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Abstract. This paper may be 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? Three basic hypotheses are examined: migrants had false expectations about their future urban conditions, or about their future urban aspirations, or about their future selves. Estimated happiness functions and decomposition analyses, based on a 2002 national household survey, indicate that certain features of migrant conditions make for unhappiness, and that their high aspirations in relation to achievement, influenced by reference groups, also make for unhappiness. It is difficult to form unbiased expectations about life in a new and different world.

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

JEL classification. I 32; O 15.

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1. Introduction

This paper 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. 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 the models – but these are migrants who have established urban households and whose average urban stay is no less than 7.5 years. Did the migrants come with excessively great, and non-rational, expectations?

In Section 2 we briefly explain the theory of the decision to migrate, and the implications of models based on the theory. Section 3 provides background on migrants in China, and describes the data to be analysed. In Section 4 we present some relevant descriptive information, and in Section 5 the hypotheses to be examined. Section 6 reports the results from our estimates of happiness functions, and Section 7 provides robustness checks of those results. In Section 8 we explore the determinants of the view that urban living yields greater happiness than rural living. Section 9 conducts simulations to answer such questions as: what would be the happiness scores of migrants had they stayed in the rural areas? Section 10 draws conclusions, both for China and for migration in general.

2. Models of Migration

The original probabilistic model of rural-urban migration (Todaro, 1967) has spawned a plethora of models, but almost all of them have the following features in common. First, the model is based on the assumption either of utility maximisation or of income maximisation where income serves as a proxy for utility. Second, the worker is assumed to migrate if the discounted present value (in terms of utility or income) of migrating to the urban location (given an expected urban stay of a certain length) exceeds the discounted present value of remaining in the rural location. Third, the migrant takes into account the probability of obtaining a desired urban job in any period, and the need to remain unemployed or in a low-income activity until such a job is found. Thus, fourth, the relevant urban discounted present

value is an 'expected value', represented by the wage in a desired urban job multiplied by the probability of obtaining one, this product being discounted by the degree of risk aversion.

Consider the implications for migration equilibrium. Fifth, with unrestricted migration and no transaction costs, migration takes place until the rural supply price, as defined above, is equal to this urban 'expected wage'. Sixth, the marginal migrant is indifferent as to whether he migrates or stays, expecting the same utility from both actions, but intra-marginal migrants benefit from their migration in the form of economic rents. Given that the expected wage incorporates an initial period of search and some probability of failure, migrants who have undergone initial hardship and secured a desired job, should also derive a net benefit. Thus, migration models predict that migrants who have made the transition into urban employment and living have more utility than they would have had they remained at home.

3. 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. 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 (recall) element in the survey, and 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. Further attitudinal questions included the main reason for unhappiness in the case of those reporting to be unhappy or not happy at all; whether living in a rural or an urban area gave greater happiness; a ranking of the most important social problems in the city, the degree of satisfaction with their current job; and whether migrants experienced discrimination in various aspects of urban living.

4. 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 (Table 1). 61% were men, 90% were married, 93% were employed, 90% reported being in good health, and 88% were living with their family. These respondents were generally not pessimistic about the future: 7% expected a big increase in income over the next five years, 55% a small

increase, 28% no change, and only 10% a decrease. 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.

Table 2 shows the percentage distribution of migrants among the five categories of happiness. We see that over 43% are happy or very happy, and that 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.

Table 3 provides the reasons given for their unhappiness by respondents in the categories unhappy and not at all happy. 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. Discrimination against migrants is mentioned only by 2% of respondents. On the basis of Tables 2 and 3, we expect that income will be an important determinant of migrant happiness.

Migrants were asked whether urban or rural living yielded greater happiness. Table 4 sets out their replies, both overall and also by reported happiness level. 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. Note also from Table 1 that, 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?

Migrant perceptions about the most important social problem are shown in Table 5. Lack of social security is the most common response, mentioned by 24% of respondents. The problem is perceived by both happy and unhappy people. It is interesting that environmental pollution is the second-most reported problem (20%), but it is felt more by the happy. Corruption comes third (18%): it is resented irrespective of happiness level. This is followed by social polarization (11%), discrimination against migrants (10%), and crime (8%).

5. Hypotheses

There are several possible explanations for our puzzle, giving rise to hypotheses that we wish to test, or at least to explore. Three of them involve some form of false expectations. A necessary corollary of any interpretation is the need to explain why migrants choose to remain in the city.

Our first hypothesis is that migrants, when they decided to migrate from the village, had excessively high expectations of the conditions that they would experience in the city. We shall look for evidence that this might be the case by considering the characteristics of their urban life that reduce their welfare.

Second, the puzzle might be solved by recourse to the adaptation theory that has been developed by Easterlin (2001). His argument is that happiness is a function of both 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 (2003), 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 its 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 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. 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 (2003) 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. Aspirations may not be quantifiable, but 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 second hypothesis, like the first, involves false expectations, but in this case the expectations are about subjective aspirations rather than objective outcomes.

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

Third, the presence of members left behind in the village can place a burden on the urban part of the migrant family. Insofar as migrant households remit part of their income, their happiness score might be reduced. Equivalently, our measure of urban household income per capita might overstate the income per capita of the migrant family as a whole.

Fourth, our results might be explained by selection bias. The lower mean happiness score of migrants may be the result of their, or of their households, having different characteristics than rural people. If this were the case, they would indeed have been less happy on average

had they remained in the village. Such happiness-reducing characteristics might be available in the data set or they might be unobservable to the researcher. For instance, it is possible that those rural-dwellers who are by nature unhappy hold their rural life to be responsible for their unhappiness and expect that migration will provide a cure. They might thus be more prone to leave the village for the city. If the self-selected migrants are intrinsically less happy, this might explain why the sample of rural-urban migrants has a lower mean happiness score than does the rural sample of which they were previously a part. This is a third form of false expectations, in this case based on self-misdiagnosis. Its implications can be tested.

6. The Determinants of Happiness

We estimate happiness functions in order to discover the determinants of happiness among rural-urban migrants, partly for themselves and partly in the hope that they will help to provide an explanation for the migrants' unexpectedly low mean happiness score. We proceed in stages: first, we estimate OLS estimates of the happiness score, both with a basic specification and with a full set of explanatory variables; and, second, we confine the sample to employed migrants, as this enables us to introduce a series of work-related variables.

Table 6 reports, for the full sample, the basic model and the extended model with the full set of explanatory variables available. The columns show the mean values of the explanatory variables, the coefficients of the basic equation, and the coefficients of the full equation, respectively. The asterisks show levels of statistical significance. The coefficient on ln income per capita is significantly positive, and its values (0.18 and 0.19 respectively) 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. However, 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 0.21 respectively, and those expecting a decrease have a lower score, by -0.41 and -0.39 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 a function of the current expectation of permanent income.

We see that men have lower happiness, *ceteris paribus* (the coefficients being -0.22 and -0.25 in columns 2 and 3 respectively), and that marriage has a negligible effect for women but a positive significant effect (0.27 and 0.32 respectively) for men. Surprisingly, none of years of education, unemployment, or hours worked has a significant effect, although the last two have the expected sign. Net financial assets is positive and just significant in the basic equation but loses significance in the full 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 but 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 (0.43). We explain in Section 9 why this variable is likely to reflect new or improved unobserved happiness-raising characteristics.

Columns 4 and 5 of Table 6 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 0.13), 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 -0.44 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 marriage is good for both sexes. 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 more recent arrivals.

Table 7 estimates the basic and the full equations of Table 6 for employed respondents only, the reason being that it is then possible to add various employment-related explanatory variables as well. Fortunately, we lose only 22 observations (1.3% of the sample). The first column provides mean values, the second shows the basic equation, and the third the full equation. The variables of Table 6 are barely changed: we concentrate on the additions. The hypothesis is that the unpleasantness and insecurity of urban work contribute to the unhappiness of migrants.

Where satisfaction with the current job is rated 4 for 'very satisfied' down to 0 for 'not at all satisfied', this cardinal variable has the expected positive coefficient in both specifications, being significant in the basic one. Respondents were asked whether rural workers enjoyed the same treatment as urban workers in seven different aspects of the employment relationship. The negative answers were added to form a cardinal index of discrimination (ranging from 0

to 7).The coefficient is negative and significant in both equations, indicating that perceptions of discrimination contribute to unhappiness. Compared with being self-employed (the predominant activity), having permanent work or long term contract work raises happiness, and significantly so in the full equation. Another aspect of the insecurity of urban employment can also be incorporated. Respondents were asked how long it would take them to find another job with equivalent pay if they lost their current job. Compared with 'within one week' - the reference category - the coefficients are significantly negative and increase monotonically in size in the basic equation, and this is almost true of the full equation. The evidence is consistent with our hypothesis: migrant employment can be unpleasant and insecure, and this depresses migrant happiness.

In summary, consider the light that the happiness functions throw on our first two hypotheses to explain the low mean happiness score of migrants: that it is due to their false expectations, at the time of migration that their aspirations would not alter in the city, or to their false expectations about their conditions in the city. On the former hypothesis, the evidence is consistent with the view that migrants become more materialistic as the 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. On the latter hypothesis, the fact that happiness rises over several years suggests that migrants are able to overcome the early hardships of arriving, finding work, and settling in the city. However, some hardships remain, relating to accommodation and family. There is evidence that dissatisfaction with the jobs that migrants normally occupy and perceptions of discrimination against migrants both cause unhappiness, as do our measures of the insecurity of migrant employment. Thus the unsatisfactory conditions in which migrants live and the unpleasant and insecure nature of their employment depress migrant happiness.

Our third explanation for the low mean happiness score of migrants is that they support their nrural family members through remittances, and therefore that our dependent variable cannot reflect the full gain in happiness of family members. In principle the argument is weak. First, it is less plausible for settled than for temporary migrants. Second, utility-maximising economic agents are assumed to allocate their income optimally, i.e. at the margin gifts yield

as much utility for the giver as does consumption. Happiness thus need not fall if income is remitted. It is nevertheless true that household disposable income per capita is reduced by the presence of family members elsewhere.

It is relevant that 51% of migrant households made remittances, and that remittances represented 8.7% of household income for the sample as a whole and 17.1% for the remitting households. Our hypothesis is that remittances reduce the happiness of respondents in migrant urban households, and so contribute to the low mean happiness score. Our test is whether the variable ln household remittance per capita (with zero remittance set equal to one yuan) is significantly negative in the happiness function. Whether we add this term to the basic or the full equation of Table 6, and whether for the full sample or the sub-sample of remitters, the coefficient on the remittance variable is in no case different from zero (estimates not reported). We can find no evidence in support of hypothesis three.

7. Robustness Checks

First, we introduce instrumental variable estimates of the specifications used above, both for all migrants and for employed migrants, with the potentially endogenous income variable being instrumented. Second, we change the dependent variable: happiness becomes a binary variable which is estimated by means of a probit model, with either actual and instrumented ln household income per capita. Third, happiness is converted into a multinomial variable and estimated with an ordered probit model. These various robustness checks permit us to be more confident about the conclusions to be drawn from the analysis.

Table 8 presents the same information as Table 6 (equations 1 and 3) and Table 7 (equations 1 and 2) 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 is in the coefficient on the income variable itself. Contrary to expectations, this is now higher, being more than doubled in size to between 0.55 and 0.70. However, this effect is still

modest, e.g. a doubling of income raises the score by between 0.38 and 0.49, 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.

Table 9 changes the dependent variable 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 is estimated using a binary probit model. The marginals (the effect of a unit change in each variable on the probability of being happy or very happy) are shown, along with the significance of the coefficients from which they are derived. The pattern of results is very similar to that of Table 6. The only notable difference is that the variable denoting ln average rural income per capita in the province of origin is now significantly positive. If migrants make comparisons with rural origin people and are liable to feel relative deprivation, the sign should be negative. The positive sign might reflect a more desirable fall-back position (should they have to return) or fellow-feeling (but this is unlikely at the province level). The equations are also re-estimated with ln income per capita instrumented, using the same instruments as in Table 8. The instrument is strong and valid but we cannot reject the null hypothesis that that the income variable is exogenous after all. Again, the only notable difference is to raise the coefficient on the income variable, from 0.10 - 0.12 to 0.63 - 0.87.

Finally, Table 10 shows an ordered probit estimate in which there are 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 is 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 have merely produced a stronger income effect, and our robustness checks using alternative measures of happiness have produced almost no notable changes in our findings.

8. The Determinants of an Increase in Happiness

Table 11 shows the determinants of the view that urban living yields greater happiness than does rural living. The four columns, presenting the results of a binary logit equation predicting an affirmative answer, indicate whether the full sample or the employed sample is used, and whether the household income variable is instrumented or not. The coefficient on the income variable is significantly positive, and the marginal effect is large, when actual income is used. It becomes negative and insignificant when the income variable is instrumented. However, as our best attempt at instrumenting fails the over-identification test for the full sample, and as exogeneity cannot be rejected for either sample, we concentrate on the results without instrumentation.

Not only current income but also expected future income is important: the replies are highly sensitive to future income prospects. This suggests a reason why migrants choose to remain in the city despite low happiness scores: many feel that things will get better for them. In the full sample, migrants are more likely to reply affirmatively: the longer they stay in the city (the turning point comes after as many as 25 years); the less education they have received; the longer their working hours (perhaps a proxy for determination to succeed in the city); the lower is average rural income per capita in the province of origin (possibly a reflection of perceived opportunity cost); if they are in good health; and if they are living in their own house. All these coefficients are significantly different from zero.

Two of the additional variables in the equation for the employed sample are significant. The index of discrimination has a negative effect, as does the expectation that it would take a month or more to find another job. Thus, both perceptions of imposed unfairness and of insecurity in the labour market reduce the chances that migrant workers regard urban living as enhancing their happiness.

9. Comparisons with Rural and with Urban Residents

Hypothesis 4 of Section 5 is 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 12 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?'.

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 in other ways acquired urban *hukou* status, 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 13 provides a decomposition similar to that of Table 12, but with a different set of explanatory variables - those that are common to the two datasets.

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.

We see that the constant term in the decomposition presented in Table 12 explains more than the entire difference in the mean happiness scores of migrants and rural-dwellers. This suggests that differences in unobserved characteristics are important. Migrants may be less happy on average simply because naturally unhappy people tend to be the ones who migrate. Support for this hypothesis comes from answers to the question: 'does urban living yield greater happiness than rural living?'. Despite the mean happiness score being lower for migrants than for rural people, 56% of migrants answered affirmatively and only 3% negatively (Table 4). This is the picture that could emerge if migrants are intrinsically unhappy people whose happiness remains low despite improving after migration.

The notion that unhappy people migrate does not fit well with the stereotype of migrants as relatively self-confident, optimistic, risk-loving individuals. Nevertheless consider the implications of assuming that the notion is correct and also that migration does indeed generally raise happiness. Insofar as those migrants with a relatively unhappy disposition become absolutely happier albeit still relatively unhappy after migration, we might expect as high a proportion of unhappy as of happy migrants to report that life is better in urban than in rural areas. In fact the proportion falls, from 67% in the highest happiness category to 34% in the lowest happiness category (Table 4). This result suggests that self-selection can at best be only a partial explanation for the low mean happiness of migrants.

The argument can be tested more rigorously as follows. If we estimate the predicted happiness score for each respondent (from column (1) of Table 7), the residual (actual minus predicted) score is the part of happiness that cannot be explained by our variables. The residual is made up of measurement error and two sorts of unobserved characteristics of the respondent: those which were present before migration and those which came after migration. A disposition to be happy or unhappy is of the former sort. Except for those who cannot escape chronic depression, it is plausible to assume that migration had a similar effect on the happiness of all respondents whose unobserved characteristics did not change pre- and post-migration. In that case, if the residual is introduced into the equation corresponding to column (1) of Table 12, we expect that it will not be significantly different from zero: disposition should not affect the chances of holding the view that urban living yields greater happiness.

However, we find that the coefficient is positive and significantly so at the 1% level (equation not shown), and the marginal implies that a residual of +1.0 raises the probability of an affirmative answer by 17 percentage points. This positive effect must reflect the fact that migration changed the unobserved characteristics of migrants, in which case inherent disposition cannot be the main explanation for our puzzle.

10. Conclusion

This may be the first paper which links the literature on rural-urban migration and the literature on subjective well-being in developing countries. It has 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. It is a question that cannot easily be answered in terms of the conventional models of rural-urban migration. Four hypotheses were examined. We found no evidence for the explanation in terms of migrant support for family members in the village. Each of the other three involves false expectations, but for different reasons: prospective migrants have false expectations about their urban conditions, or about their urban aspirations, or about themselves.

Consider the reasons why their urban conditions may cause migrants unhappiness. The fact that happiness rises over several years, *ceteris paribus*, suggests that migrants are able to overcome the early hardships of arriving, finding work, and settling in the city. However, some hardships remain, including aspects of their accommodation and the absence of family, especially if these are children. We found evidence that dissatisfaction with the jobs that migrants normally occupy and perceptions of discrimination against migrants both cause unhappiness. Our two measures of the insecurity of migrant employment – the difficulty of finding permanent or long term contract work, and the speed with which they expect to find another job if necessary - have the same effect. Thus, the physical and social conditions in which migrants live and the unpleasant and insecure nature of their employment depress their subjective well-being.

Why should migrants have overestimated the conditions of their urban life and work? It is plausible that, whereas expected income is quantifiable and understandable, other aspects of urban life have to be experienced to be understood. Moreover, expectations of conditions might be based on images of the lives of urban residents rather than those of rural-urban

migrants, or the reports provided by migrant networks might be self-justifyingly rosy. The migrants, when they made their decisions to move, may have been realistic about their urban income prospects. However, their expectations of living and working conditions could have been biased upwards.

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 China than in rural China (for instance, Knight and Song, 1999).

Consider the argument that people who are naturally unhappy have a higher propensity to migrate, in the false expectation that migration will provide a cure, and that their continuing unhappiness pulls down the mean happiness score. It was found that the residual, unexplained component of the happiness score is itself an argument in the function that determines the view that urban living produces more happiness than rural living. This suggests that the residual reflects changing unobserved characteristics rather than an invariant disposition to be happy or unhappy. Provided that naturally unhappy people experience the same change in happiness as a result of migration as do happier people, inherent disposition cannot be a predominant explanation for the low mean happiness score of migrants.

Whatever the explanation, 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 might again be relevant: migrants do not take into account how their aspirations will adjust if they return to village life. 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.

Each of these three explanations is either consistent with some of the evidence or can be disproved only by making assumptions: we cannot reject any of them. What they have in common is that rural-urban migrants are unable to form 'rational expectations' because they lack the necessary information as they enter and settle in a new and different world. In each case there are reasons why their expectations are too favourable. In principle, our underlying argument has general applicability to urbanising poor societies: it would be interesting to see if the findings hold in other cases.

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Table 1

Characteristics of the Respondents to Attitudinal Questions, Rural-Urban Migrant Household Survey 2002

	Percentage
Male	61
Married	93
Employed	90
In good health	90
Living with family	88
Family still farms in village	53
Children still living in village	32
Urban compared with rural living	
happier	56
the same	41
less happy	3
Preferred option of employed migrants if local urban government bans migrants	
go back to village	39
go to another city	54
go to a small town	3
go to a rural area other than home village	1
	Mean value
Household income per capita, yuan 2002	6537

Notes: Data for this table and for all subsequent tables derived from the Rural-Urban Migrant Household Survey, 2002.

Table 2

Percentage Distribution of Happiness, Overall and by Income Per Capita Quintile

Happiness Category	Overall	Income Quintile					
		1st	2nd	3rd	4th	5th	5th-1st
very happy	6.35	3.5	6.0	5.8	6.5	9.8	6.3
happy	37.33	27.8	35.0	39.3	42.1	42.5	14.7
so-so	45.09	50.0	47.1	43.6	42.8	42.0	-8.0
not very happy	9.47	15.4	10.3	8.6	7.8	5.3	-10.1
not happy at all	1.76	3.3	1.5	2.8	0.8	0.5	-2.8
total (number)	1985	396	397	397	397	398	
mean happiness	2.37	2.13	2.34	2.37	2.46	2.56	0.43

Notes:
The data relates to the household member – normally the household head – who responded to the question about happiness, and to the income per capita quintile into which that household falls.
The happiness score is based on cardinal values assigned to the qualitative assessments as follows: very happy=4; happy=3; so-so=2; not happy=1 and, not at all happy=0.

Table 3

Reasons for Unhappiness, Rural-Urban Migrants 2002

	%
income too low	68.2
future is uncertain	11.7
in bad health	3.1
family conflict	4.0
personal problems	2.2
discrimination	1.8
other problems	8.1
no answer	0.0
total (number)	223

Table 4

Happiness from Urban compared with Rural Living, by Level of Happiness: Row Percentages

	Numbers			Row percentages (%)		
	Happier	The same	Less Happy	Happier	The same	Less Happy
very happy	84	39	2	67	31	2
happy	547	176	15	74	24	2
so-so	405	465	24	45	52	3
not very happy	60	108	18	32	57	10
not happy at all	12	18	5	34	51	14
total (number)	1,108	806	64	56	41	3

Table 5

Perceptions About Most Important Social Problem by Level of Happiness, Rural-Urban Migrants 2002

Most important social problem	Overall	Happiness				
		very happy	happy	so-so	not very happy	not happy at all
Environmental pollution	20.7	27.8	23.2	19.8	10.6	17.1
Social security	24.0	17.5	22.7	25.3	27.7	22.9
Corruption	18.5	17.5	18.4	18.2	20.2	25.7
Crime	8.3	15.1	8.8	7.5	6.4	2.9
Discrimination against migrants	9.8	6.3	9.0	10.1	13.3	11.4
Social polarization	11.3	3.2	10.9	11.6	16.5	11.4
Too many migrants	4.5	7.1	4.2	4.6	3.7	2.9
Moral degeneration	2.3	4.0	2.0	2.3	1.6	5.7
Total (number)	1985	126	741	895	188	35

Table 6

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

	Full sample			Below median duration	Above median duration
	(1)	(2)	(3)	(4)	(5)
Log of per capita household income 2002	0.197186***	0.209469***	0.192216***	0.124424***	0.250754***
Duration of urban residence (years)	0.018281***	0.020065***	0.006784		
Duration of urban residence, squared	-0.000657**	-0.000703**	-0.000413		
Male	-0.275356**	-0.261867**	-0.302506***	-0.338548***	-0.137854
Married	-0.009709	0.009596	-0.07259	-0.226647*	0.180397
Male and married	0.333382**	0.326131**	0.383751***	0.495313***	0.143183
Education (years)	-0.001446	-0.000911	0.001023	-0.005208	0.006435
Unemployed	-0.068813	-0.037995	-0.004196	-0.282381	0.348887**
In good health	0.112137*	0.096619	0.089477	0.002452	0.142601
Working hours (‘00 per year)	-0.001378	-0.001392	-0.001247	-0.00097	-0.001786
Net financial assets (‘000 Yuan)	-0.00008	-0.000155	-0.000264	-0.000394***	0.000483
Expect big increase in income over next 5 years	0.323740**	0.312471**	0.225355**	0.196215*	0.26075
Expect small increase in income over next 5 years	0.047957	0.027448	-0.00879	0.016351	-0.033034
Expect decrease in income over next 5 years	-0.399027***	-0.411777***	-0.363920***	-0.305753***	-0.394141***
Log of average per capita urban income in province of current residence		-0.343156	-0.352901*	-0.275006	-0.463844***
Log of average rural income in province of origin		0.172659	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	2.146345	1.914632	1.52945	2.374272
R-squared	0.077	0.086	0.165	0.173	0.181
Number of observations	1930	1850	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, 2 and 3 are for the full sample. Models 4 and 5 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), (4) and (5) have been clustered at province level for robust standard errors.

Table 7

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

	Mean or proportion	(1)	(2)
Log of per capita household income 2002	8.56	0.160629***	0.173088***
Duration of urban residence (years)	7.56	0.011945**	0.002374
Duration of urban residence, squared	85.67	-0.000458*	-0.000278
Male	0.64	-0.214243**	-0.227788**
Married	0.90	0.091119	0.043346
Male and married	0.58	0.235653*	0.267961**
Education (years)	8.01	-0.005594	-0.002177
In good health	0.91	0.112058	0.086555
Working hours ('00 per year)	34.57	-0.000546	-0.001175
Net financial assets ('000 Yuan)	14.49	0.000795	0.000271
Expect big increase in income over next 5 years	0.07	0.270228**	0.171700**
Expect small increase in income over next 5 years	0.55	0.025181	-0.030412
Expect decrease in income over next 5 years	0.10	-0.371348***	-0.364438***
Permanent or long-term contract work	0.05	0.128294	0.142879**
Temporary work	0.25	-0.016973	0.003057
Satisfaction with job	1.99	0.080024**	0.043424
Index of discrimination	5.35	-0.039273***	-0.029319**
Can find another job in two weeks	0.12	-0.106260*	-0.097993
Can find another job in a month	0.24	-0.133214***	-0.099807*
Can find another job in 2 months	0.11	-0.145655*	-0.152792*
Can find another job in 6 months	0.14	-0.183292***	-0.190453**
Need more than 6 months to find another job	0.18	-0.237879***	-0.220208***
Log of average per capita urban income in province of current residence	8.93		-0.351783*

Log of average rural income in province of origin	7.80		0.203899
Living with family members	0.88		0.118644
Child still in village	0.33		-0.107863**
Urban living happier	0.56		0.401981***
Number of relatives and friends in city	7.21		0.002458
House area per capita	11.32		0.002086
Living in own house	0.10		-0.006696
No heating	0.66		-0.157285***
Constant		2.368506	0.998867**
R-squared		0.111	0.188
N		1784	1715

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.
4 ***, **, and * denote statistical significance at the one per cent, five per cent and ten per cent levels respectively.
6. Model (2) has been clustered at province level for robust standard errors.

Table 8

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

	Full sample		Employed sample	
	(1)	(2)	(3)	(4)
Log of per capita household income 2002	0.627950***	0.546841***	0.700360***	0.638637***
Duration of urban residence (years)	0.011281	0.003043	0.006671	-0.000762
Duration of urban residence, squared	-0.000527	-0.000334	-0.0004	-0.000229
Male	-0.355274***	-0.343332***	-0.313357**	-0.281374**
Married	-0.063311	-0.129865	0.038834	-0.029057
Male and married	0.472639***	0.465640***	0.412757***	0.382461***
Education (years)	-0.019414**	-0.009319	-0.027059**	-0.016501*
Unemployed	0.060894	0.15363		
In good health	0.069605	0.051149	0.095087	0.065207
Working hours ('00 per year)	-0.002491*	-0.002108	-0.001025	-0.00138
Net financial assets ('000 Yuan)	-0.000592**	-0.000583**	-0.001087	-0.001002
Expect big increase in income over next 5 years	0.232934***	0.171032**	0.216383**	0.13209
Expect small increase in income over next 5 years	0.013138	-0.033998	0.001677	-0.053127
Expect decrease in income over next 5 years	-0.383844***	-0.372403***	-0.340538***	-0.363770***
Log of average per capita urban income in province of current residence		-0.502839***		-0.553771***
Log of average rural income in province of origin		0.095942		0.053488
Living with family members		0.169361**		0.232361**
Child still in village		-0.178675***		-0.207581***
Urban living happier		0.388110***		0.365522***
Number of relatives and friends in city		0.002907		0.002052
House area per capita		-0.00257		-0.003245
Living in own house		0.036435		0.040701
No heating		-0.142967***		-0.141234***
Permanent or long-term contract work			0.151847*	0.152693*

Temporary work			0.038131	0.081463
Satisfaction with job			0.075598***	0.044204*
Index of discrimination			-0.034517***	-0.028440***
Can find another job in two weeks			-0.094581	-0.092994
Can find another job in a month			-0.136252**	-0.105226*
Can find another job in 2 months			-0.112249	-0.133735*
Can find another job in 6 months			-0.126570*	-0.148022**
Need more than 6 months to find another job			-0.187472***	-0.179781***
Constant	-2.837596**	1.445425*	-3.395954**	1.542797*
Centred R-squared	-0.039	0.099	-0.055	0.082
Number of Observations	1930	1850	1784	1715
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	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	0.0000	0.0000
Anderson Rubin test of joint significance of endogenous regressors in main equation, F test (P-val)	0.0000	0.0047	0.0001	0.0044
Sargan test for overidentification of all instruments (P-val)	0.0626	0.1365	0.0972	0.2304

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 for the sub-sample of employed rural-urban migrants.
3. 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.
4 ***, **, and * denote statistical significance at the one per cent, five per cent and ten per cent levels respectively.
5. Instrumented variables regression results generated using Baum, Schaffer and Stillman's (2003), ivreg2.ado programme for Stata. See, Baum, C. F., M. E. Schaffer, and S. Stillman. 2003, Instrumental variables and GMM: Estimation and testing. Stata Journal 3(1): 1-31.
6. Productive assets does not include land or financial assets – forms of wealth that are more likely to affect happiness directly by providing security.

Table 9

Robustness Checks for Determinants of Rural-Urban Migrants' Happiness: Probit and Instrumented Probit Estimation

	Probit Estimation Marginal Effects		Instrumented Probit Estimation Coefficients	
	(1)	(2)	(3)	(4)
Log of per capita household income 2002	0.104679***	0.115696***	0.868913***	0.631133*
Duration of urban residence (years)	0.011591**	0.004048	0.01956	0.006688
Duration of urban residence, squared	-0.000351	-0.000182	-0.000708	-0.000387
Male (d)	-0.251458***	-0.310863***	-0.754041***	-0.841577***
Married (d)	-0.096205*	-0.132896**	-0.315114**	-0.388318**
Male and married (d)	0.292942***	0.364153***	0.958236***	1.048604***
Education (years)	-0.007366*	-0.004872	-0.043807***	-0.022232
Unemployed (d)	-0.02708	0.026463	0.114842	0.217748
In good health (d)	0.06278	0.03348	0.10165	0.049476
Working hours ('00 per year)	-0.001078	-0.001001	-0.004323*	-0.00339
Net financial assets ('000 Yuan)	0.000017	-0.000098	-0.000695	-0.00056
Expect big increase in income over next 5 years (d)	0.233574***	0.192276***	0.467375***	0.433692***
Expect small increase in income over next 5 years (d)	0.047529*	0.013564	0.072617	0.010496
Expect decrease in income over next 5 years (d)	-0.133873***	-0.119183***	-0.331825***	-0.322854***
Log of average per capita urban income in province of current residence		-0.348390***		-1.031909***
Log of average rural income in province of origin		0.199433**		0.389538**
Living with family members (d)		0.051026		0.19508
Child still in village (d)		-0.087391***		-0.293094***
Urban living happier (d)		0.308588***		0.785515***
Number of relatives and friends in city		0.001276		0.002488
House area per capita		0.00069		-0.002862
Living in own house (d)		-0.011303		0.022675

No heating (d)		-0.122381***		-0.289269***
Pseudo R-squared	0.041	0.129		
Number of observations	1930	1850	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			***	***
Amemiya-Lee-Newey minimum chi-sq statistic (P-val)			0.1650	0.3788
Wald test of exogeneity (P-val)			0.0440	0.3200

Notes:

1. The table reports marginal effects for the probability of being very happy or happy. The omitted categories are so-so, not happy and not at all happy. For the dummy variables denoted by (d), the marginal effects of the probit models are denoted by dy/dx for discrete change of dummy variable from 0 to 1

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 of the marginal effects of the probit estimation and the coefficients of the instrumented probit estimation.

5. The Amemiya-Lee-Newey test results for overidentification of instruments were generated using Baum, Schaffer, Stillman and Wiggins' (2006) overid.ado programme for Stata. See Baum, C.F., Schaffer, M.E., Stillman, S., Wiggins, V. 2006. overid: Stata module to calculate tests of overidentifying restrictions after ivreg, ivreg2, ivprobit, ivtobit, reg3. http://ideas.repec.org/c/boc/bocode/s396802.html.

6. Model (2) has been clustered at province level for robust standard errors.

Table 10

Robustness Checks for Determinants of Rural-Urban Migrants' Happiness: Marginal Effects from Ordered Probit Estimation

	(1)	(2)	(3)	(4)
	Outcome: very unhappy or unhappy	Outcome: very happy or happy	Outcome: very unhappy or unhappy	Outcome: very happy or happy
Log of per capita household income 2002	-0.049917***	0.109664***	-0.047606***	0.118118***
Duration of urban residence (years)	-0.004100*	0.009007*	-0.000754	0.001872
Duration of urban residence, squared	0.000138	-0.000303	0.000066	-0.000164
Male (d)	0.073026***	-0.169097***	0.075935***	-0.200090***
Married (d)	0.009718	-0.02203	0.020999	-0.056786
Male and married (d)	-0.092569***	0.193136***	-0.104288***	0.240140***
Education (years)	0.001126	-0.002474	-0.00003	0.000076
Unemployed (d)	0.006738	-0.014431	-0.007831	0.020186
In good health (d)	-0.026299	0.053351	-0.014874	0.0349
Working hours ('00 per year)	0.000306	-0.000672	0.000302	-0.000749
Net financial assets ('000 Yuan)	0.000041	-0.000089	0.000082*	-0.000202**
Expect big increase in income over next 5 years (d)	-0.064767***	0.186019***	-0.045542***	0.141212***
Expect small increase in income over next 5 years (d)	-0.018216*	0.039708*	-0.001718	0.004258
Expect decrease in income over next 5 years (d)	0.117850***	-0.190183***	0.102137***	-0.183773***
Log of average per capita urban income in province of current residence			0.103976**	-0.257981**
Log of average rural income in province of origin			-0.059078	0.146583
Living with family members (d)			-0.022684	0.052
Child still in village (d)			0.031128***	-0.073340***
Urban living happier (d)			-0.122553***	0.274786***
Number of relatives and friends in city			-0.000555	0.001377
House area per capita			-0.000455	0.001129
Living in own house (d)			-0.001787	0.004463

No heating (d)			0.036735***	-0.096138***
Pseudo R-squared	0.036	0.036	0.097	0.097
Number of observations	1930	1930	1850	1850

Notes:

1. The table reports marginal effects for two out of three outcomes only for the basic and extended models. The two outcomes are, (a) very unhappy or unhappy; very dissatisfied or dissatisfied; (b) very happy or happy; very satisfied or satisfied. Marginal effects for the third outcome 'so-so' have been excluded from the table for ease of presentation.
For the dummy variables denoted by (d), the marginal effects are denoted by dy/dx for discrete change of dummy variable from 0 to 1
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 (3) and (4) have been clustered at province level for robust standard errors.

Table 11

Determinants of Urban Living Happier than Rural Living: Probit and Instrumented Probit Estimation

	Probit Estimation Marginal Effects			Instrumented Probit Estimation Coefficients	
	(1)	(2)	(3)		
	full sample	employed sample	employed sample		
Log of per capita household income 2002	0.059632**	0.046424*	0.056782**	-0.147195	-0.131457
Duration of urban residence (years)	0.017659***	0.018897***	0.017603***	0.048405***	0.047038***
Duration of urban residence, squared	-0.000346***	-0.000354*	-0.000318*	-0.000957*	-0.000847
Difference between actual and predicted happiness score		0.170236***			
Male (d)	0.082082	0.087426	0.079674	0.244266	0.235213
Married (d)	0.043523	0.044815	0.02245	0.159372	0.100735
Male and married (d)	-0.088302	-0.091708	-0.071262	-0.296208	-0.251607
Education (years)	-0.024582***	-0.024231***	-0.025858***	-0.054319***	-0.057808***
Unemployed (d)	0.041285**	0.072433**	0.075598*	0.13736	0.205055*
In good health (d)	0.003015***	0.004039***	0.004537***	0.008448***	0.011747***
Working hours (‘00 per year)	-0.000025	0.000317	0.000228	0.000198	0.001301
Net financial assets (‘000 Yuan)	0.152138**	0.180298**	0.164858**	0.456351***	0.473413***
Expect big increase in income over next 5 years (d)	0.076991**	0.089472***	0.086622**	0.218621***	0.235887***
Expect small increase in income over next 5 years (d)	-0.105576*	-0.088530*	-0.057609	-0.261249**	-0.147011
Expect decrease in income over next 5 years (d)	0.049726	0.113321	0.046136	0.253103	0.237531
Log of average per capita urban income in province of current residence	-0.178518***	-0.209752***	-0.189499***	-0.350390**	-0.395491**
Log of average rural income in province of origin	0.127805**	0.097217	0.136901**	0.268686**	0.280765*
Living with family members (d)	-0.03623	-0.024617	-0.0477	-0.031531	-0.062502
Child still in village (d)	0.001922	0.001592	0.001731	0.005489	0.004591
Number of relatives and friends in city	-0.000118	-0.000237	-0.000039	0.003845	0.003106
Household area per capita	0.143876**	0.138965**	0.130666**	0.340128***	0.321555**

Living in own house (d)	0.055541	0.089879	0.061593	0.122672*	0.147367**
No heating (d)			-0.00516		-0.019783
Permanent or long-term contract work			0.051781**		0.086995
Temporary work			0.073862***		0.189316***
Satisfaction with job			-0.004454		-0.01184
Index of discrimination			-0.027993		-0.073814
Can find another job in two weeks			-0.075218		-0.188885*
Can find another job in a month			0.00883		0.011953
Can find another job in 2 months			-0.012473		-0.057444
Can find another job in 6 months			0.006602		-0.006619
Need more than 6 months to find another job	-0.08953			-0.360913	
Pseudo R-squared	0.0617	0.108	0.0779		
Number of observations	1850	1715	1715	1850	1715
Instruments used				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				***	***
Amemiya-Lee-Newey minimum chi-sq statistic (P-val)				0.4151	0.3705
Wald test of exogeneity (P-val)				0.3499	0.4332

Notes:

1. The dependent variable is the probability of being happier in urban areas. For the dummy variables denoted by (d), the marginal effects of the probit models are denoted by dy/dx for discrete change of dummy variable from 0 to 1.
2. The variable, difference between actual and predicted happiness score, has been derived by obtaining predicted happiness score from estimating Model (1) in Table 7.
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 of the marginal effects of the probit estimation and the coefficients of the instrumented probit estimation.
5. The Amemiya-Lee-Newey test results for overidentification of instruments were generated using Baum, Schaffer, Stillman and Wiggins' (2006) overid.ado programme for Stata. See Baum, C.F., Schaffer, M.E., Stillman, S., Wiggins, V. 2006. overid: Stata module to calculate tests of overidentifying restrictions after ivreg, ivreg2, ivprobit, ivtobit, reg3. http://ideas.repec.org/c/boc/bocode/s396802.html
6. Models (1) and (2) have been clustered at province level for robust standard errors.

Table 12

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 13

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.