are consistent with the results of the OLS model above. When all variables are controlled, the odds ratio related to the year variable actually increases and becomes significant. The probability of happiness for the Chinese in 2005 (represented by odds) is 1.357 times the 2003 figure. Similarly, the probabilities for 2006, 2008 and 2010 are respectively 1.936, 2.655 and 6.575 times the 2003 figure. Even after the 2003 sample (covering only urban areas) is excluded, and the 2005 sample is taken as the reference, the probability of happiness in 2010 was still 4.690 times the 2005 figure, clearly showing an annual increase in happiness.

Table 3 Logistic Regression Analysis of Factors Affecting Chinese Citizens' Happiness (Odds Ratio)

Variable		Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Year	2003	Reference group	Reference group	Reference group	Reference group	Reference group	Excluded
	2005	1.393***	1.607***	1.629***	1.534***	1.357***	Reference
	2006	1.417***	1.669***	1.656***	1.518***	1.936***	1.400***
	2008	2.875***	3.230***	3.201***	3.149***	2.655***	1.965***
	2010	4.447***	5.302***	5.206***	4.363***	6.575***	4.690***
Gender	Male	Reference group					
	Female		1.096***	1.193***	1.266***	1.190***	1.143***
Age (year)	18-30	Reference group					
	31-40		0.639***	0.691***	0.650***	0.719***	0.729***
	41-50		0.545***	0.620***	0.603***	0.694***	0.687***
	51-60		0.572***	0.737***	0.723***	0.801***	0.799***
	61-70		0.725***	0.996	0.953	1.056	0.992
	71-100		0.880*	1.383***	1.284***	1.395***	1.422***

22 Richard Layard, "Human Satisfaction and Public Policy," pp. 737-750.



Marital status	Not married	Reference group					
	Married		1.522***	1.626***	1.672***	1.826***	1.810***
	Widowed /divorced		0.662***	0.737***	0.749***	0.908	0.891
Political affiliation	Non-CPC member	Reference group					
	CPC member		1.722***	1.459***	1.437***	1.283***	1.287***
Type of household registration	Rural	Reference group					
	Urban		1.237***	0.957*	0.872***	1.060*	1.039
Education				1.075***	1.052***	1.040***	1.048***
Personal annual income					1.198***	1.083***	1.063***
Current subjective social status						1.779***	1.749***
Change in social status compared with the past						1.706***	1.621***
N		44,100	42,903	42,852	36,192	34,621	299,05

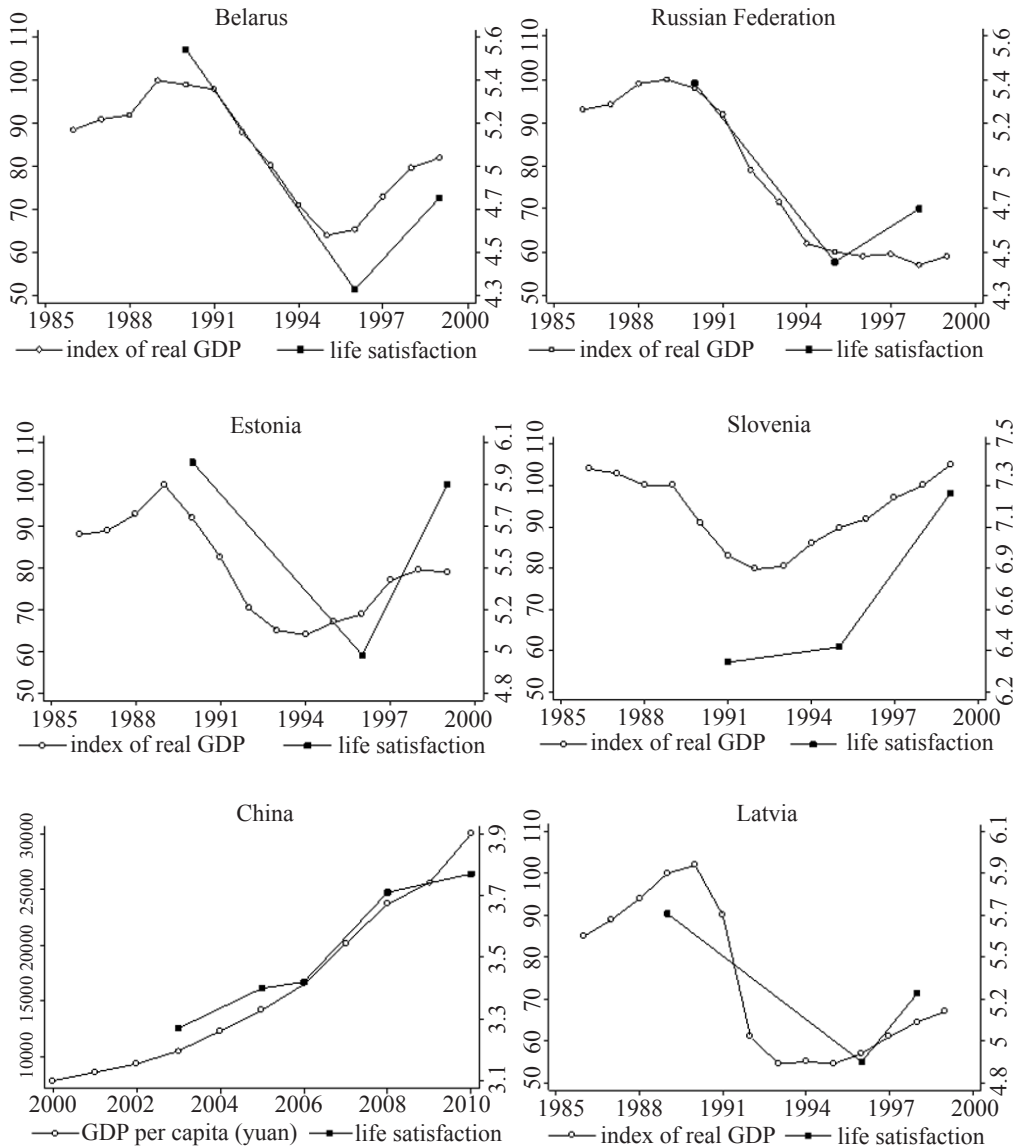
Note: $p^* < 0.1$, $p^{**} < 0.05$, $p^{***} < 0.01$ (two tailed test).

3. How are we to explain the increase in the total number of citizens who feel happy?

The purpose of the multiple regression analysis above, in addition to demonstrating the upward trend in the value of the happiness score, is to provide clues to understanding the increase of subjective well-being. On this point the results could be said to be mixed. On the one hand, the regression models have established a series of variables with explanatory power in regard to happiness and with values that basically show a rise from 2003 to 2010 (with the latter being five times the former). For example, the personal income variable in the models is positively correlated with happiness, and personal income greatly increased over the decade.

On the other hand, after these variables were introduced as control variables in the regression models (Tables 2 and 3), the regression coefficient of the year dummy variable did not fall, still less disappear or approximate 1. This means that the increase in the total number of people who feel happy cannot be explained by the increase in the value of the control variables, but must be associated with other unknown factors. The data available do not provide a reliable strategy for the exploration of these “other factors.” However, one may hazard a guess by referring to a cross-national study. In 2009, Easterlin compared the happiness index and annual GDP of 13 transition countries. He found that the curve of the happiness index was highly consistent with GDP trends (1989 = 100). In Belarus, for example, GDP and life satisfaction score dropped sharply in the late 1980s and early 1990s, but rose sharply in the mid-1990s. Following are the comparison curves for several of these countries (Figure 4).

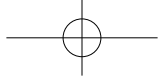
Figure 4 Trend Graphs of GDP and Happiness Scores of Major Transition Countries



Sources: Easterlin, 2009;²³ CGSS; National Bureau of Statistics of China, *China Statistical Yearbook 2011*.

Compared with the other transition countries, the changing trend of China's GDP per capita from 2003 to 2010 is consistent with that of happiness: both increased each year. We therefore

23 Richard A. Easterlin, "Lost in Transition: Life Satisfaction on the Road to Capitalism," pp. 130-145.



hypothesize that, at certain periods of development, increased happiness results from GDP growth. China's economic growth after reform and opening up is likely to be a key factor in the overall growth of happiness. However, more empirical research is needed to determine the causal connection between the two.

VI. Concluding Remarks: When Economic Growth Slows

Analyzing the data from CGSS 2003-2010, we find:

First, in the past ten years, although a certain population was not happy, 53.0 percent of Chinese citizens did feel happy or very happy. In terms of trends, the share of those with a subjective feeling of happiness increased from 37.3 percent in 2003 to 72.6 percent in 2010, with the mean value of happiness rising from 3.27 (2003) to 3.77 (2010).

Second, after analyzing changes in happiness based on relevant group factors including political affiliation, place of residence, age group, income, marital status, ethnicity, mass incidents, etc., we find that the happiness of all social groups shows a tendency to increase, although this varies among different groups.

Third, the OLS regression analysis and multivariate logistic regression analysis show that, after controlling for factors such as gender, age, urban/rural registration, income, education and social status, Chinese happiness still shows a rising trend.

From the above results we can draw the following conclusions. Firstly, the improvement in China's economic and social indicators has been reflected in the subjective well-being of its citizens. Secondly, although the problems reported by the mass media are important, they do not show the real situation of the silent majority. Ordinary people's lives are actually happier than appears on the media. Thirdly, our findings do not support the "Easterlin paradox," at least in the short run.

Since reform and opening up, economic growth and the improvement of material life have become the foundation of China's political stability, proving that "development is an iron law." But growth has its limits, especially current growth, driven as it is by investment incentives. At present, we are seeing the first signs of a slow-down. As mentioned above, economic growth is driving the increase in happiness; so we can reasonably infer that if the economy contracts, people's happiness will decrease accordingly. Since the people's subjective well-being is the barometer of government performance, we need to do more detailed tracking and research on happiness for the purpose of ensuring future political and social stability.

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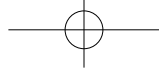
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