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Identity, Inequality, and Happiness: Evidence from Urban China

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Summary. — This paper presents the impact of income inequality on subjective well-being using data from the 2002 Chinese Household Income Project (CHIP) Survey. We find that people feel unhappy with between-group inequality, as measured by the income gap between migrants without local urban *hukou* (household registration identity) and urban residents, irrespective of whether they are urban residents with or without local *hukou*. However, when we control for identity-related inequality and other individual, household, and city-level characteristics, inequality (as measured by city-level Gini coefficients) positively correlates with happiness. This study contributes to the inequality–happiness literature by distinguishing between the different effects of between-group and general inequality on happiness.

Key words — inequality, *hukou* identity, happiness, migration, Asia, China

1. INTRODUCTION

In the era of globalization, the scale of immigration is growing rapidly in many countries, especially in the developed economies of North America and Europe. In developing countries, more and more people are leaving their rural homes and heading for cities. For example, in China, there are some 242 million rural-to-urban migrants, representing almost one-sixth of the Chinese population. [1] One important question concerning this population shift, essential to better understand problems in social integration and sustainable development, is whether the identity differences between migrants and local residents have led to inequality and unhappiness and the way people respond to identity-related inequality.

The enormous scale of rural-to-urban labor migration in China has exposed an institutionally divided urban–rural society. This has typically taken the form of social segmentation and inequality between urban residents who have local urban household registration (*hukou*) status and rural migrants who live and work in urban areas without local urban *hukou* status. [2] These connected but segmented groups form "a dual society" in Chinese cities. Although rural migrants contribute significantly to city development and are recognized as a key factor in the ongoing boom in the Chinese manufacturing industry, they suffer substantial discrimination in the labor market (Friedman & Lee, 2010; Wang, Appelbaumb, Degiulib, & Lichtenstein, 2009; Zhu, 2004). In evidence, rural migrants find themselves excluded from many urban jobs (Chan & Buckingham, 2008) and face many formal and informal obstacles to securing employment (Li, 2003). Moreover, rural migrants also have limited access to social insurance and other forms of welfare (Zhu, 2003).

At the same time, rural migrants in China have lower average incomes along with lower human capital returns in the labor market (Knight, Deng, & Li, 2010; Meng & Bai, 2007; Yan, 2007). Such inequality derived from social identity is termed "horizontal inequality" and is a type of between-group inequality (BI hereafter). [3] It is also considered as a more influential element than "vertical inequality" (e.g., the Gini income coefficient) in determining social conflict and long-term growth (Acemoglu & Robinson, 2006; Stewart, 2002; Stewart, Brown, & Mancini, 2005; Stewart & Langer, 2007).

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Because between-group inequality also widely exists across the world, this paper seeks to study how BI affects the happiness of urban residents and neighboring migrants in a Chinese context. In theory, while inequality may serve as an incentive in society, it is also considered unfair, particularly if people are institutionally constrained from becoming richer. There may be also some confusion in the literature. For instance, existing empirical work on the inequality–happiness relationship has not distinguished between identity-related inequality and general inequality. As a result, there are findings sometimes of both negative and positive effects of inequality on happiness.

Unlike these earlier studies, we measure between-group inequality as the ratio of household per capita income between urban residents and migrants. We find that happiness scores negatively correlate with *hukou*-identity-related inequality, irrespective of whether the residents are urban residents or rural migrants. However, when we control for BI and other individual, household, and city-level characteristics, inequality (as measured by city-level Gini coefficients) is positively associated with happiness. This finding implies that when studying the impact of inequality, we should distinguish between the income inequalities found in different social groups that are arguably more "unfair" than general inequality, which is relatively neutral.

An important question is also how people with different *hukou* status respond to between-group inequality. The response is crucial because it guides the welfare analysis of who exactly suffers from income inequality, as these persons are the potential proponents of institutional change for the redistribution of income (Acemoglu & Robinson, 2006). In the case of urban China, we identify three specific social groups in cities according to their *hukou* status. The first group is rural migrants without urban local *hukou* status. The second group comprises those who are born as urban residents, with urban *hukou* status granted at birth. The third group comprises those who have acquired urban residency and who have changed their *hukou* status from rural to urban at some point of time in the past (*nongzhuanfei*). As Deng and Gustafsson (2006) argue, acquired urban residents can be considered "permanent migrants." We find that among urban residents with *hukou*, acquired urban residents are most unhappy with *hukou*-related inequality. This suggests that for these institutionally advantaged people, personal experience also forms identity. In contrast, rural-born persons display similar attitudes toward *hukou*-related inequality as do rural migrants, even if they have had urban *hukou* for some time.

The remainder of the paper is organized as follows. Section 2 reviews past studies on happiness, especially the empirical evidence concerning the inequality–happiness relationship. Section 3 describes the data and discusses the methodology used in our analysis. In Section 4, we employ regression analysis to investigate how BI affects people of different *hukou* identities and characteristics. The final section presents the conclusions and provides some policy implications.

2. LITERATURE REVIEW

During China's rapid economic growth it is generally accepted that while living standards in terms of income have greatly improved, many people still do not feel any happier. The primary explanation of this "China puzzle" is that during the process of economic development, income gaps have continuously expanded, thereby restraining the increase in each person's subjective feeling of well-being. For example, Brockmann, Delhey, Welzel, and Yuan (2008) found that during 1990–2000 the subjective well-being of all societal income groups in China declined. They attributed this to the increased perception that the prevailing income distribution was unequal.

Unlike early studies focusing on individual and household socioeconomic characteristics, recent work considers inequality as one of the most important social factors affecting happiness. Nevertheless, the extant literature has not reached a consistent conclusion on the precise nature of the inequality–happiness relationship. One reason could be that, as implied by the term "subjective well-being," it is a subjective measurement. Thus, when determining their own subjective well-being, people do not just consider their own absolute income but they also consider their income relative to other groups in society. Theoretically, ex post inequality reflects a reward for effort. Thus, inequality may be a manifestation of economic incentive and opportunity. Therefore, the income gap and subjective well-being may correlate positively. Consequently, the "tunnel effect" metaphor might explain why an increase in the income gap could increase subjective well-being: If caught in traffic in a tunnel, and the cars ahead of you start moving, you will feel happy because you feel hopeful about the cars moving faster.[4] However, the increasing income gap could also bring about a series of negative impacts (e.g., lower economic growth, higher crime rate, etc.), thereby decreasing subjective well-being.

Recent developments in empirical studies concerning the inequality–happiness relationship have also obtained controversial results. In the existing literature, most research measures income inequality using the Gini coefficient to analyze the relationship between the income inequality and subjective well-being. For instance, Alesina, Di Tella, and MacCulloch (2004) found that in Europe the poor and those on the left of the political spectrum are most unhappy about inequality, whereas in the United States the happiness of the poor and of those on the left is uncorrelated with inequality. Interestingly, in the United States, inequality also bothers the rich, while the poor in Europe are more concerned with inequality than in the United States, mainly because Europe has relatively lower social mobility. In other work, McBride (2001) and Luttmer (2005) revealed that people could be unhappy because of a decline in their income relative to their social group, while Rousseau (2009) and Graham and Felton (2005) proved that an increase in the income gap would lower subjective well-being.

Finally, Knight, Song, and Gunatilaka (2009) studied the determinants of the subjective well-being of Chinese rural residents and found that people compare themselves with each other in their own villages, such that the higher a person's relative income, the higher his or her subjective well-being. However, they also discovered that an increase in the Gini coefficient at the rural county level increases the subjective well-being of peasants. They explained this as being the result of the tunnel effect. In other words, county-level income inequality potentially serves as a "demonstration effect" of possible progress in the future.

The fact that research regarding inequality and subjective well-being reaches different conclusions possibly has much to do with the literature not making a sufficiently fine distinction between identity-related income gaps and general inequality. In theory, every social member must share equally in the incentive formed by income inequality in order to raise subjective well-being. However, if income gap expansion has something to do with identity, and a disadvantageous status prevents disadvantaged groups from obtaining a higher income, then the income gap will lower subjective well-being. Moreover, even those in the more dominant social groups will

also feel unhappiness because of the identity-related income gap.

In general, this increase in income gap leads to social and political turbulence, a worsening of the social environment for investment, and causes more resources to be devoted to protecting property, thereby decreasing the accumulation of productive physical capital and economic growth (e.g., Benhabib & Rustichini, 1996). At this point, each member of society will become less happy because of identity-related inequality, which is essentially the income gap between different social groups. A series of country-specific studies has already discovered that relative to the "aggregate" inequality measured by the Gini coefficient, "horizontal inequality" between social groups is an even more important determinant of conflict and long-term economic growth (Stewart, 2002, 2007; Stewart *et al.,* 2005). Between-group inequality is also potentially a trigger of political conflict and a contributor to democratization (Acemoglu & Robinson, 2006).

If we consider identity-related inequality, then we must distinguish the object of reference when "horizontal inequality" forms in China. In Clark and Senik (2010) European research, they discovered that Europeans are more willing to use friends and colleagues as their object of reference, essentially because there is no institutional segmentation of European society into different groups. However, in China, we must consider the context of rapid urbanization and the possibility that during this process social segmentation arising from the household registration system has created two distinct social groups: urban residents and nonlocal migrants. Under the household registration system in China, rural residents cannot enjoy the same welfare accommodations that urban residents can from the moment they are born.

Therefore, when rural residents migrate to cities, they are subject to unequal policy treatment and asymmetric public goods provisions relative to urban residents. This identity-related inequality means that rural migrants cannot share equally in the growing income and welfare in China. In China, Knight and Gunatilaka (2010a, 2010b) studied the determinants of happiness in urban nonlocal workers. They found that migrant workers had even worse subjective well-being than did rural residents. They explained this finding with an increase in desires, in other words, migrant workers switch their reference group from rural community members to urban residents. In this context, we attempt to use Chinese data to distinguish between identity-related income gap and aggregate inequality.

The core hypothesis of our study is that the income gap related to household registration (between-group inequality) decreases subjective well-being, but that aggregate inequality unrelated to identity has an indefinite impact on happiness. If the incentive effect from aggregate inequality is sufficiently large, its impact on happiness may be positive. Our hypothesis relates to that of Kingdon and Knight (2007), who discovered (in South Africa) that the higher the average income level of the local community, the higher the individual subjective well-being. They explained this result as a manifestation of individuals' altruistic tendencies. However, the average income of a "community" across a greater range (as measured in entire cities) had a negative impact on the sense of well-being. In other words, "geographical" closeness or remoteness affects whether the utility of others enters one's own household utility, positively or negatively. In our study, between-group inequality is actually a measure of inequality between people who are "socially" close to another person and others who are "socially" remote in the same geographical area. In other words, within a given geographical scope, social distance matters in the inequality–happiness relationship. By separating the different impacts on subjective well-being from the income gap between groups and aggregate inequality, we can provide a reasonable explanation for the different findings in the existing literature on the inequality–happiness relationship.

3. DATA AND METHODOLOGY

The data used in our study are from an urban household survey and a migrant household survey, both of which were included in the 2002 Chinese Household Income Project (CHIP) Survey, a database collected and compiled by the Chinese Academy of Social Science. The data include a series of individual and household characteristics and information on income. More importantly, there are attitude questions on "happiness" for the head or main member of the household. [5] Unfortunately, while the urban survey covers 62 cities, the migrant household survey includes only 27 cities. As the focus of this paper is on city-level inequality, we need to control for other city-level variables to alleviate any bias arising from missing variables. As a result, we do not include the observations from the *Honghe Minority Autonomous Prefecture* because we lack city-level data for this area as obtained from the *China City Statistical Yearbook*. [6] Thus, we employ only the 26 matched cities in our subsample.

We establish the following happiness functions:

$$Happiness_{ij} = a_0 + \alpha_1 \cdot Hukou_{ij} + \alpha_2 \cdot BI_j + \alpha_3 \cdot Hukou_{ij} \times BI_j + \beta \cdot X_{ij} + \gamma \cdot Z_j + \varepsilon_{ij}$$

where the dependent variable, the key variable in our analysis, is the subjective happiness score of the household respondent. Subscripts i and j denote individuals and cities, respectively. In each sampled household, one adult was asked the same question: "Generally speaking, how happy do you feel?" The six possible responses were "very happy," "happy," "so-so," "not happy," "not happy at all," and "don't know." We do not include the observations with the response "don't know" and rate the other five responses as 4, 3, 2, 1, and 0, respectively.

We structure the independent variables as follows. First, we classify an individual's *hukou* identity using a dummy variable with a value of one if she/he has urban *hukou* status and zero if she/he has rural *hukou* status. [7] Second, as the measure of between-group inequality (BI), we calculate the ratio between the mean incomes of urban residents and migrants within the same city. This variable is a monetary measure of the socioeconomic gap generated by the *hukou* status combined with other discriminatory urban–rural segmentation policies. For urban residents, income includes wages, bonuses, allowances, subsidies for minimum living standards, living hardship subsidies from the work unit, second-job and sideline income, and the monetary value of income in kind; for the rural migrants, income includes wages, revenues from family production, income from assets, cash gifts, and other income. We also include an interaction term between BI and the *hukou* identity dummy to examine the effect of income inequality on each group. Finally, we calculate the Gini coefficient for each city as a measure of overall inequality as distinct from identity-related inequality.

The set X_{ij} includes the individual and household characteristics. We employ the log of annual household income per capita to control for the influence of the absolute level of household income. Following previous studies where the expectation of future income was found to be a statistically significant factor in current happiness (Knight & Gunatilaka,

2010b; Knight *et al.,* 2009; Luo, 2006), we specify a dummy variable that indicates each respondent's expectations of income change over the next 5 years: namely, "big increase," "small increase," "unchanged," or "decrease" ("unchanged" is the base or reference group). The other control variables include gender, age, age squared, years of schooling completed, health condition, marital status, political identity (whether a member of the Chinese Communist Party or not), employment status (employed or unemployed), and household living arrangements (in square meters of living space per capita).

Table 1 provides descriptive statistics of the between-group inequality and city-level Gini coefficient for the 26 cities. As shown, there is a positive correlation between BI and the city-level Gini coefficients. In order to more closely observe the role of BI on general inequality, we apply the general entropy index (with parameters 0, 1, 2) to decompose inequality into between-group (identity-related inequality) and within-group inequality. As shown in Table 2, we can see that *hukou*-identity-related inequality can explain 12.82–18.46% of total inequality, and the Theil index decomposition shows that the between-group inequality accounts for 17.59% of total inequality. Therefore, BI is an important source of inequality. Table 3 includes descriptive statistics concerning the characteristics of migrants and urban residents. The last column is the *p*-value for the ANOVA test of equal means. As shown in the table, we can see that migrants and urban residents in China comprise two distinct groups of people, such that urban residents have relatively higher happiness scores, higher education levels, and higher household incomes; migrants are also overwhelmingly male, younger, healthier, and generally more optimistic about future income change.

The second set of variables Z_j is a vector of city-level controls. Given the key right-hand-side variables, BI and Gini are both city-level measures of inequality, and we need to consider carefully whether other city-level characteristics correlated with both inequality and happiness drive the inequality–happiness relationship. For this purpose, we construct a vector of city characteristics, including per capita GDP in 2002, population growth, and city size. We compile the city-level data from the *China City Statistical Yearbook* (National Bureau of Statistics, 1991–2003). We measure population growth by the compound yearly growth of the nonagricultural population of each city from 1998 to 2002.[8] The criterion for defining a "big city" is whether it had a population of more than 1.5 million nonagricultural residents in 1990.[9] Additional dummies for cities located in the middle and west of China control for interregional heterogeneity in geography, climate, and other unobserved natural conditions and national development policies.[10]

To estimate the model, we mainly use ordinary least squares (OLS) regression. The reasons are twofold. First, Ferrer-i-Carbonell and Frijters (2004) found that in a happiness function the significance and sign of the estimated coefficients are robust for both OLS and ordered probit or logit regression models. Nonetheless, OLS regression is more intuitive and interpretable by a wider range of readers. The second reason is that we control the interaction terms in our regression and it is generally difficult to interpret the marginal effects of interacted variables when using ordered probit or logit models. In addition, Knight *et al.* (2009) and Knight and Gunatilaka (2010a, 2010b) also used OLS to explore the determination of happiness in China, and so our choice of model assists comparability. Nevertheless, we also estimated ordered probit models and found that their and the corresponding OLS results are consistent in terms of both the signs and significance of the estimated coefficients. Therefore, we select OLS as our preferred model as it is more intuitive and easier to interpret.[11]

4. REGRESSION RESULTS

(a) ***Hukou****, between-group inequality, and happiness*

We first examine how between-group inequality affects the happiness of both urban residents and migrants. Table 4 reports the results of six regressions. In column 1, unlike column 2, we do not control for the *hukou* dummy variable and the interaction terms between BI and *hukou*. A problem with the column 2 regression is the potential missing-variable bias. The focus of the regressions is the coefficient of BI, but this could correlate with educational differences between urban residents and migrants. Therefore, in column 3 we include the ratio of the average education level of urban residents to that of migrants. Eqn. (4) controls for additional city-level variables to alleviate the missing-variable bias. As a consequence, the inequality–happiness relationship obtained in this column is less likely driven by other city-level characteristics, such as per capita GDP, city scale, etc., that may be correlated with both inequality and happiness.

What we are primarily concerned with in our analysis is the coefficient of BI. All four regressions indicate that people are unhappy with identity-related inequality and that, in contrast, overall inequality brings hope for becoming rich and is associated with higher happiness after controlling for BI. There are potentially two reasons for the negative correlation between BI and happiness for both urban residents and migrants. On the one hand, when BI is higher, it is more difficult for people with a lower social status to become rich. On the other hand, BI has such a strong negative externality that even urban residents with *hukou* will feel unhappy. This may result from the social unrest, crime and other social costs associated with identity-related inequality.

As BI partly exists because of educational differences between urban residents and migrants, in column 3 we control for the ratio of the average education level of urban residents to that of migrants. The estimated result does not display any significant changes in the coefficient for BI, while there is a negative correlation between the education gap and happiness. We also wish to check whether missing city characteristics drive the BI happiness relationship. Therefore, we add several city-level variables, including per capita GDP, population growth, and an identifier if the city is a big city. We also include dummies for cities located in the middle and west of China. Column 4 indicates the greater absolute value of the coefficient of BI. This suggests that if we omit city-level variables, estimates of the BI coefficient tend to bias toward zero.

Table 1. *City-level variable definitions and descriptions*

Variable	Definitions	Obs.	Mean	*SD*	Min.	Max.
BI	Income ratio between urban residents and migrants in a city	26	1.9105	0.5283	1.1226	3.4750
City-level Gini	Inequality of income for people including urban residents and migrants	26	0.3459	0.0335	0.2868	0.4094

Table 2. *Decomposition of general entropy index based on the hukou group*

Index	Total inequality	Within-group inequality	Between-group inequality (BI)	Between-group inequality/total inequality (%)
GE(0)	0.2535	0.2067	0.0468	18.46
GE(1)-Theil index	0.2376	0.1958	0.0418	17.59
GE(2)	0.2971	0.2590	0.0381	12.82

Table 3. *Individual and household characteristics: definitions and descriptions*

Variable	Definitions	Full sample 5630		Urban residents 3797		Migrants 1833		ANOVA test
		Mean	*SD*	Mean	*SD*	Mean	*SD*	*p* value
Happiness	Cardinal scores	2.451	0.846	2.491	0.859	2.368	0.811	0.0000
Male	Male = 1	0.479	0.500	0.416	0.493	0.610	0.488	0.0000
Age		43.31	11.73	47.19	10.89	35.29	9.02	0.0000
Marital status								
Married	Married = 1	0.925	0.263	0.934	0.248	0.906	0.292	0.0000
Divorced	Divorced = 1	0.014	0.116	0.015	0.123	0.010	0.101	0.0629
Widowed	Widowed = 1	0.020	0.141	0.027	0.163	0.006	0.077	0.0000
Years of education		10.05	3.31	11.05	3.08	7.97	2.76	0.0000
Unemployed	Unemployed = 1	0.034	0.181	0.044	0.206	0.013	0.111	0.0000
Household yearly income per capita (*yuan*)		7634.78	5902.97	9119.12	5885.85	4560.01	4610.48	0.0000
Communist Party member	Communist Party member = 1	0.235	0.424	0.332	0.471	0.035	0.185	0.0000
House square meters per capita (m^2)		14.28	9.59	17.17	8.37	8.29	9.16	0.0000
Expect big income increase	Expect big income increase = 1	0.036	0.187	0.020	0.140	0.070	0.256	0.0000
Expect small income increase	Expect small income increase = 1	0.477	0.500	0.441	0.497	0.552	0.497	0.0000
Expect income decrease	Expect income decrease = 1	0.165	0.371	0.200	0.400	0.093	0.291	0.0000
Health								
Good	Good health = 1	0.695	0.460	0.593	0.491	0.908	0.289	0.0000
Bad	Bad health = 1	0.0517	0.221	0.067	0.250	0.020	0.139	0.0000

Data sources: CHIPS2002 and authors' calculation.
Note: The ANOVA test is to see whether the mean value of the urban residents and that of migrants are significantly different.

Somewhat surprisingly, after controlling for BI there is a significant positive correlation between the city-level Gini coefficient and happiness. Interestingly, Knight *et al.* (2009) also found a significant positive relationship between county-level Gini coefficients and happiness when exploring the happiness determination of rural Chinese residents. Our explanation is similar: in an era of rapidly increasing incomes, people may optimistically expect their future opportunities to be at the higher end of the income distribution (a demonstration effect). Our finding then complements that of Knight *et al.* (2009) in the sense that the positive inequality–happiness relationship must be based on the precondition that inequality is unrelated to identity, such that everyone has an equal opportunity to become richer. When we control for additional city-level variables in column 4, the Gini coefficient has an even greater effect on happiness. This suggests that we could underestimate the overall effect of inequality on happiness if we fail to control for city-level variables. Nonetheless, the share of migrants and urban residents in our sample differs from the population share in China, so the calculated city-level Gini coefficient may only be a proxy for the actual level of income inequality. [12]

As shown in column 2, the *hukou* dummy and its interaction term with BI are not statistically significant. In other words, when compared with migrants, the average urban resident does not exhibit a significantly different attitude toward BI. We surmise that this is because we have not considered the heterogeneity among urban residents and their diverse aversions to BI. We consider this heterogeneity in the next section.

Two further robustness checks confirm the inequality–happiness relationship. In the model represented by the results in column 4a, we employ multilevel regression instead of OLS because the key explanatory variables are at the city level and therefore persons within the same city may have correlated individual characteristics. In fact, almost none of the variables have significantly different coefficients and significance levels when compared with the model results in column 4. Only the *hukou* dummy becomes significant, while the education gap is insignificant, with the signs of the estimated coefficients unchanged. Yet another empirical concern is that urban residents and migrants may have different sources of income, thereby making impossible an accurate comparison of their income levels. In the model of the results shown in column 4b, we control for the per capita wage ratio of urban residents and migrants instead of the per capita income ratio and find that the estimated coefficient for the wage ratio is even greater than that of the income ratio. This is not surprising because migrants mainly feel unfairly treated because of discrimination in the labor market and because different income sources are not directly comparable between the different groups of people. [13]

The remaining coefficients in our study are consistent with the findings of previous studies (Knight & Gunatilaka, 2010a, 2010b; Knight *et al.*, 2009; Luo, 2006). To start with, when compared with females, males have lower happiness scores. We also find that age has a U-shaped effect on happiness, with a turning point at 39.3 years of age shown in column 4. Marital status also influences happiness: compared with unmarried persons, married persons enjoy a family life and thus have higher happiness scores. However, being divorced or widowed significantly reduces happiness. Educational attainment has an insignificant effect on happiness. Generally, education increases happiness, but in China, the effect of education could have already been observed through

Table 4. *Happiness functions of urban residents and migrants. Dependent variable: cardinal happiness scores*

	(1) *Hukou* not controlled	(2) *Hukou* controlled	(3) Education ratio controlled	(4) City characteristics controlled	(4a) Multi-level regression	(4b) Wage gap instead of BI
BI	−0.0592***	−0.0912**	−0.0959***	−0.143***	−0.141**	−0.220***
	(0.0208)	(0.0366)	(0.0365)	(0.0398)	(0.062)	(0.083)
Gini	1.451***	1.441***	1.489***	2.764***	2.906***	2.391***
	(0.314)	(0.314)	(0.316)	(0.429)	(0.905)	(0.393)
Hukou × BI		0.0482	0.0442	0.0491	0.0453	−0.0447
		(0.0432)	(0.0433)	(0.0432)	(0.0424)	(0.092)
Hukou		−0.122	−0.113	−0.138	−0.141*	0.0068
		(0.0859)	(0.0863)	(0.0861)	(0.085)	(0.117)
Male	−0.0603***	−0.0647***	−0.0651***	−0.0626***	−0.0584***	−0.0572**
	(0.0222)	(0.0226)	(0.0226)	(0.0225)	(0.0224)	(0.0227)
Age	−0.0236***	−0.0225***	−0.0221***	−0.0232***	−0.0231***	−0.0227***
	(0.00617)	(0.00635)	(0.00636)	(0.00632)	(0.0065)	(0.0064)
Age squared	0.000301***	0.000294***	0.000290***	0.000295***	0.0003***	0.0003***
	(0.0000638)	(0.0000649)	(0.0000649)	(0.0000645)	(0.0001)	(0.0001)
Marital status						
Married	0.105*	0.0948	0.0985*	0.116**	0.126**	0.119**
	(0.0578)	(0.0580)	(0.0580)	(0.0576)	(0.0607)	(0.0586)
Divorced	−0.256**	−0.264**	−0.260**	−0.249**	−0.250**	−0.249**
	(0.109)	(0.110)	(0.110)	(0.109)	(0.108)	(0.109)
Widowed	−0.195*	−0.205*	−0.199*	−0.174	−0.168*	−0.131
	(0.106)	(0.107)	(0.107)	(0.106)	(0.097)	(0.106)
Years of schooling completed	0.00188	0.00345	0.00336	0.00328	0.0034	0.0024
	(0.00367)	(0.00391)	(0.00391)	(0.00389)	(0.004)	(0.0039)
Health						
Good	0.218***	0.215***	0.215***	0.210***	0.208***	0.214***
	(0.0253)	(0.0256)	(0.0256)	(0.0256)	(0.026)	(0.0256)
Bad	−0.165***	−0.164***	−0.164***	−0.173***	−0.177***	−0.169***
	(0.0545)	(0.0545)	(0.0545)	(0.0540)	(0.0503)	(0.0539)
Communist Party member	0.0698***	0.0713***	0.0725***	0.0707***	0.0769***	0.0693***
	(0.0269)	(0.0270)	(0.0270)	(0.0269)	(0.0279)	(0.027)
Unemployed	−0.186***	−0.179**	−0.181**	−0.184***	−0.175***	−0.179**
	(0.0713)	(0.0718)	(0.0717)	(0.0710)	(0.0588)	(0.071)
Log household income per capita	0.257***	0.256***	0.254***	0.269***	0.268***	0.285***
	(0.0185)	(0.0194)	(0.0194)	(0.0209)	(0.0201)	(0.0211)
Expect big income increase	0.326***	0.325***	0.323***	0.320***	0.308***	0.306***
	(0.0616)	(0.0618)	(0.0617)	(0.0622)	(0.0585)	(0.0634)
Expect small income increase	0.110***	0.109***	0.110***	0.111***	0.110***	0.103***
	(0.0238)	(0.0238)	(0.0238)	(0.0238)	(0.0241)	(0.0239)
Expect income decrease	−0.364***	−0.363***	−0.362***	−0.357***	−0.352***	−0.352***
	(0.0344)	(0.0345)	(0.0345)	(0.0343)	(0.0317)	(0.0347)
Square meters of housing per capita	0.00418***	0.00444***	0.00442***	0.00478***	0.0051***	0.0041***
	(0.00123)	(0.00123)	(0.00123)	(0.00125)	(0.0014)	(0.0013)
Education ratio			−0.116*	−0.262***	−0.235	−0.119
			(0.0699)	(0.0771)	(0.161)	(0.0754)
GDP per capita/10^4				0.0380	0.044	0.0238
				(0.0525)	(0.11)	(0.0584)
Population growth				−3.930***	−3.880**	−2.102**
				(0.827)	(1.707)	(0.967)
Big city				0.101***	0.11973*	0.073***
				(0.0291)	(0.0635)	(0.0283)
Middle				0.0380	0.0519	−0.0109
				(0.0362)	(0.0738)	(0.0395)
West				−0.0466	−0.0595	−0.0351
				(0.0430)	(0.0832)	(0.041)
Constant	−0.0453	0.00957	0.171	0.00541	−0.109	−0.189
	(0.228)	(0.258)	(0.273)	(0.275)	(0.410)	(0.283)
Number of observations	5630	5630	5630	5630	5630	5630
R-squared	0.145	0.145	0.146	0.152	−6640.83[a]	0.154

Note: Heteroscedasticity-robust standard errors are in parentheses for OLS regressions.
* Coefficient different from zero at 10% significance level.
** Coefficient different from zero at 5% significance level.
*** Coefficient different from zero at 1% significance level.
[a] Value of log restricted-likelihood for multi-level regression.

other variables such as income. Unemployed persons are also less happy. In addition, log yearly household per capita income has a significantly positive effect on happiness and Communist Party members have higher happiness scores. People who optimistically expect that they will have a large or small increase in income after 5 years are also much happier, whereas pessimistic expectations for future income correlate with less happiness. The estimated coefficients on self-reported health also agree with intuition: people who say they are in good (bad) health are happier (unhappier) than those reporting indifferent health.

To alleviate further the possibility of missing variable bias, we include city-level economic, population, and geographical controls to the right-hand side of the model with the results presented in column 4. As shown, per capita GDP displays an insignificantly positive effect on happiness. Happiness also significantly and negatively correlates with the growth rate in a city's nonagricultural population. If we take nonagricultural population growth as an indicator of economic growth, this negative correlation with happiness is a potential reflection of "unhappy growth." This means that in countries with similar levels of per capita income, respondents experiencing higher economic growth rates are generally less happy. This unhappy growth is driven by nature in rapidly changing economies, where growth is often accompanied by changes in the rewards to different skill sets and increased job insecurity for some groups, and by increases in vertical and/or horizontal inequality (Graham & Lora, 2009). Particularly in urban China, the rapid growth of the urban population is mainly because of the influx of rural migrants without local *hukou*. This is problematic in that the level of public resources allocated in cities is based on the *hukou* population. Thus, when population growth is high, people may face congestion problems in public services and so feel unhappier. However, we cannot argue against migration and city expansion, as urbanization potentially leads to scale economies in economic growth and improvements in the quality of life. In evidence, we find that people are happier in big cities.

Using our models, we can compare the magnitude of the BI coefficients with those of the other variables. Consider column 4 in Table 4. Note that when we reduce the income ratio between urban residents and migrants by one (almost half of the mean BI), happiness becomes as high as it would if per capita household income increased by 53.2%. Looking at the other variables, reducing the urban–migrant income ratio by one is associated with a higher happiness level as if per capita living space increased by 29.9 m^2. As a point of comparison, in 2009, per capita living space in China was about 30 m^2 (as reported by the Ministry of Housing and Urban–Rural Construction).

(b) *Heterogeneity of urban residents, between-group inequality, and happiness*

An interesting question is why *hukou* and its interaction term with BI in Table 4 are both insignificant. Intuitively, urban residents should exhibit greater happiness compared with migrants because they represent the advantaged social group under the *hukou* system. We surmise that the interaction term between *hukou* and BI is insignificant because we did not consider the heterogeneity of *hukou* identity among urban residents.

In response, we further distinguish between urban residents according to their *hukou* status at birth. Although the *hukou* policy has lasted for a long time, it is still possible to change rural *hukou* to urban *hukou* by attending college, becoming a government official, joining the army, losing land to the government, buying a house in a city, or even purchasing a *hukou*. Deng and Gustafsson (2006), for example, discovered that these "permanent migrants" who transferred their status to urban resident still differ significantly in socioeconomic terms from urban residents born in cities. How then does changed *hukou* status affect attitudes toward BI? Further, will past rural *hukou* owners assimilate with the "born" urban *hukou* residents if the duration of their urban stay is sufficiently long? These questions require exploration in that if the once-rural *hukou* residents are averse to BI, but their attitudes are yet to be assimilated, they will be potential advocates for social integration policy in the future. Accordingly, we further categorize urban *hukou* into two groups, with those who have never changed their *hukou* status (born urban *hukou*) and people who used to be rural residents but acquired urban *hukou* status later in life (acquired urban *hukou*) taking separate values of one: the reference group remains rural migrants. We employ the interaction terms between born urban *hukou*, acquired urban *hukou*, and BI to see whether these two groups have similar attitudes to BI as compared with migrants.

As shown in Table 5, we indeed find that urban residents with different *hukou* status when they were born have different attitudes toward *hukou*-related inequality. First, consider the results shown in column 5 in Table 5. As in Table 4, migrants display an aversion to BI (with a marginal effect of −0.125). BI also has a negative effect on the happiness scores for born urban residents; nevertheless, their advantaged social status alleviates the negative impact of BI on happiness scores. In fact, the marginal effect of BI for born urban residents is quite small ($-0.125 + 0.0803 = -0.0447$). Furthermore, even if the born urban dummy has a negative coefficient, it does not imply they are relatively unhappier. Only when BI is greater than 2.7 will their higher social status make them happier than migrants. In our sample, the city-level BI lies between 1.12 and 3.47. Thus, only when BI is small are born urban residents not socially powerful enough to face competition from migrants and will be unhappier.

The most striking result here pertains to the acquired urban *hukou* residents: they have insignificantly different attitudes toward BI compared with migrants—that is, they say they suffer from unhappiness when the between-group income gap increases, but they do not exhibit greater happiness because of their urban *hukou*. This finding further explains why the interaction term between *hukou* and BI is not significant in Table 4. This is largely because the acquired urban *hukou* residents account for 22.4% of our urban sample and do not display different attitudes to BI compared with migrants. This also implies that identity formation relates not only to policy, but also to one's own experience and self-identity. Because consideration of urban residents mainly determines urban public policy in China and people without local urban *hukou* have almost no influence on local policy, the acquired urban *hukou* residents may demonstrate sympathy and advocate policy changes for migrants. However, the sample statistics in our data show that they are still in the minority among urban residents.

A question remains in that if the attitudes of acquired urban *hukou* residents are closer to those of migrants, would they change their aversion to BI with longer tenure in the city. As shown by the results of column 6 in Table 5, we add an interaction term between "years since getting *hukou*" and "acquired urban *hukou* × BI." However, we find the estimated coefficient to be insignificant. Therefore, it is reasonable to conclude that former rural life experiences have a persistent effect on the perceptions of BI.

Table 5. *Happiness functions of "born" and "acquired" urban residents and migrants. Dependent variable: cardinal happiness scores; regression method: OLS*

	(5)	(6)	(7)	(8)
BI	−0.125***	−0.127***	−0.140***	−0.145***
	(0.0398)	(0.0413)	(0.0398)	(0.0415)
Gini	2.589***	2.646***	2.817***	2.898***
	(0.422)	(0.436)	(0.429)	(0.445)
"Born" urban	−0.217**	−0.220**	−0.197**	−0.203**
	(0.0912)	(0.0933)	(0.0915)	(0.0935)
"Acquired" urban	0.00855	0.00797	0.0120	0.00896
	(0.113)	(0.114)	(0.113)	(0.114)
"Born" urban × BI	0.0803*	0.0807*	0.0692	0.0718
	(0.0457)	(0.0469)	(0.0458)	(0.0470)
"Acquired" urban × BI	0.00105	−0.0377	−0.00192	−0.0381
	(0.0565)	(0.0653)	(0.0564)	(0.0650)
"Acquired" urban × BI × years Since getting urban *hukou*		0.00136		0.00134
		(0.00102)		(0.00102)
Education ratio			−0.256***	−0.256***
			(0.0771)	(0.0779)
GDP per capita	0.00000757	0.00000742	0.00000610	0.00000603
	(0.00000528)	(0.00000540)	(0.00000531)	(0.00000543)
Population growth	−4.096***	−4.090***	−4.386***	−4.400***
	(0.838)	(0.852)	(0.843)	(0.858)
Big city	0.0887***	0.0861***	0.110***	0.109***
	(0.0286)	(0.0292)	(0.0293)	(0.0299)
Middle	0.0211	0.0196	0.0391	0.0375
	(0.0358)	(0.0363)	(0.0363)	(0.0369)
West	−0.0537	−0.0534	−0.0433	−0.0436
	(0.0432)	(0.0437)	(0.0432)	(0.0437)
Constant	−0.343	−0.350	−0.0581	−0.0688
	(0.267)	(0.272)	(0.276)	(0.280)
Individual characteristics	Yes	Yes	Yes	Yes
Number of observations	5630	5478	5630	5478
R-squared	0.151	0.154	0.152	0.155

Note: Heteroscedasticity-robust standard errors are in parentheses.
* Coefficient different from zero at 10% significance level.
** Coefficient different from zero at 5% significance level.
*** Coefficient different from zero at 1% significance level.

Once again, being aware that BI is partly attributable to educational differences, we control for the education ratio for the models with results presented in columns 7 and 8. In this case, the magnitude of BI is even greater. In other words, we underestimate the effect of BI on happiness if we omit the difference in education. Besides, when we control for the education ratio, the interaction term between born urban residents and BI becomes insignificant. This implies that the BI induced not only by educational difference but also by discrimination is strongly associated with lower happiness, and that when people with different *hukou* identity do not exhibit different attitudes to BI it is related to factors other than the education gap.

(c) *Different attitudes of born urban hukou residents toward between-group inequality*

An increasingly important problem in China is how to reduce the income gap between rural and urban China of about 3.23:1 at the end of 2010.[14] What is worrying, particularly with more and more migrants to Chinese cities, is that the traditional rural–urban divide has gradually become a divide between migrants and urban residents in cities. There is thus an urgent need for social integration policies concerning income equality and China's urbanization and economic growth (Chen & Lu, 2008). Although we have shown that born urban *hukou* residents are also unhappy with BI, the magnitude is relatively small. Consequently, these residents would not strongly advocate social integration policies when faced with the costs of action. The acquired urban *hukou* residents are also averse to BI, but they account for less than one-quarter of urban *hukou* residents in our sample, whereas migrants do not have a formal channel of voice in urban policymaking. Therefore, we still need to elaborate upon the attitude of born urban residents to BI. By doing so, the focus here is to confirm whether people with particular characteristics will be more or less averse to inequality. Specifically, we include a series of interaction terms between individual characteristics and BI into our regression model. Table 6 reports the results.

As shown, only older people and Communist Party members among born urban residents are unhappy with BI. In column 9 of Table 6, we add an interaction term between age and BI. This term has a significant and negative sign, which indicates that older people dislike BI relatively more. In column 10 of Table 6, we specify the interaction of the dummy variable for Communist Party membership with BI. We find that Communist Party members very strongly dislike BI (indicated by an estimated coefficient of −0.108). This is not a surprising result as Party members are often from the elite of Chinese society and they may have a strong taste for social justice and a much deeper understanding of the harm of BI. In a similar manner, Alesina *et al.* (2004) also found that left-wingers are hurt more by inequality in Europe than in the United

Table 6. *Happiness functions of only "born" urban residents. Dependent variable: cardinal happiness scores; regression method: OLS*

	(9) X = Age	(10) X = Party member	(11) X = Education	(12) X = Per capita income	(13) X = Male
BI	0.121	−0.0565	−0.163*	0.174	−0.0711
	(0.123)	(0.0430)	(0.0956)	(0.436)	(0.0438)
Gini	3.660***	3.658***	3.691***	3.652***	3.696***
	(0.627)	(0.626)	(0.627)	(0.627)	(0.627)
X[a] × BI	−0.00463*	−0.108*	0.00653	−0.0296	−0.0484
	(0.00253)	(0.0573)	(0.00774)	(0.0482)	(0.0554)
Other controls	Yes	Yes	Yes	Yes	Yes
Number of observations	2942	2942	2942	2942	2942
R-squared	0.185	0.185	0.184	0.184	0.184

Note: Heteroscedasticity-robust standard errors are in parentheses.
* Coefficient different from zero at 10% significance level.
*** Coefficient different from zero at 1% significance level.
[a] X refers to age, party member, education, per capita income, and male, respectively, in Eqs. (9)–(13).

States. In columns 11–13 in Table 6, we respectively specify additional interaction terms for BI with years of schooling, log household income per capita, and gender (male), but none are statistically significant.

5. CONCLUSION

In the modern economics literature concerning the determinants of happiness, exactly how the social environment, such as inequality, affects subjective well-being remains unclear. In this paper, we focused on how income inequality, specifically the inequality between urban residents and migrants in Chinese cities, affects happiness. The *hukou* system and the large scale of rural-to-urban migrants has meant that urban society in China has segmented into two groups of people, those with and those without local urban *hukou*, who are treated differently in the labor market and with respect to public services. This makes it feasible that we can distinguish between identity-related and general inequality, and we study their dissimilar effects on happiness.

Our main empirical result is that people in Chinese cities feel unhappy if inequality relates to their *hukou* identity, irrespective of whether they are urban residents with *hukou* or migrants without local *hukou*. Compared with local residents, migrants are more averse to identity-related inequality because they belong to the disadvantaged group. However, when we control for identity-related inequality and other individual, household, and city-level characteristics, inequality (as measured by city-level Gini coefficients) positively correlates with happiness. This finding suggests that inequality causes social unrest between groups with different social identities, but that this does not concern general inequality in the sense that this form of inequality may instead work as an incentive for society. We also find that among urban residents with *hukou*, primarily those who are born rural, are unhappy with *hukou*-related inequality. This implies that both current policy and personal experience in the past shape identity. Among urban residents born urban, older persons and Communist Party members particularly dislike identity-related inequality.

Our empirical results contain several strong policy implications. In an era of globalization and urbanization in developing economies, many people migrate across country and regional borders and from rural to urban settings. For a society with identity-related social segmentation, social integration and narrowing identity-related inequality require urgent action to achieve justice and sustainable economic and social development. In China, the potential proponents of social integration policy will be those who are most sensitive to income inequality related to *hukou* identity. They thus potentially include migrants who currently have no voice in local public policy, acquired urban residents who somewhat preserve their earlier rural characteristics, and Communist Party members and elderly people among born urban residents.

NOTES

1. *Data source:* The Ministry of Human Resources and Social Security, "The Report on the Development of Human Resources and Social Security, 2010." The data cited here include nonagricultural workers migrating from rural to urban areas of the same township (*xiang* and *zheng*). According to the same document, the number of rural-to-urban migrants across townships, mainly cities, was more than 153 million in 2010.

2. Regarding the fundamental role of the *hukou* system in the socioeconomic segmentation in China, see Liu (2005), Wang (2004), Wu and Treiman (2007), and Chan (2009).

3. In her seminal paper, Stewart (2001) proposed the concept of "horizontal inequality" defined as the "... existence of severe inequalities between culturally defined groups, ... horizontal inequalities are multidimensional—with political, economic and social elements."

4. This is in line with the argument in Hirschman and Rothschild (1973) that in times of rapid economic growth we can sometimes interpret income inequality as greater opportunity.

5. For details of the sampling framework and method of the 2002 CHIP Survey, see Gustafsson, Li, and Sicular (2008).

6. In fact, in the regressions that do not control for city-level variables, whether or not the sample includes Honghe does not alter the results significantly.

7. We do not include the 1.71% of the sample observations from the urban survey data that report their *hukou* status as "rural."

8. Because of incomplete data, the population growth rate for Pingliang City in Gansu Province is for the period 2002–04.

9. From our 26 sample cities, we define Beijing, Shenyang, Wuhan, Guangzhou, Chongqing, and Chengdu as big cities. Across China, there were 14 "big cities" with a nonagricultural population of more than 1.5 million in 1990, all of which are national or regional economic centers.

10. Consistent with existing literature, "West" includes 12 provinces, namely, Sichuan, Yunnan, Tibet, Shaanxi, Gansu, Qinghai, Ningxia, Xinjiang, Inner Mongolia, Guangxi, and Guizhou, and one municipality, Chongqing. "Center" includes seven provinces, namely, Hebei, Anhui, Jiangxi, Henan, Hubei, Hunan, and Shanxi. The remaining 12 provinces and municipalities are in "East." These are Heilongjiang, Jilin, Liaoning, Tianjin, Beijing, Shandong, Jiangsu, Shanghai, Zhejiang, Fujian, Guangdong, and Hainan.

11. To conserve space, the ordered probit results are not provided, but are available from the authors upon request.

12. A moderate level of inequality may be an incentive, but it also harms physical and human capital accumulation if inequality becomes overly high. To consider this nonlinear effect, we simultaneously controlled for the linear and squared terms of inequality, but neither was significant.

13. We followed one anonymous referee's suggestion that we control for the personal ranking of income and found that a higher ranking is associated with more happiness. While consistent with Powdthavee (2009), the estimated coefficients for BI and Gini did not change much. The results are not reported to save space, but are available from the authors upon request.

14. *Source of data:* NBS, "The 2010 Report of National Economic and Social Development," http://www.stats.gov.cn/tjgb/ndtjgb/qgndtjgb/t20110228_402705692.htm.

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