E C O N O M I C S B U L L E T I N

Inequality and Happiness in Urban China

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Abstract

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Keywords: Happiness, inequality, China.

JEL Codes: D31, D63.

I. Introduction

There is a large economics literature on the determinants of happiness (see Dolan *et al.,* 2008 for a review). While economists were initially sceptical about the value of using subjective well-being as a measure of utility, as Kahneman *et al.* (1997) note the use of direct scientific measurement of utility represents a return to the origins of Classical economics. As a subset of the economics literature on the determinants of happiness, a small number of studies examine the correlation between inequality and happiness (see eg. Alesina *et al.,* 2004; Biancotti & Alessio, 2007; Graham & Felton, 2006; Senik, 2004). The purpose of this note is to extend this literature to examine the correlation between inequality and happiness in urban China.

China represents an interesting 'natural experiment' to examine the relationship between inequality and happiness. The three decades since market reforms commenced in 1978 have witnessed a massive increase in income inequality. While market reforms have created myriad opportunities for people to climb the social ladder, particularly through fast wealth creation in the non-state sector, there are whole segments of the urban population, such as workers retrenched from the state-owned sector, whom the reforms have left behind. To this point, government has had a minimal role in income redistribution, but there have been calls for a more important role for income taxation. Reducing income inequality, and broadening the middle-class, has been a centre-piece of Hu Jintao's notion of building a 'harmonious society' as first articulated at the Sixteenth Communist Party Congress in 2006.

II. Empirical Specification

First, we examine the relationship between perceptions of income inequality and happiness. This follows the approach employed in Alesina *et al.* (2004) and Graham and Felton (2006). To do this we employ a specification in which we express happiness (*HAPPINESS)* as a function of perceptions of income inequality (*INEQUALITY),* a vector of demographic and personal variables *(P)* and a vector of variables controlling for the respondent's state of mind (*SM).* It is important to control for the respondent's state of mind because there is evidence that as much as 50 per cent of the variation in measures of happiness may be due to psychological state of mind (Layard, 2005). The relationship between all of these variables can be expressed as follows where ε is the error term, reflecting unobserved random factors.

$$HAPPINESS = f(INEQUALITY, P, SM, \varepsilon) \quad (1)$$

The expected relationship between perceptions of inequality and happiness is unclear. Hirschman's (1973) tunnel effects suggests that high levels of income inequality might be positively correlated with happiness, even for the poor, if people interpret other's faster progression as a sign that their turn will come soon. However, Thurow (1971) suggested people who perceive higher inequality might report lower happiness if they have quasi-aesthetic preferences for more equal distributions of wealth.

Second, we consider the effect of reference group income (*AVERAGE INCOME),* defined as the log of average monthly income in the city in which the respondent lives, on happiness, while controlling for the log of the respondent's income *(INCOME),* other personal characteristics and the respondent's state of mind:

$$HAPPINESS = f(AVERAGE\ INCOME, INCOME, P, SM, \varepsilon) \quad (2)$$

Equation (2) follows the approach adopted in Luttmer (2005) and Graham and Felton (2006). It is also equivalent to that used by Di Tella and MacCulloch (2003), but they replace the individual income variable with a relative income variable, defined as the difference between individual income and average income as follows:

$$HAPPINESS=f(AVERAGE\ INCOME, RELATIVE\ INCOME, P, SM\ , \varepsilon) \quad (3)$$

The expected relationship between reference group income and happiness is also not clear. Most studies have found that happiness falls as reference group income rises ('jealousy effect') (see eg. Graham & Felton, 2006). However, some studies have found that happiness increases as reference group increases ('signalling effect') (see eg. Senik, 2004). The latter is consistent with the Hirschman tunnelling effect – it might be reassuring to know others are doing well because you might be in their shoes in the near future. If the coefficients on *AVERAGE INCOME* and *RELATIVE INCOME* (which add up to *INCOME*) are the same, happiness is increasing in income with no regard to relative status. For instance, if *AVERAGE INCOME* increases by one measurement unit, but a person's income remains constant, then that individual's happiness increases by the coefficient on *AVERAGE INCOME,* but decreases by the coefficient on *RELATIVE INCOME.* If the coefficients are the same, the individual's happiness is unchanged. If *RELATIVE INCOME* is more important than *AVERAGE INCOME,* then happiness would decrease (see Graham & Felton, 2006).

To estimate Equations (1)-(3) we use an ordered probit model. This means that self-reported happiness is assumed to be a categorical variable; that the answer to the happiness question provides an ordinal (and not cardinal) ranking and that ordinal interpersonal comparability is assumed (Ferrer-i-Carbonell & Frijters, 2004).

III. Data

Our data were collected by China Mainland Marketing Research Company (CMMRC), a private firm under the direct supervision of China's State Statistical Bureau, which conducted face-to-face interviews with approximately 10,000 individuals in 31 Chinese cities in September, 2002. These 31 cities are the provincial capitals of the 22 provinces; the four municipalities directly under the control of the central government (Beijing, Shanghai, Chongqing and Tianjin) and the capitals of the five autonomous regions of China. There were up to 9,284 valid responses containing questions of interest to us in this study. The CMMRC survey asks respondents a number of questions relating to attitudes on a range of social and economic issues as well as background characteristics of the respondent such as age, education, gender, income, marital status and occupation. CMMRC employs multi-stage stratified random sampling to ensure a representative sample in terms of age, gender and income. All respondents were aged 18 years or above and had an urban household registration. Information on average income in the city in which the respondent lives was obtained from SSB (2003). Table 1 contains a complete description of the variables employed in the study, together with descriptive statistics.

Insert Table 1

IV. Results

The first column of Table 2 presents the results for Equation 1. The results suggest that those who perceive income inequality is high report statistically significant lower levels of happiness. However, the results for the sample as a whole reported in

column 1 may mask considerable differences between rich and poor income respondents. For example, in their study of happiness and inequality in Europe and the United States Alesina *et al.* (2004) find striking differences across groups. In column 2 we interact the inequality variable with dummy variables for the top 20 per cent and bottom 20 per cent of income earners. We find that for the top 20 per cent of income earners, those who perceive income is unequal report higher levels of happiness, while for the bottom quintile of income earners those who perceive income inequality is unfair report lower levels of happiness. This finding is consistent with perceived income inequality generating a status effect among the rich and a jealousy effect amongst the poor, which are opposite sides of the same coin depending on where one sits on the income scale. The personal controls and state of mind variables are consistent with expectations. Females, the better educated, older people,[1] those with higher own income and those who have better self-assessed health report higher levels of happiness, while the unemployed report lower levels of happiness (cf. Dolan *et al.,* 2008). Those who consider their marriage to be unhappy and to have dismal career prospects also report statistically significant lower levels of happiness.

Insert Table 2

Table 3 reports the results for Equations (2) and (3) which examine the effect of reference income on happiness. The results for Equation (2) are reported in column 1. We get a positive and statistically significant sign on own income and a negative and statistically significant sign on average income. Thus, in urban China, having wealthier city-mates lowers self-reported happiness, controlling for the individual's own income. Relative differences matter to urban residents in China, over and beyond the effects of individual income. The finding of a jealousy effect is consistent with what Luttmer (2005) finds for the United States and Graham and Felton (2006) find for Latin America. The results for Equation (3) are reported in column 2. We find that the coefficients on *RELATIVE INCOME* and *AVERAGE INCOME* are positive and significant and that the coefficient on *RELATIVE INCOME* is larger. Thus, *RELATIVE INCOME* contributes to greater than average happiness for those that are above mean income and less than average happiness for those who are below mean income because the value on relative income for those below the mean income is negative, making them much less happy. This finding is similar to the result obtained by Graham and Felton's (2006) for Latin America, but differs from Di Tella and MacCulloch's (2003) results for Europe and the United States which were that the effect of average and relative income on happiness was the same. The results for the personal controls variables and respondent's state of mind in Table 3 are similar to those in Table 2, with one difference being that those who consider their life to be generally dull also report statistically significant lower levels of happiness.

V. Conclusion

This note has examined the relationship between inequality and happiness in urban China. It adds to existing studies of the relationship between inequality and happiness for Europe and the United States as well as developing regions such as Latin America and transitional economies such as Russia. We find that those who perceive income distribution to be unequal report lower levels of happiness, although the effect differs

[1] Most studies find a U-shaped relationship between happiness and age. We could not test for this U-shaped relationship because in the survey age was reported in discrete categories.

between high and low income individuals. High income individuals who perceive income distribution to be unequal report higher levels of happiness while poor income individuals who perceive income distribution to be unequal report lower levels of happiness. We also find that there is a negative relationship between reference group income and happiness, which is consistent with the existence of a 'jealousy effect'. From a policy perspective, our finding that income inequality has a negative correlation with reported happiness lends support to Hu Jintao's objective of reducing income inequality as part of the process of constructing a 'harmonious society'.

References

Alesina, A., Di. Tella, R. and MacCulloch R. (2004) Inequality and happiness: Are Europeans and Americans different? *Journal of Public Economics*, **88**, 2009-2042.

Biancotti, C. and D'Alessio, G. (2007) Inequality and happiness. Mimeo

Di Tella, R. and MacCulloch, R. (2003) Income, happiness and inequality as measures of welfare. Mimeo.

Dolan, P., Peasgood, T. and White, M. (2008) Do we really know what makes us happy? A review of the economic literature on the factors associated with subjective well-being, *Journal of Economic Psychology*, **29**, 94-122.

Ferrer-i-Carbonell, A. and Frijters, P. (2004) How important is methodology for the estimates of the determinants of happiness? *Economic Journal*, 114, 641-659

Graham, C. and Felton, A. (2006) Inequality and happiness: Insights from Latin America. *Journal of Economic Inequality*, **4**, 107-122.

Hirschman, A.O. (1973) "The changing tolerance for income inequality in the course of economic development", *Quarterly Journal of Economics,* **87**, 544-566.

Kahneman, D., Wakker, P. and Sarin, R. (1997) Back to Bentham? Explorations of experienced utility, *Quarterly Journal of Economics*, **112**, 375-405.

Layard, R. (2005) *Happiness: Lessons From a New Science*, New York: Penguin Press.

Luttmer, E. (2005) Neighbors as negatives: Relative earnings and well-being, *Quarterly Journal of Economics*, **120**, 963-1002.

Senik, C. (2004) When information dominates comparison: Learning from Russian subjective panel data, *Journal of Public Economics*, **88**, 2099-2123.

State Statistical Bureau (2003) *China City Statistical Yearbook 2003*, Beijing: SSB.

Thurow, L. (1971) The income distribution as a pure public good, *Quarterly Journal of Economics*, **85**, 327-336.

Table 1: Description of variables

Variable	Definition	Descriptive Statistics
HAPPINESS	An ordered variable depicting response to the question: *"How happy are you with your life these days?"* 1=very unhappy; 2=quite unhappy; 3=average; 4=quite happy; 5=very happy	1=2.3%; 2=6.1%; 3=34%; 4=46%; 5=12.1%
	Attitudes	
INEQUALITY	An ordered variable depicting response to the question: *"Please evaluate the degree of fairness in the distribution of income"* 1= "*not too serious*" to 5= "*extremely serious*".	1=2.5%; 2=15.5%; 3=33.5%; 4=39.1%; 5=9.4%.
	Personal Characteristics	
GENDER	A dummy variable set equal to 1 if respondent is male.	49.6% of respondents were female
AGE	Eleven categories ranging from 1 (18-19) to 11 (65 and above).	Median = 6 (40-44)
MARITAL STATUS	A vector of dummy variables for marital status of the respondent (single, married, divorced and not remarried, divorced and remarried, widowed and not remarried, widowed and remarried).	Single=23.7%, married=71%, divorced and not remarried=2.1%, divorced and remarried=0.7%, widowed and not remarried=2.3%, widowed and remarried=0.2%
EDUCATION	An ordered variable representing the highest education of respondent (1=junior secondary school and below; 2=senior secondary school; 3=polytechnic school; 4=three year higher degree; 4=four year undergraduate; and 5=postgraduate degree).	Junior secondary school and below=19.4%; senior secondary school=26.3%; polytechnic school=13.9%; three year higher degree=23.9%; four year undergraduate=14.8%; and postgraduate degree=1.5%.
OCCUPATION	A vector of dummy variables for occupation of respondent. (senior professional; middle professional; lower professional; technical; semi-skilled; manual; retired; not in labour force).	Senior professional=0.5%; middle professional=9.3%; lower professional=25.8%; technical=14.1%; semi-skilled=13.6%; manual=3.6%; retired=15.9%; not in labour force=8.4%
UNEMPLOYED	A dummy variable set equal to 1 if the respondent is unemployed, or laid-off (*xiagang*)	8.8% of respondents were unemployed or laid-off (*xiagang*)
HEALTH	An ordered variable depicting how the respondent perceives his/her state of health 1= "very poor" to 5= "very good".	1=0.8%; 2=6.2%; 3=29.2%; 4=42%; 5=21.8%
	State of Mind	
WORK PRESSURE	A dummy variable set equal to 1 if the respondent considers pressures in the work unit to be the most worrying matter in their life; zero otherwise.	6.4% of respondents considered pressures in the work unit to be the most worrying matter in their life
LIFE OUTLOOK	A dummy variable set equal to 1 if the respondent considers life being generally dull to be the most worrying matter in their life; zero otherwise.	22.6% of respondents considered life being generally dull to be the most worrying matter in their life
DISMAL CAREER PROSPECTS	A dummy variable set equal to 1 if the respondent considers dismal career prospects to be the most worrying matter in their life; zero otherwise.	15% of respondents considered dismal career prospects to be the most worrying matter in their life

Table 1 continued:

UNHAPPY MARRIAGE	A dummy variable set equal to 1 if the respondent considers an unhappy marriage to be the most worrying matter in their life; zero otherwise	2.7% of respondents considered an unhappy marriage to be the most worrying matter in their life
EXPECTATIONS OF CHILDREN UNREALIZED	A dummy variable set equal to 1 if the respondent considers children failing to live up to expectations to be the most worrying matter in their life; zero otherwise.	4.2% of respondents considered children failing to live up to expectations to be the most worrying matter in their life
	Relative Income	
AVERAGE INCOME	The log of the average monthly wage in the city in which the respondent lives.	Mean wage is 1999 RMB; SD=341 RMB; Max =2184RMB; Min=861RMB
INCOME	The log of the average monthly wage of the respondent	Mean average monthly wage is 1875RMB; SD=472 RMB; Max=20,000 RMB; Min=260 RMB
RELATIVE INCOME	The difference between income and average income.	

Table 2: Perceptions of inequality and happiness

	I	II
INEQUALITY	-0.0866*	_
	(-6.96)	
INEQUALITY x INCOME IN TOP 20%	_	0.0629*
		(5.55)
INEQUALITY x INCOME IN BOTTOM 20%	_	-0.1330*
		(-12.71)
HEALTH	0.5339*	0.5393*
	(37.54)	(38.01)
GENDER	-0.0842*	-0.0823*
	(-3.61)	(-3.53)
AGE	0.0278*	0.0277*
	(4.49)	(4.48)
MARITAL STATUS [a]		
Single	0.2729*	0.2876*
	(3.17)	(3.34)
Married	0.4289*	0.4400*
	(5.32)	(5.46)
Divorced and Remarried	0.2827***	0.2947***
	(1.86)	(1.94)
Widowed and Not Remarried	0.3604*	0.3833*
	(3.23)	(3.44)
Widowed and Remarried	0.2577	0.2359
	(0.95)	(0.87)
Occupation Dummies	YES	YES
EDUCATION	0.0432*	0.0570*
	(4.27)	(5.70)
UNEMPLOYED	-0.4472*	-0.4316*
	(8.76)	(-8.40)
WORK PRESSURE	0.03	0.0258
	(0.65)	(0.56)
LIFE OUTLOOK	-0.0416	-0.0428
	(-1.51)	(-1.56)
DISMAL CAREER PROSPECTS	-0.0875*	-0.1008*
	(-2.68)	(-3.09)
UNHAPPY MARRIAGE	-0.4725*	-0.4510*
	(-6.57)	(-6.28)
EXPECTATIONS OF CHILDREN	0.0153	0.0245
UNREALIZED	(0.27)	(0.43)
INCOME	0.0524*	_
	(16.23)	
Number of Observations	9284	9284
Log Likelihood	-10203.981	-10261.577
Psuedo R^2	0.1115	0.1065

Notes: (a) reference category is divorced and not remarried. Figures in parenthesis are t-statistics. *(**)(***) denotes statistical significance at the 1%(5%)(10%) level.

Table 3: Average Income, Relative Income and Happiness

	I	II
AVERAGE INCOME	-0.0001*	0.00007***
	(-3.42)	(1.91)
INCOME	0.0606*	
	(11.82)	
RELATIVE INCOME		0.2835*
		(13.63)
HEALTH	0.5506*	0.5465*
	(38.17)	(37.84)
GENDER	-0.1514*	-0.1598*
	(-6.30)	(-6.65)
AGE	0.0326*	0.0308*
	(4.97)	(4.70)
MARITAL STATUS [a]		
Single	0.3754*	0.3925*
	(4.36)	(4.56)
Married	0.5393*	0.5505*
	(6.69)	(6.83)
Divorced and Remarried	0.3524**	0.3594**
	(2.31)	(2.36)
Widowed and Not	0.4088*	0.4335*
Remarried	(3.69)	(3.91)
Widowed and Remarried	0.3541	0.3872
	(1.28)	(1.40)
Occupation Dummies	YES	YES
EDUCATION	0.0543*	0.0489*
	(5.19)	(4.67)
UNEMPLOYED	-0.4594*	-0.3147*
	(-7.34)	(-4.91)
WORK PRESSURE	-0.0140	-0.0239
	(-0.31)	(-0.53)
LIFE OUTLOOK	-0.0833*	-0.0873*
	(-2.98)	(-3.12)
DISMAL CAREER	-0.0711**	-0.0745**
PROSPECTS	(-2.14)	(-2.24)
UNHAPPY MARRIAGE	-0.4799*	-0.4741*
	(-6.74)	(-6.66)
EXPECTATIONS OF	0.0070	0.0080
CHILDREN	(0.13)	(0.14)
UNREALIZED		
Number of Observations	8953	8953
Log Likelihood	-9914.8425	-9891.8464
Psuedo R^2	0.1038	0.1059

Notes: (a) reference category is divorced and not remarried. Figures in parenthesis are t-statistics. *(**)(***) denotes statistical significance at the 1%(5%)(10%) level.