Transfers and Development – Easy Come, Easy Go? [1]

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Abstract

A central behavioral assumption of economic theory is that income is fungible. Yet, building on the pioneering work by Thaler (1999) recent work by behavioural economists highlights that people code income in different mental accounts, creating a direct link between spending behaviour and income sources, thereby violating the fungibility assumption. This paper examines whether the marginal propensity to consume differs depending on the source of income in a developing country setting. It further focuses on a form of mental accounting which has received little attention, i.e. the coding of income in line with the amount of effort dispensed. In particular, it examines the differences in the marginal propensity to consume among earned and unearned incomes, using a 5-year household panel of 1500 households in two provinces in rural China. The results indicate that households have a higher marginal propensity to spend unearned income on consumption items. On the other hand, households also display a higher marginal propensity to spend earned income (and loans) on productive assets and investment in the family business. This evidence from observed demand behaviour lends support to the psychologically grounded choice theory of mental accounting and has important policy implications. Heeding the advice from the age-old saying 'Easy come, easy go' may be time well spent in future theoretical and empirical work.

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1   Spending and the Origins of Income?

Folk wisdom holds that income that is easily earned, is also easily spent—'Easy come, easy go!' The notion that income from gifts or transfers is often spent quite differently than income obtained through hard work resonates throughout the world's cultures and languages— 'Как нажито, так и прожито' (Russian), 'Zo gewonnen, zo geronnen' (Dutch), 'Lai de rong yi, qu de kuai' (Chinese). Yet, a central behavioral assumption of economic theory is that income is fungible. [4] In this view, consumption behavior does not depend on how income has been obtained, but only on the total amount. In technical terms, the marginal propensity to consume (MPC) is independent of the source of income. Can the economic profession discard century old folk wisdom as an anomaly? Or does it fundamentally alter the economic models and the policy recommendations?

Following the pioneering work by Thaler (1985, 1990) the fungibility assumption is increasingly being challenged by behavioral economists. Building on insights from cognitive psychology, they argue that people compartmentalize spending into different budget categories (e.g. food, housing, luxuries, investments) and total income into different mental accounts such as a current income, a future income and an assets account. Further important categorizations of current income concern whether income gains are large or small and whether they are regular or unexpected/windfalls. The mere existence of such accounts would be inconsequential if people would not act upon them, i.e. if they were perfectly fungible (substitutable). The empirical evidence reviewed by Thaler (1999) suggests however that they are not, and thus that mental accounts matter, beyond being mere anomalies.

One example of the existence of mental accounts which has been receiving more

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[4] Fungibility is the notion that money has no labels and that all sources of income can be (indistinguishably) collapsed in one number.

attention lately is the 'fly-paper or labeling effect', a phenomenon whereby people change their consumption behavior in line with the suggestion of the label (Abeler and Marklein, 2008). Kooreman (2000) finds for example that the MPC of child clothing out of exogenous child benefits in the Netherlands is substantially larger than the MPC of child clothing out of other income sources.[5] Other studies explore how income windfalls affect consumption and saving behavior (Imbens, Rubin, and Sacerdote, 2001; Agarwal, Liu, and Souleles, 2007; Kuhn et al., 2008) and how the MPC out of windfalls also depends on the size of the gains, with the MPC from small unexpected income gains typically much larger than the MPC from large income gains (Thaler, 1999).

This paper focuses on a form of mental accounting which has received much less attention so far, despite age-old folk wisdom to the contrary, the coding of income in line with the amount of effort dispensed.[6] A better understanding of whether the amount of dispensed effort affects spending and investment behavior can have important implications for the design of many policy interventions. For example, massive programs are being developed in many transforming countries to stem the growing rural-urban divide. Yet, is it more efficient to do so through (unconditional or conditional) transfers (as in China[7] or Brazil—Bolsa Familia) or employment guarantee schemes as in India? Similarly, are stimulus packages in times of economic crises aimed at providing employment (Trabajar, Argentina) more effective in

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[5] Similarly, recent studies of school feeding (Jacoby, 2002; Afridi, 2005) and supplementary nutrition (Islam and Hoddinott, 2009) programs find that a substantial part of the supplementary feeding 'sticks' with the targeted child (like a fly-paper).Because these transfers are inframarginal, parents would be expected to reallocate the transfer away from the child.

[6] Incipient studies include Zhu et al. (2008) who find for example that the marginal propensity to save out of remittances in rural China is only half that out of other sources of income based on cross-sectional data. Hoffman (2007) finds that mosquito nets received by a household as a transfer in Uganda are more likely to be used by vulnerable members of the household, but purchased nets are more likely to be used by income earners in the household. Households treat purchased and free goods differently.

[7] An important component of China's 11th five year plan (2005-2010) is the construction of an harmonious socialist countryside, more recently also through a dramatic increase in land based subsidies to farmers since 2005. As a result, agricultural subsidies are now more than twice those in the United States in per acre terms, even though the transfers are only a couple of percent in relation to average rural incomes but 10 to 15 percent of the income of the rural poor.

stimulating demand than packages aimed at transferring money to households (China's stimulus package). At the macro-level, the findings bear on the ongoing debate about aid effectiveness. They provide a behavioral interpretation of why aid may be less effective in fostering development than say migration or trade (Moffitt, 1984), and inform the debate about the optimality of different aid modalities such as grants, loans as well as the more innovative forms of development finance (Gupta et al. 2003; Odedokun 2003; Girishankar, 2009).[8]

In particular, the paper examines whether the marginal propensity to consume and invest from earned incomes is different from this of unearned incomes, as well as these of loans and other assets. The effect of two other categorizations of income is further explored, i.e. the effect of small versus large income gains and the effects on spending of permanent/regular and transitory/irregular income. The latter has received a lot of attention since Friedman (1957) established the permanent income hypothesis. It implies that the MPC out of transitory income is low (transitory income is largely saved), while the MPC of permanent income is high (Paxson, 1992; Kuhn et al., 2008). The review by Thaler (1990) of many studies of life-cycle consumption profiles in developed countries suggests however that current consumption tracks current income too closely for the permanent income hypothesis to hold, even after accounting for imperfections in credit markets.

Unlike the majority of the studies reviewed above, the empirical application is to a developing country setting, i.e. rural China. Household fixed effects and time varying village fixed effects panel regression techniques are applied to a 5 year household panel of 1500 households from two provinces in rural China, Gansu and Inner Mongolia to estimate the differences in MPCs and MPIs across different income categories. Estimates thus reflect

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[8] Nonetheless, while suggestive, care must be taken in interpreting the results in this context. The findings presented here concern micro-behavior at the household level, while the aid debate concerns decision-making processes at more aggregate levels such as local or national governments.

revealed preferences, as opposed to stated preferences or experimental settings.

The results indicate that households have a higher marginal propensity to consume unearned income and a higher marginal propensity to invest (permanent) earned income and loans. Unearned income gains (especially transitory ones) are also more likely spent on non-basic consumption items such as tobacco, liquor, and other non-food and non-clothing consumption items than earned income gains. Permanent earned income gains on the other hand are at least as likely being spent on basic consumption items such as staples or on education. Gifts are mainly financed from unearned income, consistent with the reciprocity principle. The findings are not much affected by the size of the income gain, the gender composition of the household or the occupation of the households. Together these results lend some credence to the age-old saying 'Easy come, easy go'.

In what follows, it is first explored theoretically how mental accounting affect consumption behaviour (section 2). The data used in the study are described in section 3 and the empirical strategy is reviewed in section 4. The base results and a series of extensions are presented in section 5. Section 6 concludes the paper.

2   A Household Utility Optimization Model with Mental Accounts

Consider a rural household who derives income from multiple sources. Income from farming is the main income for this household which requires investment in farm inputs and labor. The household can also allocate labor to off-farm self-employment or wage-employment locally or in urban areas. A common characteristic of income from these sources is that they all require effort. This type of income is denoted by E: earned income. The household obtains also income from other sources, such as transfer income from the government or other institutions, remittances from migrants who are no longer members of the household, and gifts

received from friends or relatives. Income from these sources requires typically little direct effort. It is denoted by U: unearned income. The household's total income is the sum of the two types of income : $I = E + U$.

The household spends its income on various types of expenditures. As a farm household it needs to buy inputs for farming and invest in productive assets. The household also needs to spend on consumption items like food, clothes, liquor, tobacco and medicine. Expenditures on the consumption items are denoted as c and those on farm inputs and investment as b. For illustrative purposes, assume that the household does not save and its initial wealth is equal to zero. Therefore, the only way to finance any type of expenditure is by spending income. We have

$$c = c^e + c^u, \tag{1}$$

$$b = b^e + b^u, \tag{2}$$

where c^e is earned income spent on consumption, c^u is unearned income spent on consumption, b^e is earned income spent on farm inputs and investment, b^u is unearned income spent on farm inputs and investment. It follows that

$$E = c^e + b^e, \tag{3}$$

$$U = c^u + b^u. \tag{4}$$

The household derives its utilities from its expenditure. If the household does not mentally put income from different sources into different accounts, it does not matter whether the income spent on consumption or investment items are earned or unearned. The expenditure on consumption may bring different joy to the household than the same amount of expenditure on investment. This is captured by putting different weights τ_1 and τ_2 on the

utilities derived from the two types of expenditure. [9]   Assuming utility u(.) from consumption

and investment is additive (as in most intertemporal models), the household maximizes

$$u(.) = \tau_1 u(c^e + c^u) + \tau_2 u(b^e + b^u), \tag{5}$$

Since it does not matter where the income is from, the household's optimization problem

is:

$$\max \tau_1 (u(c) + \tau_2 (u(b)), \tag{6}$$

s.t. $I = c + b$

The solution to this problem needs to satisfy the following condition:

$$\frac{u^{'}(c)}{u^{'}(b)} = \frac{\tau_2}{\tau_1}. \tag{7}$$

The allocation of income to consumption or investment items depends only on the weights and

the shape of the utility function irrespective of how income has been obtained.

When mental accounting exists, households may feel differently about spending earned

and unearned income on different goods. They may for example consider spending earned

income on consumption goods like liquor or tobacco a waste given the efforts involved in

obtaining the income, and prefer to spend earned income on necessities such as food or to

invest it. The household may not have such a feeling when consuming (as opposed to investing)

transfer income since there was little effort involved. Mentally the household puts earned and

unearned income into different accounts, and evaluate the utilities derived from spending and

investing from (at least one of) these accounts separately. In other words, consumption

(and/or investment) of a certain good yields a different utility when it is financed by earned

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[9] One could also consider it as spending on different consumption items. In the literature on farm household models, household utility is usually only a function of consumption. Investment enters the utility function indirectly through affecting income and consumption in the next period. For simplicity we consider a one period model in this paper and let investment enter the utility function directly. The difference between τ_1 and τ_2 arises from the indirect effect of investment on utility and the discount rate in a multi-period model.

compared to unearned income.

These insights can be captured by representing the household's utility from consumption by $u(.) = \lambda^c u(c^e) + u(c^u)$ (as opposed to $u(.) = u(c^e + c^u)$ under the fungibility assumption), with c^e and c^u the expenditures from different mental income accounts. The parameter λ^c captures how the utilities from spending income from different accounts differ. Similarly, the household's utility from investment is formulated as $\lambda^b u(b^e) + u(b^u)$.

The household's optimization challenge now becomes:

$$\max \tau_1 (\lambda^c u(c^e) + u(c^u)) + \tau_2 (\lambda^b u(b^e) + u(b^u)), \tag{8}$$

s.t. $\qquad\qquad E = c^e + b^e$,

$\qquad\qquad\qquad U = c^u + b^u$.

To fix ideas, take the widely used utility function $u(x) = \dfrac{x^\gamma}{\gamma}$ to solve this problem, where the parameter $0 < \gamma < 1$. The first order conditions of the model are:

$$\tau_1 \lambda^c (c^e)^{\gamma-1} - \tau_2 \lambda^b (E - c^e)^{\gamma-1} = 0, \tag{9}$$

$$\tau_1 (U - b^u)^{\gamma-1} - \tau_2 (b^u)^{\gamma-1} = 0. \tag{10}$$

It follows that

$$c^e = \frac{E}{1 + (\frac{\lambda^c \tau_1}{\lambda^b \tau_2})^{\frac{1}{\gamma-1}}}, b^e = \frac{(\frac{\lambda^c \tau_1}{\lambda^b \tau_2})^{\frac{1}{\gamma-1}} E}{1 + (\frac{\lambda^c \tau_1}{\lambda^b \tau_2})^{\frac{1}{\gamma-1}}}, \tag{11}$$

$$c^u = \frac{U}{1 + (\frac{\tau_1}{\tau_2})^{\frac{1}{\gamma-1}}}, b^u = \frac{(\frac{\tau_1}{\tau_2})^{\frac{1}{\gamma-1}} U}{1 + (\frac{\tau_1}{\tau_2})^{\frac{1}{\gamma-1}}} \tag{12}$$

and

$$c = \frac{E}{1+(\frac{\lambda^c \tau_1}{\lambda^b \tau_2})^{\frac{1}{\gamma-1}}} + \frac{U}{1+(\frac{\tau_1}{\tau_2})^{\frac{1}{\gamma-1}}} \,, \tag{13}$$

$$b = \frac{(\frac{\lambda^c \tau_1}{\lambda^b \tau_2})^{\frac{1}{\gamma-1}} E}{1+(\frac{\lambda^c \tau_1}{\lambda^b \tau_2})^{\frac{1}{\gamma-1}}} + \frac{(\frac{\tau_1}{\tau_2})^{\frac{1}{\gamma-1}} U}{1+(\frac{\tau_1}{\tau_2})^{\frac{1}{\gamma-1}}} \,. \tag{14}$$

From (13), it is clear that the marginal propensity to consume from earned and unearned income is different if $\lambda^c \neq \lambda^b$. Similarly, if $\lambda^c \neq \lambda^b$ from (14), the marginal propensity to invest from earned and unearned income is different. Consumption does not only depend on total income (E+U), but also on the source of the income. These propositions are now brought to the data.[10]

3   Income, Consumption and Investment among Rural Households in China

The data were collected by the National Bureau of Statistics of the Government of China as part of the monitoring and evaluation system for the World Bank supported Western Poverty Reduction Project. The project operated in Inner Mongolia and Gansu between 1999 and 2004 and supported households in project villages through the provision of agricultural loans and rural infrastructure. Fifteen project counties were sampled (8 in Inner Mongolia and 7 in Gansu) and within each sample county, 10 villages were sampled in the ratio of 6 project villages to 4 non-project villages. Within each sample village, 10 households were sampled randomly, yielding a sample of 800 households in Inner Mongolia and 700 in Gansu. Households were

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[10] Note that even when the household is indifferent about where the income comes from for one of the goods (consumption or investment) ($\lambda^c \neq \lambda^b = 1$ or $1 = \lambda^c \neq \lambda^b$), the MPCs for both goods will still depend on the source of income. Also, when $\lambda^c = \lambda^b$, expression (8) is not a special case of the no mental accounting case in expression (5). Expressions (5) and (8) represent two different ways of evaluating utility, and the former does not include the later. Even when mental accounting exists, income can still be fungible (when $\lambda^c = \lambda^b$), i.e. people keep track of where income comes from, but don't act upon it.

surveyed annually between 1999 and 2004. There was no attrition across rounds.

All data on household consumption, income and loans were collected through the daily diary method, with the exception of the baseline year 1999, when annual recall was used. To ensure comparability the study is confined to the 2000-2004 panel. Data on household characteristics, e.g., demography, education, and assets were collected in December every year using a recall method.

Income is coded into two categories based on the effort involved in obtaining the income: earned income and unearned income. Earned income (E) includes wage income from temporary migration to urban areas, wage income from participating in off-farm wage-earning activities locally, and income from family business. Farming, forestry, fishery, animal husbandry, construction, transportation, restaurant and other services are all considered as family business, which is the most important earned income. Unearned income (U) includes remittances[11], gifts and transfers.

On average, most earned income is derived from family businesses (78% in Gansu and 86% in Inner Mongolia) (Tables 1 and 2). Less than half of households have wage income. In Gansu wage income from temporary migration is more important than wage earned locally, while in Inner Mongolia it is the opposite. In both provinces, average unearned income is between 300 to 400 Yuan. While this is small compared with average earned income, it can nonetheless be substantial for those few who receive it.

Income is mostly spent on consumption, business and investment. In both provinces, the sum of consumption, business and investment is very close to total income. In our data, consumption includes food, housing, clothing, medicine, education etc. The share of food in

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[11] Remittances are sent back by people who are not considered to be household members, while wage income from migrants are from household members who have temporarily migrated to work as wage laborers. The former involves little or no effort from household members.

total consumption is 53% in Gansu and 42 % in Inner Mongolia, the richer of both provinces. Housing and education are the next biggest ticket items. Investment spending consists of two parts: expenditure on family business and investment in productive assets with the former multiple times bigger than the latter in both provinces.

On a yearly basis, less than 50% of the households took loans in both provinces. In Gansu the average amount of loans is about 8% of the average income, in Inner Mongolia it is 15%. In both provinces, households also hold a significant amount of assets (in the form of financial assets and livestock). Assets amount on average to 38% and 57% of total income in Gansu and Inner Mongolia respectively.

4   An Empirical Strategy to Compare MPCs across Income Sources

To test whether household spending behavior on consumption items depends on the source of income source, equation (13) is expressed as:

$$C_{vht} = \alpha_1 U_{vht} + \alpha_2 E_{vht} + e_{vht} , \tag{15}$$

where C_{vht} is the consumption of household h living in village v at time t and e_{vht} is the error term. When income is fungible, the MPC from the earned income is equal to that from the unearned income ($\alpha_1 = \alpha_2$).

Direct application of (15) to the data is problematic for three main reasons. First, consumption may not only depend on income but also on credit and assets, which are likely correlated with income itself.   Second, households are located in different villages. Local policies, facilities and cultural characteristics which are specific to locations may simultaneously affect household income and spending. Third, households are different. For example, a household with extensive social networks may receive and send out more gifts and transfers than a less well-connected household. We do not observe social networks directly in our data.

Households also have different demographic characteristics, which may affect the composition of their income as well as their spending behavior.

These considerations are accommodated by augmenting equation (15) with loans taken and the asset position in t-1, time varying village dummies as well as household fixed effects, and a series of time varying household characteristics:

$$C_{vht} = \alpha_1 U_{vht} + \alpha_2 E_{vht} + \alpha_3 L_{vht} + \alpha_4 A_{vht-1} + \sum_{i=1}^{m} \alpha_i^H H_{vht,i} + \sum_{j=1}^{n} \alpha_j^V V_{vt,j} + u_{vh} + e_{vht} , \quad (16)$$

where L_{vht} denote the loans incurred in t, A_{vht-1} the household's assets at the beginning of year t, V_{vt} is the set of village-year dummies, controlling for all time variant community characteristics (including changes in relative prices and the overall macro-economic conditions). Time invariant unobserved household heterogeneity (including preferences) is controlled for through the inclusion of household dummies, while H_{vht} captures the m most important remaining time variant household characteristics that may also affect consumption behavior (and income).

These include demographic characteristics of the household such as household size and dependency ratio, and gender, age and education of the household head. Control for the household employment status is also included (self employed business household may be more inclined to invest their income in their business than to consume it) as well as whether the household belong to the rural cadres (which may provide them with easier access to transfers). One other important consideration is the gender composition of the household which has been widely documented to affect consumption behavior of the household. It may also influence the income composition of the household (women dominated household could for example be more (or less) likely to receive transfers). To the extent that the gender composition of the household remains constant during the period under study (2000-2004), this would not affect

our results, given the inclusion of household fixed effects. Nonetheless, the female-male ratio in the household is also included to further control for any changes in the gender composition. Table 3 provides a description of the different household characteristics H_{vht}.

Equation (16) forms the base equation and it is estimated using Ordinary Least Squares (OLS) with suitable corrections for heteroskedasticity. While inclusion of household fixed effects protects better against potential bias from unobserved heterogeneity, it forces identification of the MPC from transitory income. To explore whether the permanent or temporary nature of income also matters, OLS estimates without household fixed effects are also presented. The linear specification in (16) permits easy testing of the fungibility assumption. Fungibility between unearned income and credit implies that $\alpha_1 = \alpha_3$ and fungibility between earned income and credit implies that $\alpha_2 = \alpha_3$. Both propositions will be tested.

A similar model as in (16) is estimated to test whether the spending behavior on business and investment related items depends on income sources:

$$B_{vht} = \beta_1 U_{vht-1} + \beta_2 E_{vht-1} + \beta_3 L_{vht} + \beta_4 A_{vht-2} + \sum_{i=1}^{m} \beta_i^H H_{vht,i} + \sum_{j=1}^{n} \beta_j^V V_{vt,j} + u_{vh} + e_{vht} , \text{ (17)}$$

The parameters β_1, β_2 and β_3 measure the marginal propensity to invest (MPI) from the two sources of income and credit respectively. Assets are lagged twice, as rural household incur most of their expenditure on family business and productive assets before the farming season at the beginning of the year.

Four extensions to equation (16) and (17) are explored: 1) differences in MPCs across consumption and investment items, as opposed to between aggregate consumption and investment; 2) sensitivity of MPC to small and large income gains; 3) gender differences in MPCs from different income sources; 4) differences in MPCs to consume and invest from temporary

and permanent income. To explore whether the source of income affects spending (and investment) behavior across consumption (investment) items—for example earned income more likely going to necessities and unearned income more likely going to entertainment and luxuries—equations (16) (and (17) are re-estimated by consumption (investment) item:

$$CI_{vht,k} = \vartheta_{1,k}U_{vht} + \vartheta_{2,k}E_{vht} + \vartheta_{3,k}L_{vht} + \vartheta_{4,k}A_{vht-1} + \sum_{i=1}^{m}\vartheta_{i,k}^{H}H_{vht,i} + \sum_{j=1}^{n}\vartheta_{j,k}^{V}V_{vt,j} + u_{vh} + e_{vht} \,,$$

$$BI_{vht,k} = \sigma_{1,k}U_{vht-1} + \sigma_{2,k}E_{vht-1} + \sigma_{3,k}L_{vht} + \sigma_{4,k}A_{vht-2} + \sum_{i=1}^{m}\sigma_{i,k}^{H}H_{vht,i} + \sum_{j=1}^{n}\sigma_{j,k}^{V}V_{vt,j} + u_{vh} + e_{vht}$$

(18)

where $CI_{vht,k}$ and $BI_{vht,k}$ denote consumption item and business and investment item respectively. Comparison of the parameters $\vartheta_{1,k}$ and $\vartheta_{2,k}$, provides a test of whether the MPC on item k is different across earned and unearned income. Similarly, comparison of $\sigma_{1,k}$ and $\sigma_{2,k}$ permits testing of equality of MPI on item k across income sources.

Second, to explore whether the size of the income gain affects a household's affinity to save or invest it (Thaler, 1990), specification (16) is re-estimated with income in quadratic form and by splitting income gains in small and large gains. Doing so by income source also permits testing whether differences in the MPC of earned and unearned income depend on the size of gains.

Third, while inclusion of the gender composition of the household protects against omitted variable bias, the MPCs to consume or save out of earned and unearned income may still be sensitive to the gender composition of the household. To test this, interaction terms are included between the female-male ratio and loans, the earned and unearned income terms. Similar interaction terms are included with the employment status of the household (off-farm business or not) to test whether running an off-farm business affects the MPC from loans, earned, and unearned income.

Fourth, Friedman's theory of permanent income predicts that a household's consumption only depends on its permanent income. Paxson (1992) tests this theory and finds that households save most of their transitory income but not their permanent income. If earned income in our sample is mostly permanent and unearned income mostly transitory, the findings might simply reflect the durability of the income gains, and not the efforts dispensed. To explore this further, earned and unearned income are separated into a permanent part and a transitory part as follows:

$$E_{vht} = \sum_{j=1}^{p} \eta_j T_{vt,j} + v_{vh}^{e} + r_{vht}^{e}, \qquad U_{vht} = \sum_{j=1}^{p} \rho_j T_{vt,j} + v_{vh}^{u} + r_{vht}^{u}, \qquad (19)$$

where T_{vt} is village specific time trend, v_{vh}^{e} and v_{vh}^{u} are household fixed effects, r_{vht}^{e} and r_{vht}^{u} are error terms. Define

$$EP_{vht} = \sum_{j=1}^{p} \eta_j T_{vt,j} + v_{vh}^{e}, \qquad ET_{vht} = r_{vht}^{e}, \qquad (20)$$

$$UP_{vht} = \sum_{j=1}^{p} \rho_j T_{vt,j} + v_{vh}^{u}, \qquad UT_{vht} = r_{vht}^{u},$$

where EP_{vht} is earned permanent income, ET_{vht} is earned transitory income, UP_{vht} is unearned permanent income, and UT_{vht} is unearned transitory income.

Permanent income is the household fixed effect plus a time trend and the difference between observed income and estimated permanent income is the transitory income. Considering that transitory income may be correlated across year, the error terms are modeled to following a AR(1) process:

$$r_{vht}^{e} = \rho r_{vht-1}^{e} + f_{vht}^{e}, \qquad r_{vht}^{u} = \rho r_{vht-1}^{u} + f_{vht}^{u}, \qquad (22)$$

where f_{vht}^{e} and f_{vht}^{u} are identically independently distributed and follow normal distributions with the means equal to zero. The following equations are then estimated to explore the effect

of the durability of income gains on consumption and investment behavior:

$$CI_{vht,k} = \varphi_{1,k}UP_{vht} + \varphi_{2,k}UT_{vht} + \varphi_{3,k}EP_{vht} + \varphi_{4,k}ET_{vht} + \varphi_{5,k}L_{vht} + \varphi_{6,k}A_{vht-1}$$
$$+ \sum_{i=1}^{m}\varphi_{i,k}^{H}H_{vht,i} + \sum_{j=1}^{n}\varphi_{j,k}^{V}V_{vt,j} + u_{vh} + e_{vht},$$

$$BI_{vht,k} = \psi_{1,k}UP_{vht-1} + \psi_{2,k}UT_{vht-1} + \psi_{3,k}EP_{vht-1} + \psi_{4,k}ET_{vht-1} + \psi_{5,k}L_{vht} + \psi_{6,k}A_{vht-2}$$
$$+ \sum_{i=1}^{m}\psi_{i,k}^{H}H_{vht,i} + \sum_{j=1}^{n}\psi_{j,k}^{V}V_{vt,j} + u_{vh} + e_{vht},$$

(21)

5 The Fungibility Hypothesis Questioned – Empirical Findings

5.1 Household consume more from unearned income and invest more from earned income

Two different total consumption variables are used in estimating equations (16): total consumption including living expenses, gifts and transfers going out (Table 4) and total consumption without gifts and transfers (Table 5). The estimated marginal propensities to invest on business and investment from different income sources are presented in Table 6. For both provinces, the OLS estimates (without household fixed effects) are presented first, followed by the within estimates.

Strikingly, the MPC from unearned income is two to five times (within estimates for Inner Mongolia) bigger than that from earned income in both provinces (Table 4)[12]. Once gifts and transfers are excluded from total consumption (Table 5), the MPCs from unearned income decline, especially in Inner Mongolia, though they remain one and a half to three times larger than the MPCs of earned income, which do not change much when excluding gifts. This is consistent with the existence of reciprocity in gift giving—income received as gifts is much more likely to be spent as gift (Sobel, 2005).

The within estimates of the MPC from earned income tend to be smaller than the OLS

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[12] The p-values from a t-test of the equality of the coefficients are provided at the bottom of the tables.

estimates. As the former implicitly control for a household's permanent income through the inclusion of household fixed effects, they are in essence identified from transitory income, indicating that the MPC from transitory earned income is smaller than the MPC from permanent earned income. A similar pattern is observed when estimating the marginal propensity to invest (MPI), suggesting that transitory income gains that are earned, are more likely to be saved (Table 6). There is no difference in the OLS and within estimates of the MPC (and MPI) from unearned income, suggesting that the MPC from transitory and permanent unearned income is the same. These findings will be more directly investigated below through direct estimation and incorporation of the permanent and transitory income components.

Households only use earned, and not unearned, income to buy inputs for their business or to invest. It further appears that they only invest from permanent earned income (OLS estimates) and not from transitory earned income (within estimates). The MPI from (permanent) income is also much larger in Inner Mongolia than in Gansu. However, in both cases, the MPI is largest from loans.

The MPC's from loans on total consumption are around 0.25-0.33, slightly higher than those from earned income, but well below these from unearned income which are around 0.5-0.7. They decline somewhat when excluding transfers and gifts, indicating that loans are slightly more likely to be taken for gifts/transfers than for living expenses as such. Nonetheless, with an MPC of 0.2-0.3 it is clear that many loans are not only taken for investment purposes, but also for consumption purposes. This is more the case in Gansu (the poorer of the two provinces) than in Inner Mongolia, where the MPI from loans is more than twice the MPC from loans, unlike in Gansu where they are about equal. Nonetheless, the MPI is the largest for loans, followed by the MPI from financial assets in Gansu and (permanent) earned income in Inner Mongolia.

Besides spending income households can also sell their assets and buy consumption items from it. The MPC from financial assets is smallest, but tends to be larger when from transitory (within estimates) than from permanent (OLS estimates) gains. Households in Gansu also rely on their financial assets to finance their business and investment expenditures, unlike those in Inner Mongolia. Livestock values do not affect spending or investment. The gender composition of the household has no direct effect on consumption or investment behavior.

In sum, households are more likely to spend their unearned income on consumption, and they are more likely to spend their earned income on their business and investment. The marginal propensity to consume and invest from loans is equal in Gansu, the poorer of both provinces, while the MPI from loans of households in Inner Mongolia is much larger than their MPC.

5.2   Unearned income is more likely spent on non-basic consumption items

Comparing the MPC from earned and unearned income across different consumption items it emerges that for a number of non-basic consumption goods (though not all), the MPC is larger from unearned income than from earned income (Table 7). This holds especially for spending on tobacco and other non-food spending, but also for spending on liquor and clothing in Inner Mongolia, and housing and transport in Gansu.

The MPC for spending from earned and unearned income on staple foods is not statistically different. Nonetheless, the decline in MPC from earned income in going from OLS to within estimates suggests the MPC on staple foods from permanent income is larger. When explicitly considering the sustainability of the income gain (see Table 16), it becomes clear that the MPC from permanent earned income on staple foods is larger than this from permanent unearned income. Staple foods are not financed from loans. Similarly, the MPC from earned income on education is at least as large as this from unearned income, and the MPC from

permanent earned income on education is larger (see Table 16).[13] The MPC from loans on

education is as large as the MPC from earned income.

Gifts are only financed from unearned income, not from earned income, consistent with

the reciprocity hypothesis raised before. Loans are also used to finance gifts and medicines. The

MPC from loans is largest for other consumption items, but loans are not used to finance

staples and for the most part also not to finance for non-staple food. But, as indicated before,

loans are mostly spent to finance family business expenditures (in Gansu) and investment in

productive assets (in Inner Mongolia). The marginal propensity to invest in the family business

from (permanent) earned income is largest in Inner Mongolia.

In conclusion, there is a tendency for unearned income to be spent more easily on non-

basic consumption goods, while permanent gains in earned incomes are spent more on basic

consumption goods such as staple foods and education. Gifts are totally financed from

unearned incomes, as predicted by the age-old saying "What goes around, comes around."

5.3   Core pattern of consuming unearned and investing earned incomes unaffected by size of income gain

Does the difference in MPC from earned and unearned income differ depending on the

size of the income gain? Specifications so far have assumed MPC and MPI constant across

income. This linearity assumption is tested through inclusion of a quadratic term in each of the

different income sources (Table 8) permitting a (parametric) test to see whether MPCs from

earned and unearned income sources differ depending on the size of the income gain. There

are clear signs of non-linearities in the MPCs of the different income sources depending on their

level, while the signs for non-linearities in the MPIs are mixed, non-existent for unearned

income, partially existent for earned income, depending on the specification, and mostly

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[13] In Gansu, this is already hinted at by the higher OLS estimate of the MPC on education compared with the within estimate.

present for the MPI from loans.

To explore whether these non-linearities also affect the observed differences in the MPCs and MPIs across earned and unearned income, the MPCs and MPIs from earned and unearned income sources are compared across a range of different earned and unearned incomes. In particular, the MPCs and MPIs for the 25th, 50th, 75th, 90th percentile households in each of the income components are calculated (Table 9)[14]. Clearly, the MPCs and MPIs from the different income sources do not change much across these ranges of incomes examined and the core finding that the MPC from unearned income tends to be much larger than the MPC from earned income, while the MPI from earned income tends to be much larger than this from unearned income holds.[15]

5.4   Consumption and investment patterns largely robust to gender composition of household

Table 10 presents the estimated MPCs and MPIs from the different income sources interacted with the female-male ratio within the household. The gender composition of the household does not affect the MPCs of earned and unearned incomes in Gansu, but reduces the MPI from earned income. In Inner Mongolia, it reduces the MPC from unearned income on living expenses. In both provinces, households with a higher female-male ratio have a higher MPC from loans.

To explore at which point it alters the core pattern of higher consumption from unearned income and higher investment from earned income, the MPCs and MPIs from the different income sources (earned, unearned, and loans) are calculated along a range of female-male ratios (Table 11). The proposition that the MPC from unearned income largely exceeds this of

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[14] To calculate the MPC/MPI for variable x we use the formula: coefficient of x + 2*coefficient of x^2*x. The values of different percentiles of unearned income, earned income and loans are listed at the top of the table.
[15] Exploration of the effects of non-linearity using a step function does not alter the conclusion.

earned income holds irrespective of the gender composition of the household. The proposition

that the MPI from earned income tends to be larger than the MPI from unearned income also

holds for all OLS estimates, but becomes tenuous in Gansu when considering transitory earned

income (within estimates) and the female-male ratio approaches 1, which is the case for less

than 10 percent of the sample. [16] It does not hold for transitory earned income in Inner

Mongolia.

There is also no difference between the spending pattern of agricultural households and

that of off-farm business households (Table 12). In the data, 1276 out of 1500 households

identify themselves as agricultural households whose major income source is from agriculture

in all 5 years. The rest of the households identify themselves at least once in the 5 years as non-

agricultural business households.

5.5   Permanent and transitory income

Tables 13-16 present the estimated MPCs and MPIs with earned and unearned income

decomposed in their transitory and permanent parts. For comparison, the within estimates

from Tables 4-7 are included as well. As expected, the within estimated coefficients on earned

and unearned income closely resemble the estimates of transitory income components. As

before, the MPC is larger from unearned than from earned income for both permanent and

transitory income, though the difference is largest for transitory income.

Similarly, the MPI is much larger from earned income, than from unearned income in

particular permanent earned income (Table 15). In Gansu they spend 26% of their earned

permanent income on business and investment, and in Inner Mongolia this number is as high as

53%. Transitory earned income does not translate in increased investment (Table 15) and is

likely saved. This is consistent with Paxson (1992), who finds that households in Thailand spent

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[16] For less than 5% of the households, the ratio is more than 1.

their permanent income but save their transitory income. Yet, the key difference is that this only holds for their unexpected labor related income gains and not for unexpected unearned income gains such as transfers.

When considering differences in MPCs between earned and unearned incomes across different subcategories of consumption and investment, the earlier finding that it is especially the MPC on non-basic consumption goods that is larger from unearned income holds. From table 16, it further seems that this holds especially for transitory unearned income (and less for permanent unearned income) as demonstrated by the estimated results for liquor, tobacco, and clothing. The MPC for other consumption goods is larger from both unearned permanent and transitory income, without much difference between the two. This also holds for gifts, which are financed both from permanent and transitory unearned income, at a similar rate. As before, the MPC on basic goods such as staples and education from earned income tends to be larger than this from unearned income, especially from *permanent* earned income.

Concerning investment in family business and productive assets, it is the permanent earned income that is invested, and not the transitory or unearned income. The MPI from permanent income in family business is especially large in Inner Mongolia, which also displays the largest MPI to invest from loans in productive assets.

6   Conclusion

Behavioral economists are calling attention to consumption phenomena that violate the income fungibility assumption that underpins most economic modeling and policy advice. They argue that people code income in different mental accounts, establishing an explicit link between the source of income and spending behavior. This paper explores the existence of such accounts with respect to the effort dispensed in earning income. This link has not received

much conceptual or empirical attention in (development) economics.

Estimation of the marginal propensity to consume and invest among households in rural China supports the notion that unearned income tends to be consumed more (and even more so when it is transitory). Earned income on the other hand (especially when it is permanent) tends to be invested more. For a series of non-basic consumption goods, unearned income gains (especially transitory ones) are also more likely spent on non-basic consumption items such as tobacco, liquor, and other non-food and non-clothing consumption items than earned income gains. Permanent earned income gains on the other hand are at least as likely being spent on basic consumption items such as staples or on education. Gifts are mainly financed from unearned income, consistent with the reciprocity principle.

These results hold controlling for time invariant unobserved household heterogeneity (including of preferences) and time variant village characteristics and are largely robust to the size of the income gains, the gender composition of the household, or the employment status of the household (business or agriculture). Together these revealed preferences lend support to the psychologically grounded choice theory of mental accounting.

The policy implications of these findings can also be important. For example, if the purpose of a government intervention is to increase (rural) demand (as in China's 2009 stimulus package), transferring income to its citizens through transfers is appropriate. The amount of employment generated will depend on the employment content of the consumption items with the larger MPCs. Yet, if the purpose is to close the rural-urban divide, employment generating programs tend to be more appropriate than say the current rapid expansion of land based agricultural subsidies. Spending on the former tends to generate more investment (and thus a virtuous circle of economic growth) than spending on the latter, which displays a larger propensity to be consumed. Overall, it appears that heeding the age-old saying 'Easy come,

easy go' in future theoretical and empirical work, might be time well spent.

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Tables

Table 1: Summary statistics (Gansu)

Variables	N	mean	sd	min	median	max
Total income	3,500	6,360	3,907	0	5,598	87,533
Earned income	3,500	5,962	3,536	0	5,269	86,092
Wage income from migrants	3,500	827	1,483	0	0	17,480
Other wage income	3,500	513	1,185	0	0	12,955
income from family business	3,500	4,623	3,332	0	3,930	86,092
Unearned income	3,500	363	1,705	0	34	79,858
Remittances	3,500	128	611	0	0	18,634
Gifts	3,500	95	638	0	0	19,980
Other transfers	3,500	141	1,443	0	17	79,858
Total consumption	3,500	4,381	2,950	633	3,621	51,675
Food	3,500	2,337	1,435	404	2,116	50,809
Staple food [1]	3,500	1,208	1,095	0	1,076	50,430
Non-staple food	3,500	624	476	0	531	7,829
Entertainment	3,500	93	302	0	5	2,989
Education	3,500	396	1,101	0	92	15,179
Liquor	3,500	109	146	0	64	1,979
Tobacco	3,500	122	140	0	82	1,958
Money sent to non-residential family members	3,500	21	146	0	0	4,505
Gifts sent out	3,500	86	645	0	0	17,904
Other consumption	3,500	1,423	1,723	10	910	29,195
Clothing	3,500	203	193	0	153	2,623
Housing	3,500	776	1,297	0	412	28,317
Medicine	3,500	223	702	0	74	18,143
Transportation	3,500	164	559	0	19	10,729
Business and investment	3,500	1,282	1,735	0	873	24,998
Family business	3,500	1,128	1,253	0	844	24,710
Productive assets	3,500	154	1,006	0	0	22,523
Taxes	3,500	148	189	0	111	5,631
Loans	3,500	490	2,202	0	0	75,075
Financial assets	3,500	1,462	2,020	0	781	26,405
Livestock	3,500	953	953	0	887	14,985

Note. - The unit is Yuan (1 Yuan is around 0.12 Dollar). All values are in 1999 price of Gansu.

1) Staple food includes grains, potatoes and beans.

Table 2: Summary statistics (Inner Mongolia)

Variables	N	mean	sd	min	median	max
Total income	4,000	9,716	5,972	357	8,626	70,047
Earned income	4,000	9,331	5,816	49	8,277	68,631
Wage income from migrants	4,000	328	1,146	0	0	17,349
Other wage income	4,000	669	1,429	0	0	12,687
income from family business	4,000	8,334	5,676	0	7,308	68,631
Unearned income	4,000	329	990	0	64	22,444
Remittances	4,000	20	208	0	0	7,807
Gifts	4,000	119	834	0	0	22,388
Other transfers	4,000	190	483	0	56	10,815
Total consumption	4,000	5,452	3,720	288	4,438	45,919
Food	4,000	2,297	885	105	2,171	8,817
Staple food [1]	4,000	838	402	0	787	4,438
Non-staple food	4,000	884	481	0	835	8,100
Entertainment	4,000	134	338	0	32	8,227
Education	4,000	630	1,329	0	154	13,713
Liquor	4,000	135	143	0	94	1,467
Tobacco	4,000	136	141	0	101	2,430
Money sent to non-residential family members	4,000	86	747	0	0	25,563
Gifts sent out	4,000	312	1,110	0	54	27,529
Other consumption	4,000	1,961	2,492	12	1,218	38,795
Clothing	4,000	346	342	0	265	5,016
Housing	4,000	774	1,588	0	421	35,089
Medicine	4,000	327	999	0	92	21,465
Transportation	4,000	410	996	0	95	21,842
Business and investment	4,000	4,090	4,414	0	2,836	62,242
Family business	4,000	3,415	3,264	0	2,580	58,057
Productive assets	4,000	673	2,679	0	0	45,008
Taxes	4,000	349	482	0	201	7,964
Loans	4,000	1,404	3,358	0	0	63,800
Financial assets	4,000	2,784	3,357	2	1703	33,646
Livestock	4,000	1,285	3,948	0	694	61,763

Note. - The unit is Yuan (1 Yuan is around 0.12 Dollar). All values are in 1999 price of Inner Mongolia.

1) Staple food includes grains, potatoes and beans.

Table 3: Descriptive statistics of the control variables

variables	explanation	N[1]	mean	sd	min	max
	Gansu					
Business household	Dummy:=1 if household is a business household; 0 if not	3,500	0.07	0.26	0	1
Rural cadres' household	Dummy:=1 if household is a cadres' household; 0 if not	3,500	0.07	0.25	0	1
Household size	Size of the household	3,500	4.77	1.34	0	10
Female male ratio 16<=age<=60	Female 16<=age<=60/(1+ male 16<=age<=60)	3,500	0.59	0.30	0	3
Dependency ratio	(household size - member 16<=age<=60)/member 16<=age<=60	3,500	0.29	0.21	0	1
Gender household head	Dummy:=1 if gender of household head is male; 0 if not	3,497	1.00	0.06	0	1
Age household head	Age of household head	3,497	41.88	11.10	5	83
Education level household head	1=illiterate; 2=primary school; 3=junior school; 4=high school; 5=technical school; 6=univ.	3,486	2.46	0.95	1	6
	Inner Mongolia					
Business household	Dummy:=1 if household is a business household; 0 if not	4,000	0.03	0.18	0	1
Rural cadres' household	Dummy:=1 if household is a cadres' household; 0 if not	4,000	0.04	0.19	0	1
Household size	Size of the household	4,000	3.72	0.98	1	8
Female male ratio 16<=age<=60	Female 16<=age<=60/(1+ male 16<=age<=60)	4,000	0.59	0.31	0	4
Dependency ratio	(household size - member 16<=age<=60)/member 16<=age<=60	4,000	0.22	0.20	0	1
Gender household head	Dummy:=1 if gender of household head is male; 0 if not	3,995	0.99	0.09	0	1
Age household head	Age of household head	3,995	44.10	8.89	23	78
Education level household head	1=illiterate; 2=primary school; 3=junior school; 4=high school; 5=technical school; 6=univ.	3,995	2.80	0.78	1	6

[1] Based on all 5 survey rounds in 2000-2004. The difference in the number of observations is due to missing values.

Table 4: Regression results of consumption

Consumption	Gansu		Inner Mongolia	
	OLS	Within	OLS	Within
Unearned income	0.529***	0.511***	0.692***	0.704***
	(0.039)	(0.043)	(0.060)	(0.062)
Earned income	0.262***	0.161***	0.216***	0.146***
	(0.013)	(0.015)	(0.012)	(0.015)
Loans	0.335***	0.293***	0.251***	0.258***
	(0.016)	(0.017)	(0.017)	(0.018)
L.Financial assets in the end of the year	0.100***	0.160***	0.056**	0.133***
	(0.024)	(0.032)	(0.022)	(0.027)
L.Original value of livestock	-0.027	0.006	-0.001	0.038
	(0.054)	(0.076)	(0.025)	(0.028)
Business household	424.366**	-115.007	940.144**	17.580
	(144.912)	(189.723)	(297.156)	(371.739)
Rural cadres' household	224.109	-899.835***	-155.892	-518.346
	(198.543)	(258.049)	(360.467)	(441.631)
Household size	164.918***	27.520	488.165***	428.700***
	(33.314)	(71.123)	(68.289)	(126.853)
Female male ratio 16<=age<=60	23.238	-170.419	163.950	-106.509
	(132.909)	(213.750)	(197.552)	(325.383)
Dependency ratio	-1185.257***	-962.069**	-1406.308***	-2123.978***
	(195.380)	(371.586)	(343.905)	(586.052)
Gender household head	-337.402	-399.177	-795.906	-2814.957**
	(568.950)	(644.051)	(580.764)	(1,140.465)
Age household head	0.942	0.604	-15.789**	12.275
	(3.895)	(11.267)	(7.530)	(18.883)
Education level household head	291.250***	-85.402	236.867**	191.933
	(45.535)	(104.127)	(78.127)	(163.544)
Unearned income = Earned income [1]	0.000	0.000	0.000	0.000
Unearned income = Loans	0.000	0.000	0.000	0.000
Earned income = Loans	0.001	0.000	0.105	0.000
R-squared	0.608	0.452	0.448	0.335
F-statistic	13.255	6.911	6.987	4.267
No. of Obs.	2,788	2,788	3,196	3,196

Note. – Time varying village dummies are included in all regressions. Standard errors are shown in brackets.

1) P-values from t-test of equality of the coefficients.

* Significant at the 10% level.

** Significant at the 5% level.

*** Significant at the 1% level.

Table 5: Regressions results of living expenses

Living expenses (consumption excluding transfers and gifts sent out)	Gansu		Inner Mongolia	
	OLS	Within	OLS	Within
Unearned income	0.464***	0.437***	0.323***	0.340***
	(0.037)	(0.040)	(0.053)	(0.056)
Earned income	0.251***	0.155***	0.193***	0.125***
	(0.012)	(0.014)	(0.011)	(0.014)
Loans	0.277***	0.240***	0.194***	0.197***
	(0.016)	(0.016)	(0.015)	(0.016)
L.Financial assets in the end of the year	0.083***	0.143***	0.053**	0.109***
	(0.023)	(0.029)	(0.020)	(0.024)
L.Original value of livestock	-0.042	-0.028	-0.001	0.036
	(0.052)	(0.071)	(0.023)	(0.026)
Business household	380.598**	-144.248	944.220***	148.686
	(137.901)	(175.851)	(266.077)	(336.770)
Rural cadres' household	187.370	-879.460***	88.726	-104.958
	(188.937)	(239.181)	(322.766)	(400.087)
Household size	168.089***	70.177	454.442***	380.205***
	(31.702)	(65.922)	(61.147)	(114.919)
Female male ratio 16<=age<=60	24.595	-180.620	229.213	-92.528
	(126.479)	(198.120)	(176.890)	(294.774)
Dependency ratio	-940.723***	-863.555**	-966.777**	-1674.292**
	(185.927)	(344.416)	(307.935)	(530.922)
Gender household head	-158.838	-196.250	-598.922	-2950.858**
	(541.424)	(596.958)	(520.021)	(1,033.181)
Age household head	0.658	-0.206	-21.943**	-3.944
	(3.706)	(10.443)	(6.742)	(17.107)
Education level household head	315.602***	-36.160	225.557**	134.967
	(43.332)	(96.513)	(69.956)	(148.159)
Unearned income = Earned income[1]	0.000	0.000	0.018	0.000
Unearned income = Loans	0.000	0.000	0.023	0.017
Earned income = Loans	0.223	0.000	0.973	0.001
R-squared	0.603	0.466	0.436	0.292
F-statistic	12.953	7.287	6.671	3.499
No. of Obs.	2,788	2,788	3,196	3,196

Note. – Time varying village dummies are included in all regressions. Standard errors are shown in brackets.

1) P-values from t-test of equality of the coefficients.

* Significant at the 10% level.

** Significant at the 5% level.

*** Significant at the 1% level.

Table 6: Regressions results of business and investment

Business and investment	Gansu		Inner Mongolia	
	OLS	Within	OLS	Within
L.Unearned income	0.039	-0.043	0.000	0.004
	(0.033)	(0.039)	(0.072)	(0.081)
L.Earned income	0.095***	0.003	0.284***	-0.033
	(0.011)	(0.013)	(0.016)	(0.024)
Loans	0.269***	0.291***	0.471***	0.475***
	(0.014)	(0.015)	(0.022)	(0.025)
L2.Financial assets in the end of the year	0.206***	0.071**	0.037	-0.011
	(0.022)	(0.031)	(0.033)	(0.045)
L2.Original value of livestock	0.005	-0.068	-0.012	0.002
	(0.049)	(0.075)	(0.041)	(0.048)
Business household	-156.293	-201.849	364.168	810.116
	(146.634)	(171.954)	(471.481)	(595.557)
Rural cadres' household	400.361**	327.764	2175.164***	2855.998***
	(162.098)	(234.475)	(427.481)	(641.405)
Household size	55.239*	24.546	74.855	27.489
	(29.349)	(66.649)	(91.819)	(215.104)
Female male ratio 16<=age<=60	-174.745	-188.375	45.520	351.324
	(116.147)	(201.026)	(261.921)	(531.757)
Dependency ratio	235.376	-279.037	-48.390	-32.636
	(170.474)	(369.251)	(465.628)	(995.298)
Gender household head	148.191	-128.554	2003.978**	3,049.419
	(474.069)	(577.571)	(702.663)	(1,985.109)
Age household head	-3.145	-7.879	-13.370	13.279
	(3.449)	(10.568)	(10.195)	(39.452)
Education level household head	-19.819	-200.986**	-108.517	-68.141
	(39.960)	(89.101)	(104.420)	(246.237)
Unearned income = Earned income[1]	0.108	0.249	0.000	0.671
Unearned income = Loans	0.000	0.000	0.000	0.000
Earned income = Loans	0.000	0.000	0.000	0.000
R-squared	0.502	0.465	0.533	0.399
F-statistic	8.465	7.029	9.724	5.465
No. of Obs.	2,089	2,089	2,400	2,400

Note. – Time varying village dummies are included in all regressions. Standard errors are shown in brackets.

1) P-values from t-test of equality of the coefficients.

* Significant at the 10% level.

** Significant at the 5% level.

*** Significant at the 1% level.

Table 7: Regressions of sub-categories

	Gansu		Inner Mongolia	
	OLS	Within	OLS	Within
Food				
Unearned income	0.079***	0.061***	0.113***	0.105***
	(0.012)	(0.012)	(0.013)	(0.013)
Earned income	0.049***	0.004	0.046***	0.026***
	(0.004)	(0.004)	(0.003)	(0.003)
Loans	0.022***	0.017***	0.007*	0.009**
	(0.005)	(0.005)	(0.004)	(0.004)
Unearned income = Earned income	0.017	0.000	0.000	0.000
Unearned income = Loans	0.000	0.001	0.000	0.000
Earned income = Loans	0.000	0.072	0.000	0.001
Staple food				
Unearned income	0.014**	0.016**	0.010*	0.011*
	(0.006)	(0.006)	(0.006)	(0.006)
Earned income	0.008***	0.003	0.007***	0.005***
	(0.002)	(0.002)	(0.001)	(0.001)
Loans	-0.002	0.000	0.000	-0.001
	(0.002)	(0.003)	(0.002)	(0.002)
Unearned income = Earned income	0.325	0.053	0.517	0.296
Unearned income = Loans	0.014	0.020	0.068	0.053
Earned income = Loans	0.004	0.360	0.000	0.012
Non-staple food				
Unearned income	0.025***	0.016**	0.041***	0.037***
	(0.006)	(0.007)	(0.007)	(0.007)
Earned income	0.017***	0.005*	0.019***	0.011***
	(0.002)	(0.003)	(0.001)	(0.002)
Loans	0.006**	0.002	0.000	0.002
	(0.003)	(0.003)	(0.002)	(0.002)
Unearned income = Earned income	0.196	0.115	0.001	0.001
Unearned income = Loans	0.004	0.061	0.000	0.000
Earned income = Loans	0.002	0.489	0.000	0.001
Entertainment				
Unearned income	0.012*	0.012	0.003	0.005
	(0.006)	(0.008)	(0.006)	(0.007)
Earned income	0.008***	0.007**	0.005***	0.003
	(0.002)	(0.003)	(0.001)	(0.002)
Loans	0.000	0.000	0.005**	0.004*
	(0.003)	(0.003)	(0.002)	(0.002)
Unearned income = Earned income	0.547	0.519	0.688	0.743
Unearned income = Loans	0.084	0.151	0.779	0.841
Earned income = Loans	0.028	0.117	0.756	0.746
Education				
Unearned income	0.065**	0.064**	0.010	0.023
	(0.022)	(0.020)	(0.026)	(0.023)
Earned income	0.078***	0.036***	0.029***	0.021***

	Gansu		Inner Mongolia	
	OLS	Within	OLS	Within
	(0.007)	(0.007)	(0.005)	(0.006)
Loans	0.098***	0.060***	0.031***	0.028***
	(0.009)	(0.008)	(0.007)	(0.007)
Unearned income = Earned income	0.567	0.175	0.472	
Unearned income = Loans	0.172	0.848	0.453	
Earned income = Loans	0.119	0.033	0.870	
Liquor				
Unearned income	0.009***	0.005**	0.028***	0.027***
	(0.002)	(0.002)	(0.002)	(0.003)
Earned income	0.006***	0.003**	0.005***	0.002***
	(0.001)	(0.001)	0.000)	(0.001)
Loans	0.004***	0.004***	0.001*	0.002**
	(0.001)	(0.001)	(0.001)	(0.001)
Unearned income = Earned income	0.162	0.254	0.000	0.000
Unearned income = Loans	0.056	0.660	0.000	0.000
Earned income = Loans	0.258	0.207	0.000	0.427
Tobacco				
Unearned income	0.014***	0.012***	0.025***	0.026***
	(0.002)	(0.002)	(0.002)	(0.003)
Earned income	0.005***	0.001	0.005***	0.003***
	(0.001)	(0.001)	0.000)	(0.001)
Loans	0.005***	0.004***	0.001*	0.002**
	(0.001)	(0.001)	(0.001)	(0.001)
Unearned income = Earned income	0.000	0.000	0.000	0.000
Unearned income = Loans	0.000	0.000	0.000	0.000
Earned income = Loans	0.912	0.010	0.000	0.059
Gifts				
Unearned income	0.059***	0.077***	0.321***	0.307***
	(0.011)	(0.014)	(0.021)	(0.023)
Earned income	0.006	-0.001	0.002	0.001
	(0.004)	(0.005)	(0.004)	(0.006)
Loans	0.040***	0.045***	0.046***	0.050***
	(0.005)	(0.005)	(0.006)	(0.007)
Unearned income = Earned income	0.000	0.000	0.000	0.000
Unearned income = Loans	0.127	0.027	0.000	0.000
Earned income = Loans	0.000	0.000	0.000	0.000
Other Consumption				
Unearned income	0.309***	0.299***	0.198***	0.206***
	(0.028)	(0.034)	(0.044)	(0.048)
Earned income	0.116***	0.107***	0.113***	0.074***
	(0.009)	(0.012)	(0.009)	(0.012)
Loans	0.157***	0.163***	0.152***	0.157***
	(0.012)	(0.013)	(0.012)	(0.014)
Unearned income = Earned income	0.000	0.000	0.059	0.008
Unearned income = Loans	0.000	0.000	0.323	0.331

	Gansu		Inner Mongolia	
	OLS	Within	OLS	Within
Earned income = Loans	0.011	0.003	0.014	0.000
Clothing				
Unearned income	0.010**	0.012**	0.019**	0.026***
	(0.003)	(0.004)	(0.006)	(0.006)
Earned income	0.010***	0.007***	0.016***	0.006***
	(0.001)	(0.001)	(0.001)	(0.001)
Loans	0.004**	0.005**	0.001	-0.001
	(0.001)	(0.001)	(0.002)	(0.002)
Unearned income = Earned income	0.965	0.159	0.629	0.002
Unearned income = Loans	0.085	0.063	0.004	0.000
Earned income = Loans	0.002	0.327	0.000	0.002
Housing				
Unearned income	0.192***	0.187***	0.044	0.048
	(0.022)	(0.027)	(0.029)	(0.034)
Earned income	0.071***	0.076***	0.054***	0.044***
	(0.007)	(0.009)	(0.006)	(0.008)
Loans	0.070***	0.076***	0.079***	0.084***
	(0.009)	(0.011)	(0.008)	(0.010)
Unearned income = Earned income	0.000	0.000	0.743	0.906
Unearned income = Loans	0.000	0.000	0.263	0.313
Earned income = Loans	0.950	0.973	0.018	0.002
Medicine				
Unearned income	0.014	0.021	0.042**	0.047**
	(0.015)	(0.018)	(0.021)	(0.022)
Earned income	0.010**	0.003	0.000	-0.008
	(0.005)	(0.006)	(0.004)	(0.005)
Loans	0.051***	0.052***	0.053***	0.056***
	(0.006)	(0.007)	(0.006)	(0.007)
Unearned income = Earned income	0.764	0.366	0.047	0.016
Unearned income = Loans	0.021	0.112	0.603	0.705
Earned income = Loans	0.000	0.000	0.000	0.000
Transportation				
Unearned income	0.051***	0.038**	0.046**	0.037*
	(0.011)	(0.013)	(0.019)	(0.023)
Earned income	0.026***	0.019***	0.037***	0.028***
	(0.004)	(0.005)	(0.004)	(0.006)
Loans	0.027***	0.027***	0.021***	0.021**
	(0.005)	(0.005)	(0.005)	(0.007)
Unearned income = Earned income	0.023	0.172	0.618	0.691
Unearned income = Loans	0.038	0.447	0.204	0.496
Earned income = Loans	0.892	0.289	0.020	0.418
Family business				
L.Unearned income	0.031	-0.045	-0.054	-0.109**
	(0.025)	(0.030)	(0.048)	(0.051)
L.Earned income	0.085***	0.006	0.248***	-0.001

	Gansu		Inner Mongolia	
	OLS	Within	OLS	Within
	(0.008)	(0.010)	(0.011)	(0.015)
Loans	0.220***	0.239***	0.110***	0.045**
	(0.011)	(0.011)	(0.015)	(0.016)
Unearned income = Earned income[1]	0.033	0.094	0.000	0.043
Unearned income = Loans	0.000	0.000	0.001	0.003
Earned income = Loans	0.000	0.000	0.000	0.029
Productive assets				
L.Unearned income	0.009	0.002	0.055	0.114*
	(0.021)	(0.027)	(0.053)	(0.066)
L.Earned income	0.009	-0.003	0.036**	-0.031
	(0.007)	(0.009)	(0.012)	(0.019)
Loans	0.049***	0.052***	0.362***	0.431***
	(0.009)	(0.010)	(0.016)	(0.020)
Unearned income = Earned income	0.983	0.859	0.725	0.039
Unearned income = Loans	0.079	0.075	0.000	0.000
Earned income = Loans	0.001	0.000	0.000	0.000

Note. – Time varying village dummies and other variables reported in Table 4 to Table 6 are included in all regressions. Standard errors are shown in brackets.

1) P-values from t-test of equality of the coefficients.

* Significant at the 10% level.

** Significant at the 5% level.

*** Significant at the 1% level.

Table 8: Regression results with squared income and loan variables

	Gansu		Inner Mongolia	
	OLS	Within	OLS	Within
Consumption				
Unearned income	0.702***	0.632***	0.442***	0.482***
	(0.068)	(0.078)	(0.108)	(0.114)
Unearned income squared/10000	-0.156**	-0.098	0.208**	0.178**
	(0.063)	(0.069)	(0.081)	(0.083)
Earned income	0.441***	0.332***	0.306***	0.187***
	(0.020)	(0.024)	(0.025)	(0.030)
Earned income squared/10000	-0.041***	-0.033***	-0.025***	-0.010
	(0.004)	(0.004)	(0.006)	(0.007)
Loans	0.658***	0.553***	0.477***	0.466***
	(0.027)	(0.029)	(0.029)	(0.031)
Loans squared/10000	-0.078***	-0.061***	-0.090***	-0.078***
	(0.005)	(0.006)	(0.009)	(0.009)
Living expenses (consumption excluding transfers and gifts sent out)				
Unearned income	0.596***	0.512***	0.480***	0.551***
	(0.066)	(0.073)	(0.097)	(0.104)
Unearned income squared/10000	-0.115*	-0.054	-0.149**	-0.192**
	(0.061)	(0.064)	(0.072)	(0.075)
Earned income	0.406***	0.298***	0.277***	0.172***
	(0.019)	(0.022)	(0.022)	(0.027)
Earned income squared/10000	-0.035***	-0.028***	-0.023***	-0.012**
	(0.004)	(0.004)	(0.005)	(0.006)
Loans	0.551***	0.451***	0.382***	0.375***
	(0.026)	(0.027)	(0.026)	(0.028)
Loans squared/10000	-0.066***	-0.050***	-0.077***	-0.068***
	(0.005)	(0.005)	(0.008)	(0.009)
Business and investment				
L.Unearned income	0.002	-0.048	-0.018	0.123
	(0.066)	(0.075)	(0.139)	(0.158)
L.Unearned income squared/10000	0.065	0.009	0.014	-0.077
	(0.072)	(0.077)	(0.100)	(0.111)
L.Earned income	0.161***	0.015	0.290***	0.155***
	(0.018)	(0.022)	(0.033)	(0.045)
L.Earned income squared/10000	-0.014***	-0.002	-0.002	-0.049***
	(0.003)	(0.003)	(0.008)	(0.010)
Loans	0.230***	0.272***	0.554***	0.602***
	(0.026)	(0.029)	(0.038)	(0.044)
Loans squared/10000	0.008*	0.004	-0.031**	-0.045***
	(0.005)	(0.005)	(0.011)	(0.013)

Note. – Time varying village dummies and other variables reported in Table 4 to Table 6 are included in all regressions. Standard errors are shown in brackets.
* Significant at the 10% level.
** Significant at the 5% level.
*** Significant at the 1% level.

Table 9: MPC and MPI of households with different wealth levels

	Gansu				Inner Mongolia			
	p25	p50	p75	p90	p25	p50	p75	p90
Unearned income	34	65	497	1,429	69	107	443	1,340
Earned income	3,761	5,270	7,364	9,921	5,451	8,277	11,758	16,123
Loans	300	798	2,004	4,437	694	1,573	3,441	6,856
Consumption								
OLS								
Unearned income	0.701 [1]	0.700	0.687	0.657	0.445	0.446	0.460	0.498
Earned income	0.410	0.398	0.381	0.360	0.279	0.265	0.247	0.225
Loans	0.653	0.646	0.627	0.589	0.465	0.449	0.415	0.354
FE								
Unearned income	0.631	0.631	0.622	0.604	0.484	0.486	0.498	0.530
Earned income	0.307	0.297	0.283	0.267	0.176	0.170	0.163	0.155
Loans	0.549	0.543	0.529	0.499	0.455	0.441	0.412	0.359
Living expenses								
OLS								
Unearned income	0.595	0.595	0.585	0.563	0.478	0.477	0.467	0.440
Earned income	0.380	0.369	0.354	0.337	0.252	0.239	0.223	0.203
Loans	0.547	0.540	0.525	0.492	0.371	0.358	0.329	0.276
FE								
Unearned income	0.512	0.511	0.507	0.497	0.548	0.547	0.534	0.500
Earned income	0.277	0.268	0.257	0.242	0.159	0.152	0.144	0.133
Loans	0.448	0.443	0.431	0.407	0.366	0.354	0.328	0.282
Business and investment								
OLS								
Unearned income	0.002	0.003	0.008	0.021	-0.018	-0.018	-0.017	-0.014
Earned income	0.150	0.146	0.140	0.133	0.288	0.287	0.285	0.284
Loans	0.230	0.231	0.233	0.237	0.550	0.544	0.533	0.511
FE								
Unearned income	-0.048	-0.048	-0.047	-0.045	0.122	0.121	0.116	0.102
Earned income	0.013	0.013	0.012	0.011	0.102	0.074	0.040	-0.003
Loans	0.272	0.273	0.274	0.276	0.596	0.588	0.571	0.540

Note. – Time varying village dummies are included in all regressions.
1) This number is calculated using the formula: coefficient of unearned income in Table 14 +
2*coefficient of squared unearned income in Table 14 * unearned income at the 25th percentile.

Table 10: Regression results with female male ratio

	Gansu		Inner Mongolia	
	OLS	Within	OLS	Within
Consumption				
Unearned income	0.550***	0.588***	0.772***	0.813***
	(0.081)	(0.090)	(0.130)	(0.137)
Unearned income*female male ratio 16<=age<=60	-0.039	-0.116	-0.090	-0.136
	(0.103)	(0.110)	(0.146)	(0.154)
Earned income	0.250***	0.181***	0.161***	0.108***
	(0.027)	(0.033)	(0.021)	(0.028)
Earned income*female male ratio 16<=age<=60	0.017	-0.034	0.095**	0.066
	(0.040)	(0.049)	(0.030)	(0.041)
Loans	0.228***	0.193***	0.161***	0.178***
	(0.045)	(0.047)	(0.035)	(0.037)
Loans*female male ratio 16<=age<=60	0.221**	0.208**	0.156**	0.136**
	(0.086)	(0.092)	(0.053)	(0.056)
Living expenses (consumption excluding transfers and gifts sent out)				
Unearned income	0.511***	0.521***	0.517***	0.548***
	(0.077)	(0.083)	(0.117)	(0.124)
Unearned income*female male ratio 16<=age<=60	-0.082	-0.134	-0.239*	-0.263*
	(0.098)	(0.102)	(0.131)	(0.140)
Earned income	0.244***	0.188***	0.171***	0.116***
	(0.026)	(0.031)	(0.019)	(0.025)
Earned income*female male ratio 16<=age<=60	0.008	-0.060	0.037	0.013
	(0.038)	(0.045)	(0.027)	(0.037)
Loans	0.091**	0.045	0.090**	0.104**
	(0.042)	(0.044)	(0.031)	(0.034)
Loans*female male ratio 16<=age<=60	0.385***	0.407***	0.179***	0.157**
	(0.082)	(0.085)	(0.048)	(0.050)
Business and investment				
L.Unearned income	-0.018	-0.194**	-0.099	0.104
	(0.064)	(0.071)	(0.150)	(0.171)
L.Unearned income*female male ratio 16<=age<=60	0.087	0.217**	0.115	-0.133
	(0.079)	(0.083)	(0.160)	(0.185)
L.Earned income	0.131***	0.040*	0.270***	-0.100**
	(0.017)	(0.021)	(0.023)	(0.034)
L.Earned income*female male ratio 16<=age<=60	-0.058**	-0.057**	0.029	0.115**
	(0.022)	(0.027)	(0.029)	(0.041)
Loans	0.151***	0.121**	0.560***	0.610***
	(0.044)	(0.049)	(0.045)	(0.052)
Loans*female male ratio 16<=age<=60	0.232**	0.344***	-0.152**	-0.222**
	(0.081)	(0.094)	(0.067)	(0.078)

Note. – Time varying village dummies and other variables reported in Table 4 to Table 6 are included in all regressions. Standard errors are shown in brackets. * Significant at the 10% level. ** Significant at the 5% level. *** Significant at the 1% level.

Table 11: MPC and MPI for households with different female male ratio

	Gansu				Inner Mongolia			
female male ratio	0.00	0.25	0.67	1.00	0.00	0.25	0.67	1.00
Consumption								
OLS								
Unearned income	0.530 [2)]	0.531	0.532	0.533	0.725	0.731	0.740	0.747
Earned income	0.259	0.258	0.258	0.257	0.210	0.204	0.195	0.187
Loans	0.341	0.336	0.329	0.323	0.242	0.232	0.217	0.204
Within								
Unearned income	0.529	0.531	0.535	0.538	0.743	0.751	0.764	0.775
Earned income	0.164	0.164	0.165	0.166	0.142	0.138	0.132	0.126
Loans	0.299	0.295	0.288	0.282	0.248	0.240	0.227	0.216
Living expenses								
OLS								
Unearned income	0.511	0.491	0.456	0.429	0.517	0.457	0.357	0.278
Earned income	0.244	0.246	0.249	0.252	0.171	0.180	0.196	0.208
Loans	0.091	0.187	0.349	0.476	0.090	0.135	0.210	0.269
Within								
Unearned income	0.521	0.488	0.431	0.387	0.548	0.482	0.372	0.285
Earned income	0.188	0.173	0.148	0.128	0.116	0.119	0.125	0.129
Loans	0.045	0.147	0.318	0.452	0.104	0.143	0.209	0.261
Business and investment								
OLS								
Unearned income	-0.018	0.004	0.040	0.069	-0.099	-0.070	-0.022	0.016
Earned income	0.131	0.117	0.092	0.073	0.270	0.277	0.289	0.299
Loans	0.151	0.209	0.306	0.383	0.560	0.522	0.458	0.408
Within								
Unearned income	-0.194	-0.140	-0.049	0.023	0.104	0.071	0.015	-0.029
Earned income	0.040	0.026	0.002	-0.017	-0.100	-0.071	-0.023	0.015
Loans	0.121	0.207	0.351	0.465	0.610	0.555	0.461	0.388

Note. – Time varying village dummies are included in all regressions.
1) The percentile applies to the variable female male ratio.
2) This number is calculated using the formula: coefficient of unearned income in Table 12 + coefficient of the interaction between unearned income and female male ratio in Table 12 * female male ratio.

Table 12: Regression results with off-farm business household dummy

	Gansu		Inner Mongolia	
	OLS	Within	OLS	Within
Consumption				
Unearned income for business households	0.771***	0.585***	0.950***	0.927***
	(0.116)	(0.126)	(0.163)	(0.167)
Unearned income for non-business households	0.496***	0.499***	0.655***	0.671***
	(0.040)	(0.044)	(0.063)	(0.065)
Earned income for business households	0.456***	0.151**	0.174***	0.120**
	(0.050)	(0.054)	(0.052)	(0.057)
Earned income for non-business households	0.252***	0.159***	0.219***	0.147***
	(0.013)	(0.015)	(0.012)	(0.015)
Loans for business households	0.273***	0.187***	0.160**	0.224**
	(0.042)	(0.043)	(0.073)	(0.073)
Loans for non-business households	0.345***	0.312***	0.258***	0.260***
	(0.018)	(0.018)	(0.017)	(0.018)
Living expenses (consumption excluding transfers and gifts sent out)				
Unearned income for business households	0.563***	0.326**	0.297**	0.253*
	(0.111)	(0.117)	(0.146)	(0.151)
Unearned income for non-business households	0.449***	0.443***	0.327***	0.351***
	(0.039)	(0.041)	(0.057)	(0.059)
Earned income for business households	0.460***	0.153**	0.166***	0.101*
	(0.048)	(0.050)	(0.047)	(0.051)
Earned income for non-business households	0.242***	0.154***	0.195***	0.125***
	(0.012)	(0.014)	(0.011)	(0.014)
Loans for business households	0.271***	0.193***	0.149**	0.203**
	(0.040)	(0.040)	(0.065)	(0.066)
Loans for non-business households	0.276***	0.249***	0.197***	0.197***
	(0.017)	(0.017)	(0.016)	(0.017)
Business and investment				
L.Unearned income for business households	0.320***	0.024	-0.026	0.096
	(0.089)	(0.102)	(0.189)	(0.212)
L.Unearned income for non-business households	-0.003	-0.046	0.003	-0.003
	(0.036)	(0.040)	(0.077)	(0.087)
L.Earned income for business households	0.060**	-0.006	0.281***	0.016
	(0.024)	(0.027)	(0.037)	(0.046)
L.Earned income for non-business households	0.096***	0.003	0.285***	-0.037
	(0.011)	(0.013)	(0.016)	(0.024)
Loans for business households	0.251***	0.210**	0.653***	0.897***
	(0.069)	(0.073)	(0.124)	(0.137)
Loans for non-business households	0.271***	0.295***	0.465***	0.466***
	(0.014)	(0.015)	(0.022)	(0.025)

Note. – Time varying village dummies and other variables reported in Table 4 to Table 6 are included in all regressions. Standard errors are shown in brackets.
* Significant at the 10% level.
** Significant at the 5% level.
*** Significant at the 1% level.

Table 13: Permanent and transitory income regression of consumption

Consumption	Gansu		Inner Mongolia	
	PT	Within	PT	Within
Unearned permanent income	0.536***		0.687***	
	(0.044)		(0.113)	
Unearned (transitory) income[1]	0.537***	0.511***	0.698***	0.704***
	(0.040)	(0.043)	(0.070)	(0.062)
Earned permanent income	0.405***		0.267***	
	(0.019)		(0.016)	
Earned (transitory) income	0.151***	0.161***	0.155***	0.146***
	(0.017)	(0.015)	(0.017)	(0.015)
Loans	0.333***	0.293***	0.246***	0.258***
	(0.016)	(0.017)	(0.017)	(0.018)
L.Financial assets in the end of the year	0.051**	0.160***	0.045**	0.133***
	(0.024)	(0.032)	(0.022)	(0.027)
L.Original value of livestock	-0.049	0.006	0.004	0.038
	(0.053)	(0.076)	(0.025)	(0.028)
Business household	387.503**	-115.007	869.592**	17.580
	(142.265)	(189.723)	(296.528)	(371.739)
Rural cadres' household	118.429	-899.835***	-180.018	-518.346
	(195.100)	(258.049)	(360.089)	(441.631)
Household size	104.269**	27.520	436.959***	428.700***
	(33.300)	(71.123)	(68.877)	(126.853)
female male ratio 16<=age<=60	76.830	-170.419	189.022	-106.509
	(130.528)	(213.750)	(197.295)	(325.383)
dependency ratio	-1029.733***	-962.069**	-1362.933***	-2123.978***
	(192.345)	(371.586)	(342.779)	(586.052)
Gender household head	-233.194	-399.177	-913.458	-2814.957**
	(558.347)	(644.051)	(579.459)	(1,140.465)
Age household head	0.175	0.604	-15.293**	12.275
	(3.824)	(11.267)	(7.506)	(18.883)
Education level household head	255.427***	-85.402	194.271**	191.933
	(44.828)	(104.127)	(78.314)	(163.544)
R-squared	0.623	0.452	0.452	0.335
F-statistic	14.010	6.911	7.071	4.267
N. of Obs.	2,788	2,788	3,196	3,196

Note. – Time varying village dummies are included in all regressions. PT results are OLS estimates. Within estimates are taken from Table 4. Standard errors are shown in brackets.
1) The variable is unearned transitory income in the PT regressions and unearned income in the Within regressions. This also applies to the variable earned (transitory) income.
* Significant at the 10% level, ** Significant at the 5% level, *** Significant at the 1% level.

Table 14: Permanent and transitory income regression of living expenses

Living expenses (consumption excluding transfers and gifts sent out)	Gansu		Inner Mongolia	
	PT	Within	PT	Within
Unearned permanent income	0.473***		0.310**	
	(0.042)		(0.101)	
Unearned (transitory) income[1]	0.470***	0.437***	0.332***	0.340***
	(0.038)	(0.040)	(0.062)	(0.056)
Earned permanent income	0.388***		0.243***	
	(0.018)		(0.014)	
Earned (transitory) income	0.146***	0.155***	0.132***	0.125***
	(0.016)	(0.014)	(0.015)	(0.014)
Loans	0.275***	0.240***	0.188***	0.197***
	(0.015)	(0.016)	(0.015)	(0.016)
L.Financial assets in the end of the year	0.036	0.143***	0.042**	0.109***
	(0.023)	(0.029)	(0.020)	(0.024)
L.Original value of livestock	-0.064	-0.028	0.004	0.036
	(0.051)	(0.071)	(0.023)	(0.026)
Business household	345.160**	-144.248	874.865***	148.686
	(135.380)	(175.851)	(265.251)	(336.770)
Rural cadres' household	86.861	-879.460***	66.953	-104.958
	(185.658)	(239.181)	(322.107)	(400.087)
Household size	110.146***	70.177	403.261***	380.205***
	(31.688)	(65.922)	(61.612)	(114.919)
female male ratio 16<=age<=60	75.779	-180.620	255.261	-92.528
	(124.211)	(198.120)	(176.484)	(294.774)
dependency ratio	-792.763***	-863.555**	-924.261**	-1674.292**
	(183.036)	(344.416)	(306.623)	(530.922)
Gender household head	-59.771	-196.250	-717.767	-2950.858**
	(531.324)	(596.958)	(518.338)	(1,033.181)
Age household head	-0.061	-0.206	-21.428**	-3.944
	(3.638)	(10.443)	(6.714)	(17.107)
Education level household head	281.570***	-36.160	183.265**	134.967
	(42.658)	(96.513)	(70.054)	(148.159)
R-squared	0.618	0.466	0.442	0.292
F-statistic	13.699	7.287	6.785	3.499
N. of Obs.	2,788	2,788	3,196	3,196

Note. – Time varying village dummies are included in all regressions. PT results are OLS estimates. Within estimates are taken from Table 5. Standard errors are shown in brackets.
1) The variable is unearned transitory income in the PT regressions and unearned income in the Within regressions. This also applies to the variable earned (transitory) income.
* Significant at the 10% level,** Significant at the 5% level,*** Significant at the 1% level.

Table 15: Permanent and transitory income regression of business and investment

Business and investment	Gansu		Inner Mongolia	
	PT	Within	PT	Within
L.Unearned permanent income	0.064*		0.049	
	(0.038)		(0.142)	
L.Unearned (transitory) income[1]	0.039	-0.043	-0.005	0.004
	(0.034)	(0.039)	(0.082)	(0.081)
L.Earned permanent income	0.260***		0.528***	
	(0.017)		(0.019)	
L.Earned (transitory) income	-0.025*	0.003	-0.022	-0.033
	(0.014)	(0.013)	(0.022)	(0.024)
Loans	0.251***	0.291***	0.425***	0.475***
	(0.014)	(0.015)	(0.020)	(0.025)
L2.Financial assets in the end of the year	0.144***	0.071**	-0.016	-0.011
	(0.022)	(0.031)	(0.030)	(0.045)
L2.Original value of livestock	-0.023	-0.068	-0.008	0.002
	(0.047)	(0.075)	(0.038)	(0.048)
Business household	-178.014	-201.849	-77.948	810.116
	(140.680)	(171.954)	(436.666)	(595.557)
Rural cadres' household	273.663*	327.764	1734.710***	2855.998***
	(155.779)	(234.475)	(397.301)	(641.405)
Household size	-22.987	24.546	-196.484**	27.489
	(28.818)	(66.649)	(86.142)	(215.104)
female male ratio 16<=age<=60	-109.568	-188.375	104.758	351.324
	(111.509)	(201.026)	(242.807)	(531.757)
dependency ratio	413.918**	-279.037	296.209	-32.636
	(164.081)	(369.251)	(430.859)	(995.298)
Gender household head	228.434	-128.554	1505.550**	3,049.419
	(454.716)	(577.571)	(650.538)	(1,985.109)
Age household head	-4.105	-7.879	-10.327	13.279
	(3.309)	(10.568)	(9.433)	(39.452)
Education level household head	-65.286*	-200.986**	-309.013**	-68.141
	(38.493)	(89.101)	(97.100)	(246.237)
R-squared	0.542	0.465	0.601	0.399
F-statistic	9.858	7.029	12.733	5.465
N. of Obs.	2,089	2,089	2,400	2,400

Note. – Time varying village dummies are included in all regressions. PT results are OLS estimates. Within estimates are taken from Table 6. Standard errors are shown in brackets.
1) The variable is unearned transitory income in the PT regressions and unearned income in the Within regressions. This also applies to the variable earned (transitory) income.
* Significant at the 10% level, ** Significant at the 5% level, *** Significant at the 1% level.

<div align="center">Table 16: Permanent and transitory income regression of sub-categories</div>

	Gansu		Inner Mongolia	
	PT	Within	PT	Within
Food				
Unearned permanent income	0.079***		0.137***	
	(0.013)		(0.024)	
Unearned (transitory) income	0.083***	0.061***	0.105***	0.105***
	(0.012)	(0.012)	(0.015)	(0.013)
Earned permanent income	0.110***		0.061***	
	(0.006)		(0.003)	
Earned (transitory) income	0.003	0.004	0.027***	0.026***
	(0.005)	(0.004)	(0.004)	(0.003)
Loans	0.021***	0.017***	0.005	0.009**
	(0.005)	(0.005)	(0.004)	(0.004)
Staple Food				
Unearned permanent income	0.010		0.012	
	(0.007)		(0.011)	
Unearned (transitory) income	0.017**	0.016**	0.010	0.011*
	(0.006)	(0.006)	(0.007)	(0.006)
Earned permanent income	0.015***		0.009***	
	(0.003)		(0.001)	
Earned (transitory) income	0.002	0.003	0.004**	0.005***
	(0.003)	(0.002)	(0.002)	(0.001)
Loans	-0.002	0.000	-0.001	-0.001
	(0.002)	(0.003)	(0.002)	(0.002)
Non-staple food				
Unearned permanent income	0.025***		0.055***	
	(0.007)		(0.013)	
Unearned (transitory) income	0.026***	0.016**	0.037***	0.037***
	(0.006)	(0.007)	(0.008)	(0.007)
Earned permanent income	0.033***		0.025***	
	(0.003)		(0.002)	
Earned (transitory) income	0.004	0.005*	0.012***	0.011***
	(0.003)	(0.003)	(0.002)	(0.002)
Loans	0.005**	0.002	-0.001	0.002
	(0.003)	(0.003)	(0.002)	(0.002)
Entertainment				
Unearned permanent income	0.012*		-0.003	
	(0.007)		(0.012)	
Unearned (transitory) income	0.012*	0.012	0.005	0.005
	(0.007)	(0.008)	(0.007)	(0.007)
Earned permanent income	0.009**		0.007***	
	(0.003)		(0.002)	
Earned (transitory) income	0.007**	0.007**	0.003	0.003
	(0.003)	(0.003)	(0.002)	(0.002)
Loans	0.000	0.000	0.004**	0.004*
	(0.003)	(0.003)	(0.002)	(0.002)

	Gansu		Inner Mongolia	
	PT	Within	PT	Within
Education				
Unearned permanent income	0.074**		-0.024	
	(0.025)		(0.049)	
Unearned (transitory) income	0.064**	0.064**	0.023	0.023
	(0.023)	(0.020)	(0.030)	(0.023)
Earned permanent income	0.138***		0.036***	
	(0.011)		(0.007)	
Earned (transitory) income	0.031**	0.036***	0.021**	0.021***
	(0.010)	(0.007)	(0.007)	(0.006)
Loans	0.097***	0.060***	0.030***	0.028***
	(0.009)	(0.008)	(0.007)	(0.007)
Liquor				
Unearned permanent income	0.010***		0.030***	
	(0.003)		(0.005)	
Unearned (transitory) income	0.008***	0.005**	0.027***	0.027***
	(0.002)	(0.002)	(0.003)	(0.003)
Earned permanent income	0.009***		0.006***	
	(0.001)		(0.001)	
Earned (transitory) income	0.003**	0.003**	0.003***	0.002***
	(0.001)	(0.001)	(0.001)	(0.001)
Loans	0.004***	0.004***	0.001	0.002**
	(0.001)	(0.001)	(0.001)	(0.001)
Tobacco				
Unearned permanent income	0.013***		0.024***	
	(0.002)		(0.005)	
Unearned (transitory) income	0.014***	0.012***	0.026***	0.026***
	(0.002)	(0.002)	(0.003)	(0.003)
Earned permanent income	0.010***		0.005***	
	(0.001)		(0.001)	
Earned (transitory) income	0.001	0.001	0.004***	0.003***
	(0.001)	(0.001)	(0.001)	(0.001)
Loans	0.005***	0.004***	0.001	0.002**
	(0.001)	(0.001)	(0.001)	(0.001)
Gifts				
Unearned permanent income	0.051***		0.353***	
	(0.013)		(0.040)	
Unearned (transitory) income	0.065***	0.077***	0.309***	0.307***
	(0.012)	(0.014)	(0.025)	(0.023)
Earned permanent income	0.015**		0.002	
	(0.006)		(0.006)	
Earned (transitory) income	-0.001	-0.001	0.001	0.001
	(0.005)	(0.005)	(0.006)	(0.006)
Loans	0.040***	0.045***	0.046***	0.050***
	(0.005)	(0.005)	(0.006)	(0.007)
Other consumption				

	Gansu		Inner Mongolia	
	PT	Within	PT	Within
Unearned permanent income	0.308***		0.201**	
	(0.032)		(0.083)	
Unearned (transitory) income	0.311***	0.299***	0.199***	0.206***
	(0.029)	(0.034)	(0.051)	(0.048)
Earned permanent income	0.131***		0.140***	
	(0.014)		(0.011)	
Earned (transitory) income	0.104***	0.107***	0.081***	0.074***
	(0.012)	(0.012)	(0.013)	(0.012)
Loans	0.156***	0.163***	0.149***	0.157***
	(0.012)	(0.013)	(0.012)	(0.014)
Clothing				
Unearned permanent income	0.009**		0.007	
	(0.004)		(0.011)	
Unearned (transitory) income	0.011***	0.012**	0.024***	0.026***
	(0.003)	(0.004)	(0.007)	(0.006)
Earned permanent income	0.014***		0.024***	
	(0.002)		(0.002)	
Earned (transitory) income	0.007***	0.007***	0.006***	0.006***
	(0.001)	(0.001)	(0.002)	(0.001)
Loans	0.004**	0.005**	0.000	-0.001
	(0.001)	(0.001)	(0.002)	(0.002)
Housing				
Unearned permanent income	0.186***		0.045	
	(0.025)		(0.056)	
Unearned (transitory) income	0.195***	0.187***	0.044	0.048
	(0.023)	(0.027)	(0.034)	(0.034)
Earned permanent income	0.065***		0.060***	
	(0.011)		(0.008)	
Earned (transitory) income	0.075***	0.076***	0.045***	0.044***
	(0.010)	(0.009)	(0.008)	(0.008)
Loans	0.070***	0.076***	0.078***	0.084***
	(0.009)	(0.011)	(0.008)	(0.010)
Medicine				
Unearned permanent income	0.015		0.037	
	(0.017)		(0.039)	
Unearned (transitory) income	0.015	0.021	0.044*	0.047**
	(0.016)	(0.018)	(0.024)	(0.022)
Earned permanent income	0.019**		0.003	
	(0.007)		(0.005)	
Earned (transitory) income	0.002	0.003	-0.005	-0.008
	(0.007)	(0.006)	(0.006)	(0.005)
Loans	0.051***	0.052***	0.053***	0.056***
	(0.006)	(0.007)	(0.006)	(0.007)
Transportation				
Unearned permanent income	0.055***		0.066*	

	Gansu		Inner Mongolia	
	PT	Within	PT	Within
	(0.013)		(0.036)	
Unearned (transitory) income	0.050***	0.038**	0.039*	0.037*
	(0.012)	(0.013)	(0.022)	(0.023)
Earned permanent income	0.035***		0.042***	
	(0.006)		(0.005)	
Earned (transitory) income	0.019***	0.019***	0.029***	0.028***
	(0.005)	(0.005)	(0.006)	(0.006)
Loans	0.026***	0.027***	0.020***	0.021**
	(0.005)	(0.005)	(0.005)	(0.007)
Family business				
L.Unearned permanent income	0.055*		0.113	
	(0.028)		(0.093)	
L.Unearned (transitory) income[1]	0.026	-0.045	-0.106**	-0.109**
	(0.025)	(0.030)	(0.053)	(0.051)
L.Earned permanent income	0.198***		0.438***	
	(0.012)		(0.013)	
L.Earned (transitory) income	0.003	0.006	0.008	-0.001
	(0.011)	(0.010)	(0.014)	(0.015)
Loans	0.208***	0.239***	0.073***	0.045**
	(0.010)	(0.011)	(0.013)	(0.016)
Productive assets				
L.Unearned permanent income	0.009		-0.062	
	(0.025)		(0.112)	
L.Unearned (transitory) income	0.013	0.002	0.101	0.114*
	(0.022)	(0.027)	(0.064)	(0.066)
L.Earned permanent income	0.062***		0.089***	
	(0.011)		(0.015)	
L.Earned (transitory) income	-0.028**	-0.003	-0.031*	-0.031
	(0.009)	(0.009)	(0.017)	(0.019)
Loans	0.043***	0.052***	0.353***	0.431***
	(0.009)	(0.010)	(0.016)	(0.020)

Note. – Time varying village dummies and other variables reported in Table 4 to Table 6 are included in all regressions. PT results are OLS estimates. Within estimates are taken from Table 7. Standard errors are shown in brackets.

1) The variable is unearned transitory income in the PT regressions and unearned income in the Within regressions. This also applies to the variable earned (transitory) income.

* Significant at the 10% level.

** Significant at the 5% level.

*** Significant at the 1% level.