Intergenerational persistence in China: from the perspective of food consumption

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Abstract

This article studies intergenerational persistence in China. We use data from the China Health and Nutrition Survey to estimate the intergenerational food consumption and intergenerational income elasticities in China (IFCE and IIE). We demonstrate that IFCE is a good indicator of intergenerational persistence when income data is insufficient to compute an accurate measure of permanent income. We find a particularly high IFCE (0.878) and a lower IIE (0.43), which is close to the one (0.47) estimated by Deng, Gustafsson and Li (2012). Parental food consumption greatly affects offspring food consumption and is homogeneous across individuals having different levels of education or who live in urban or rural areas. Finally, we also show that intergenerational linkages in consumption do not mainly result from the transmission of income but rather from the transmission of taste.

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1 Introduction

On January 18th 2013, for the first time since 2000, the National Bureau of Statistics of China released official figures on income inequality. Varying from 0.47 to 0.49 between 2003-2012, the announced Gini depicts the high inequality that prevailed in the Chinese society over the period. Nevertheless, these statistics do not inform on the roots of inequality. Does the widening income gap in China reflect an efficient economy where individuals with different marginal productivity are rewarded correspondingly? Or does it reveal an inefficient situation where inequality in opportunity is ruling? The current sharp debates on the phenomenon of "the second generation of governors" suggest that the second option is more accurate and reveal the issue of intergenerational persistence. High intergenerational persistence indicates that economic success and welfare is more related to an individual's social background rather than to his (her) ability and work effort. It may, consequently, discourage human capital accumulation and lower the matching efficiency in the labour market. Research on intergenerational persistence is thus becoming crucial for China and finding its exact level may contribute to shed some light on the ongoing debates concerning the income gap.

This paper seeks to give some insights on intergenerational persistence in China. Much research has been done on the importance of intergenerational linkage in the study of income inequality but the exact calculation of intergenerational income elasticity (IIE) remains difficult at present (Solon, 1999; Black and Devereux, 2011). One of the greatest challenges in the estimation of IIE is to obtain an accurate measure of individuals' lifetime income, the calculation of which needs individual's lifetime income record. However, there are only few countries with such detailed income data for two generations. The use of permanent income is commonly used to tackle the lack of data. As records of annual income are not yet extensive enough to compute a reliable proxy for permanent income -and to a greater degree, lifetime income- in China, we suggest to use intergenerational food consumption to evalutate intergenerational persistence. We argue that, when few years of income data are available, IFCE constitutes a better measure of permanent income than average income. As individuals smooth their food consumption according to their expected permanent income, food consumption is by definition less sensitive to transitory fluctuations than income.

In addition, IFCE provides a new perspective from which to study intergenerational persistence. Food consumption constitutes a direct measure of well-being compared to income (Ringen, 1988). While income reflects the total economic capability of an individual, food consumption constitutes the basic economic needs for subsistance.

In a first part, we estimate and compare IFCE and IIE. We compute the two elasticities using both annual data and different years average data to demonstrate that IFCE is a good indicator of intergenerational persistence when income data is insufficient to compute an accurate measure of permanent income. We find that IFCE is particularly high (0.881) in China and that IIE is less important (0.43). The IIE we find is close to the one estimated by Deng *et al.* (2012) for urban China, which is 0.4. There is a substantial effect of parental food consumption on offspring food consumption. This effect remains high after controlling for children (parents) income and is homogeneous across individuals having different levels of education or who live in urban or rural areas. In a second part, we seek to decompose the different mechanisms of intergenerational persistence into the transmission of income and the transmission of taste. We show that intergenerational linkages in consumption do not mainly result from the transmission of parental income, but very likely from other family effects such as the transmission of personal taste.

The rest of the paper is organised as follows: section 2 provides a review of literature on intergenerational mobility; section 3 describes the data, section 4 presents the empirical strategy; section 5 gathers the main empirical results, and section 6 concludes.

2 Intergenerational persistence in the economic literature

2.1 Biases in the estimation of intergenerational income elasticity

The majority of existing economic studies on intergenerational persistence focus on income. The theoretical analysis uses the following framework of human capital investment: family i consists of a parent and a child, the utility of which depends on parental consumption and child income. Family income depends on parent's lifetime income Y_i^{parent}, which should be allocated between

parent's consumption, C_i^{parent} and the human capital investment in the child, I_i. Child lifetime income, Y_i^{child}, depends on his (her) endowment, E_i^{child}, as well as on the return of human capital investment, with a return of r. The child's endowment, E_i^{child} depends on a stochastic part,u_i^{child}, and a part inherited from the parents, e_i^{child}. The inherited part is given by the inheritance ratio, λ:

$$max \quad U_i = (1-a)logC_i^{parent} + alogY_i^{child} \tag{1}$$

$$\begin{aligned} s.t. \quad Y_i^{parent} &= C_i^{parent} + I_i \\ Y_i^{child} &= (1+r)I_i + E_i^{child} \\ E_i^{child} &= e_i^{child} + u_i^{child} \\ e_i^{child} &= \lambda e_i^{parent} + v_i^{child} \end{aligned}$$

The first order equation for this model solves:

$$Y_i^{child} = a(1+r)Y_i^{parent} + a\lambda e_i^{parent} + av_i^{child} + au_i^{child} \tag{2}$$

As parental endowment is difficult to observe, the exact causal impact of parental income on child income measured by a(1+r) is hard to evaluate. Consequently, empirical studies first examine the correlation between parents' and children's income. This regression coefficient is called the intergenerational income elasticity. The corresponding benchmark reduced model is then given by the Galton-Becker-Solon equation[1]:

$$Y_i^{child} = \alpha + \beta Y_i^{parent} + \varepsilon_i \tag{3}$$

where β is the intergenerational income elasticity measuring income mobility. The higher β is, the lower the income mobility is.

Although equation (3) identifies the general level of intergenerational persistence, it is difficult to estimate it empirically. In earlier studies, the lack of data to compute lifetime income drove

[1]Galton (1869) generated this equation first to study the height inheritance between father and son. Becker and Tomes (1979) used this model in their theory of inequality and intergenerational mobility and Solon (2004) gave a thorough description of the possible factors underlying the intergenerational persistence with this equation.

researchers to use annual income to estimate IIE. The use of annual income, however, leads to an imprecise estimate of IIE. In 1986, Becker and Tomes reviewed that most of the early researches using one-year income data estimate the IIE to equal 0.2 in the US, which misled to the conclusion that "almost all the earnings advantages or disadvantages of ancestors are wiped out in three generations". Indeed, annual income suffers a lot from transitory fluctuations -be it the consequence of a bad harvest, a promotion, a sick leave...- so it is not a good proxy for lifetime income and it is preferred to calculate the permanent income of individuals by averaging annual income over several periods. Later studies using average income of 3-5 years' showed that the IIE is, in fact, significantly higher and almost doubles to around 0.4 in the US (Solon, 1992; Zimmerman, 1992).

As a result, subsequent researches worked on discovering the sources of estimation bias induced by the use of annual years of income instead of lifetime income. Two main sources has been suggested and tested: the transitory diversion of annual income from the lifetime income[2] and the life cycle variation[3] in the association between current and lifetime earnings. Based on the studies on income dynamics (Baker and Solon, 2003; Haider and Solon, 2006), Grawe (2006) finds out that one third of the variation of IIE in previous research can be attributed to differences in father's age. Studies using data on OECD countries other than US show similar results on the estimation bias. Using the Norwegian administrative tax data, Nilsen *et al.* (2012) distinguish the aforementioned two types of bias and give evidence that without the life cycle variation, IIE would raise from 0.2 to more than 0.3. The elasticity is found to be smaller in Nordic countries and similar to the US in England.

Another issue with the current literature on IIE is the misuse of the two terms: lifetime income and permanent income. Lifetime income, as Mazumder (2005) points out, reflects "the true long-term earnings capacity". Its calculation needs an individual's whole life income and this leads to the discussion of the above-mentioned estimation bias. While most of the current papers are actually examining this income capacity, they often misuse the word "permanent income" (Nilsen

[2]Mazumder (2005) proves that this bias follows an autoregressive process of order one in the US and that correcting for it will raise the intergenerational income elasticity close to 0.6.

[3]Also called life cycle bias in a more recent survey by Black and Devereux (2011).

et al, 2012; Gong et al, 2012), which leads to confusions in the literature. The term "permanent income" was first used by Friedman (1958). Friedman's core standpoint that economic income should be what determines a person's consumption has gained consensus. Our idea that individual consumption, taken annually or averaged, suffers less from the transitory diversion and life cycle biases relies on Friedman's permanent income theory[4].

2.2 Intergenerational consumption elasticity

Though consumption is at least an equally important index for well-being as income, research on consumption persistence is more recent and more limited than research on income persistence. Mulligan (1997) is the first to estimate the relationship between father's and son's consumption levels. He is followed by authors such as Aughinbaugh (2000), Fisher and Johnson (2006), Charles *et al.* (2007). They all use US data (PSID) and the imputation procedure built by Skinner (1987). They find that consumption mobility is less important than income mobility across generations.

Waldkirch, Ng and Cox (2004) go further and identify the different mechanisms at stake in intergenerational consumption persistence in the US. Consumption persistence can operate through different mechanisms such as the transmission of preferences or habits, the transmission of income, or genetic transmission. We focus here on the first two types of transmission that we call taste inheritance and income inheritance. Taste inheritance simply describes that behaviour and preferences are transmitted across generations. Income inheritance reflects the mechanism through which parents' income influence children's income, which in turn affect children's consumption. In our paper, we follow the estimation method used by Waldkirch, Ng and Cox (2004) to dissociate the impacts of income inheritance and taste inheritance in consumption persistence.

2.3 Intergenerational Persistence in China

Research on social mobility in China is dominated by sociological works on occupational and social status persistence. Wang (2005) is the first to calculate IIE for urban China in 1995. He includes retired people which may bias his estimates as not every retired people receives pension

[4]Though the use of permanent income hypothesis in China might not be the most appropriate as financial markets are still imperfect, this hypothesis has not been completely denied in the nation by now. Our following results supports this hypothesis as least from the perspective of food consumption.

in the period of the study. Chen and Yuan (2012) estimate IIE in China for both rural and urban wage income in 1995, 2002 and 2005 for working age individuals only. There are only two papers on intergenerational income mobility in China that use average income and the results they provide are conflicted over the magnitude of IIE. Estimates double. Deng, Gustafsson and Shi (2012) find an income elasticity near 0.5, while it is equal to 0.36-0.97 for Gong, Leigh and Meng (2012). Deng, Gustafsson and Li (2012) use the 3-year income average of the retrospective data from China Household Income Project, and find an IIE equal to 0.47 for 1995 and 0.53 for 2002 in urban China. Gong, Leigh and Meng (2012) combine the data of two surveys: the Urban Household Income and Expenditure Survey 1987-2004 (UHIES) and the Urban Household Education and Employment Survey 2004 (UHEES). They use an income function estimated by the data in UHIES to predict the lifetime income for the parents in UHEES. Their estimated IIE are 0.63 for father-son, 0.97 for father-daughter, 0.36 for mother-son, and 0.64 for mother-daughter pairs. So far, no research has been done on intergenerational consumption persistence in China, nor on intergenerational income persistence for both rural and urban areas in China.

3 Data

We use panel data from the China Health and Nutrition Survey (CHNS). CHNS is jointly conducted by the Carolina Population Center at the University of North Carolina at Chapel Hill and the National Institute of Nutrition and Food Safety at the Chinese Center for Disease Control and Prevention in Beijing. This survey was designed using a multi stage random cluster process and covers nine provinces from 1989 to 2009. The CHNS provides information on socio economic and demographic characteristics at the community, household and individual levels. Focusing on health and nutrition outcomes as well as individual and household expenses, the overall survey collects information on about 4,400 rural and urban households (or some 26,000 individuals) for 8 waves. It was designed to see how the social and economic transformations of Chinese society are affecting the health and nutritional status of its population. It was also designed to examine the effects of health, nutrition, and family planning policies as well as programs implemented by national and local governments.

In this paper, we use five rounds of CHNS for which food expenditures are computable: 1997, 2000, 2004, 2006 and 2009. We focus on individuals answering questions of the adult, household and nutrition surveys. We combine the information given in three different databases to match the parents and children into pairs. We use the child-parent relationship data which links a substantial number of individuals, but we also exploit information from the birth data and the master data to create additional pairs of parents and children. The master data gives information on the relationship between a member of the household and the head of the household (wife, husband, child, brother, sister, grandparent, grandchild) and the birth data gathers information on women and their children.

We restrict the sample to the pairs for which we have information for both generations on the following variables: food consumption expenditures, individual income, age, gender, marital status, household size, unemployment, household registration type (HUKOU), and educational level. As the income of too young and retired people is not representative for their lifetime income (Solon, 1999; Deng, Gustafsson and Shi, 2012), the literature on intergenerational mobility usually keeps only pairs for which both parents and children are of working age. We follow the literature and drop these pairs. We also eliminate the pairs for which the age gap between the child and the parent is less than 14 years. This gives us a sample of 3591 pairs, with some of the pairs that are reported for more than one year. So, we have an unbalanced panel that we exploit to compute IFCE and IIE both with annual data and averaged data.

Our core variables are individual income and food consumption expenditures. Individual income is built as the sum of seven sources of income: business, farming, fishing, gardening, livestock, non-retirement wages, and retirement. We use food consumption expenditures because it is the only consumption data available at the individual level for China. Food is also the basic need for human, and may serve as the most fundamental item of consumption. We compute annual food expenditures by multiplying the quantity of food eaten during three days with their corresponding prices adjusted for 2009. Food items are classified according to nine categories, each containing a substantial list of daily consumed products: food grains, cooking oil and sugar, vegetables and fruits, meat and poultry, fresh milk, preserved milk products, fish, bean curd, and alcohol and soft drinks. Total food consumption expenditures is built as the sum of these nine

sub-aggregates. Tables 1 and 2 in the appendix give the descriptive statistics of the characteristics of children and parents.

4 Empirical strategy

4.1 Overall consumption persistence in China

In order to estimate the IFCE in China, we follow Waldkirch, Ng and Cox (2004) and proceed to an estimation in two steps. We first compute the residuals of the children (parents) consumption by regressing the log of consumption of the children (parents) on children's (parents') age, square of age, household size, gender, marital status, as well as on provincial dummies and time dummies. These consumption residuals are purged of life cycle and business cycle effects and thereafter, we will call them child and parent food consumption. Then, we regress parent consumption in a given year t on the offspring consumption of the same year t using the Galton-Becker-Solon equation from the intergenerational income mobility literature:

$$c_{it}^{child} = \alpha + \beta c_{it}^{parent} + \varepsilon_{it} \tag{4}$$

where c_{it}^{child} is the log of food consumption of the child of family i in year t, c_{it}^{parent} is the log of food consumption of the parent of family i in year t, ε_i is the error term and β is the IFCE. The larger β is, the less social mobility there is[5].

As income is one of the main determinants of food consumption, we add children income as a control in equation (4) to make sure our estimate of IFCE is not biased due to the omission of children income:

$$c_{it}^{child} = \alpha + \beta c_{it}^{parents} + \gamma Y_{it}^{child} + \varepsilon_{it} \tag{5}$$

[5]The same procedure is used to estimate the IIE in China later on by replacing consumption by income.

4.2 Comparison of IFCE and IIE as indicators of intergenerational persistence

In this part, we test the hypothesis that IFCE is a relevant measure of intergenerational persistence when few years of income are available. We claim that IFCE represents a better proxy for permanent income than IIE because food consumption is smoothed according to individual's permanent income. We first estimate IIE in China using the same regression and control variables as for IFCE. Then, we calculate both IFCE and IIE averaging consumption and income on two, three, and four years' average to diminish the transitory bias of current income to lifetime income. We finally compare the intergenerational elasticities calculated from different years average of food consumption and income with the elasticities computed from annual data. The equation for the average estimate is:

$$\bar{c_{it}}^{child} = a_0 + a_1 \bar{c_{it}}^{parent} + \varepsilon_i \tag{6}$$

4.3 Factors affecting food consumption persistence

Food consumption persistence might be shrunk or on the contrary inflated by different factors. The quick development of urban areas, synonym of greater job opportunities may, for instance, override parental influences. Education constitutes another factor that may reduce intergenerational persistence, as it is supposed to act as a social lift. Food consumption persistence may also be higher for children of poorer parents if they are trapped in a vicious cycle of poverty. We are also concerned that our estimated IFCE may be spuriously high as the majority of the pairs in our sample are living together and share meals.

We study how these characteristics modify IFCE by adding interaction terms between parental consumption and the child registration (hukou), the child education level, the parent income group and the living together status in equation (3). As we have only 5% of pairs living together in the sample, we also control for the share of meals shared together (at least half and at least three-quarters); Z_{it} represents the dummies for having a urban hukou, different levels of education, the parent income group (belonging to the 25% the poorest and to the first half of the income distribution), pairs living together or sharing meals together (at least half of the meals or three-quarters of the meals). We expect IFCE to be less important for: individuals living in urban

areas, the most educated one, children coming from higher income groups, as well as for the pairs not living or sharing meals together :

$$c_{it}^{child} = \alpha + \beta c_{it}^{parent} + \phi Z_{it} + \gamma Z_{it} * c_{it}^{parent} + \varepsilon_{it} \tag{7}$$

4.4 Mechanisms of transmission at stake in consumption persistence

We also seek to disentangle taste inheritance from income inheritance in food consumption persistence by using two methods suggested by Waldkirch, Ng and Cox (2004). The first one consists in regressing children's average consumption on their average income and also on their parents' average income and consumption. The coefficient on parents' average consumption reflects the consumption persistence free of income transmission :

$$\bar{c_{it}}^{child} = a_0 + a_1 \bar{c_{it}}^{parent} + a_2 \bar{Y_{it}}^{child} + a_3 \bar{Y_{it}}^{parent} + \varepsilon_i \tag{8}$$

A second method to evaluate how parents' personal taste affect their children's personal taste is to predict the child (parent) time-invariant specific effects (μ_i and δ_i) and correlate them. In order to obtain these specific effects, we run the following fixed effect regressions of child (parent) consumption[6]:

$$\begin{cases} c_{it}^{child} = bY_{it}^{parent} + \mu_i \\ c_{it}^{parent} = bY_{it}^{parent} + \delta_i \end{cases} \tag{9}$$

[6]These two methods give the exact importance of income inheritance and taste inheritance in consumption persistence when we have a panel with many years of observations. In this study, we have only a short panel. So, the decomposition of the effects of taste and income inheritance we get, is not perfectly accurate. We can fully disentangle these two mechanisms by estimating the intergenerational linkages model proposed by Walkirch *et al.* (2004) with the method of moments that we wish to add to our research in a near future.

5 Results

5.1 Consumption Persistence in China

Table 3 summarizes the results of the auxiliary regressions for children and parents. The positive signs on age and negative signs on age square are concordant with existing literatures on income mobility and perfectly reflect the life cycle pattern of consumption and income. Non surprisingly, unemployment and a bigger household size affect negatively both income and consumption, while income and consumption are greater for men. The marital status is not significant for income but married or divorced parents tend to consume more than never-married parents, and divorced children consume less than never-married ones. The provincial dummies are all significant with an expected negative sign as, the province of reference, Jiangsu, is the richest one. The time dummies convey the development pattern in China, as their impact on income and food consumption are positive and the coefficient grows over time. The only exception is for food consumption in 2000 which might reflect a negative shock during that year.

Table 4 gives the OLS and fixed-effect regressions results. Child consumption is highly determined by parent consumption, a one percent increase in parental consumption expenses leads to an 0.88 percent increase in child's one. Controlling for children time-invariant specific effects do not change IFCE.

Table 5 gives the results for OLS and fixed-effect regressions when we control for child income. Child income has a positive significant impact on child consumption but it does not affect our estimate of IFCE. Consumption persistence remains high when we control for child income and time-invariant child specific effects. Both in the OLS and fixed-effect regressions, IFCE remains the same when we include child income or when we do not control for it (0.878 and 0.875 for OLS and 0.865 and 0.865 for fixed-effect).

5.2 Comparison of IFCE and IIE as indicators of intergenerational persitence

Table 6 presents the estimates for the intergenerational income elasticity computed from annual data. Income persistence is much lower than consumption persistence, the regression coefficients

being 0.425 and 0.328 for OLS and fixed-effects estimations. The IIE we find is close to the one estimated by Deng, Gustafsson and Shi (2012) which reaches 0.47.

Table 7 gathers the estimates of IFCE and IIE when we use different years' average instead of annual data. Even though both IIE and IFCE show a robust increasing sign when using more years' of income observations, confirming that using annual data underestimates intergenerational persistence, the increase for IFCE is quite small compared to the increase for IIE. The different elasticities for food consumption are ranging from 0.867 to 0.938, while the different elasticities for income vary from 0.307 up to 0.675. These results confirm our assumption that, when estimated with few years of data, IFCE suffers less from transitory variations than IIE[7] and thus constitutes a relevant measure of permanent income.

5.3 Factors affecting intergenerational food consumption persistence

Tables 8 and 9 show how the different IFCE vary when we differentiate individuals living in urban areas, with different levels of education, coming from different income groups as well as when children and parents are living and sharing meals together. We see that neither the urban hukou nor the level of education affect IFCE which might reflect a high degree of inequality in opportunity in the Chinese society, especially as food consumption persistence is 8.4% point higher for the children coming from poorest families (from parents form the first income quartile). The overall IFCE is lower when we account for children living and sharing meals with their parents but remains quite high. The children living together with their parents know an additional increase of almost 0.2% for a 1% increase in parent consumption compared to children who do not and for who consumption rise by 0.7% with a 1% increase in their parents' consumption. When we control for the share of meals eaten together the overall IFCE drops in the same range (0.73 when half of the meals are shares and to 0.68 when three-quarters of the meals are shared) and the children sharing meals with their parents have an IFCE greater from 0.19 to 0.24 percentage point.

[7]The observed increase is true for elasticities computed from annual data to three years average, but is not verified for four years average. We think that the small number of observations for the pool of pairs that are followed for four years bias our estimates.

5.4 Mechanisms of transmission at stake in consumption persistence

Table 10 gathers our results on the income and tastes inheritance in food consumption persistence. Column 1 gives us the result for the method in which we regress time averaged consumption of the children on their time averaged income and their parents' averaged consumption and income. The regression coefficient is quite similar to the previous one, suggesting that taste inheritance dominates IFCE. Columns 2 and 3 report the results of the fixed effect regressions of child (parental) consumption on parental income and table 11 gives the correlation between the children and parents specific effects. The estimated IFCE remains the same as with the previous method and equals 0.866.

6 Conclusion

This article estimates the intergenerational food consumption and income elasticities (IFCE and IIE) to study intergenerational persistence in China. Using China Health and Nutrition Survey, we compute IFCE and IIE using ordinary-least-square and fixed-effect regressions. We find a particularly high IFCE in China (0.878). The IIE we find is less important (0.43) than the IFCE we find and is close to the one (0.47) estimated by Deng, Gustafsson and Shi (2012). There is a substantial effect of parents food consumption on offspring food consumption. This effect remains high after controlling for children (parents) income and is homogeneous across individuals, whatever their level of education or their type of hukou. The absence of effects of having a higher level of education or living near more job opportunities on consumption persistence reflect inequality in opportunities. It would be relevant to study social mobility across individuals by comparing the degree of mobility of peasants' children to the one of city-dwellers' children. Finally, we demonstrate that food consumption expenditures are less subject to transitory variations than income and provide elasticities that are pretty equal when using different years average. We conclude that IFCE constitutes a good alternative to IIE, when we want to assess intergenerational persistence with few years of data.

In a near future, we would like to dissociate income inheritance from taste inheritance in consumption persistence. To do so, we want to estimate Waldkirch, Ng and Cox (2004) model of

intergenerational linkages with a method of moments.

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Appendix

Table 1: Summary statistics of children characteristics

Variable	Mean	Std. Dev.	N
food consumption	1771.668	1650.203	3591
income	7789.598	12758.541	3591
age	23.023	4.246	3591
male	0.664	0.473	3591
household size	4.641	1.387	3591
unemployed	0.023	0.151	3591
urban hukou	0.262	0.44	3591
primary school	0.185	0.389	3591
middle school	0.668	0.471	3591
higher education	0.147	0.354	3591
never married	0.735	0.442	3591
married	0.261	0.44	3591
divorced	0.003	0.053	3591
widowed	0	0	3591
separated	0.001	0.033	3591
pairs living together	0.955	0.208	3591
Liaoning	0.057	0.232	3591
Heilongjiang	0.096	0.294	3591
Jiangsu	0.138	0.344	3591
Shandong	0.105	0.307	3591
Henan	0.132	0.339	3591
Hubei	0.097	0.295	3591
Hunan	0.074	0.261	3591
Guangxi	0.14	0.347	3591
Guizhou	0.162	0.369	3591
1997	0.351	0.477	3591
2000	0.28	0.449	3591
2004	0.129	0.335	3591
2006	0.104	0.305	3591
2009	0.136	0.342	3591

Table 2: Summary statistics of parents' characteristics

Variable	Mean	Std. Dev.	N
food consumption	1806.721	1698.764	3591
income	8427.027	12485.184	3591
age	49.354	4.937	3591
male	0.578	0.494	3591
household size	4.645	1.401	3591
unemployed	0.005	0.071	3591
urban hukou	0.242	0.428	3591
primary school	0.617	0.486	3591
middle school	0.341	0.474	3591
higher education	0.041	0.199	3591
never married	0.009	0.095	3591
married	0.944	0.229	3591
divorced	0.005	0.071	3591
widowed	0.041	0.199	3591
separated	0	0.017	3591
pairs living together	0.955	0.208	3591
Liaoning	0.057	0.232	3591
Heilongjiang	0.096	0.294	3591
Jiangsu	0.138	0.344	3591
Shandong	0.105	0.307	3591
Henan	0.132	0.339	3591
Hubei	0.097	0.295	3591
Hunan	0.074	0.261	3591
Guangxi	0.14	0.347	3591
Guizhou	0.162	0.369	3591
1997	0.351	0.477	3591
2000	0.28	0.449	3591
2004	0.129	0.335	3591
2006	0.104	0.305	3591
2009	0.136	0.342	3591

Table 3: Determinants of food consumption and income for children and parents

	Food consumption		Income	
VARIABLES	children	parents	children	parents
age	0.0646***	0.0560*	0.372***	0.127**
	(0.0207)	(0.0312)	(0.0453)	(0.0585)
square of age	-0.00114***	-0.000621*	-0.00631***	-0.00141**
	(0.000422)	(0.000321)	(0.000922)	(0.000598)
male	0.107***	0.166***	0.131***	0.313***
	(0.0228)	(0.0218)	(0.0415)	(0.0361)
household size	-0.0460***	-0.0331***	-0.0774***	-0.0797***
	(0.00895)	(0.00828)	(0.0170)	(0.0138)
married	0.0343	-0.108	-0.0571	-0.0853
	(0.0311)	(0.0986)	(0.0586)	(0.183)
divorced	0.0718	-0.345**	0.172	0.188
	(0.191)	(0.148)	(0.235)	(0.278)
widowed		-0.245**		-0.264
		(0.110)		(0.195)
separated	-0.197	1.391***	0.423***	0.361*
	(0.163)	(0.111)	(0.149)	(0.196)
unemployed	-0.0761	0.0408	-1.768***	-1.734***
	(0.0574)	(0.107)	(0.192)	(0.484)
2000	-0.0886***	-0.0594**	0.0575	0.0815*
	(0.0259)	(0.0256)	(0.0505)	(0.0417)
2004	0.430***	0.456***	0.445***	0.151**
	(0.0430)	(0.0415)	(0.0644)	(0.0589)
2006	0.575***	0.623***	0.888***	0.725***
	(0.0336)	(0.0339)	(0.0670)	(0.0651)
2009	0.595***	0.642***	1.054***	1.054***
	(0.0301)	(0.0282)	(0.0596)	(0.0529)
Liaoning	-0.441***	-0.422***	-0.413***	-0.472***
	(0.0480)	(0.0459)	(0.0884)	(0.0897)
Heilongjiang	-0.450***	-0.499***	-0.692***	-0.683***
	(0.0408)	(0.0399)	(0.0735)	(0.0668)
Shandong	-0.651***	-0.671***	-0.500***	-0.654***
	(0.0507)	(0.0517)	(0.0739)	(0.0691)
Henan	-0.700***	-0.688***	-0.893***	-0.724***
	(0.0406)	(0.0395)	(0.0733)	(0.0626)
Hubei	-0.281***	-0.287***	-0.810***	-0.465***
	(0.0422)	(0.0427)	(0.0809)	(0.0603)
Hunan	-0.204***	-0.217***	-0.332***	-0.148**
	(0.0426)	(0.0462)	(0.0956)	(0.0748)
Guangxi	-0.199***	-0.252***	-0.810***	-0.630***
	(0.0380)	(0.0362)	(0.0729)	(0.0614)
Guizhou	-0.461***	-0.455***	-0.997***	-0.643***
	(0.0403)	(0.0388)	(0.0710)	(0.0592)
Constant	6.697***	6.366***	3.763***	6.189***
	(0.258)	(0.772)	(0.570)	(1.450)
Observations	3,591	3,591	3,591	3,591
R-squared	0.292	0.292	0.297	0.217

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 4: Intergenerational Food Consumption Elasticity (IFCE), annual data

	(1) IFCE	(2) IFCE
VARIABLES	OLS	Fixed Effect
Parent consumption	0.878***	0.865***
	(0.0129)	(0.0195)
Constant	2.22e-10	2.22e-10
	(0.00504)	(0.00497)
Observations	3,591	3,591
R-squared	0.755	0.715
Number of id		2,809

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 5: Importance of child income in consumption persistence

	(1)	(2)	(3)	(4)
VARIABLES	OLS	OLS	Fixed effect	Fixed effect
parent consumption	0.878***	0.875***	0.865***	0.865***
	(0.0129)	(0.0132)	(0.0195)	(0.0195)
child income		0.0146**		0.0231**
		(0.00585)		(0.0104)
Constant	2.22e-10	2.20e-10	2.22e-10	2.18e-10
	(0.00504)	(0.00503)	(0.00497)	(0.00496)
Observations	3,591	3,591	3,591	3,591
R-squared	0.755	0.756	0.715	0.717
Number of id			2,809	2,809

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 6: Intergenerational Income Elasticity (IIE), annual data

	(1) IIE	(2) IIE
VARIABLES	OLS	Fixed effect
parent income	0.425***	0.328***
	(0.0208)	(0.0404)
Constant	1.02e-10	1.22e-10
	(0.0176)	(0.0163)
Observations	3,591	3,591
R-squared	0.139	0.078
Number of id		2,809

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 7: Intergenerational Food Consumption and Income Elasticities, different years average

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	one year	two years	three years	four years	one year	two years	three years	four years
parent average consumption	0.867***	0.890***	0.938***	0.893***				
	(0.0223)	(0.0174)	(0.0208)	(0.0750)				
parent average income					0.437***	0.475***	0.675***	0.307***
					(0.0485)	(0.0318)	(0.0423)	(0.0759)
Constant	-0.0242**	-0.0150**	0.000727	-0.0242	-0.0122	-0.00801	-0.0621*	0.00125
	(0.0103)	(0.00642)	(0.00940)	(0.0182)	(0.0364)	(0.0245)	(0.0368)	(0.0545)
Observations	775	1,102	261	76	775	1,102	261	76
R-squared	0.764	0.800	0.852	0.773	0.143	0.195	0.358	0.153

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 8: Factors affecting consumption persistence: hukou type, level of education and pairs living together

	(1)	(2)	(3)	(4)
VARIABLES	Child consumption	Child consumption	Child consumption	Child consumption
parent consumption	0.881***	0.890***	0.691***	0.696***
	(0.0154)	(0.0304)	(0.0694)	(0.0769)
middle school		0.00475		-0.00303
		(0.0145)		(0.0146)
higher education		-0.0254		-0.0582***
		(0.0192)		(0.0216)
middle_parent consumption		-0.0115		-0.00712
		(0.0344)		(0.0351)
higher_parent consumption		-0.0262		-0.0244
		(0.0459)		(0.0508)
urban hukou	0.0232*			0.0447***
	(0.0125)			(0.0144)
urban_parent consumption	-0.0194			-0.00594
	(0.0289)			(0.0317)
living together			0.0643**	0.0653**
			(0.0317)	(0.0318)
together_parent consumption			0.193***	0.198***
			(0.0706)	(0.0716)
Constant	-0.00559	0.00121	-0.0618**	-0.0632*
	(0.00584)	(0.0132)	(0.0313)	(0.0339)
Observations	3,591	3,591	3,591	3,591
R-squared	0.755	0.755	0.757	0.758

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 9: Factors affecting consumption persistence: parent income groups, shared meals

	(1)	(2)	(3)	(4)
VARIABLES	Child consumption	Child consumption	Child consumption	Child consumption
parent consumption	0.853***	0.856***	0.726***	0.675***
	(0.0174)	(0.0287)	(0.0395)	(0.0455)
First quartile of income	0.0111			
	(0.0108)			
First quartile_parent consumption	0.0841***			
	(0.0211)			
First half of income		-0.0205		
		(0.0140)		
First half_parent consumption		0.0249		
		(0.0322)		
Share 1/2 meals			0.0107	
			(0.0198)	
1/2 meals_parent consumption			0.190***	
			(0.0416)	
Share 3/4 meals				0.0118
				(0.0221)
3/4 meals_parent consumption				0.240***
				(0.0472)
Constant	-1.48e-05	0.0168	-0.00174	-0.00304
	(0.00605)	(0.0128)	(0.0192)	(0.0216)
Observations	3,591	3,591	3,493	3,493
R-squared	0.756	0.755	0.762	0.764

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 10: Pure transmission of parents' income and tastes in food consumption persistence

	(1)	(2)	(3)
	Conditional IFCE	Children	Parents
VARIABLES	Averages	Consumption	Consumption
parent average consumption	0.882***		
	(0.0133)		
child average income	0.0187***		
	(0.00687)		
parent average income	-0.0182***		
	(0.00584)		
parent income		0.0450**	0.0335
		(0.0225)	(0.0225)
Constant	-1.68e-10	1.98e-10***	-0***
	(0.00447)	(0)	(0)
Observations	3,591	3,591	3,591
R-squared	0.765	0.005	0.003
Number of id		2,809	2,809

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 11: Cross-correlation between child and parent specific effects

Variables	Child specific effect	Parent specific effect
Child specific effect	1.0000	
Parent specific effect	0.8663	1.0000
	(0.0000)	