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ASPIRATIONS, ADAPTATION AND SUBJECTIVE WELL-BEING OF RURAL-URBAN MIGRANTS IN CHINA

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Abstract. This research is among the first to link the literatures on migration and on subjective well-being in developing countries. It poses the question: why do rural-urban migrant households settled in urban China have an average happiness score lower than that of rural households? It examines the hypothesis that migrants have false expectations because they cannot foresee how their aspirations will adapt to their new situation, and draws on research in both psychology and sociology. Estimated happiness functions and decomposition analyses, based on a 2002 national household survey, suggest that their high aspirations in relation to achievement, influenced by their new reference groups, make for unhappiness. The evidence is consistent with the hypothesis.

Key words. Rural-urban migration; subjective well-being; happiness; relative deprivation; aspirations; China.

JEL classification. I 32; O 15.

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Aspirations, Adaptation and Subjective Well-being of Rural-Urban Migrants in China

4.1 Introduction

To what extent is economic welfare determined by objective conditions and to what extent by aspirations and the degree to which they adapt to objective conditions? This question – relevant to many normative issues in economics – has been addressed by both economists and psychologists but with different answers. Easterlin (2006) contrasts economists' emphasis on the importance of objective conditions in the determination of subjective well-being with psychologists' tendency to regard subjective well-being as the stable product of personality and genetics, and adaptation to objective conditions as rapid and complete. Easterlin's synthetic panel analysis for the U.S. favours an intermediate position in which happiness is the product of objective conditions in various life domains and of aspirations in each domain. The key issue, therefore, is the speed and extent to which aspirations adapt to circumstances. It is the issue that underlies this chapter.

This chapter contributes to the voluminous literature on rural-urban migration in developing countries. It does so from a new angle – by examining the subjective well-being of respondents living in migrant households in China. It raises an interesting puzzle. The normal assumption of migration theory is that rural people migrate in order to raise their utility, at least in the long run (for instance, Todaro, 1967). Thus migrants who have made the transition into urban employment and living should be happier than they would have been had they remained at home. Yet our sample of migrants has a mean happiness score of 2.3, well below the mean score of the rural sample (2.7) and also below that of the urban sample (2.5). Of course, initial hardship is to be expected – and indeed it is predicted by migration models – but these are migrants who have established urban households and whose average urban stay is no less than 7.5 years. Were the migrants thwarted by unexpected changes in their aspirations?

Section 4.2 provides background on migrants in China, and describes the data to be analysed. In Section 4.3 we present some relevant descriptive information, and in Section 4.4 the hypothesis to be examined. Section 4.5 reports the results from the estimates of happiness functions, and Section 4.6 describes robustness checks of those results. Section 4.7 conducts simulations to answer such questions as: what would be the happiness scores of migrants had they stayed in the rural areas? Section 4.8 draws conclusions for migration, for the role of aspirations and reference groups in determining happiness, and for policy-making.

4.2 The Background and the Data

The phenomenon of rural-urban migration has been different in China from that in most other poor countries (Knight and Song, 1999, chs.8, 9). During the period of central planning the movement of people, and especially movement from the communes to the cities, was strictly controlled and restricted. Even after economic reform commenced in 1978, migration was very limited although temporary migration was permitted when urban demand for labour exceeded the resident supply. For a long time the system of residential registration (*hukou*) prevented rural people from settling in the cities. When, increasingly, they began to settle in the cities with their families, they were subject to discrimination in access to jobs, housing, education and health care. City governments favour their own residents, and migrants are generally treated as second class citizens (Knight and Song, 1999, ch.9; Knight and Song, 2005, chs.5, 6). For instance, they are allowed only into the least attractive or remunerative jobs that urban *hukou* residents shun; many enter self-employment, which is less regulated.

Despite these drawbacks, rural-urban migration has burgeoned as the controls on movement have been eased and the demand for urban labour has increased. Estimates of the stock of rural *hukou* migrants in the cities, although unreliable, place the number at over 100 million people. It is very likely the case that we are observing 'the greatest migration in human history'. Although a large percentage of migrants have chosen to come temporarily to the cities with the intention of returning home, an increasing

percentage wish to settle in the cities, and are establishing urban households. Thus, many are revealing their preferences for urban living.

In this study we examine a sample of rural-urban migrants living in households. As we shall see, these are migrants who are settled in the cities. The sample was collected as part of a national household survey, organised by the Institute of Economics, Chinese Academy of Social Sciences, and designed by Chinese and foreign scholars including one of the authors. The survey was conducted by the National Bureau of Statistics early in 2003 and its information generally relates to 2002. There is very little panel (retrospective) element in the survey, and almost none that we can use. The urban and rural samples are sub-samples of the official annual national household survey. However, because the official urban survey does not yet cover rural *hukou* households, the rural–urban migrant sample was based on a sampling of households in migrant neighbourhoods in the sampled cities.

The migrant survey contains a great deal of information about the household and each of its members, including income, consumption, assets, housing, employment, labour market history, health, education, and rural links. Less commonly, various migrant attitudes and perceptions were explored. The same question was asked of one of the adults - normally the household head - in each sampled household: ‘Generally speaking, how happy do you feel?’. The six possible answers were: very happy, happy, so-so, not happy, not happy at all, and don’t know. This is the key variable in our analysis.

4.3 Descriptive Information

It is helpful first to provide descriptive information about the migrants before presenting the happiness functions that will explain the determinants of subjective well-being. This will inform our interpretations. Consider the characteristics of those household members – 77% of whom were the household head - who responded to the attitudinal questions. 61% were men, 90% were married, 93% were employed, and 88% were living with their family. Rural links were commonly retained: 53% had family members who still farmed in the village, and 32% had one or more children still living in the village.

Even though the mean happiness score of migrants is lower than that of rural people, their mean income is not. The average income per capita of migrant households is 2.39 times that of rural households. Even allowing for the smaller number of dependants in migrant households by comparing total instead of per capita household incomes, the ratio is still 1.54. The corresponding ratios of household income per worker and of wage income per employee are 2.01 and 3.02 respectively. Whichever concept is considered most relevant, migrants are at a considerable income advantage. This compounds the puzzle: higher income appears not to raise happiness.

Consider the percentage distribution of migrants among the five categories of happiness: over 43% are happy or very happy, and fewer than 12% are unhappy or not at all happy. On the scale of 4 for very happy down to zero for not at all happy, the mean score is 2.37. When migrant households are divided into income per capita quintiles, the happiness score increases monotonically, from 2.13 for respondents in the lowest quintile to 2.56 for those in the highest. Respondents in the categories unhappy and not at all happy were asked the reasons for their unhappiness. The predominant reason, offered by over two-thirds of the respondents, is that income is too low. The next most important reason, reported by over 11%, is uncertainty about the future, suggesting that insecurity is a problem. On this basis, we expect that income will be an important determinant of migrant happiness.

Migrants were asked whether urban or rural living yielded greater happiness. No fewer than 56% felt that urban living gave greater happiness, 41% felt that they gave the same, and only 3% perceived greater happiness in rural living. When asked what they would do if forced to leave the city, more would go to another city (54%) than would go back to their village (39%). These results add to the puzzle. If most migrants view urban living as yielding greater happiness, and most wish to remain in an urban area, why are their mean happiness scores lower than those of rural residents?

4.4 Hypotheses

There are several possible explanations for our puzzle, giving rise to hypotheses that can in principle be tested. Our concern here is to explore whether the puzzle can be solved by recourse to the adaptation theory that has been developed by Easterlin (2001). His argument is that happiness is a function of income and aspirations, the former having a positive and the latter a negative effect. Moreover, as income rises over time, aspirations adapt to income, so giving rise to a 'hedonic treadmill'. This account is consistent with the finding (for instance, by Easterlin, 1974) that happiness rises with income in cross-section but does not do so in time-series data sets.

Easterlin (2001), using successive cross-section surveys to create a synthetic panel, found that the income of a cohort rises over the working life and then falls in retirement, but that average happiness score remains remarkably constant. His explanation draws on the psychological literature to make the distinction between 'decision utility' and 'experienced utility': the utility expected at the time of making a choice and the utility subsequently experienced from that choice. When respondents are asked to assess their happiness in the past, when their income was lower, they tend to judge it by their current aspirations for income and therefore to report that their happiness was lower. Similarly, when they are asked to assess their happiness in the future, when they expect to have higher income, they do not realise that their aspirations will rise along with their income and therefore report that their happiness will be higher (Kahneman and Snell, 1992). Rabin (1998, p.12) summarised the findings from social psychology thus: 'we don't always predict our own future preferences, nor even accurately assess our experienced well-being from past choices'. Easterlin (2001) marshals this evidence as support for his argument that aspirations are a function of income and tend to rise in proportion with income.

If current judgements about subjective well-being, whether in the past, the present, or the future, are based only on current aspirations, this might explain why the mean happiness of migrants is lower than that of rural people: aspirations could have risen after having made the decision to migrate. Although aspirations might not be quantifiable, the

predictions of the theory can be tested. Similarly, we might also find an explanation for why it is that migrants nevertheless generally report that happiness is higher, or at least no lower, in urban than in rural areas.

The notion that aspirations depend on income relative to that of the relevant reference group, originates from the sociological literature (for instance Runciman, 1966). It has been developed for China in companion papers on subjective well-being (Knight and Gunatilaka, 2007a, 2007b, 2007c, Knight, Song and Gunatilaka, 2007). If the group with which the migrants compare themselves changes as a result of rural-urban migration and urban settlement, this might explain why their aspirations change. We can test whether migrants show relative deprivation in relation to urban society.

It is possible to advance three other hypotheses which might solve the puzzle. One is that the migrants, when they decided to migrate, could not predict the conditions that they would encounter in the city; another is that naturally unhappy people migrate; and the third is that the presence of family members left behind in the village imposes a financial burden on migrants. All four hypotheses are examined in Knight and Gunatilaka (2007c): there is some evidence consistent with the conditions hypothesis, some inconsistent with the self-selection hypothesis, but the remittance hypothesis can be rejected. Here we examine only the aspirations hypothesis.

4.5 The Determinants of Happiness

We estimate happiness functions in order to discover how aspirations and adaptation influence happiness among rural-urban migrants, in the hope that they will help to provide an explanation for the migrants' unexpectedly low mean happiness. First, we estimate OLS estimates of the happiness score: Table 4.1 reports, for the full sample, the basic model and the extended model with a full set of explanatory variables. Columns (1) and (2) report the coefficients of the basic equation and the full equation, respectively. The asterisks show levels of statistical significance. The coefficient on ln income per capita is significantly positive, and its values (averaging 0.195) indicate that a doubling of

income raises the happiness score by about 0.13 points. Income is relevant, as predicted, but its effect is not powerful.

[Insert Table 4.1 about here]

Expectations of income over the next five years enter powerfully and significantly: those expecting a 'big increase' have a higher happiness score than those who expect income to remain the same, by 0.32 and 0.23 respectively, and those expecting a decrease have a lower score, by -0.40 and -0.36 respectively. These results are consistent with the findings of the psychological literature: people evaluate their future income on the basis of their current aspirations, on the assumption that their future aspirations will not adjust to their future income (Easterlin, 2001). However, that is not the only possible explanation. The results are also consistent with the notion that aspirations are irrelevant and that people are efficient inter-temporal utility-maximizers on the basis of their 'permanent income'. For instance, it is arguable that people derive their happiness from their current consumption and that current consumption in turn is determined by permanent income, or alternatively that happiness is directly a function of the current expectation of permanent income.

We see that men have lower happiness, *ceteris paribus* (the coefficients being -0.27 and -0.30 in columns 1 and 2, respectively), and that marriage has a negligible effect for women but a positive significant effect (0.33 and 0.38 respectively) for men. Surprisingly, years of education, net financial assets, unemployment, and hours worked do not have a significant effect, although the last two have the expected signs. Being in good health raises happiness, significantly so in the basic equation.

We expect migrants to adjust over time to urban life in various ways. On the one hand, as they overcome initial difficulties and become more settled, we expect their happiness to rise. On the other hand, their reference groups might change, from the, poorer, village society to the, richer, urban society, and this fall in perceived comparative status might reduce happiness. The length of time spent in the urban area is introduced as an

explanatory variable, and its square is also introduced so as to allow for non-linearity in the relationship. Both the variable and its square are significant in the basic equation, the former positively and the latter negatively. The coefficients imply the happiness score rises to a peak after 14 years and then declines. In the full equation, however, the two variables keep their signs and imply a peak after 8 years, but they fall in size and are no longer significant. Thus, there is weak evidence that, *ceteris paribus*, migrants' happiness tends to rise over several years of urban living.

We turn to the variables that enter only in the full equation. In order to pursue the notion that reference groups can be important, we investigated the effect of relative income. Drawing on the urban and rural samples of the 2002 national household survey, we introduced the average urban income per capita in the destination province and the average rural income per capita in the origin province of the migrant, the hypothesis being that both have a negative coefficient, reflecting relative deprivation. The coefficient on destination income is indeed negative, large, and significant; that on origin income is not significantly different from zero. The migrants appear to compare their own situations with those of others living in their new surroundings.

If the migrant is living with family, or has relatives in the city who can be turned to for help, the effect on happiness is positive but not significantly so. On the other hand, having a child still in the village has a significant depressing impact. Of the housing variables only lack of heating is significant: the effect is predictably negative. Finally, if the respondent answered that urban living yields more happiness than rural living, this is associated with a significantly greater level of happiness (0.42).

Columns 3 and 4 of Table 4.1 reproduce the full equation for two sub-samples: those who had less than the median urban stay (7.5 years) and those who had more, respectively. We mention only the determinants for which there is a significant difference in coefficients. The long-stayers have a higher coefficient on the income variable (0.25 compared with 0.12), suggesting that migrants become more materialistic as they lay down deeper urban roots. The long-stayers are also more sensitive to average urban income per capita in the

destination province (a significant -0.46 compared with a non-significant -0.28), suggesting that increasingly urban residents become their reference group. Long-staying men cease to be at a significant disadvantage compared with women and, whereas among short-stayers marriage is bad for women's happiness but good for men's, among long-stayers these effects are weakened. This change might reflect the evolution of power relationships or social norms as migrants become more urbanised. The house area per capita of the household significantly raises the happiness of migrants who have lived in the city for a long time but not that of recent arrivals; it seems that people eventually come to expect city housing standards.

In summary, consider the light that the happiness functions throw on our hypothesis that the low mean happiness score of migrants is due to their false assumption, made at the time of migration, that their aspirations would not alter in the city. The evidence is consistent with the view that migrants become more materialistic as they lay down urban roots, and with the psychologists' finding that people are bad at forecasting how their aspirations will change. The negative effect of urban income per capita in the destination province implies that migrants draw their reference groups from their new surroundings, that they experience feelings of relative deprivation in the city, and that there is a progressive transfer of reference group from village to city.

4.6 Robustness Checks

First, we introduced instrumental variable estimates of the specifications used above, with the potentially endogenous income variable being instrumented. Table 4.2 presents the same information for the full sample as Table 4.1 except in one respect: the equations are re-estimated with ln income per capita instrumented. It is plausible that income is endogenous, e.g. unobserved characteristics such as personal energy might raise both income and happiness, or happiness itself might improve motivation and so raise income. In that case the coefficient on income in the OLS equation will be upward-biased. The exclusion restrictions are father's years of education, mother's years of education, and household productive assets. The table shows that the instruments pass the conventional

statistical tests for good instruments: they are not weak, they are exogenous (using a 5% significance test), and they are needed.

The only notable difference between Tables 4.1 and 4.2 is in the coefficient on the income variable itself. Contrary to expectations, this is now higher, being more than doubled in size to 0.63 and 0.55 in columns (1) and (2), respectively. However, this effect is still modest, e.g. a doubling of income raises the score by between 0.43 and 0.38, i.e. less than half the equivalent of moving from being so-so (a score of 2) to being happy (3). One explanation for the rise is the possibility that the hidden relationships have the opposite sign, e.g. workaholics have high income but are unhappy, or happiness discourages effort. Alternatively, instrumenting might reduce the attenuation bias caused by error in the measurement of income.

[Insert Table 4.2 about here]

The dependent variable was changed to denote that the person is happy or very happy (taking a value of one and the other responses a value of zero), the probability of which was estimated using a binary probit model. The pattern of results showing the marginals (the effect of a unit change in each variable on the probability of being happy or very happy) was very similar to that of Table 4.1. The equations were also re-estimated with ln income per capita instrumented, using the same instruments as in Table 4.2. Again, the only notable difference was to raise the coefficient on the income variable. An ordered probit was estimated in which there were three dependent variables: happy or very happy, so-so, and unhappy or not at all happy. Moving from predicting the positive to the negative outcome, the sign of the coefficient was invariably reversed, e.g. a unit rise in ln income per capita raises the probability of being happy or very happy and lowers that of being unhappy or not at all happy. The results are highly consistent with those for the alternative versions of the dependent variable.

In summary, our various robustness checks involving instrumenting the income variable merely produced a stronger income effect, and our robustness checks using alternative measures of happiness produced no notable changes in our findings.

4.7 Comparisons with Rural and with Urban Residents

It is possible that migrants have lower mean happiness than rural people because they are self-selected. Thus, their lower happiness might be the result of differences in characteristics. We wish to compare the migrants with both rural and urban residents, employing the standard Blinder-Oaxaca decomposition methodology, based on identical happiness regression equations for the groups being compared. The choice of explanatory variables used is governed by the availability of the same variable in the two data sets, and by its success in the happiness functions. The objective is to pinpoint the reasons for the differences in happiness.

The mean happiness score of rural people was 2.68 and that of migrants 2.37, implying a migrant shortfall of 0.31. In Table 4.3 we decompose this gap into the parts which can be explained by differences in the mean values of the characteristics of the two groups and by differences in the coefficients of the two happiness functions. The results differ only a little according to whether we pose the counterfactual question ‘what would be the effect on the mean happiness of migrants if they had the same happiness function as rural people?’ or the question ‘what would be the effect on the mean happiness of rural people if they had the same happiness function as migrants?’.

[Insert Table 4.3 about here]

The effect of characteristics is actually to increase the difference in mean happiness scores. This is mainly due to the variable ln income per capita: its coefficients are the same in the two samples (both 0.194) but migrants have higher mean income. The reason why migrants have lower mean happiness is thus to be found in the different happiness functions. The constant term, health, and income expectations are the main contributors. The importance of the constant term implies that there are unobserved characteristics that

reduce migrant relative to rural happiness. Perhaps because rural people are on average less healthy than migrants, they place a higher value on good health.

In both samples happiness is highly sensitive to expectations about future income in five years' time. With the expectation of no change in income as the omitted category in the dummy variable analysis, the coefficients in the migrant sample vary from 0.31, if a large increase is expected, to 0.05, if a small increase is expected, and to -0.39, if a decrease is expected; the corresponding estimates for the rural sample are 0.41, 0.19 and -0.19 respectively. These results are consistent with the evidence from the psychological literature as applied by Easterlin (2001): people judge their future happiness on the basis of their current aspirations.

The fact that in the migrant sample the coefficients are uniformly lower, in relation to the expectation of static income, suggests that migrants have higher aspirations relative to current income. This can be expected if aspirations depend on the income of the relevant comparator group. Whereas the rural respondents are representative of rural society, and so their mean income is close to the mean income of their likely comparator group, the migrant sub-sample is unrepresentative of urban society: migrants tend to occupy the lower ranges of the urban income distribution. If migrants make comparisons with urban-born residents as well as with other migrants, their aspirations will be high in relation to their current income.

We pursue our inquiry further by comparing migrants with 'urban residents', i.e. persons who are urban-born and or have acquired urban *hukou* status in other ways, with the rights and privileges that accompany it. The mean happiness score of urban residents is 2.48 and that of migrants 2.37, implying a migrant shortfall of 0.11. Table 4 provides a decomposition similar to that of Table 4.3, but with a different set of explanatory variables - those that are common to the two datasets.

[Insert Table 4.4 about here]

In this case the differences in coefficients add slightly to the migrant shortfall in mean happiness score. The coefficient on the income variable is higher for urban residents (0.173) than for migrants (0.111), so raising urban relative to rural happiness, and the effect of income expectations is also stronger for urban residents. The positive effect of income expectations reflects the lower coefficients in the migrant sample: with static expectations as the reference category, for migrants an expected big increase in income has a coefficient of 0.21, a small increase 0.00, and a decrease -0.37, whereas for urban residents the corresponding estimates are 0.34, 0.10, and -0.29 respectively. Again, migrants appear to have higher aspirations relative to their current income. The contribution of the income variables to the explanation of the difference in mean happiness is offset by the negative effects of such variables as age, gender and the constant term. Note that position in the city income distribution has a powerful effect on happiness. With the highest quarter of households being the omitted category, happiness falls monotonically, to lower than -0.80 in the lowest quarter. As this is true of both samples, it does not affect relative happiness.

The migrant shortfall thus has to be explained in terms of differences in mean characteristics. Two variables stand out: the higher mean income of urban residents improves their relative happiness, and their superior position in the city income distribution has the same effect. A far higher proportion of migrants than of urban residents report that they fall in the lowest quarter of city households in terms of living standard (35% compared with 11%). This fact alone can explain more than the entire migrant deficit. If the income of the relevant comparator group influences aspirations, the inferior position of migrants in the city income distribution can also explain why they appear to have higher aspirations in relation to their current income.

4.8 Conclusion

This research is among the first which links the literature on rural-urban migration and the literature on subjective well-being in developing countries. To our knowledge the only other paper to do so is De Jong, Chamrarrirthirong, and Tran (2002), which found that a somewhat higher proportion of the permanent migrants in their sample for Thailand

experienced an increase in life satisfaction after migration than experienced a decrease. We have posed the question: why do rural-urban migrant households which have settled in urban China report lower average happiness than rural households? Migrants had lower mean happiness despite their higher mean income: the income difference merely adds to the puzzle. Knight and Gunatilaka (2007c) examined four possible answers, but in this chapter we have investigated one hypothesis: that they could not foresee that their aspirations would adapt to their new environment.

Consider the reasons why migrants' aspirations may have risen and now exceed their actual achievements. Our evidence is consistent with the view that migrants become more materialistic as they lay down urban roots. When we conducted a decomposition analysis to discover why migrants have a lower mean happiness score than both rural residents and urban *hukou* residents, in both cases a major contribution came from the higher aspirations of migrants in relation to current income. This is consistent with the fact that over two-thirds of migrants who were unhappy or not at all happy gave low income as the predominant reason for their unhappiness. The relatively high aspirations might be explained by the lowly position of most migrants in the city income distribution: having relatively low income was shown to reduce the happiness of both migrants and urban *hukou* residents. The evidence suggests that migrants draw their reference groups from their new surroundings, and for that reason have feelings of relative deprivation. There is also evidence consistent with the psychologists' finding that people are bad at forecasting how their aspirations will change. It is plausible that migrants, when they took their decisions to move, could not predict how their aspirations would rise as they became part of the very different urban society. It is well documented that incomes and other measures of living standards are generally much higher in urban than in rural China (for instance, Knight and Song, 1999).

The question arises: why do unhappy migrants not return to their rural origins? One reason is that the majority do perceive urban living to yield more happiness than rural living. This finding was found to be sensitive to expected income, and the majority of migrants did indeed expect that their incomes would rise over the next five years.

Migrants were also more likely to favour urban living the longer they stayed in the city – possibly because they increasingly valued aspects of urban living that were not to be found in rural areas. Social psychology is again relevant: migrants do not take into account how their current aspirations will adjust if they return to village life. Thus there is symmetry in the way they view both leaving their rural residence and not leaving their urban one. Another possible reason why unhappy migrants do not return to their origins – unfortunately not pursued in the survey - is that the cost might be prohibitive. This is plausible if their households have forgone the tenurial rights to village farm and housing land that they previously held.

The case of rural-urban migrants in China provides an extreme example of aspirations being adapted to new circumstances. Aspirations actually outpaced rising absolute incomes at least partly on account of falling relative incomes. Accordingly, migration may well have had the unexpected consequence of reducing subjective well-being. These conclusions are echoed in Graham and Pettinato (2002) and Graham (2005), which examined 'frustrated achievers' in Peru. More than half of those who had objectively achieved the largest income growth subjectively reported that their economic condition had deteriorated over the previous decade. Part of the explanation was to be found in their perception of relative deprivation in the face of high urban income inequality.

The analysis has implications for the study of economic welfare more generally. Utility is not simply a function of goods, leisure and wealth, as conventional economic analysis often implies. Subjective considerations can enter the utility function in important ways. To regard 'true' utility as existing separately from subjectively perceived utility is effectively to make a normative judgement about what is socially valuable. Unless the economics profession recognises and takes account of the subjective realities, we risk misunderstanding the economic determinants of happiness. Insofar as subjectively perceived utility enters the social welfare function, we are in danger of being simplistic in our policy prescriptions.

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Table 4.1

Happiness Functions of Rural-Urban Migrants in China: OLS Estimation

	Full sample		Below median duration	Above median duration
	(1)	(2)	(3)	(4)
Log of per capita household income 2002	0.197186***	0.192216***	0.124424***	0.250754***
Duration of urban residence (years)	0.018281***	0.006784		
Duration of urban residence, squared	-0.000657**	-0.000413		
Male	-0.275356**	-0.302506***	-0.338548***	-0.137854
Married	-0.009709	-0.07259	-0.226647*	0.180397
Male and married	0.333382**	0.383751***	0.495313***	0.143183
Education (years)	-0.001446	0.001023	-0.005208	0.006435
Unemployed	-0.068813	-0.004196	-0.282381	0.348887**
In good health	0.112137*	0.089477	0.002452	0.142601
Working hours (‘00 per year)	-0.001378	-0.001247	-0.00097	-0.001786
Net financial assets (‘000 Yuan)	-0.00008	-0.000264	-0.000394***	0.000483
Expect big increase in income over next 5 years	0.323740**	0.225355**	0.196215*	0.26075
Expect small increase in income over next 5 years	0.047957	-0.00879	0.016351	-0.033034
Expect decrease in income over next 5 years	-0.399027***	-0.363920***	-0.305753***	-0.394141***
Log of average per capita urban income in province of current residence		-0.352901*	-0.275006	-0.463844***
Log of average rural income in province of origin		0.222121	0.284652	0.192626
Living with family members		0.102405	0.148600*	0.103829
Child still in village		-0.106700*	-0.108072**	-0.093254
Urban living happier		0.419280***	0.447830***	0.375813***
Number of relatives and friends in city		0.003636	0.006983	0.00158
House area per capita		0.002322	-0.000909	0.003783*
Living in own house		-0.016876	0.01376	-0.032022

No heating		-0.165489***	-0.215788***	-0.135654
Constant	0.541127	1.914632	1.52945	2.374272
R-squared	0.077	0.165	0.173	0.181
Number of observations	1930	1850	926	925

Notes:

1. Dependent variable:
Score of happiness based on cardinal values assigned to qualitative assessments as follows: very happy=4; happy=3; so-so=2; not happy=1 and not at all happy=0.
2. Models 1 and 2 are for the full sample. Models 3 and 4 are based on sub-samples selected according to the length of stay in urban areas.
3. The omitted categories in the dummy variable analyses are: single female; employed or labour force non-participant not healthy; in normal or worse than normal mood; change in income expected in the next five years.
4 ***, **, and * denote statistical significance at the one per cent, five per cent and ten per cent levels respectively.
5. Models (2), (3) and (4) have been clustered at province level for robust standard errors.

Table 4.2
Robustness Checks for Determinants of Rural-Urban Migrants' Happiness with Income Instrumented: Second Stage IV Estimates

	Full sample	
	(1)	(2)
Log of per capita household income 2002	0.627950***	0.546841***
Duration of urban residence (years)	0.011281	0.003043
Duration of urban residence, squared	-0.000527	-0.000334
Male	-0.355274***	-0.343332***
Married	-0.063311	-0.129865
Male and married	0.472639***	0.465640***
Education (years)	-0.019414**	-0.009319
Unemployed	0.060894	0.15363
In good health	0.069605	0.051149
Working hours ('00 per year)	-0.002491*	-0.002108
Net financial assets ('000 Yuan)	-0.000592**	-0.000583**
Expect big increase in income over next 5 years	0.232934***	0.171032**
Expect small increase in income over next 5 years	0.013138	-0.033998
Expect decrease in income over next 5 years	-0.383844***	-0.372403***
Log of average per capita urban income in province of current residence		-0.502839***
Log of average rural income in province of origin		0.095942
Living with family members		0.169361**
Child still in village		-0.178675***
Urban living happier		0.388110***
Number of relatives and friends in city		0.002907
House area per capita		-0.00257
Living in own house		0.036435
No heating		-0.142967***
Constant	-2.837596**	1.445425*
Centred R-squared	-0.039	0.099
Number of Observations	1930	1850
Instruments	Father's years of education; Mother's years of education; productive assets	Father's years of education; Mother's years of education; productive assets
Significance of instruments in first stage equation		
Father's years of education	*	**
Mother's years of education		
Productive assets	***	***
F-test of excluding instruments (P-val)	0.0000	0.0000
Anderson Rubin test of joint significance of endogenous regressors in main equation, F test (P-val)	0.0000	0.0047
Sargan test for overidentification of all instruments (P-val)	0.0626	0.1365

Notes:
1. Dependent variable: Score of happiness based on cardinal values assigned to qualitative assessments as follows: very happy=4; happy=3; so-so=2; not happy=1 and not at all happy=0.
2. The omitted categories in the dummy variable analyses are: single female; not healthy; in normal or worse than normal mood; no change in income expected in the next five years; self-employed; can find a job immediately.
3 ***, **, and * denote statistical significance at the one per cent, five per cent and ten per cent levels respectively.
4. Instrumented variables regression results generated using ivreg2.ado programme for Stata (Baum, Schaffer and Stillman, 2003).
5. Productive assets does not include land or financial assets – forms of wealth that are more likely to affect happiness directly by providing security.

Table 4.3

Decomposition of the Difference in Mean Happiness Score between Rural-Urban Migrants and Rural Residents: Percentage Contribution to the Difference

	Using the rural happiness function		Using the migrants' happiness function	
	Due to characteristics	Due to coefficients	Due to characteristics	Due to coefficients
Ln income per capita	-55.57	-0.49	-55.62	-0.44
Age	15.14	-131.11	6.72	-122.68
Education	-2.64	23.07	-0.13	20.55
Male	-4.82	-24.41	0.74	-29.97
Marital status	2.26	-1.62	0.90	-0.26
Ethnicity	1.30	2.55	0.13	3.72
CP membership	4.60	1.26	0.40	5.46
Unemployment	0.12	-0.06	0.10	-0.04
Health	-26.41	114.96	-5.83	94.38
Working hours	-3.87	-3.10	-3.07	-3.90
Net financial assets	-13.96	22.11	0.29	7.86
Income expectations	15.02	34.62	11.38	38.26
Constant term	0.00	131.05	0.00	131.05
Sum (percentage)	-68.84	168.84	-44.00	144.00
Sum (score)	-0.2097	0.5144	-0.1341	0.4387

Notes:

The mean happiness scores are 2.6764 in the case of rural residents and 2.3703 in the case of migrants, creating a migrant shortfall of 0.3061 to be explained by the decomposition. The composite variables are age and age squared for age, married, single, divorced, and widowed for marital status, and big increase, small increase and decrease for income expectations. The explanatory variables used are governed by the availability of the same variable in the two data sets, and by the relative success of the possible explanatory variables in the happiness functions.

Table 4.4

Decomposition of the Difference in Mean Happiness Score between Rural-Urban Migrants and Urban Residents: Percentage Contribution to the Difference

	Using the urban happiness function		Using the migrants' happiness function	
	Due to characteristics	Due to coefficients	Due to characteristics	Due to coefficients
Ln income per capita	43.11	464.60	27.90	479.82
Age	2.53	-575.56	32.69	-605.72
Education	-7.06	12.55	-11.48	16.97
Male	12.18	-64.87	-4.06	-48.63
Marital status	-1.53	2.83	-1.92	3.22
Ethnicity	-1.60	2.26	-0.33	0.99
CP membership	14.03	0.80	7.59	7.24
Unemployment	-6.88	-2.04	-0.69	-8.23
Health	-53.57	75.65	-28.04	50.12
Working hours	-2.57	24.93	10.51	11.85
Net financial assets	1.49	3.66	-2.45	7.60
Income expectations	-47.08	65.48	-40.36	58.76
Living standard in second highest quarter in city	-21.83	6.44	-33.31	17.92
Living standard in third highest quarter in city	-8.61	61.93	-11.51	64.83
Living standard in lowest quarter in city	190.23	-23.84	173.95	-7.56
Constant term	0.00	-67.67	0.00	-67.67
Sum (percentage)	112.84	-12.84	118.49	-18.49
Sum (score)	0.1260	-0.0143	0.1324	-0.0207

Notes:

The mean happiness scores are 2.4831 in the case of urban residents and 2.3703 in the case of migrants, creating a migrant shortfall of 0.1128 to be explained by the decomposition. The composite variables are age and age squared for age, married, single, divorced and widowed for marital status, and big increase, small increase and decrease for income expectations. The explanatory variables used are governed by the availability of the same variable in the two data sets, and by the relative success of the possible explanatory variables in the happiness functions.