

# Tajikistan, Remittances, Expenditures & the Family left behind

Rémi Viné

*The Graduate Institute, Geneva, Switzerland*

---

## Abstract

Tajikistan between 2007 and 2011 was the most dependent on remittances in the world. I use survey data over this range of years and analyse the impact of remittances in the household on the expenditure shares of different goods and services. I control for endogeneity and find that remittances does not seem to impact spending in human capital or basic goods (including food unless the household is among the poorest). On the other hand, it seems to increase the spending in secondary goods. Therefore, the paper provides some results that would suggest that remittances, even though undoubtedly worthwhile to reduce poverty, do not necessarily help improve the long term development of Tajikistan.

*Keywords:* Tajikistan, Remittances, Status, Expenditures, Household

---

The need of subsistence and of an increase of physical comfort may for a time be the dominant motive of acquisition for those classes who are habitually employed at manual labor, whose subsistence is on a precarious footing, who possess little and ordinarily accumulate little; but it will appear in the course of the discussion that even in the case of these impecunious classes the predominance of the motive of physical want is no so decided as has sometimes been assumed.

The Theory of the Leisure Class - Thorstein Veblen

## 1. Introduction

*Migration and Remittances.* Migration is almost always the decision of not only one individual but of a household. There raises all the issues of temporary versus permanent migration. In any cases, the migrant is likely, upon

the context, to send remittances to the rest of the household for several reason: (i) pay back the debt generated by the migration), (ii) simply for being altruistic and allow better living conditions to the family, (iii) for providing a sort of insurance by increasing the diversity of incomes, (iv) to invest in human capital of the children, (v) to invest in order to improve his or her ranking in the family.

An important question that has already been largely analyzed deals with the impact of remittances. The microeconomics side mostly relate with the impact in terms of labor supply (and the type of supply - formal or informal), expenditures (goods and services, education, health), etc. The present paper fits into the expenditure literature and I will provide some hints about the sorting of the goods. Remittances partly relaxes the budget constraint, *ceteris paribus*, and therefore allows the household to chose new types or a new sorting of consumption.

Fundamentally, the question can be summarised as: *are remittances a blessing or a curse?* An increase in education or health expenditures would potentially be more of a blessing than expenditures of secondary needed goods which can sometimes be reduced to *conspicuous consumption*. It is well-known, at least since Thorstein Veblen [1], that this type of consumption could be raised where social status are highly dependent on reputability.

*Tajikistan.* The present paper focuses on Tajikistan for several reason. First, an household-level survey has been conducted bi-yearly over six year, permitting to control for household heterogeneity. Second, the emigration from Tajikistan is ruled by an extremely homogeneous pattern: the migration generally involves a man in his twenties who temporarily (a bunch of years) goes to main cities in Russia. One can see in figure (1) that Russia has a GDP per capita around ten times higher than Tajikistan. Migration is therefore economically appealing. The cost of migration is implicitly reduced by the fact that most migrants speak at least basic Russian. One can also notice that Tajikistan is the poorest country of Central Asia. Historical context might partly explain this phenomenon: the country was hampered by a civil war (1992-1997) that caused massive internal displacement of the population<sup>1</sup>. Lastly, the Tajikistani government encourages the migration process as

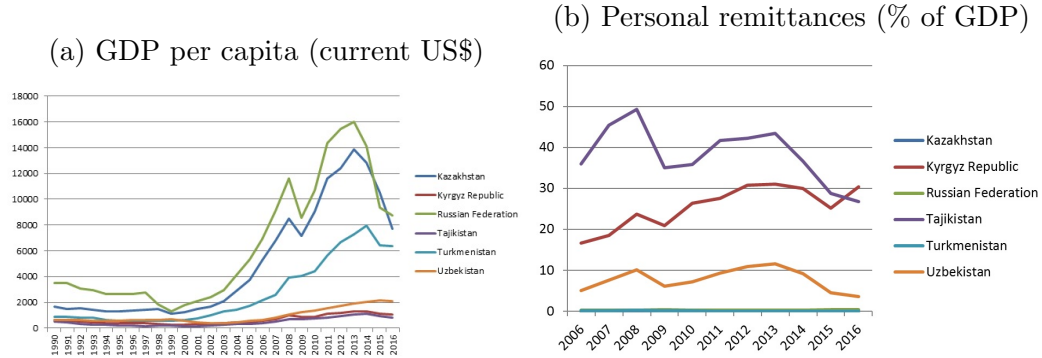
---

<sup>1</sup>See <https://www.rferl.org/a/qishloq-ovozi-tajikistan-civil-war/28575338.html>

stated in Buckley and Hofmann in 2012 [2]<sup>2</sup>.

The country is extremely highly dependent on remittances: from 2007 to 2011 remittances accounted for 35 to 50 % of the GDP. That was the most remittance-dependent country in the world. Unfortunately, to my knowledge, macroeconomic data are available only after the 2000s and on a yearly basis. On the other hand survey data are available for a household-based analysis. Given the massive reliance on remittances, it seems fruitful to better study the impact it has on the families left behind.

Figure 1: Macroeconomic Context - Source WDI



## 2. Literature

### 2.1. Remittances

*Why remitting.* Remittances, its reason and its impact have been studied for a long time (see the pioneer work of Lucas and Stark [3] in 1985, Azam and Gubert in 2005 [4] and in 2006 [5], de la Brière *et al.* in 2001 [6], or some more recent work using macro-level data, such as Azizi in 2019 [7]). The review provided by Docquier and Rapoport in 2006 [8] summarizes neatly all the issues. The present paper's focus is on the impact of the remittances rather than on the drivers of the migration and, ultimately, on the drivers of remittances.

<sup>2</sup>It can be noted that this process is also backed by Russia, both countries try to set a legal frame that fits best with the migration process. See <http://www.cacianalyst.org/publications/field-reports/item/12914-tajikistan-ratifies-agreement-with-russia-on-tajik-labor-migrants.html>

*Remittances and Macroeconomic effects.* The impact of remittances on growth have been studied without concluding that it has a positive a definite impact (see Gapen *et al.* [9] and Clemens and McKenzie, 2014 [10]).

A theoretical insight is brought about by Djajić in 1986 [11] which highlights that remittances' impact depend on its magnitude and, moreover that this can concern both migrant and non-migrant households. A different perspective (though not meant to specifically deal with remittances issues) using an overlapping generation framework raises the potentiality of poverty trap due to overcaring for current status and less so for human capital investment (see Moav and Neeman in 2010 [12] and in 2012 [13]). Remittances could increase non-productive consumption of family the left behind and therefore not increasing the overlapping household's utility: the immediate quest for status can hamper the overall well-being. Becker - 1965[14] - can be a setting to use to analyze whether remittances would change the best time allocation and that, adding the quest for high status, people might actually ended up consuming conspicuously.

*Remittances, Activity and Expenditures.* About survey-based data, one can read the excellent review of Adams in 2011 [15] that broadly cover the different type of impact (labour market, poverty, consumption, education, investment, etc). A large amount of studies analyze the role of remittances in the left-behind's involvement on the labor market and on the entrepreneurial activities. In general, remittances are found to increase the activity rate and/or the labor involvement. Migration jointly with cash transfer can actually reduce the labor participation of women. Lokshin and Glinskaya in 2009 [16] obtain in the context of Nepal that remittances indeed reduce the probability for a woman to be active on the labor market. Amuedo-Dorantes and Pozo in 2006 find similar results using data from Mexico [17] as long as one focuses on rural area. However urban remittances receivers might behave differently. Respectively using Mexican and Tajikistani data, Murard in 2016 [18] and Vadean *et al.* in 2019 find that remittances diminish the amount of farming work through increasing the entrepreneurial activities.

In terms of expenditures, the usual result attests that spending in food, education or other investment goods are increased while the spending in other goods are not significantly changed. Transfers can be mostly used for thwart poverty and thus an increase in food spending is expected. It can also push up transitory spending, and it can lastly modify the preferences of the receivers. The third case implies that remittances' impact is preserved

once the remiter is back: transfers would break the consumption pattern indefinitely. The second case can lead to opposite behaviors: (i) investment for the future which requires a high level of confidence and potentially a good financial inclusion; (ii) another transitory spending can rather be related to conspicuous consumption. The transfers allow for a quest for higher status that can take the form of more leisure and a higher consumption of secondary goods.

The various and very detailed analysis by Richard Adams Jr and co-authors shed lights in a large spectrum of countries. Remittances can lead to an increase in investment and education spending in the case of Guatemala [19]. On the other hand, spending balance is not modified in the case of Ghana [20]. In the context of Egypt, Adams finds that inequalities within a community can be pushed up due to remittances [21]. He also shows, using Pakistani's data, that external and internal remittances can lead to a different shift in terms of expenditures: remittances from abroad are mostly invested while remittances from inner migration are both invested and consumed [22]. Using panel data in Indonesia, Adams and Cuecuecha (2010) find that remittances actually reduce the spending on housing and increase the consumption of food [23]. One common aspect of all those studies is that remittances contribute to alleviate poverty [24]. Nevertheless, one should keep in mind that those facts are heavily context dependent (time and space): remittances can change the consumption balance in very different manners and that deserves to be better understood in a larger scale. In essence, remittances might firstly be used to fight instantaneous poverty and thus push up the spending in food. Secondly

Remittances appear to strengthen to pro-social behavior, the involvement to the community life, of the left-behind in the case of Bulgaria and Romania as source countries (see Nikolova *et al.* in 2017 [25]). Another study by Ivlevs *et al.* in 2019 [26] states that remittances are attached with a higher self-reported well-being.

## 2.2. *Tajikistan and Remittances*

*Central Asia and Social Sciences Research.* Brück *et al.* in 2014 [27] are calling for more research dealing with Central Asia: some data exist (though it is still parsimonious) but those countries appear to be understudied. Unlike the rest of post USSR countries, Central Asian countries are not very influenced by the European Union and more broadly the Occidental culture. It remains highly dependent on Russia and is more and more prone to build

links with China. This geopolitical setting makes Central Asian countries very unique and particularly interesting to further study. Danzer *et al.* in 2014 [28] find that internal Kazakh migrants tend to acquire a status premium due to a higher visible consumption. Using Uzbekistan, a recent study by Kakhkharov and Ahunov (2020) shows that remittances can be spent unproductively [29] in expenditures like ceremonies. This paper has a narrative close to the one in the present analysis.

*Tajikistan.* Jha *et al.* in 2010 [30] highlights that the likelihood of poverty is largely increased when the household is located in a rural area, when the household is large, and when the share of children is high within the household. Using data from 2004 and 2005, they document that remittances have contributed to reduce poverty and vulnerability of household.

Justino and Shemyakina in 2012 [31] demonstrate that remittances do not (or slightly) impact female labor supply but do affect male supply, depending on whether the area was heavily affected by the civil war (the more affected the more elastic the labor supply to remittances). However, Vedean *et al.* [32] show that, for men, remittances do not appear to hamper labor supply once endogeneity is taken into account but this result is disputed by Murakami *et al.* obtain the opposite result (though they do not distinguish different labor activities) [33]. Buckley and Hofmann 2012 [2] conclude that remittances receiver household cannot be distinguished from the rest of household in several characteristics, such as wealth, financial stability, labor supply, entrepreneurial involvement. UNICEF [34] published a detailed report studying the impact of migration on children: remittances can reduce the parental care and the education achievement, and the effect is inflated when the frequency of remittances is unclear.

Lastly, the work of Clément in 2011 [35] is the closest from what I try to achieve here: he indeed assesses the impact of remittances on the expenditures with the use of a propensity score matching procedure. My work differs from what he did as I am using a panel data framework and thus correct unobserved heterogeneity of households, I also provide a potential correction from either selection and/or endogeneity, lastly, I put this analysis in the more classic framework of the Engel's curves as presented above.

### 3. Theoretical Intuitions

#### 3.1. An attempt

Following the setting of Moav and Neeman [13], one can see the utility function as following:

$$\begin{aligned} V &= U_1 + \beta E[U_2] \\ U_t &= u(C_t, S_t) \end{aligned} \tag{1}$$

with  $C_t$  being the total value of consumption (both the basic,  $b_t$  and the conspicuous good,  $x_t$ ) in the period  $t$  and  $S_t$  being the social status. I assume that there are two periods: (i) the period over which there is a migrant in the household, (ii) the post migration period when the migrant is back to the household. The status function is:

$$S_t = E[M_t | \zeta(E_{t-1}), x_t] \tag{2}$$

with  $M_t$  the total income available at  $t$  and  $E_{t-1}$  the accumulated spending in education at the previous period so that  $E_t = \sum_{t-1} e_t$  with  $e_t$  the spending in education in one specific period. Since I assume two periods only, one can simplify the education process as  $E_t = e_t$  and  $E_{t+1} = e_t$ . The returns of education spending are characterized by the function  $\zeta(\cdot)$  for which  $\zeta'(\cdot) > 0$  and  $\zeta''(\cdot) < 0$  are assumed. At equilibrium, the perceived income is in line with the conspicuous consumption that in turn depends on the education spending.

The social status is driven by the expected income which depends on instantaneous conspicuous consumption (memoryless process) and the accumulated education acquired the previous period.

The model contains two periods: (i) in the period 1 there is a remiter, (ii) in the second period the household is back to a non-migrant situation. This is a toy model as I keep things unrealistically simple but so that this still highlights the potential drivers of the different spending. I assume that there is no borrowing capacity so that education is the only investment good<sup>3</sup>. It

---

<sup>3</sup>The database shows that the household with a bank account is only a small minority of the sample. This is not sufficient to evict any possibility to borrow, notably from acquaintances, but that still supports the strong hypothesis. Moav and Neemann [12] keep the borrowing capacity in their model but simply assume higher returns of education. This assumption is fundamentally similar to the one I put in the present analysis.

is assumed that the migrant could have worked back home at the moment s/he is on leave and that, once returned, the migrant works. Therefore, the budget constraints are the following:

$$\begin{aligned} b_1 + x_1 + e_1 &\leq I * (n - 1) + p * R \\ b_2 + x_2 &\leq I(n + \zeta(e_1)) \end{aligned} \quad (3)$$

The household, composed of  $n$  workers, including one migrant who remits if  $p > 0$  (the probability that the migrant is remitting). I assume that each worker brings the same and constant income to the household. The income is inflated by the education spending of the first period. It is possible to write a unique budget constraint:

$$b_2 + x_2 - I(n + \zeta((I(n - 1) + p * R - b_1 - x_1))) = 0 \quad (4)$$

ONGOING WORK...

#### 4. Households Panel Survey in Tajikistan

I use the three waves of the Tajikistan Living Standard Measurement Survey (TLMS)<sup>4</sup>. It was firstly processed by the World Bank and UNICEF and, for the year 2011, by the Institute for East and Southeast European Studies<sup>5</sup>. I can keep the track of 1262 households from 2007 to 2011 on a biyearly basis. The survey provides details regarding former and current migration in the household, current remittances and spending. In the 2007 survey, around 22.3% of households have or had at least one migrant.

*The choice of the migrant.* At the risk being simplistic (one can refer to table (1)), the usual Tajikistani migrant is the son (most likely migrants are males) of the head of the household in his late twenties with a secondary degree or higher. He most likely migrates in a major city in Russia (Moscow is the clear gravity center but Saint Petersburg and Yekaterinburg also attract a sizable share of migrants) and stays there for about a year or two<sup>6</sup>. The

---

<sup>4</sup>Though the last year is named the Tajikistan Household Panel Survey (THPS). One can get details in Danzer *et al.* [36]. For some households, the used a replacement, I dropped those observation for consistency as I will be using fixed effects or Mundlak device

<sup>5</sup>Tajikistan Household Panel Survey (THPS) 2011. Institute for East and Southeast European Studies, Regensburg. THPS data 1

<sup>6</sup>Among the surveyed, those who migrated and returned where in migration for 15.5 months on average.



	2007	2009	2011
Age	27.6	28.1	31.3
Male (%)	95	91	95
Son or Daughter of head (%)	80.3	82.8	65.7
Education (%)			
<i>Primary</i>	15.2	14.5	8.4
<i>Secondary</i>	70.2	66.2	74.4
<i>Above</i>	14.6	19.3	17.2
Pre-migration activity (%)			
<i>Active</i>	34.3	26.9	16.5
<i>Student</i>	5.1	8.3	7.1
<i>Inactive</i>	60.7	64.8	76.4
Migration in Russia? (%)	93.8	98.6	99.7
Migration in Moscow? (%)	59	60.7	68
(Censored) length of migration in months	27.5	37.2	30.4
Remiter (%)	84.3	89.7	87.2
N	178	145	297

Table 1: Migrants characteristics

migrant probably was not active before going abroad. More importantly, the migrant is likely (around 80% of them) to remit the the rest of the family, in cash, in goods, in both<sup>7</sup>.

#### 4.1. *Sorting Expenditures*

The database provides refined expenditures information about the spending in (i) education, (ii) health, (iii) food, (iv) non-food purchases, (v) energy, (vi) communication. The fourth group is characterized by a large variety of goods, from cloths to travels and gambling. Some goods, such as cloths, footwear, personal care products, clearly are basic goods while some other, such as travels, films, jewelry, ceremonies, seem to fit in another category, call them secondary. I convert the expenditures in 2007 Somoni and I stick

---

<sup>7</sup>UNICEF's report [34] distinguishes migrants who remit and those who do not remit. The effect on the children and more generally on the family is logically more perceptible for the non-remitters.

to a monthly expenditures scale<sup>8</sup>.

*Food and Poverty.* Across Central Asian countries, Tajikistan has the lowest GDP per capita. The share of the population considered as undernourished is reducing over time but still high: from 39.2 to 36.8%. Children's anemia is almost reaching 40% and stunting affects about 30% of adults. This dramatic situation is, however, improving. The food deficit is reducing over time. Nevertheless, remittances can firstly be a bliss to offset this gap and reduce the food consumption deficit, particularly for the poorest households.

*Education.* The schooling system in Tajikistan is inherited from the USSR era (see Shemyakina in 2011 [37]) and thus provides free and compulsory education for all children from 7 to 15<sup>9</sup>. Therefore the schooling enrollment is particularly high for this range of age. On the other hand, pre-primary education remains rare, especially in the countryside (one can read the UNICEF report dedicated to education in Tajikistan [39]). Between 2007 and 2011, the global school enrollment in respectively primary, secondary and tertiary schools increased from 96.1% to 98.9%, from 82.8% to 85%, slightly decreased from 22.8% to 22.2%. The gender gap is widening over time: the share of male having tertiary education is twice as much as the share of women while the share is roughly the same for the primary education.

Education's expenditures in the data are related with the spending in equipment, in transportation to school, but also to supplementary courses or training that can be taken by any member of the household.

*Health. Provide few elements of the context of Tajikistan* The global health expenditures have slightly increased over time and accounted for about 5.5 to 6% of the GDP of Tajikistan over 2007 to 2011. The life expectancy at birth was about 69 to 70 years with a 6 years gap across gender (as usual, with women living longer). Using the 1999 survey (hence soon after the end of the civil war), Falkingham in 2004 [40] indicates that the poorest household frequently do not seek medical assistance because they cannot afford it.

---

<sup>8</sup>Non-food purchases are evaluated either on a weekly, monthly or yearly basis in the survey, depending of the types and thus on the frequency of expenditures.

<sup>9</sup>Virtually all children of this age range in 2007 are in the public system: around 1% is in a private and/or in a religious school. Some more information about religious school can be found in Stephen 2010 [38]

The present data includes different costs of health: consultation and operation, drugs, transportation.

*Energy. Provide few elements of the context of Tajikistan [41]*

*Communication.* The amount of fixed telephone is stable over time and amounts to 4 to 5 fixed telephones per 100 people. Mobile phone are rapidly increasing from 30 per 100 people to 80 per 100 people between 2007 and 2011. The access of the internet almost doubled between 2007 and 2011 but still reaches a minority of the population (13%). By 2016, the number of mobile phones exceeds the population and the internet coverage reaches around 20% of the population. In the data base, one can sum the expenditures for the internet coverage as well as for the fixed line and the mobile line(s).

*Sorting of non-food goods.* It is quite intuitive to generate food, health or education variables (though this can as well be decomposed, especially the food categories). Rubrics of the different types of non-food goods are not straightforward to define. One can struggle more with the durable goods' consumption. In order to sort it, I proceed in two ways: (i) I simply separate goods into two categories according to my own subjectivity. Obviously, this suffers from dire cultural biases and even preferences. In order to thwart this issue (ii) I built a Principal Component Analysis, sorted the goods by the first component and then keep as basics the goods whose variances were explained by at least 25% of the total variance. PCA belongs to unsupervised analysis so it has the advantage to be unrelated, statistically, to the dependent variable. The drawback can arouse in terms of interpretability: each component are by definition orthogonal and it can be unclear about the interpretation of each and most importantly the first component that catches the highest share of the variance in the data.

Intuitively, this method should keep the most needed goods, as in a developing country such as Tajikistan the first component is likely to catch the most basic needs in priority.

I proceed in the two manners in order to minimize the biases led by either my own evaluation or by purely statistical methods which evacuates the economic basis. The results provide similar trends in both sorting though different in terms of magnitudes and statistical significance across specifications.

#### *4.2. Households with and without remittances*

Since the present article analyzes the remittances impacts I split the two groups: those with a migrant who is remitting and those with no remittances (it can therefore be a household with a non-remitting migrant or a household without migrants). Table (2) displays few elements about the data. It is striking to notice how similar the two groups are for the three years available. In terms of family structure it appears that the differences are not very large though sometimes significant. The only key variables that does show any strong pattern is the share of actives workers in the household except for the migrant. It appears that the share is much lower when there is a remitter within the household. This can be driven by two effects: (i) the household has one worker who migrated hence the reduction of the share, (ii) the remittances receivers are less prone to work since their need can be fitted thanks to the remittances. It is beyond the scope of the present study to disentangle the two effects. This has been done in several studies quoted beforehand. Table (1) allows to think that there is a crowding out effect at least partly going on. Indeed, one can notice that the number of migrants being active in pre-migrating only covers a minority of the cases (between one fourth and one sixth depending of the years). Households receiving remittances are more likely to be located in a rural area. The education levels appear to be very similar across the two groups though remittances receivers are less likely to have at least one member with a higher education degree.

Spending for durable goods and for energy (though the mean comparison tests are only poorly significant) seem to attest for statistically significant differences. Overall expenditures are increasing over time but are very similar across the two groups. The fact that the two households groups are very similar can appear surprising as migration often implies a strong selection. On the other hand, the context of migration out of Tajikistan can imply a reduced selection: the migration routes are well settled, the diaspora is structured, reducing the cost of migration<sup>10</sup>.

---

<sup>10</sup>The Remittance Prices Worldwide Worldbank database estimates a cost of remitting from Russia to Tajikistan at about 2.5% of the transfer in 2011 (the earliest available data). Overall, it is noticeable that the costs of remitting from Russia to former USSR countries is particularly low (around 1 and 3% while the world average was around 9% as of 2011) except for the Baltic countries.

Table 2: Family characteristics

	2007			2009			2011		
	No-Remit	Remit		No-Remit	Remitt		No-Remit	Remit	
Age of head	50.6	52.5	*	52.2	52.6		55	49.9	***
Size of family	6.6	6.3		7	6.5	*	6.8	6	***
Number of less than 16	2.5	2.3	*	2.5	1.8	***	2.3	2.1	
Share of active (%)	26.6	23	**	27.3	23.6	**	29	16.7	***
Expenditures ( <i>scaled</i> )	210.7	227.7		475.5	518.3		651.5	648.3	
Food ( <i>scaled</i> )	107.3	112.3		245.8	261.1		338.7	331.3	
Basics ( <i>scaled</i> )	12.6	11.1		28.8	58.9	***	60.8	63.7	
Intermediate ( <i>scaled</i> )	7.5	6.9		13.5	15.8		18.3	17.5	
Secondary ( <i>scaled</i> )	8.9	5.9		20.7	21.8		20.6	37.2	***
Education ( <i>scaled</i> )	32.3	38.8		6.1	1.5		9.5	15.7	
Health ( <i>scaled</i> )	1.6	2.2		18.4	16.5		25.7	22.3	
PCA basic ( <i>scaled</i> )	8.2	7.4		19.2	48.8	***	40.3	39.9	
PCA secondary ( <i>scaled</i> )	20.8	16.5		53.4	58.2		80.1	107.8	***
Energy ( <i>scaled</i> )	36.9	47	*	129.3	129.6		154.5	136.3	*
Communications ( <i>scaled</i> )	3.7	3.6		9.2	8.7		13.6	14.5	
Share of remittances (%)	.	30.4		.	19.5		.	31.7	
Urban (%)	34.9	18.7	***	33.6	26.7		34.4	21.4	***
Highest degree in the household (%)									
<i>Primary</i>	23.8	25.8		25.9	26.7		18.1	20.6	
<i>Secondary</i>	64.9	65.8		61.4	67.2		69.1	73.3	
<i>Above</i>	11.3	8.4		12.7	6.1		12.8	6.1	
Current satisfaction (%)									
<i>Fully satisfied</i>	6.5	7.2		13.3	16.2		5.8	7.8	
<i>satisfied</i>	52.3	46.1		30.3	36.9		59	64.6	
<i>Indifferent</i>	38.3	41.4		50.5	42.3		21.5	20.7	
<i>Unsatisfied</i>	2.9	5.3		5.8	4.6		13.8	6.9	
Concerned about (%)									
<i>Money</i>	34.1	36.2		33	28.9		36.3	40.3	
<i>Food</i>	34.8	32.9		14.6	14.1		26.2	16.5	
<i>Activity</i>	29.7	27.6		50	54.7		14.3	9.5	
<i>Health</i>	0.6	2.6		2.1	2.3		19	23	
<i>Safety</i>	0.7	0.7		0.3	0		4.4	10.8	
<i>N</i>	1107	155		1131	131		1000	262	

Expenditures are corrected by the size and the composition of the household using the so-called OECD modified scale that count the household head as 1, any other adults (here above 16) as 0.5, and any child as 0.3. This will be done as well in the econometrics, though the results hardly change if not. The columns 4, 7 and 10 indicate the mean comparison tests with  $p < 0.1$ ,  $** p < 0.05$ ,  $*** p < 0.01$ .

## 5. Empirical Analysis

The starting point of the empirical analysis follows the usual Working-Leser functional form. The specification gathers several qualities: (i) it allows a good fit over a large spectrum of expenditures (types of goods and/or services as well as values of the expenditures). (ii) The Engel functions can be non-linear. (iii) The marginal propensities of all sorts of expenditures,  $E$ , add up to unity<sup>11</sup>. The Working-Leser model applied to the analysis here can be written as:

$$c_{ikt} = \alpha_k + \gamma_k \text{Log} R_{it} + \delta_k \text{Log}(E)_{it} + \omega_k \frac{1}{E_{it}} + X_{it} \beta_k + \alpha_{ik} + \nu_{tk} + u_{ikt} \quad (5)$$

with  $c_{ikt}$  the share of consumption of the spending category  $k \in (1, K)$  for each household  $i$  and year  $t$ ,  $\text{Log} R_{it}$  is the natural logarithm of the amount remitted<sup>12</sup>,  $X_{it}$  is a set of controls (and an integer): the size of the family. The share of some consumption, such as energy, are highly related to the size of the family. The age (and the age squared) of the household head, the share of children (up to 15 years old) in the household help to further control the age structure of the family that will impact the consumption pattern. It is well-known that remittances, and more broadly migration, impact both the intensive and extensive margins of labour market involvement. A last control added is the length of migration in months. A very short migration might induce that the migrant is not settled yet and thus could not send remittances on a routine basis and uncertainties could change the consumption pattern differently. Conversely, an extremely long migration (more than 5 years in the present context is already a highly lasting migration) could signal a permanent migration in which case the migrant might not feel part of the family anymore and thus remit less frequently. Additionally,  $\alpha_{ik}$  indicates

---

<sup>11</sup>One can easily verify this on the regressions displayed below.

<sup>12</sup>To be more rigorous, I computed  $\ln(\text{remittances} + 1)$  in order to keep the zeros. As for expenditures, remittances values are also converted to 2007 Somoni values. The values of remittances include both the cash transfers and an estimation of the goods received. I also checked whether remittances had a quadratic effect, it does not seem to have an impact, at least for the IV regressions.

the household fixed effects and  $\nu_{tk}$  being the time fixed effects<sup>13</sup>;  $u_{ikt}$  the usual error term<sup>14</sup>.

Even though the set of spending are related (as, obviously,  $\sum_k c_{ikt} = 1$ ) a seemingly unrelated regression model is not needed since the set of explanatory variables does not change over the  $k$  equations (see Takeshi (1985) for details [42] when  $X_1 = \dots = X_K$ ).

The specification (5) might suffer from endogeneity. Remittances require migration which in turn requires a mixture between individual and family decisions. It is possible that a shift in consumption involves a need for migration. One can imagine an urgent need for health spending which then takes part of the altruistic motives of remittances. One can also envisage a risk-diversifying strategy that responds to a local or a household shock. Eventually, a change in individual preferences might induce a change of status and thus a change in consumption. This latter change would potentially require an extra source of income and remittances are one of them. Given the importance of wedding expenditures, , this case is likely to happen in Tajikistan. In any case, reverse causality might bias the estimation. Furthermore, measurement errors in terms of the value remitted and omitted variables bias cannot be totally ruled out. It therefore seems appropriate to address the problem.

### 5.1. Endogeneity of Remittances

Equipped with an estimation method, it is now needed to find instruments for the estimation the selection equation. To this purpose, I will simply reuse the strategy followed by Mendola and Carletto in 2012 [43] in the context of migration from Albania, Anzoategui *et al.* in 2014 [44] for El Salvador and Vadean *et al.* in 2019 in the case of Tajikistan<sup>15</sup>. The first instrument is a

---

<sup>13</sup>A Hausman test shows that in most cases a fixed effects model is the only non-biased model. For consistency, the fixed effects model is always kept as it only leads to a loss of efficiency.

<sup>14</sup>In order to state that, I simply ran random-effects Heckman models and checked the correlations of both the errors in the two stages and of the random effects in the two equations. It appears that the households with migrants does not seem to be selected in a way that would truncate the distribution, hence simple fixed-effects analysis is to be sufficient. This is in line with the surprisingly close characteristics of the households with and without remitters.

<sup>15</sup>The literature dealing with different effects of remittances is already vast and, therefore, the use of those instruments in different context is already rather widespread.

municipality-level weighted average measure of regional Russian wages<sup>16</sup>. It is constructed as:

$$w_{jt} = \sum_l s_{jlt} \bar{w}_{lt} \quad (6)$$

with  $l$  the Russian region,  $j$  the municipality in Tajikistan,  $t$  is the year, so  $s_{jlt}$  denotes the share of Tajikistani migrants from municipality  $j$  and living in Russian region  $l$  at time  $t$ ;  $\bar{w}_{lt}$  is the wage in the Russian city heading the oblast<sup>17</sup>. It is expected that this measure is unrelated with the consumption balance of households in Tajikistan but through remittances. The higher the wage in the Russian region the more attractive the area for further migration. The polarization around Moscow might partly explain why Moscow and Moscow Oblast account for a higher share of all the migrants in the present data: it gets richer compared with the rest of the country and is therefore more and more attractive (which also leverage the network effect). About the municipality-weighted IV, one can additionally state that remittances depend on both home and host conditions (see Sultonov in 2013 [45]) and therefore the municipality Russian wages variations are likely to impact whether the household will receive remittances. More importantly, it is unlikely that this channel to impact the consumption pattern can take other ways than remittances.

The second instrument is an indicator variable taking the value 1 when there are at least two adult males in the household. Table (2) indicates that the head of the household is most likely to be a male. Then, one can imagine in a patriarchal society that males are meant to achieve specific tasks within the household and are thus unlikely to migrate if they are the only adult male in the household. On the other hand, when the number of adult males exceeds unity, there is the possibility of avoiding overlap through (temporary) migration. The two instruments are complementary. Intuitively, the former catches the changes in the macroeconomic opportunities in migrating while the latter captures the family structure impact in allowing a member to migrate.

---

<sup>16</sup>The data come from the Russian statistic office: see Cities wages in Russia .

<sup>17</sup>As discussed above, the majority of the Tajikistani migrants are living in 43 of the major urban centers in Russia.



Classically, the estimation equation becomes:

$$c_{ikt} = \alpha_k + \gamma_k \hat{\text{Log}} R_{it} + \delta_k \text{Log}(E)_{it} + \omega_k \frac{1}{E_{it}} + X_{it} \beta_k + \alpha_{ik} + \nu_{tk} + u_{ikt} \quad (7)$$

with the first stage including the set of controls  $X_{it}$ . Both specification are computed with bootstrapped standard errors<sup>18</sup>. The first stage can be found in Appendix(B.12). Testing for overidentification and weak instruments did not convince that the present specification cannot be used.

## 5.2. The results

*Expenditures and elasticity.* I am using a frame similar to Leser [47] and follow the type of specification of Adams in his various analyses, which rather built Engel curves with expenditures rather than with income (income data in developing countries is unreliable as many activities are self-employed and in agriculture, leading to very large measurement errors). The power of Leser's equation is that, though very simple, it allows to obtain a set of three parameters Engel functions. The impact of a change in expenditures through income (I) - thus not of remittances<sup>19</sup> - on the spending for category  $k$  would be  $\frac{dx_k}{dI} = (\alpha_k + \delta_k) + \delta_k \text{Log}(E)$ . Mechanically, the impact of extra remittances simply is  $\frac{dx_k}{dR} = \frac{dx_k}{dI} + \gamma_k$ . Therefore, a significant  $\gamma_k$  would imply that the temporary and potentially uncertain flow of income, remittances, has an impact on the allocation of consumption.

Each column corresponds to one share of the expenditures. One can see on the tables displayed that, as expected, food is taken as an inferior good while education and secondary goods as defined through the PCA method appear here to be a superior good (the highest in the list proposed in this paper).

Therefore, it can be puzzling that remittances do not push up the spending in education after controlling for individual fixed effects. This is a key result of this paper. Can remittances be taken as equivalent to an increase of income? A striking result lays in the difference between the shift in relative

---

<sup>18</sup>I shall provide the bootstrapped standard errors rather than the robust standard errors as convincingly explained by Young [46]

<sup>19</sup>Quite simply, since the common practice is to take expenditures as income in this literature, I simply add remittances in expenditures, so one would have  $E = I + R$

consumption due to remittances and due to a higher level of expenditures. Durable goods are the only ones for which the coefficients of remittances and of expenditures are not significantly different<sup>20</sup>. This discrepancy suggests that remittances cannot be simply considered as an extra-income.

Several factors can influence it: the lack of insurance that the stream of remittances would be stable, the temporary characteristic of this source of income - from 2 to 4 years. Remittances might then be taken as temporary income along with the temporary dimension of the migration itself and therefore been consumed accordingly. Does the temporary feature as well as the uncertainty of remittances matter in the choice of where to use them?

The two following tables indicate the results when applying the usual fixed effects (table C.13), the iv-fixed effects (table C.14). Remittances do not seem to impact spending in education, health, communication, and the basic goods in both the FE and the FE-IV estimations. On the other hand, one can notice that the "secondary goods" expenditures seem to be pushed up when the household receives remittances.

The magnitude as well as the statistical significance change along with the specifications but they seem to lead to a similar conclusion. The share of food, education, and health spending seem to vary more than other models according to whether remittances are instrumented or not.

*The effect of lagged remittances.* In order to better understand the nature of the change in consumption shares, the lagged remittances effects has to be introduced. A similar effect between the current and the lagged value would indicate a potential *hysteresis* of the effect: the change in consumption became permanent. On the contrary, a different change would suggest that the consumption pattern highly depends on the current situation even though the migration - thus the remittances - can be expected to be temporary only. This implies that the household does not smooth the consumption pattern accordingly. The second case would contradict the permanent income hypothesis that requires no links between the transitory consumption and income. An extra income in the form of remittances would in this scenario impact the temporary consumption pattern as its effect vanishes over time.

Tables (5) and (6) display the results of the lagged remittances on the consumption of the households. The share of durable goods is not signifi-

---

<sup>20</sup>This is true for both FE and FE-IV specifications. It is also verified when the specification does not introduce the term  $\frac{1}{E_{it}}$  so that it fully parallels the remittances variable.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Food	Basic	Secondary	Education	Health	Basic PCA	Secondary PCA	Energy	Communication
Scaled Log Remittances	0.00794*** (3.33)	-0.000103 (-0.07)	0.00300*** (2.98)	-0.00173 (-1.30)	0.0000663 (0.06)	-0.000417 (-0.40)	0.00493*** (2.88)	-0.00942*** (-4.00)	0.000255 (0.78)
One over expenditures	7.564*** (3.76)	2.014** (2.05)	0.509 (1.03)	-3.236*** (-2.61)	0.187 (0.29)	2.246*** (2.90)	0.819 (0.88)	-6.293*** (-3.50)	-0.747*** (-3.51)
Log scaled expenditures	-0.0943*** (-8.62)	0.0294*** (4.03)	0.00925*** (2.77)	0.0399*** (4.60)	0.00473 (1.14)	0.0149** (2.52)	0.0284*** (4.43)	0.0182* (1.74)	-0.00708*** (-5.38)
Size of family	-0.00271 (-1.36)	0.00287** (2.57)	0.00134* (1.91)	0.00550*** (3.96)	0.000516 (0.87)	0.000663 (0.84)	0.00383*** (3.13)	-0.00675*** (-3.67)	-0.000768** (-2.56)
Age of the head	0.00182 (0.71)	-0.00104 (-0.60)	-0.0000715 (-0.09)	0.000511 (0.20)	-0.000219 (-0.31)	-0.00135* (-1.87)	0.000266 (0.15)	-0.00115 (-0.49)	0.000150 (0.33)
Square age of the head	-0.00000911 (-0.39)	0.0000119 (0.75)	-0.00000112 (-0.15)	-0.000000488 (-0.02)	0.00000325 (0.46)	0.0000127* (1.90)	-0.00000250 (-0.15)	-0.00000239 (-0.11)	-0.00000205 (-0.52)
Share of children	0.0676*** (2.99)	-0.0309** (-2.22)	0.00265 (0.35)	-0.0262 (-1.64)	0.00509 (0.71)	-0.0106 (-1.35)	-0.0137 (-0.95)	-0.0120 (-0.56)	-0.00622* (-1.74)
Share of actives	0.0579*** (2.95)	-0.000520 (-0.05)	0.0102* (1.70)	-0.0121 (-1.02)	-0.0122* (-1.84)	0.000705 (0.10)	0.0111 (1.00)	-0.0465** (-2.56)	0.00336 (1.03)
Migration length	-0.0000975 (-0.46)	0.000117 (0.94)	0.0000366 (0.43)	-0.000127 (-0.83)	-0.0000797 (-0.79)	0.000100 (1.21)	0.0000590 (0.36)	0.000121 (0.72)	0.0000298 (1.20)
2.Last diploma of most educated	0.0145 (0.77)	0.0178* (1.92)	0.00244 (0.42)	0.0193*** (2.69)	-0.0118* (-1.75)	0.00265 (0.52)	0.0182* (1.74)	-0.0457** (-2.48)	0.00348* (1.95)
3.Last diploma of most educated	-0.0125 (-0.60)	0.0283*** (2.66)	0.00235 (0.36)	0.0157 (1.49)	-0.00903 (-1.16)	0.0108* (1.81)	0.0189 (1.60)	-0.0308 (-1.56)	0.00607** (2.39)
9.Year of survey	0.0818*** (8.40)	-0.0177*** (-3.22)	-0.00461 (-1.48)	-0.138*** (-15.11)	0.0259*** (9.57)	-0.00125 (-0.35)	-0.0120** (-2.22)	0.0462*** (5.03)	0.00620*** (3.47)
11.Year of survey	0.0981*** (8.48)	0.0177** (2.50)	-0.0111*** (-2.97)	-0.150*** (-13.88)	0.0216*** (7.34)	0.0187*** (3.64)	0.00299 (0.44)	0.0156 (1.53)	0.00856*** (4.25)
Constant	0.917*** (8.99)	-0.0865 (-1.36)	-0.0240 (-0.79)	-0.155* (-1.72)	-0.00563 (-0.18)	-0.0312 (-0.76)	-0.112* (-1.84)	0.296*** (3.11)	0.0586*** (4.20)
Observations	3786	3786	3786	3786	3786	3786	3786	3786	3786
Adjusted $R^2$	-0.224	-0.347	-0.487	-0.150	-0.395	-0.381	-0.417	-0.318	-0.471
r2_o	0.146	0.0799	0.0236	0.192	0.0455	0.0603	0.0582	0.0300	0.0230
N_g	1262	1262	1262	1262	1262	1262	1262	1262	1262
df_m	13	13	13	13	13	13	13	13	13
ll	2481.2	4723.7	6541.7	4103.4	6144.4	6658.9	4223.9	2615.2	9422.8
chi2	511.5	343.0	25.97	339.3	296.4	231.0	148.2	389.1	90.99
p	5.19e-101	2.32e-65	0.0172	1.37e-64	1.34e-55	5.66e-42	4.79e-25	4.38e-75	9.04e-14
rank	14	14	14	14	14	14	14	14	14

$t$  statistics in parentheses. Standard errors are computed using a bootstrap with 1000 replicates. Amount remitted is the natural logarithm of the current dollar-equivalent value of the amount remitted.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table 3: Basic FE

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Food	Basic	Secondary	Education	Health	Basic PCA	Secondary PCA	Energy	Communication
Scaled Log Remittances	0.0165 (1.58)	0.00780 (1.34)	0.00776** (2.15)	0.0101 (1.41)	0.00321 (0.75)	-0.00184 (-0.47)	0.0213*** (2.91)	-0.0455*** (-3.91)	0.0000936 (0.07)
One over expenditures	7.567*** (3.77)	2.017** (2.05)	0.511 (1.03)	-3.232*** (-2.58)	0.188 (0.29)	2.246*** (2.90)	0.825 (0.85)	-6.304*** (-3.49)	-0.747*** (-3.49)
Log scaled expenditures	-0.0943*** (-8.60)	0.0293*** (4.05)	0.00925*** (2.74)	0.0399*** (4.55)	0.00472 (1.13)	0.0149** (2.52)	0.0284*** (4.29)	0.0182* (1.71)	-0.00708*** (-5.34)
Size of family	-0.00135 (-0.51)	0.00412*** (2.79)	0.00209** (2.35)	0.00738*** (3.99)	0.00101 (1.29)	0.000437 (0.45)	0.00644*** (3.80)	-0.0125*** (-4.41)	-0.000794** (-2.27)
Age of the head	0.00150 (0.57)	-0.00133 (-0.74)	-0.000248 (-0.30)	0.0000735 (0.03)	-0.000336 (-0.44)	-0.00130* (-1.73)	-0.000342 (-0.18)	0.000186 (0.08)	0.000155 (0.33)
Square age of the head	-0.00000661 (-0.28)	0.0000142 (0.88)	0.000000266 (0.03)	0.00000294 (0.13)	0.00000417 (0.56)	0.0000123* (1.78)	0.00000227 (0.13)	-0.0000129 (-0.60)	-0.00000209 (-0.52)
Share of children	0.0610** (2.47)	-0.0370** (-2.38)	-0.00103 (-0.13)	-0.0353* (-1.94)	0.00266 (0.33)	-0.00951 (-1.11)	-0.0264 (-1.52)	0.0158 (0.57)	-0.00609 (-1.63)
Share of actives	0.0650*** (3.11)	0.00608 (0.53)	0.0141** (2.12)	-0.00226 (-0.17)	-0.00959 (-1.31)	-0.000482 (-0.06)	0.0248* (1.90)	-0.0766*** (-3.65)	0.00323 (0.90)
Migration length	-0.000375 (-0.94)	-0.000138 (-0.63)	-0.000117 (-0.75)	-0.000509* (-1.95)	-0.000181 (-1.05)	0.000146 (0.94)	-0.000471 (-1.52)	0.00128*** (2.92)	0.0000351 (0.68)
2.Last diploma of most educated	0.0142 (0.76)	0.0176* (1.90)	0.00231 (0.39)	0.0190** (2.55)	-0.0119* (-1.74)	0.00269 (0.52)	0.0178* (1.65)	-0.0448** (-2.34)	0.00348* (1.95)
3.Last diploma of most educated	-0.0127 (-0.60)	0.0281*** (2.65)	0.00222 (0.33)	0.0154 (1.42)	-0.00912 (-1.17)	0.0108* (1.80)	0.0185 (1.52)	-0.0299 (-1.46)	0.00608** (2.38)
9.Year of survey	0.0814*** (8.26)	-0.0181*** (-3.28)	-0.00486 (-1.54)	-0.138*** (-14.97)	0.0257*** (9.57)	-0.00117 (-0.33)	-0.0129** (-2.31)	0.0480*** (5.07)	0.00621*** (3.44)
11.Year of survey	0.0950*** (7.47)	0.0148** (2.02)	-0.0128*** (-3.19)	-0.155*** (-13.33)	0.0204*** (6.29)	0.0192*** (3.50)	-0.00302 (-0.40)	0.0287*** (2.53)	0.00862*** (4.01)
Constant	0.916*** (8.94)	-0.0879 (-1.37)	-0.0248 (-0.80)	-0.157* (-1.75)	-0.00616 (-0.20)	-0.0309 (-0.75)	-0.115* (-1.79)	0.302*** (3.16)	0.0587*** (4.17)
Observations	3786	3786	3786	3786	3786	3786	3786	3786	3786
r2_o	0.137	0.0660	0.0178	0.174	0.0409	0.0603	0.0381	0.0138	0.0235
N_g	1262	1262	1262	1262	1262	1262	1262	1262	1262
df_m	13	13	13	13	13	13	13	13	13
chi2	514.0	334.1	23.48	335.9	290.0	227.4	140.6	362.8	88.87
p	1.58e-101	1.75e-63	0.0363	7.22e-64	2.96e-54	3.04e-41	1.61e-23	1.59e-69	2.30e-13
rank	14	14	14	14	14	14	14	14	14

*t* statistics in parentheses. Standard errors are computed using a bootstrap with 1000 replicates. Amount remitted is the natural logarithm of the current dollar-equivalent value of the amount remitted.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table 4: FE-IV

cantly impacted by remittances. The magnitudes of the coefficients for the secondary good in the FE-IV specification change sign compared with the current remittances impacts. This is in line with the idea that the consumption shift due to remittances is temporary. This effect seems to corroborate the idea that remittances are here mostly taken as temporary "incomes" that would vanish. This temporary income would rather shift temporary consumption than the permanent, which actually questions the relevance of the hypothesis  $\rho_{c|y_t} = 0$  (no correlation between the transitory income and the transitory consumption) that Friedman proposed and discussed in his Permanent Hypothesis chapter [48].

	(1) Food	(2) Basic	(3) Secondary	(4) Education	(5) Health	(6) Basic PCA	(7) Secondary PCA	(8) Energy	(9) Communication
Log lagged amount remitted	-0.00530** (-2.05)	0.000126 (0.08)	0.000384 (0.36)	0.000150 (0.23)	-0.00130 (-1.23)	0.000119 (0.10)	0.000634 (0.31)	0.00533* (1.85)	0.000619* (1.91)
Log scaled expenditures	-0.0769*** (-3.61)	0.0521*** (3.35)	0.0140* (1.78)	0.0379*** (3.13)	0.0208* (1.92)	0.0294** (2.48)	0.0431*** (2.70)	-0.0439** (-1.97)	-0.00404 (-1.44)
One over expenditures	7.705 (1.08)	13.75*** (2.91)	0.591 (0.23)	9.945*** (2.78)	5.515 (1.47)	9.353*** (2.70)	5.516 (1.04)	-38.66*** (-5.21)	1.151 (1.05)
Constant	0.920*** (5.04)	-0.165 (-1.39)	-0.0823 (-1.16)	-0.293** (-2.49)	-0.124 (-1.49)	-0.110 (-1.34)	-0.179 (-1.28)	0.679*** (3.71)	0.0645** (2.17)
Observations	2524	2524	2524	2524	2524	2524	2524	2524	2524
r2_o	0.0496	0.0902	0.0179	0.0392	0.00815	0.0703	0.0413	0.00606	0.0180

*t* statistics in parentheses. Standard errors are computed using a bootstrap with 1000 replicates. Amount remitted is the natural logarithm of the current dollar-equivalent value of the amount remitted.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table 5: FE - lagged remittances

	(1) Food	(2) Basic	(3) Secondary	(4) Education	(5) Health	(6) Basic PCA	(7) Secondary PCA	(8) Energy	(9) Communication
Log lagged amount remitted	-0.0236* (-1.83)	0.00283 (0.36)	-0.00443 (-1.01)	0.00370 (0.71)	0.00618 (1.15)	0.00924 (1.58)	-0.0133 (-1.52)	0.0115 (0.85)	0.00385** (2.30)
Log scaled expenditures	-0.0773*** (-3.50)	0.0521*** (3.34)	0.0139* (1.75)	0.0380*** (3.13)	0.0210* (1.90)	0.0296** (2.38)	0.0428** (2.58)	-0.0437* (-1.93)	-0.00396 (-1.37)
One over expenditures	7.195 (0.96)	13.82*** (2.90)	0.457 (0.17)	10.04*** (2.79)	5.723 (1.49)	9.607*** (2.66)	5.127 (0.93)	-38.48*** (-5.06)	1.242 (1.11)
Constant	0.904*** (4.71)	-0.162 (-1.37)	-0.0865 (-1.21)	-0.289** (-2.49)	-0.118 (-1.39)	-0.102 (-1.20)	-0.192 (-1.34)	0.684*** (3.65)	0.0674** (2.21)
Observations	2524	2524	2524	2524	2524	2524	2524	2524	2524
r2_o	0.0441	0.0909	0.00820	0.0272	0.00176	0.0415	0.0153	0.00701	0.00556

*t* statistics in parentheses. Standard errors are computed using a bootstrap with 1000 replicates. Amount remitted is the natural logarithm of the current dollar-equivalent value of the amount remitted.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table 6: FE-IV - lagged remittances

*The expenditures and the remittances.* Dropping parts of the sample according to households' ranking in terms of total expenditures (see tables 7, 8, D.16 10). When dropping the top 25% as well as when dropping the bottom 25% the shift of secondary goods shares is preserved though the magnitudes appear larger for highest spenders. The change in the share of energy spending follow a similar pattern. More interestingly, the two cases lead to a different

result in the education shares: remittances push up the share of education for the richest only and it seems to push down the share of education in for the poorest. Education is a superior good and is not uniformly impacted by remittances. On the other hand, the secondary goods are relatively consumed more in any case. The quest for status is more uniformly spread than the quest for human capital investment. Lastly, the share of spending dedicated to food increases in the case of the poorest households but this effect is not significant anymore, even at the 10% level of confidence. This might still be a weak illustration of remittances being a tool to thwart poverty.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Food	Basic	Secondary	Education	Health	Basic PCA	Secondary PCA	Energy	Communication
Remittances received	0.0122 (0.88)	0.00416 (0.47)	0.0131** (2.39)	0.0127 (1.37)	-0.00694 (-1.06)	-0.00219 (-0.34)	0.0270*** (2.58)	-0.0369*** (-2.74)	0.00179 (0.87)
Log scaled expenditures	-0.0613*** (-3.07)	0.0339*** (2.61)	0.00976 (1.47)	0.0170 (0.97)	0.0112 (1.30)	0.0207* (1.94)	0.0277** (2.29)	-0.00578 (-0.31)	-0.00481** (-2.14)
One over expenditures	22.46*** (3.71)	4.966 (1.40)	2.116 (0.97)	-20.38*** (-4.04)	2.650 (1.16)	3.350 (1.33)	4.586 (1.24)	-12.04** (-2.13)	0.220 (0.25)
Constant	0.692*** (4.21)	-0.145 (-1.34)	-0.0659 (-1.22)	0.0935 (0.58)	-0.0577 (-0.94)	-0.0542 (-0.72)	-0.204** (-2.11)	0.413*** (2.78)	0.0696*** (3.08)
Observations	2839	2839	2839	2839	2839	2839	2839	2839	2839
Adjusted $R^2$	-0.572	-0.577	-0.748	-0.238	-0.651	-0.604	-0.692	-0.632	-0.734
r2.o	0.0677	0.0704	0.0133	0.245	0.0461	0.0642	0.0309	0.0118	0.0202

$t$  statistics in parentheses. Standard errors are computed using a bootstrap with 1000 replicates. Amount remitted is the natural logarithm of the current dollar-equivalent value of the amount remitted.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table 7: FE - without the bottom 25%

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Food	Basic	Secondary	Education	Health	Basic PCA	Secondary PCA	Energy	Communication
Amount remitted	0.00710 (0.73)	0.00468 (0.79)	0.00875** (2.33)	0.0218*** (2.84)	0.00323 (0.75)	-0.00182 (-0.44)	0.0197*** (2.61)	-0.0465*** (-4.22)	0.000947 (0.69)
Log scaled expenditures	-0.0620*** (-3.07)	0.0335** (2.57)	0.00896 (1.31)	0.0151 (0.87)	0.0110 (1.25)	0.0209** (1.97)	0.0259** (2.03)	-0.00164 (-0.08)	-0.00490** (-2.18)
One over expenditures	22.16*** (3.61)	4.735 (1.32)	1.722 (0.77)	-21.50*** (-4.25)	2.421 (1.04)	3.435 (1.37)	3.680 (0.94)	-9.710 (-1.57)	0.180 (0.20)
Constant	0.689*** (4.15)	-0.148 (-1.36)	-0.0707 (-1.28)	0.0764 (0.48)	-0.0626 (-1.01)	-0.0531 (-0.70)	-0.215** (-2.10)	0.447*** (2.72)	0.0692*** (3.06)
Observations	2839	2839	2839	2839	2839	2839	2839	2839	2839
r2.o	0.0642	0.0631	0.0160	0.184	0.0364	0.0636	0.0233	0.00478	0.0174

$t$  statistics in parentheses. Standard errors are computed using a bootstrap with 1000 replicates. Amount remitted is the natural logarithm of the current dollar-equivalent value of the amount remitted.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table 8: FE-IV - without the bottom 25%

	(1) Food	(2) Basic	(3) Secondary	(4) Education	(5) Health	(6) Basic PCA	(7) Secondary PCA	(8) Energy	(9) Communication
Remittances received	0.0347** (2.55)	-0.00394 (-0.59)	0.00959** (2.24)	-0.0138** (-2.37)	-0.00130 (-0.26)	-0.00370 (-0.92)	0.0158** (1.98)	-0.0265** (-2.06)	0.00121 (0.74)
Log scaled expenditures	-0.105*** (-6.06)	0.0176** (2.13)	0.0150*** (3.08)	0.0210*** (2.65)	-0.00416 (-0.82)	0.000106 (0.02)	0.0389*** (4.28)	0.0615*** (3.92)	-0.00606** (-2.06)
One over expenditures	5.979** (2.34)	0.876 (0.83)	1.162** (2.07)	-2.811*** (-2.80)	-1.017 (-1.47)	0.810 (1.14)	1.830* (1.72)	-3.362 (-1.53)	-0.828** (-2.55)
Constant	0.964*** (7.53)	-0.0597 (-0.90)	-0.0443 (-1.23)	-0.0670 (-0.71)	0.0307 (0.80)	0.0234 (0.67)	-0.163** (-2.20)	0.127 (1.11)	0.0494** (2.32)
Observations	2839	2839	2839	2839	2839	2839	2839	2839	2839
r2_o	0.122	0.0488	0.00950	0.136	0.0471	0.0326	0.0473	0.0484	0.0254

*t* statistics in parentheses. Standard errors are computed using a bootstrap with 1000 replicates. Amount remitted is the natural logarithm of the current dollar-equivalent value of the amount remitted.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table 9: FE - without the top 25%

	(1) Food	(2) Basic	(3) Secondary	(4) Education	(5) Health	(6) Basic PCA	(7) Secondary PCA	(8) Energy	(9) Communication
Amount remitted	0.0105 (1.09)	0.00577 (1.17)	0.00548** (2.01)	-0.00982* (-1.95)	0.00459 (1.42)	-0.00166 (-0.67)	0.0150*** (2.62)	-0.0177* (-1.91)	0.00119 (0.79)
Log scaled expenditures	-0.106*** (-6.10)	0.0168** (1.98)	0.0143*** (2.86)	0.0224*** (2.79)	-0.00484 (-0.93)	0.000323 (0.06)	0.0369*** (3.91)	0.0639*** (4.07)	-0.00623** (-2.11)
One over expenditures	5.879** (2.30)	0.755 (0.71)	1.085* (1.90)	-2.663*** (-2.67)	-1.108 (-1.54)	0.831 (1.14)	1.588 (1.44)	-3.100 (-1.42)	-0.847*** (-2.58)
Constant	0.970*** (7.57)	-0.0572 (-0.83)	-0.0414 (-1.11)	-0.0721 (-0.73)	0.0328 (0.82)	0.0225 (0.64)	-0.156** (-1.96)	0.118 (1.04)	0.0500** (2.34)
Observations	2839	2839	2839	2839	2839	2839	2839	2839	2839
r2_o	0.116	0.0344	0.0115	0.118	0.0308	0.0340	0.0336	0.0372	0.0184

*t* statistics in parentheses. Standard errors are computed using a bootstrap with 1000 replicates. Amount remitted is the natural logarithm of the current dollar-equivalent value of the amount remitted.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table 10: FE-IV - without the top 25%

### 5.3. Robustness

I provide few alternatives in the specification kept above. (i) I change the key variables and instead of the log value of remittances, I use an indicator whether the household has a remiter as, alternatively, a migrant as around 15% of the migrants do not remit. None of the changes in variables change the results. The discussion about the impact of remittances should therefore better distinguish the remitters and the non-remitters. This result suggests that the expenditure changes might also be due to another aspect of migration: the quest for status and not just the direct financial support and/or stability.

(ii) I run the different regressions alternatively dropping one year of the panel. This does not severely affect the results, at worst the significance of the results for the secondary goods disappears for the PCA-based sorting.

(iii) I transformed some variables: firstly using the expenditures instead of its log; secondly using the value of remittances instead of the binary variables whether there were indeed remittances received (in the two fixed effects models).

(iv) The sample of migrants has been dropped to those migrating either for a relatively short period (less than 4 years) or, on the contrary, to those being in migration for at least 6 months. The rationale behind the first restriction is that long term migration in the context of Tajikistani migrants in Russia is rare and the migrant might actually be a permanent migrant and thus the consumption behaviour would have internalized this information. The second case rather infers that newly arrived migrants might need some time to settle, start the activity and the way to effectively send remittances.

## 6. Conclusion

The objective of the present paper was to contribute to the literature dealing with migration, remittances, and expenditures of the family left behind. It does so in the context of a critically remittances-dependent country, Tajikistan. In addition to a classic fixed effects with instruments, The results of the present paper are twofold.

First, remittances seem to increase spending that are neither the ones needed to ensure basic needs nor to invest in a future potential better off situation through investing in human capital. Remittances, instead, are more prone to push up the spending of less needed goods or even of conspicuous goods. Veblen indicates that the quest for status through consumption choices is by no means limited to the higher classes or the leisure class.

Second, the estimation of elasticities confronted to the remittances might be an indicator that remittances are not like any other types of income. Education appear to be the most positively elastic good but this is not captured by a flow of remittances. Therefore, the neoclassical theory which considers remittances as a simple extension of the income might be somehow refined: remittances do not necessarily lead to long-term rationalized spending though income might be more prone to. Moreover, it does not appear to be a long-lasting change in the preferences as the lagged impact of remittances does not relate with the contemporaneous values. Nevertheless, I should keep highlighting that those conclusion are based on a very specific case and I cannot push the external validity any further.



- [1] T. Veblen, *Theory of the Leisure Class* (Oxford World's Classics), Transaction Publishers, 2007.
- [2] C. Buckley, E. T. Hofmann, Are remittances an effective mechanism for development? evidence from tajikistan, 1999–2007, *Journal of Development Studies* 48 (2012) 1121–1138.
- [3] R. E. Lucas, O. Stark, Motivations to remit: Evidence from botswana, *Journal of political Economy* 93 (1985) 901–918.
- [4] J.-P. Azam, F. Gubert, Those in kayes, *Revue économique* 56 (2005) 1331–1358.
- [5] J.-P. Azam, F. Gubert, Migrants' remittances and the household in africa: a review of evidence, *Journal of African Economies* 15 (2006) 426–462.
- [6] B. De la Briere, E. Sadoulet, A. De Janvry, S. Lambert, The roles of destination, gender, and household composition in explaining remittances: an analysis for the dominican sierra, *Journal of Development Economics* 68 (2002) 309–328.
- [7] S. Azizi, Why do migrants remit?, *The World Economy* 42 (2019) 429–452.
- [8] H. Rapoport, F. Docquier, The economics of migrants' remittances, *Handbook of the economics of giving, altruism and reciprocity* 2 (2006) 1135–1198.
- [9] M. T. Gapen, M. R. Chami, M. P. Montiel, M. A. Barajas, C. Fullenkamp, Do workers' remittances promote economic growth?, 9-153, *International Monetary Fund*, 2009.
- [10] M. A. Clemens, D. McKenzie, Why don't remittances appear to affect growth?, *The World Bank*, 2014.
- [11] S. Djajić, International migration, remittances and welfare in a dependent economy, *Journal of Development Economics* 21 (1986) 229–234.
- [12] O. Moav, Z. Neeman, Status and poverty, *Journal of the European Economic Association* 8 (2010) 413–420.

- [13] O. Moav and, Z. Neeman, Saving rates and poverty: the role of conspicuous consumption and human capital, *The Economic Journal* 122 (2012) 933–956.
- [14] G. S. Becker, A theory of the allocation of time, *The economic journal* (1965) 493–517.
- [15] R. H. Adams Jr, Evaluating the economic impact of international remittances on developing countries using household surveys: A literature review, *Journal of Development Studies* 47 (2011) 809–828.
- [16] M. Lokshin, E. Glinskaya, The effect of male migration on employment patterns of women in nepal, *The World Bank Economic Review* 23 (2009) 481–507.
- [17] C. Amuedo-Dorantes, S. Pozo, Migration, remittances, and male and female employment patterns, *American Economic Review* 96 (2006) 222–226.
- [18] E. Murard, Consumption and leisure: The welfare impact of migration on family left behind (2016).
- [19] R. H. Adams Jr, A. Cuecuecha, Remittances, household expenditure and investment in guatemala, *World Development* 38 (2010) 1626–1641.
- [20] R. H. J. Adams, Remittances and poverty in Ghana, *The World Bank*, 2006.
- [21] R. H. Adams Jr, Worker remittances and inequality in rural egypt, *Economic Development and Cultural Change* 38 (1989) 45–71.
- [22] R. H. Adams Jr, Remittances, investment, and rural asset accumulation in pakistan, *Economic Development and Cultural Change* 47 (1998) 155–173.
- [23] R. H. J. Adams, A. Cuecuecha, The economic impact of international remittances on poverty and household consumption and investment in Indonesia, *The World Bank*, 2010.
- [24] R. H. Adams Jr, J. Page, Do international migration and remittances reduce poverty in developing countries?, *World development* 33 (2005) 1645–1669.

- [25] M. Nikolova, M. Roman, K. F. Zimmermann, Left behind but doing good? civic engagement in two post-socialist countries, *Journal of Comparative Economics* 45 (2017) 658–684.
- [26] A. Ivlevs, M. Nikolova, C. Graham, Emigration, remittances, and the subjective well-being of those staying behind, *Journal of Population Economics* 32 (2019) 113–151.
- [27] T. Brück, D. Esenaliev, A. Kroeger, A. Kudebayeva, B. Mirkasimov, S. Steiner, Household survey data for research on well-being and behavior in central asia, *Journal of Comparative Economics* 42 (2014) 819–835.
- [28] A. M. Danzer, B. Dietz, K. Gatskova, A. Schmitten, Showing off to the new neighbors? income, socioeconomic status and consumption patterns of internal migrants, *Journal of comparative economics* 42 (2014) 230–245.
- [29] J. Kakhkharov, M. Ahunov, Squandering remittances income in conspicuous consumption?, in: *30 Years since the Fall of the Berlin Wall*, Springer, 2020, pp. 271–288.
- [30] R. Jha, T. Dang, Y. Tashrifov, Economic vulnerability and poverty in tajikistan, *Economic change and restructuring* 43 (2010) 95–112.
- [31] P. Justino, O. N. Shemyakina, Remittances and labour supply in post-conflict tajikistan, *IDS Working Papers 2012* (2012) 1–37.
- [32] F. Vadean, T. Randazzo, M. Piracha, Remittances, labour supply and activity of household members left-behind, *The Journal of Development Studies* 55 (2019) 278–293.
- [33] E. Murakami, E. Yamada, E. Sioson, et al., The Impact of Migration and Remittances on Labor Supply in Tajikistan, Technical Report, 2018.
- [34] UNICEF, et al., Impact of labour migration on “children left behind” in tajikistan, UNICEF Publication: Dushanbe, Tajikistan (2011).
- [35] M. Clément, Remittances and household expenditure patterns in tajikistan: A propensity score matching analysis, *Asian Development Review* 28 (2011).

- [36] A. M. Danzer, B. Dietz, K. Gatskova, Migration and remittances in Tajikistan: survey technical report, Technical Report, IOS Working Papers, 2013.
- [37] O. Shemyakina, The effect of armed conflict on accumulation of schooling: Results from tajikistan, *Journal of Development Economics* 95 (2011) 186–200.
- [38] M. Stephan, Education, youth and islam: the growing popularity of private religious lessons in dushanbe, tajikistan, *Central Asian Survey* 29 (2010) 469–483.
- [39] UNICEF, et al., Global initiative on out-of-school children: Tajikistan country study, Dushanbe: United Nations Children’s Fund (2013).
- [40] J. Falkingham, Poverty, out-of-pocket payments and access to health care: evidence from tajikistan, *Social science & medicine* 58 (2004) 247–258.
- [41] T. Hoeck, R. Droux, T. Breu, H. Hurni, D. Maselli, Rural energy consumption and land degradation in a post-soviet setting—an example from the west pamir mountains in tajikistan, *Energy for Sustainable Development* 11 (2007) 48–57.
- [42] T. Amemiya, *Advanced econometrics*, Harvard university press, 1985.
- [43] M. Mendola, C. Carletto, Migration and gender differences in the home labour market: Evidence from albania, *Labour Economics* 19 (2012) 870–880.
- [44] D. Anzoategui, A. Demirgüç-Kunt, M. S. Martínez Pería, Remittances and financial inclusion: evidence from El Salvador, The World Bank, 2011.
- [45] M. Sultonov, The macroeconomic determinants of remittance flows from russia to tajikistan, *Transition Studies Review* 19 (2013) 417–430.
- [46] A. Young, Consistency without inference: Instrumental variables in practical application (2019).
- [47] C. E. V. Leser, Forms of engel functions, *Econometrica: Journal of the Econometric Society* (1963) 694–703.

- [48] M. Friedman, The permanent income hypothesis, in: A theory of the consumption function, Princeton University Press, 1957, pp. 20–37.
- [49] J. H. Stock, M. Yogo, Testing for weak instruments in linear iv regression, 2002.

## **AppendixA. Sorting of expenditures**

The following table displays the sorts of goods that are either grouped in "basic" or in "secondary" consumption.

	Basic		Secondary	
	Subjectivity	PCA	Subjectivity	PCA
Cosmetics and personal care products	Yes	Yes		
Household supplies & cleaning products	Yes	Yes		
Domestic services			Yes	Yes
Articles for cleaning	Yes			Yes
Laundry and dry cleaning	Yes			Yes
Fuels and lubricants for personal vehicle	Yes	Yes		
Passenger transport by road	Yes			Yes
Pet food, pet supplies and services			Yes	Yes
Entertainment			Yes	Yes
Cigarettes, tobacco, cigars			Yes	Yes
Newspapers and magazines			Yes	Yes
Cloth	Yes	Yes		
Footwear	Yes	Yes		
Tailoring expenses	Yes			Yes
Cloth and sewing/knitting supplies	Yes			Yes
Dishes	Yes			Yes
Household linens	Yes	Yes		
Non-electric kitchen utensils	Yes			Yes
Household hand tools	Yes			Yes
Small electrical accessories	Yes	Yes		
Books (excluding school books)			Yes	Yes
Films, cameras and film developing			Yes	Yes
Sports and hobby equipment, toys			Yes	Yes
Legal services			Yes	Yes
Charges for bank services			Yes	Yes
Services for maintenance and repair	Yes			Yes
Home improvements	Yes			Yes
Small electric items and appliances	Yes			Yes
Personal effects for travel			Yes	Yes
Excursion, holiday			Yes	Yes
Payment for training			Yes	Yes
Insurance (dwelling, vehicle, personal)			Yes	Yes
Other taxes (TV, radio, vehicle)			Yes	Yes
Marriage gifts			Yes	Yes
Costs for ceremonies			Yes	Yes
Gambling losses			Yes	Yes
Other			Yes	Yes

Table A.11: Taxonomy of the different types of non-food consumption goods.

## AppendixB. First stage of the regression

	(1)	(2)	(3)
	Amount remitted	Remittances received	Migrant in household
Log imputed wage	0.0602*** (9.50)	0.0102*** (8.83)	0.0104*** (8.72)
Household with more than one adult male	0.883*** (7.91)	0.163*** (8.20)	0.180*** (8.74)
Log scaled expenditures	0.0176 (0.20)	-0.00370 (-0.25)	-0.000950 (-0.06)
One over expenditures	6.145 (0.45)	1.374 (0.55)	1.839 (0.74)
Size of family	-0.218*** (-8.31)	-0.0381*** (-8.67)	-0.0398*** (-8.92)
Age of the head	0.0328 (1.08)	0.00610 (1.13)	0.00565 (1.04)
Square age of the head	-0.000228 (-0.85)	-0.0000445 (-0.93)	-0.0000441 (-0.91)
Share of children	1.212** (2.24)	0.199** (2.13)	0.223** (2.20)
Share of actives	-1.096*** (-5.91)	-0.214*** (-6.35)	-0.196*** (-5.86)
Migration length	0.0389*** (8.13)	0.00762*** (8.28)	0.00916*** (8.66)
2.Last diploma of most educated	0.0391 (0.25)	0.000733 (0.03)	-0.0185 (-0.71)
3.Last diploma of most educated	0.0704 (0.38)	0.0178 (0.53)	-0.0103 (-0.33)
Constant	-0.514 (-0.53)	-0.0411 (-0.23)	-0.0147 (-0.08)
Observations	3786	3786	3786
Overall R2	0.324	0.366	0.439
Kleibergen-Paap rk LM stat	95.6	92.8	93.1
Kleibergen-Paap Wald rk F stat	60.0	57.9	58.4
Hansen J stat	0.012	0.032	0.056

*t* statistics in parentheses. Standard errors are computed using a bootstrap with 1000 replicates. Amount remitted is the natural logarithm of the current dollar-equivalent value of the amount remitted.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table B.12: First Stage

The Kleibergen-Paap rk LM stat test the underidentification of the specification. The null hypothesis that the excluded instruments are not correlated with the endogenous variable has to be rejected for the three models displayed in table (B.12). The second test is testing the weak identification and has to be compared with the Stock and Yogo table [49]. We can reject the weak identification risk. Lastly, the Hansen J statistic allows to test the overidentification. The null hypothesis, that the overidentification is valid cannot be rejected in this context.



## AppendixC. Unscaled remittances

	(1) Food	(2) Basic	(3) Secondary	(4) Education	(5) Health	(6) Basic PCA	(7) Secondary PCA	(8) Energy	(9) Communication
Remittances received	0.0330*** (2.91)	0.00209 (0.30)	0.00844** (2.07)	-0.00570 (-0.85)	-0.00454 (-0.96)	-0.0000838 (-0.02)	0.0164** (2.17)	-0.0356*** (-3.33)	0.00231 (1.57)
Log scaled expenditures	-0.0947*** (-8.58)	0.0295*** (4.04)	0.00945*** (2.80)	0.0398*** (4.57)	0.00476 (1.12)	0.0153** (2.56)	0.0286*** (4.44)	0.0182* (1.74)	-0.00698*** (-5.31)
One over expenditures	7.592*** (3.76)	1.990** (1.99)	0.509 (1.03)	-3.265*** (-2.65)	0.0576 (0.09)	2.337*** (2.93)	0.736 (0.79)	-6.155*** (-3.42)	-0.728*** (-3.42)
Size of family	-0.00269 (-1.36)	0.00299*** (2.68)	0.00118* (1.69)	0.00560*** (4.08)	0.0000333 (0.05)	0.000800 (1.01)	0.00359*** (2.94)	-0.00640*** (-3.50)	-0.000711** (-2.41)
Age of the head	0.00157 (0.60)	-0.00110 (-0.63)	-0.0000593 (-0.08)	0.000452 (0.17)	0.000223 (0.28)	-0.00138* (-1.90)	0.000247 (0.14)	-0.00121 (-0.52)	0.000127 (0.28)
Square age of the head	-0.00000754 (-0.32)	0.0000123 (0.78)	-0.00000124 (-0.17)	-0.000000114 (-0.00)	0.000000613 (0.08)	0.0000128* (1.92)	-0.00000238 (-0.14)	-0.00000215 (-0.10)	-0.00000188 (-0.47)
Share of children	0.0684*** (3.04)	-0.0309** (-2.22)	0.00358 (0.47)	-0.0258 (-1.62)	0.00347 (0.48)	-0.0116 (-1.52)	-0.0115 (-0.81)	-0.0124 (-0.59)	-0.00639* (-1.81)
Share of actives	0.0582*** (2.97)	-0.0000982 (-0.01)	0.00915 (1.53)	-0.0111 (-0.93)	-0.0153** (-2.22)	0.000515 (0.07)	0.0105 (0.94)	-0.0445** (-2.43)	0.00361 (1.10)
Migration length	-0.000127 (-0.57)	0.0000961 (0.77)	0.0000641 (0.75)	-0.000127 (-0.81)	-0.000282 (-0.26)	0.0000888 (1.08)	0.0000814 (0.49)	0.000103 (0.60)	0.0000191 (0.77)
2.Last diploma of most educated	0.0136 (0.73)	0.0174* (1.86)	0.00247 (0.42)	0.0191*** (2.68)	-0.00919 (-1.32)	0.00216 (0.42)	0.0183* (1.75)	-0.0468** (-2.52)	0.00339* (1.90)
3.Last diploma of most educated	-0.0132 (-0.64)	0.0278*** (2.60)	0.00237 (0.36)	0.0158 (1.50)	-0.00753 (-0.96)	0.0103* (1.69)	0.0190 (1.60)	-0.0311 (-1.56)	0.00592** (2.32)
Constant	0.928*** (8.97)	-0.0859 (-1.34)	-0.0241 (-0.79)	-0.154* (-1.70)	-0.0183 (-0.55)	-0.0328 (-0.79)	-0.111* (-1.81)	0.296*** (3.10)	0.0583*** (4.18)
Observations	3786	3786	3786	3786	3786	3786	3786	3786	3786
r2_o	0.149	0.0798	0.0217	0.192	0.0501	0.0603	0.0574	0.0304	0.0214
chi2	520.0	343.1	22.78	341.8	347.2	233.2	147.6	379.4	90.11
rank	14	14	14	14	14	14	14	14	14
sigma_u	0.109	0.0513	0.0339	0.0604	0.0364	0.0324	0.0606	0.120	0.0169
sigma_e	0.154	0.0852	0.0528	0.100	0.0582	0.0511	0.0974	0.149	0.0247

*t* statistics in parentheses. Standard errors are computed using a bootstrap with 1000 replicates. Amount remitted is the natural logarithm of the current dollar-equivalent value of the amount remitted.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table C.13: Basic FE

## AppendixD. What is expenditures are corrected from the value of remittances?

The specification has a major weakness: I take the expenditures instead of the income and treat it as it it were the same thing. It is unlikely to be as the remittances that are spent directly are part of the expenditures. Therefore, I compute a different expenditures which is simply what is left once the remittances are subtracted from the expenditures.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Food	Basic	Secondary	Education	Health	Basic PCA	Secondary PCA	Energy	Communication
Amount remitted	0.0122 (1.47)	0.00640 (1.41)	0.00629** (2.22)	0.00765 (1.35)	0.00279 (0.83)	-0.00147 (-0.48)	0.0172*** (3.02)	-0.0358*** (-3.88)	0.000461 (0.39)
Log scaled expenditures	-0.0948*** (-8.57)	0.0296*** (4.07)	0.00949*** (2.78)	0.0400*** (4.56)	0.00486 (1.14)	0.0153** (2.55)	0.0288*** (4.34)	0.0178* (1.68)	-0.00699*** (-5.27)
One over expenditures	7.600*** (3.77)	1.990** (1.99)	0.510 (1.02)	-3.268*** (-2.62)	0.0559 (0.08)	2.337*** (2.93)	0.738 (0.75)	-6.160*** (-3.42)	-0.728*** (-3.40)
Size of family	-0.00152 (-0.60)	0.00407*** (2.92)	0.00204** (2.41)	0.00715*** (4.05)	0.000673 (0.87)	0.000539 (0.57)	0.00617*** (3.90)	-0.0117*** (-4.38)	-0.000700** (-2.07)
Age of the head	0.00126 (0.47)	-0.00141 (-0.78)	-0.000299 (-0.36)	0.0000116 (0.00)	0.0000390 (0.05)	-0.00130* (-1.74)	-0.000473 (-0.24)	0.000269 (0.11)	0.000126 (0.27)
Square age of the head	-0.00000522 (-0.22)	0.0000147 (0.90)	0.000000586 (0.08)	0.00000330 (0.15)	0.00000204 (0.26)	0.0000123* (1.78)	0.00000313 (0.17)	-0.0000135 (-0.61)	-0.00000188 (-0.46)
Share of children	0.0622*** (2.58)	-0.0361** (-2.37)	-0.000749 (-0.09)	-0.0332* (-1.88)	0.000436 (0.05)	-0.0103 (-1.25)	-0.0243 (-1.43)	0.0139 (0.51)	-0.00648* (-1.76)
Share of actives	0.0641*** (3.09)	0.00610 (0.53)	0.0139** (2.09)	-0.00198 (-0.15)	-0.0115 (-1.53)	-0.000993 (-0.13)	0.0250* (1.92)	-0.0743*** (-3.55)	0.00361 (1.01)
Migration length	-0.000373 (-0.91)	-0.000159 (-0.71)	-0.000133 (-0.83)	-0.000500* (-1.86)	-0.000184 (-1.06)	0.000151 (0.95)	-0.000516 (-1.63)	0.00133*** (2.90)	0.0000186 (0.34)
2.Last diploma of most educated	0.0131 (0.70)	0.0170* (1.83)	0.00216 (0.36)	0.0187** (2.52)	-0.00935 (-1.34)	0.00224 (0.43)	0.0175 (1.61)	-0.0450** (-2.34)	0.00337* (1.89)
3.Last diploma of most educated	-0.0134 (-0.64)	0.0275** (2.57)	0.00215 (0.32)	0.0152 (1.42)	-0.00777 (-0.98)	0.0104* (1.70)	0.0182 (1.49)	-0.0296 (-1.43)	0.00593** (2.31)
Constant	0.928*** (8.96)	-0.0867 (-1.33)	-0.0245 (-0.79)	-0.155* (-1.74)	-0.0191 (-0.57)	-0.0326 (-0.78)	-0.112* (-1.72)	0.299*** (3.10)	0.0584*** (4.16)
Observations	3786	3786	3786	3786	3786	3786	3786	3786	3786
r2_o	0.142	0.0662	0.0166	0.176	0.0429	0.0604	0.0372	0.0142	0.0212
chi2	526.6	334.9	24.71	336.9	340.6	230.3	145.7	355.0	86.57
rank	14	14	14	14	14	14	14	14	14
sigma_u	0.111	0.0522	0.0342	0.0614	0.0366	0.0323	0.0628	0.131	0.0169
sigma_e	0.155	0.0858	0.0531	0.101	0.0585	0.0511	0.0995	0.155	0.0247

*t* statistics in parentheses. Standard errors are computed using a bootstrap with 1000 replicates. Amount remitted is the natural logarithm of the current dollar-equivalent value of the amount remitted.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table C.14: FE-IV

	(1) Food	(2) Basic	(3) Secondary	(4) Education	(5) Health	(6) Basic PCA	(7) Secondary PCA	(8) Energy	(9) Communication
log_remittances_eq_scale	0.00755*** (3.24)	-0.0000491 (-0.03)	0.00302*** (3.07)	-0.00157 (-1.20)	0.0000771 (0.07)	-0.000408 (-0.40)	0.00500*** (2.91)	-0.00928*** (-4.00)	0.000246 (0.74)
ln_exp_noremit	-0.0938*** (-8.28)	0.0292*** (3.97)	0.00915*** (2.83)	0.0398*** (4.52)	0.00471 (1.17)	0.0149** (2.45)	0.0282*** (4.49)	0.0181* (1.71)	-0.00706*** (-5.41)
one_over_exp_noremit	7.640*** (3.83)	1.968** (2.04)	0.474 (1.00)	-3.241*** (-2.67)	0.187 (0.31)	2.229*** (2.84)	0.741 (0.84)	-6.287*** (-3.53)	-0.740*** (-3.63)
Size of family	-0.00271 (-1.39)	0.00287*** (2.61)	0.00134* (1.91)	0.00550*** (4.12)	0.000515 (0.87)	0.000662 (0.84)	0.00384*** (3.09)	-0.00675*** (-3.69)	-0.000768** (-2.57)
Age of the head	0.00179 (0.72)	-0.00104 (-0.61)	-0.0000681 (-0.09)	0.000520 (0.20)	-0.000219 (-0.32)	-0.00135** (-1.97)	0.000275 (0.16)	-0.00114 (-0.51)	0.000149 (0.34)
Square age of the head	-0.00000894 (-0.40)	0.0000119 (0.76)	-0.00000115 (-0.16)	-0.00000537 (-0.02)	0.00000325 (0.48)	0.0000127** (2.01)	-0.00000257 (-0.16)	-0.00000245 (-0.12)	-0.00000204 (-0.54)
Share of children	0.0677*** (3.40)	-0.0309** (-2.53)	0.00266 (0.40)	-0.0262* (-1.82)	0.00508 (0.86)	-0.0106 (-1.59)	-0.0137 (-1.05)	-0.0121 (-0.67)	-0.00622* (-1.90)
Share of actives	0.0578*** (2.97)	-0.000525 (-0.05)	0.0102* (1.70)	-0.0121 (-1.03)	-0.0122* (-1.87)	0.000701 (0.10)	0.0111 (1.00)	-0.0465** (-2.55)	0.00336 (1.07)
Migration length	-0.0000980 (-0.46)	0.000118 (0.93)	0.0000366 (0.44)	-0.000127 (-0.82)	-0.0000797 (-0.81)	0.000100 (1.24)	0.0000592 (0.36)	0.000121 (0.76)	0.0000298 (1.26)
2.Last diploma of most educated	0.0143 (0.78)	0.0178* (1.87)	0.00245 (0.42)	0.0194*** (2.65)	-0.0118* (-1.76)	0.00265 (0.49)	0.0183* (1.72)	-0.0457** (-2.51)	0.00348* (1.91)
3.Last diploma of most educated	-0.0127 (-0.62)	0.0283*** (2.63)	0.00236 (0.36)	0.0157 (1.50)	-0.00903 (-1.16)	0.0108* (1.76)	0.0190 (1.59)	-0.0307 (-1.54)	0.00607** (2.34)
9.Year of survey	0.0820*** (8.49)	-0.0177*** (-3.12)	-0.00468 (-1.52)	-0.138*** (-15.19)	0.0259*** (9.52)	-0.00125 (-0.34)	-0.0122** (-2.20)	0.0461*** (5.19)	0.00621*** (3.39)
11.Year of survey	0.0984*** (8.39)	0.0176** (2.44)	-0.0112*** (-3.04)	-0.150*** (-13.76)	0.0216*** (7.46)	0.0187*** (3.57)	0.00282 (0.41)	0.0155 (1.54)	0.00856*** (4.11)
Constant	0.915*** (9.23)	-0.0854 (-1.38)	-0.0233 (-0.82)	-0.155* (-1.68)	-0.00554 (-0.19)	-0.0308 (-0.75)	-0.111* (-1.86)	0.296*** (3.24)	0.0585*** (4.30)
Observations	3786	3786	3786	3786	3786	3786	3786	3786	3786
Adjusted $R^2$	0.186	0.103	0.010	0.235	0.071	0.081	0.057	0.123	0.020
$r^2_o$	0.146	0.0799	0.0236	0.192	0.0455	0.0603	0.0583	0.0301	0.0229
F	39.02	24.16	2.096	26.62	23.05	19.34	11.09	30.05	6.980
N_g	1262	1262	1262	1262	1262	1262	1262	1262	1262
df_m	12	12	12	12	12	12	12	12	12
ll	2482.2	4723.7	6541.7	4103.6	6144.4	6658.7	4224.1	2615.2	9422.8
chi2									
p	2.56e-83	1.66e-52	0.0121	7.75e-58	4.48e-50	7.85e-42	8.14e-23	4.13e-65	3.37e-13
rank	13	13	13	13	13	13	13	13	13

t statistics in parentheses

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table D.15: FE

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Food	Basic	Secondary	Education	Health	Basic PCA	Secondary PCA	Energy	Communication
log_remittances_eq_scale	0.0161 (1.59)	0.00784 (1.39)	0.00776** (2.20)	0.0103 (1.45)	0.00322 (0.79)	-0.00182 (-0.48)	0.0214*** (3.20)	-0.0453*** (-4.15)	0.0000881 (0.06)
ln_exp_noremit	-0.0937*** (-8.28)	0.0293*** (4.00)	0.00920*** (2.81)	0.0399*** (4.50)	0.00474 (1.18)	0.0149** (2.44)	0.0284*** (4.38)	0.0177* (1.66)	-0.00706*** (-5.40)
one_over_exp_noremit	7.632*** (3.85)	1.961** (2.03)	0.470 (0.98)	-3.252*** (-2.64)	0.185 (0.30)	2.230*** (2.83)	0.727 (0.79)	-6.256*** (-3.49)	-0.740*** (-3.62)
Size of family	-0.00134 (-0.51)	0.00413*** (2.88)	0.00209** (2.41)	0.00738*** (4.11)	0.00102 (1.32)	0.000438 (0.45)	0.00644*** (3.95)	-0.0125*** (-4.59)	-0.000793** (-2.29)
Age of the head	0.00148 (0.59)	-0.00133 (-0.75)	-0.000243 (-0.31)	0.0000840 (0.03)	-0.000335 (-0.46)	-0.00130* (-1.85)	-0.000329 (-0.17)	0.000190 (0.08)	0.000155 (0.35)
Square age of the head	-0.00000646 (-0.29)	0.0000141 (0.88)	0.000000224 (0.03)	0.0000288 (0.13)	0.00000416 (0.59)	0.0000123* (1.91)	0.00000216 (0.12)	-0.0000129 (-0.63)	-0.00000209 (-0.54)
Share of children	0.0610*** (2.86)	-0.0370*** (-2.61)	-0.000994 (-0.14)	-0.0353*** (-2.07)	0.00266 (0.39)	-0.00950 (-1.27)	-0.0263 (-1.61)	0.0157 (0.64)	-0.00610* (-1.76)
Share of actives	0.0650***	0.00607	0.0141**	-0.00222	-0.00959	-0.000478	0.0248*	-0.0766***	0.00323
Migration length	-0.000375 (-0.99)	-0.000137 (-0.66)	-0.000117 (-0.80)	-0.000509** (-2.01)	-0.000181 (-1.11)	0.000146 (0.99)	-0.000470* (-1.69)	0.00128*** (3.17)	0.0000349 (0.73)
2.Last diploma of most educated	0.0141 (0.76)	0.0176* (1.87)	0.00233 (0.39)	0.0191** (2.52)	-0.0119* (-1.77)	0.00268 (0.50)	0.0178* (1.65)	-0.0447** (-2.36)	0.00348* (1.91)
3.Last diploma of most educated	-0.0129 (-0.62)	0.0281*** (2.64)	0.00224 (0.34)	0.0154 (1.44)	-0.00911 (-1.17)	0.0108* (1.76)	0.0185 (1.52)	-0.0298 (-1.44)	0.00608** (2.34)
9.Year of survey	0.0815*** (8.37)	-0.0183*** (-3.20)	-0.00501 (-1.61)	-0.139*** (-15.08)	0.0257*** (9.55)	-0.00116 (-0.31)	-0.0133** (-2.35)	0.0486*** (5.31)	0.00622*** (3.36)
11.Year of survey	0.0950*** (7.47)	0.0146* (1.94)	-0.0130*** (-3.32)	-0.155*** (-13.25)	0.0204*** (6.43)	0.0193*** (3.46)	-0.00352 (-0.48)	0.0295*** (2.63)	0.00862*** (3.89)
Constant	0.913*** (9.24)	-0.0873 (-1.39)	-0.0245 (-0.83)	-0.158* (-1.73)	-0.00628 (-0.21)	-0.0304 (-0.74)	-0.114* (-1.81)	0.304*** (3.38)	0.0585*** (4.29)
Observations	3786	3786	3786	3786	3786	3786	3786	3786	3786
Adjusted $R^2$									
r2_o	0.137	0.0661	0.0179	0.175	0.0409	0.0603	0.0384	0.0137	0.0234
F									
N_g	1262	1262	1262	1262	1262	1262	1262	1262	1262
df_m	1275	1275	1275	1275	1275	1275	1275	1275	1275
ll									
chi2	2180.0	368.9	127.4	369.0	289.1	371.1	213.6	660.4	269.5
p	2.15e-50	1	1	1	1	1	1	1	1
rank	13	13	13	13	13	13	13	13	13

*t* statistics in parentheses

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table D.16: IV-FE

## AppendixE. Elasticities

As argued, the Leser specification offers a favorable tradeoff between the richness of potential shapes for the Engel curves as well as a tractable setting. Indeed, elasticities as easily derived from equation (7).

$$\epsilon_{x_k, I} = \frac{dx_k}{x_k} \frac{I}{dI} = (\alpha_k + \delta_k(1 + \text{Log}(E))) \frac{I}{x_k} \quad (\text{E.1})$$

$$\epsilon_{x_k, R} = \frac{dx_k}{x_k} \frac{R}{dR} = (\epsilon_{x_k, I} + \frac{\gamma_k I}{x_k}) \frac{R}{I} \quad (\text{E.2})$$

## AppendixF. Use binaries remittances received or migrant in the household

	(1) Food	(2) Basic	(3) Secondary	(4) Education	(5) Health	(6) Basic PCA	(7) Secondary PCA	(8) Energy	(9) Communication
Remittances received	0.0330*** (2.91)	0.00209 (0.30)	0.00844** (2.07)	-0.00570 (-0.85)	-0.00454 (-0.96)	-0.0000838 (-0.02)	0.0164** (2.17)	-0.0356*** (-3.33)	0.00231 (1.57)
Log scaled expenditures	-0.0947*** (-8.58)	0.0295*** (4.04)	0.00945*** (2.80)	0.0398*** (4.57)	0.00476 (1.12)	0.0153** (2.56)	0.0286*** (4.44)	0.0182* (1.74)	-0.00698*** (-5.31)
One over expenditures	7.592*** (3.76)	1.990** (1.99)	0.509 (1.03)	-3.265*** (-2.65)	0.0576 (0.09)	2.337*** (2.93)	0.736 (0.79)	-6.155*** (-3.42)	-0.728*** (-3.42)
Size of family	-0.00269 (-1.36)	0.00299*** (2.68)	0.00118* (1.69)	0.00560*** (4.08)	0.0000333 (0.05)	0.000800 (1.01)	0.00359*** (2.94)	-0.00640*** (-3.50)	-0.000711** (-2.41)
Age of the head	0.00157 (0.60)	-0.00110 (-0.63)	-0.0000593 (-0.08)	0.000452 (0.17)	0.000223 (0.28)	-0.00138* (-1.90)	0.000247 (0.14)	-0.00121 (-0.52)	0.000127 (0.28)
Square age of the head	-0.00000754 (-0.32)	0.0000123 (0.78)	-0.00000124 (-0.17)	-0.000000114 (-0.00)	0.000000613 (0.08)	0.0000128* (1.92)	-0.00000238 (-0.14)	-0.00000215 (-0.10)	-0.00000188 (-0.47)
Share of children	0.0684*** (3.04)	-0.0309** (-2.22)	0.00358 (0.47)	-0.0258 (-1.62)	0.00347 (0.48)	-0.0116 (-1.52)	-0.0115 (-0.81)	-0.0124 (-0.59)	-0.00639* (-1.81)
Share of actives	0.0582*** (2.97)	-0.0000982 (-0.01)	0.00915 (1.53)	-0.0111 (-0.93)	-0.0153*** (-2.22)	0.000515 (0.07)	0.0105 (0.94)	-0.0445** (-2.43)	0.00361 (1.10)
Migration length	-0.000127 (-0.57)	0.0000961 (0.77)	0.0000641 (0.75)	-0.000127 (-0.81)	-0.000282 (-0.26)	0.0000888 (1.08)	0.0000814 (0.49)	0.000103 (0.60)	0.0000191 (0.77)
2.Last diploma of most educated	0.0136 (0.73)	0.0174* (1.86)	0.00247 (0.42)	0.0191*** (2.68)	-0.00919 (-1.32)	0.00216 (0.42)	0.0183* (1.75)	-0.0468** (-2.52)	0.00339* (1.90)
3.Last diploma of most educated	-0.0132 (-0.64)	0.0278*** (2.60)	0.00237 (0.36)	0.0158 (1.50)	-0.00753 (-0.96)	0.0103* (1.69)	0.0190 (1.60)	-0.0311 (-1.56)	0.00592** (2.32)
Constant	0.928*** (8.97)	-0.0859 (-1.34)	-0.0241 (-0.79)	-0.154* (-1.70)	-0.0183 (-0.55)	-0.0328 (-0.79)	-0.111* (-1.81)	0.296*** (3.10)	0.0583*** (4.18)
Observations	3786	3786	3786	3786	3786	3786	3786	3786	3786
r2_o	0.149	0.0798	0.0217	0.192	0.0501	0.0603	0.0574	0.0304	0.0214

*t* statistics in parentheses. Standard errors are computed using a bootstrap with 1000 replicates. Amount remitted is the natural logarithm of the current dollar-equivalent value of the amount remitted.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table F.17: FE - remitters (binary) in households?

	(1) Food	(2) Basic	(3) Secondary	(4) Education	(5) Health	(6) Basic PCA	(7) Secondary PCA	(8) Energy	(9) Communication
Remittances received	0.0678 (1.46)	0.0347 (1.38)	0.0336** (2.11)	0.0427 (1.35)	0.0149 (0.81)	-0.00652 (-0.38)	0.0913*** (2.86)	-0.197*** (-3.80)	0.00286 (0.44)
Log scaled expenditures	-0.0943*** (-8.49)	0.0298*** (4.10)	0.00970*** (2.86)	0.0403*** (4.59)	0.00495 (1.16)	0.0152** (2.53)	0.0293*** (4.45)	0.0165 (1.56)	-0.00697*** (-5.21)
One over expenditures	7.581*** (3.78)	1.981** (1.98)	0.501 (1.00)	-3.279*** (-2.62)	0.0519 (0.08)	2.339*** (2.93)	0.713 (0.73)	-6.107*** (-3.42)	-0.729*** (-3.41)
Size of family	-0.00162 (-0.65)	0.00400*** (2.92)	0.00195** (2.35)	0.00709*** (4.09)	0.000632 (0.84)	0.000601 (0.64)	0.00590*** (3.81)	-0.0114*** (-4.33)	-0.000694** (-2.08)
Age of the head	0.00124 (0.46)	-0.00141 (-0.77)	-0.000294 (-0.36)	9.14e-09 (0.00)	0.0000410 (0.05)	-0.00132* (-1.76)	-0.000454 (-0.23)	0.000292 (0.12)	0.000122 (0.26)
Square age of the head	-0.00000496 (-0.20)	0.0000147 (0.90)	0.000000627 (0.08)	0.00000348 (0.16)	0.00000206 (0.26)	0.0000124* (1.80)	0.00000319 (0.18)	-0.0000141 (-0.63)	-0.00000184 (-0.45)
Share of children	0.0637*** (2.68)	-0.0352** (-2.35)	0.000189 (0.02)	-0.0323* (-1.85)	0.000852 (0.11)	-0.0107 (-1.32)	-0.0216 (-1.31)	0.00925 (0.35)	-0.00646* (-1.77)
Share of actives	0.0653*** (3.09)	0.00657 (0.57)	0.0143*** (2.10)	-0.00118 (-0.09)	-0.0113 (-1.48)	-0.000799 (-0.10)	0.0258* (1.95)	-0.0773*** (-3.61)	0.00372 (1.03)
Migration length	-0.000414 (-0.94)	-0.000174 (-0.73)	-0.000144 (-0.85)	-0.000528* (-1.84)	-0.000189 (-1.02)	0.000142 (0.84)	-0.000538 (-1.61)	0.00143*** (2.87)	0.0000145 (0.25)
2.Last diploma of most educated	0.0135 (0.72)	0.0173* (1.85)	0.00238 (0.39)	0.0189** (2.54)	-0.00926 (-1.33)	0.00219 (0.42)	0.0181* (1.65)	-0.0462** (-2.38)	0.00339* (1.89)
3.Last diploma of most educated	-0.0138 (-0.66)	0.0273** (2.55)	0.00197 (0.29)	0.0150 (1.40)	-0.00784 (-0.99)	0.0104* (1.70)	0.0178 (1.44)	-0.0286 (-1.37)	0.00591** (2.30)
Constant	0.926*** (8.92)	-0.0882 (-1.35)	-0.0259 (-0.82)	-0.157* (-1.76)	-0.0197 (-0.59)	-0.0324 (-0.78)	-0.116* (-1.77)	0.307*** (3.17)	0.0583*** (4.16)
Observations	3786	3786	3786	3786	3786	3786	3786	3786	3786
r2_o	0.142	0.0680	0.0141	0.177	0.0424	0.0602	0.0361	0.0143	0.0209

*t* statistics in parentheses. Standard errors are computed using a bootstrap with 1000 replicates. Amount remitted is the natural logarithm of the current dollar-equivalent value of the amount remitted.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table F.18: FE-IV - remitters in households?

	(1) Food	(2) Basic	(3) Secondary	(4) Education	(5) Health	(6) Basic PCA	(7) Secondary PCA	(8) Energy	(9) Communication
migrant_in_HH_	0.0264** (2.38)	0.00514 (0.73)	0.00796* (1.83)	-0.00609 (-0.83)	0.00105 (0.25)	-0.0000769 (-0.02)	0.0192** (2.39)	-0.0367*** (-3.48)	0.00226 (1.49)
Log scaled expenditures	-0.0948*** (-8.60)	0.0295*** (4.04)	0.00942*** (2.79)	0.0398*** (4.57)	0.00481 (1.13)	0.0153** (2.56)	0.0286*** (4.43)	0.0182* (1.74)	-0.00699*** (-5.31)
One over expenditures	7.583*** (3.75)	1.988** (1.99)	0.506 (1.02)	-3.262*** (-2.65)	0.0556 (0.08)	2.337*** (2.93)	0.727 (0.78)	-6.141*** (-3.41)	-0.729*** (-3.42)
Size of family	-0.00287 (-1.45)	0.00309*** (2.77)	0.00117* (1.67)	0.00558*** (4.05)	0.000207 (0.34)	0.000800 (1.02)	0.00369*** (3.03)	-0.00647*** (-3.52)	-0.000710** (-2.40)
Age of the head	0.00164 (0.63)	-0.00113 (-0.65)	-0.0000535 (-0.07)	0.000455 (0.17)	0.000170 (0.21)	-0.00138* (-1.91)	0.000223 (0.12)	-0.00121 (-0.52)	0.000128 (0.28)
Square age of the head	-0.00000797 (-0.34)	0.0000126 (0.79)	-0.00000126 (-0.17)	-0.00000159 (-0.01)	0.00000103 (0.13)	0.0000128* (1.92)	-0.00000212 (-0.13)	-0.00000232 (-0.11)	-0.00000188 (-0.47)
Share of children	0.0689*** (3.05)	-0.0313** (-2.23)	0.00351 (0.46)	-0.0256 (-1.61)	0.00270 (0.37)	-0.0116 (-1.51)	-0.0122 (-0.85)	-0.0117 (-0.55)	-0.00642* (-1.82)
Share of actives	0.0563*** (2.88)	0.000434 (0.04)	0.00891 (1.49)	-0.0110 (-0.92)	-0.0141** (-2.07)	0.000517 (0.07)	0.0107 (0.97)	-0.0441** (-2.41)	0.00356 (1.09)
Migration length	-0.000113 (-0.48)	0.0000627 (0.47)	0.0000555 (0.60)	-0.000114 (-0.68)	-0.0000761 (-0.72)	0.0000889 (1.04)	0.0000277 (0.15)	0.000170 (0.97)	0.0000159 (0.61)
2.Last diploma of most educated	0.0141 (0.76)	0.0175* (1.87)	0.00262 (0.45)	0.0190*** (2.66)	-0.00919 (-1.32)	0.00216 (0.42)	0.0187* (1.78)	-0.0475** (-2.56)	0.00343* (1.92)
3.Last diploma of most educated	-0.0124 (-0.60)	0.0279*** (2.61)	0.00260 (0.40)	0.0156 (1.49)	-0.00759 (-0.96)	0.0103* (1.69)	0.0194 (1.64)	-0.0321 (-1.61)	0.00598** (2.34)
Constant	0.928*** (8.96)	-0.0862 (-1.35)	-0.0243 (-0.80)	-0.154* (-1.70)	-0.0187 (-0.56)	-0.0328 (-0.79)	-0.111* (-1.82)	0.297*** (3.11)	0.0582*** (4.17)
Observations	3786	3786	3786	3786	3786	3786	3786	3786	3786
r2_o	0.149	0.0794	0.0222	0.192	0.0494	0.0603	0.0582	0.0305	0.0216

*t* statistics in parentheses. Standard errors are computed using a bootstrap with 1000 replicates. Amount remitted is the natural logarithm of the current dollar-equivalent value of the amount remitted.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table F.19: FE - migrants in households?

	(1) Food	(2) Basic	(3) Secondary	(4) Education	(5) Health	(6) Basic PCA	(7) Secondary PCA	(8) Energy	(9) Communication
migrant_in_HH_	0.0627 (1.44)	0.0315 (1.34)	0.0300** (2.02)	0.0397 (1.36)	0.0133 (0.78)	-0.00457 (-0.29)	0.0807*** (2.74)	-0.180*** (-3.75)	0.00292 (0.48)
Log scaled expenditures	-0.0946*** (-8.55)	0.0297*** (4.07)	0.00959*** (2.82)	0.0402*** (4.58)	0.00490 (1.15)	0.0152** (2.54)	0.0290*** (4.43)	0.0171 (1.62)	-0.00698*** (-5.23)
One over expenditures	7.559*** (3.77)	1.970* (1.96)	0.491 (0.98)	-3.294*** (-2.63)	0.0472 (0.07)	2.340*** (2.94)	0.685 (0.71)	-6.043*** (-3.39)	-0.730*** (-3.40)
Size of family	-0.00172 (-0.70)	0.00392*** (2.91)	0.00187** (2.28)	0.00704*** (4.13)	0.000595 (0.81)	0.000657 (0.72)	0.00565*** (3.75)	-0.0110*** (-4.32)	-0.000690** (-2.09)
Age of the head	0.00130 (0.49)	-0.00137 (-0.76)	-0.000256 (-0.32)	0.0000340 (0.01)	0.0000582 (0.07)	-0.00134* (-1.80)	-0.000342 (-0.18)	0.000110 (0.05)	0.000122 (0.26)
Square age of the head	-0.00000518 (-0.21)	0.0000146 (0.89)	0.000000433 (0.06)	0.00000337 (0.15)	0.00000197 (0.25)	0.0000125* (1.83)	0.00000260 (0.15)	-0.0000133 (-0.61)	-0.00000183 (-0.45)
Share of children	0.0634*** (2.67)	-0.0353** (-2.35)	0.000201 (0.03)	-0.0325* (-1.85)	0.000858 (0.11)	-0.0109 (-1.34)	-0.0214 (-1.31)	0.00990 (0.38)	-0.00651* (-1.78)
Share of actives	0.0631*** (3.05)	0.00535 (0.47)	0.0130** (1.99)	-0.00249 (-0.19)	-0.0119 (-1.61)	-0.000322 (-0.04)	0.0222* (1.76)	-0.0708*** (-3.39)	0.00368 (1.03)
Migration length	-0.000471 (-0.97)	-0.000197 (-0.76)	-0.000161 (-0.87)	-0.000566* (-1.82)	-0.000197 (-1.00)	0.000133 (0.73)	-0.000578 (-1.59)	0.00158*** (2.83)	0.00000948 (0.15)
2.Last diploma of most educated	0.0147 (0.78)	0.0179* (1.92)	0.00295 (0.49)	0.0197*** (2.64)	-0.00900 (-1.29)	0.00209 (0.40)	0.0196* (1.83)	-0.0496*** (-2.59)	0.00344* (1.93)
3.Last diploma of most educated	-0.0120 (-0.57)	0.0282*** (2.64)	0.00286 (0.43)	0.0162 (1.52)	-0.00745 (-0.94)	0.0102* (1.67)	0.0202* (1.67)	-0.0338 (-1.64)	0.00599** (2.33)
Constant	0.924*** (8.88)	-0.0887 (-1.37)	-0.0264 (-0.85)	-0.158* (-1.77)	-0.0199 (-0.60)	-0.0324 (-0.78)	-0.117* (-1.84)	0.311*** (3.24)	0.0582*** (4.16)
Observations	3786	3786	3786	3786	3786	3786	3786	3786	3786
r2_o	0.142	0.0698	0.0157	0.179	0.0455	0.0608	0.0417	0.0164	0.0210

*t* statistics in parentheses. Standard errors are computed using a bootstrap with 1000 replicates. Amount remitted is the natural logarithm of the current dollar-equivalent value of the amount remitted.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table F.20: FE-IV - migrants in households?

## AppendixG. Different lengths of migration

	(1) Food	(2) Basic	(3) Secondary	(4) Education	(5) Health	(6) Basic PCA	(7) Secondary PCA	(8) Energy	(9) Communication
Amount remitted	0.000301 (0.07)	-0.00364* (-1.87)	0.00649*** (4.15)	0.000919 (0.44)	0.00649** (2.34)	-0.00341*** (-3.08)	0.00928*** (3.43)	-0.0100** (-2.27)	-0.000512 (-0.49)
Log scaled expenditures	-0.0929*** (-7.24)	0.0265*** (3.58)	0.00694** (2.02)	0.0356*** (3.69)	0.00714 (1.54)	0.0130** (2.09)	0.0242*** (3.84)	0.0229** (1.99)	-0.00620*** (-4.00)
One over expenditures	6.925*** (3.24)	1.710* (1.70)	0.226 (0.47)	-3.666*** (-2.70)	0.281 (0.44)	2.149*** (2.63)	0.268 (0.31)	-4.768*** (-2.59)	-0.709*** (-3.31)
Size of family	-0.00190 (-0.83)	0.00262** (2.31)	0.00121 (1.60)	0.00500*** (3.35)	0.000645 (0.92)	0.000398 (0.58)	0.00365** (2.54)	-0.00674*** (-3.17)	-0.000826** (-2.24)
Age of the head	-0.00342 (-1.01)	-0.00288 (-1.55)	0.000536 (0.52)	0.00262 (0.94)	0.000813 (0.65)	-0.00315*** (-4.02)	0.00115 (0.53)	0.00262 (0.85)	-0.000293 (-0.51)
Square age of the head	0.0000314 (1.04)	0.0000291* (1.72)	-0.00000485 (-0.52)	-0.0000180 (-0.75)	-0.00000429 (-0.39)	0.0000287*** (3.88)	-0.00000720 (-0.36)	-0.0000352 (-1.30)	0.00000171 (0.34)
Share of children	0.0612** (2.54)	-0.0198 (-1.44)	0.00139 (0.17)	-0.0280 (-1.61)	0.00447 (0.57)	-0.00649 (-0.80)	-0.00825 (-0.53)	-0.0135 (-0.57)	-0.00574 (-1.27)
Share of actives	0.0445* (1.96)	0.00844 (0.76)	0.0126* (1.93)	-0.00757 (-0.54)	-0.0161** (-2.04)	0.00343 (0.50)	0.0217* (1.75)	-0.0466** (-2.16)	0.00476 (1.28)
Migration length	0.00203* (1.66)	0.000796 (1.16)	-0.0000210 (-0.03)	-0.00131* (-1.81)	-0.00106** (-1.97)	0.000310 (0.70)	0.000326 (0.39)	-0.00111 (-0.82)	0.000668* (1.83)
2.Last diploma of most educated	0.00540 (0.26)	0.0176* (1.75)	-0.000444 (-0.07)	0.0150* (1.79)	-0.00992 (-1.23)	0.00513 (0.76)	0.0119 (1.18)	-0.0309 (-1.47)	0.00326 (1.51)
3.Last diploma of most educated	-0.0156 (-0.67)	0.0276** (2.39)	0.00346 (0.48)	0.00683 (0.56)	-0.0103 (-1.13)	0.0140* (1.83)	0.0171 (1.45)	-0.0174 (-0.76)	0.00543* (1.75)
Constant	1.077*** (9.01)	-0.0271 (-0.41)	-0.0261 (-0.74)	-0.182* (-1.91)	-0.0522 (-1.24)	0.0231 (0.53)	-0.112* (-1.67)	0.144 (1.25)	0.0665*** (3.82)
Observations	3256	3256	3256	3256	3256	3256	3256	3256	3256
r2_o	0.145	0.0740	0.0253	0.192	0.0568	0.0617	0.0457	0.0286	0.0254

t statistics in parentheses. Standard errors are computed using a bootstrap with 1000 replicates. Amount remitted is the natural logarithm of the current dollar-equivalent value of the amount remitted.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table G.21: FE - Migration up to 6 months long

	(1) Food	(2) Basic	(3) Secondary	(4) Education	(5) Health	(6) Basic PCA	(7) Secondary PCA	(8) Energy	(9) Communication
Amount remitted	0.0429 (0.98)	0.0307 (1.27)	0.0353** (2.22)	0.0174 (0.60)	0.0315* (1.73)	-0.0222 (-1.45)	0.106*** (2.68)	-0.155*** (-2.63)	-0.00268 (-0.46)
Log scaled expenditures	-0.0940*** (-7.22)	0.0255*** (3.32)	0.00614* (1.68)	0.0352*** (3.58)	0.00645 (1.35)	0.0135** (2.12)	0.0215*** (2.75)	0.0269** (2.07)	-0.00614*** (-3.89)
One over expenditures	6.617*** (3.00)	1.462 (1.34)	0.0183 (0.03)	-3.785*** (-2.69)	0.101 (0.14)	2.285*** (2.73)	-0.428 (-0.34)	-3.719* (-1.66)	-0.693*** (-3.08)
Size of family	-0.000251 (-0.08)	0.00395** (2.56)	0.00233** (2.38)	0.00564*** (3.01)	0.00161* (1.68)	-0.000329 (-0.37)	0.00738*** (3.10)	-0.0124*** (-3.31)	-0.000910** (-2.23)
Age of the head	-0.00360 (-0.99)	-0.00302 (-1.58)	0.000415 (0.37)	0.00255 (0.91)	0.000708 (0.53)	-0.00307*** (-3.63)	0.000741 (0.29)	0.00323 (0.79)	-0.000284 (-0.49)
Square age of the head	0.0000335 (1.01)	0.0000308* (1.76)	-0.00000343 (-0.33)	-0.0000171 (-0.70)	-0.00000305 (-0.25)	0.0000278*** (3.44)	-0.00000244 (-0.10)	-0.0000423 (-1.12)	0.00000160 (0.32)
Share of children	0.0480 (1.62)	-0.0304 (-1.61)	-0.00749 (-0.72)	-0.0330 (-1.49)	-0.00322 (-0.28)	-0.000701 (-0.06)	-0.0379 (-1.31)	0.0312 (0.71)	-0.00507 (-1.02)
Share of actives	0.0487** (2.10)	0.0118 (1.01)	0.0154** (2.11)	-0.00593 (-0.41)	-0.0137 (-1.61)	0.00157 (0.22)	0.0312** (2.00)	-0.0609** (-2.38)	0.00454 (1.18)
Migration length	-0.00306 (-0.29)	-0.00330 (-0.55)	-0.00346 (-0.66)	-0.00328 (-0.45)	-0.00404 (-0.90)	0.00255 (0.69)	-0.0112 (-0.79)	0.0162 (0.68)	0.000926 (0.63)
2.Last diploma of most educated	0.00123 (0.06)	0.0142 (1.32)	-0.00327 (-0.47)	0.0134 (1.47)	-0.0124 (-1.43)	0.00697 (0.96)	0.00241 (0.18)	-0.0167 (-0.64)	0.00347 (1.48)
3.Last diploma of most educated	-0.0212 (-0.84)	0.0232* (1.85)	-0.000280 (-0.03)	0.00469 (0.35)	-0.0136 (-1.39)	0.0164** (1.99)	0.00464 (0.28)	0.00145 (0.05)	0.00571* (1.75)
Constant	1.085*** (8.77)	-0.0210 (-0.31)	-0.0209 (-0.56)	-0.179* (-1.86)	-0.0478 (-1.09)	0.0198 (0.44)	-0.0950 (-1.22)	0.118 (0.90)	0.0661*** (3.77)
Observations	3256	3256	3256	3256	3256	3256	3256	3256	3256
r2_o	0.121	0.0320	0.0100	0.179	0.0317	0.0392	0.0107	0.00697	0.0223

t statistics in parentheses. Standard errors are computed using a bootstrap with 1000 replicates. Amount remitted is the natural logarithm of the current dollar-equivalent value of the amount remitted.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table G.22: FE-IV - Migration up to 6 months long

	(1) Food	(2) Basic	(3) Secondary	(4) Education	(5) Health	(6) Basic PCA	(7) Secondary PCA	(8) Energy	(9) Communication
Amount remitted	0.00715** (2.09)	-0.00182 (-0.80)	0.00221 (1.41)	0.000181 (0.10)	-0.000900 (-0.73)	-0.00226 (-1.51)	0.00437* (1.70)	-0.00636* (-1.66)	-0.000453 (-0.89)
Log scaled expenditures	-0.0999*** (-8.31)	0.0288*** (3.88)	0.00826** (2.40)	0.0368*** (3.99)	0.00424 (1.02)	0.0150** (2.25)	0.0261*** (4.31)	0.0282** (2.40)	-0.00641*** (-4.44)
One over expenditures	6.307*** (3.06)	1.958* (1.94)	0.535 (1.06)	-3.274** (-2.53)	0.117 (0.20)	2.312*** (2.59)	0.728 (0.83)	-4.928*** (-2.59)	-0.716*** (-3.33)
Size of family	-0.00200 (-0.91)	0.00228** (2.15)	0.00148** (2.12)	0.00533*** (3.54)	0.000408 (0.63)	0.000161 (0.23)	0.00381*** (2.93)	-0.00666*** (-3.25)	-0.000841** (-2.54)
Age of the head	0.00116 (0.39)	-0.00130 (-0.69)	-0.000282 (-0.38)	0.000185 (0.06)	0.000386 (0.44)	-0.00173** (-2.22)	-0.0000375 (-0.02)	-0.000258 (-2.10)	0.000107 (0.22)
Square age of the head	-0.0000583 (-0.22)	0.0000146 (0.84)	0.00000182 (0.25)	0.00000210 (0.08)	0.000000641 (0.08)	0.0000163** (2.27)	0.00000209 (0.12)	-0.0000114 (-0.49)	-0.00000194 (-0.47)
Share of children	0.0702*** (2.92)	-0.0222* (-1.65)	-0.000770 (-0.10)	-0.0313* (-1.69)	0.00762 (1.08)	-0.00694 (-0.86)	-0.0137 (-0.86)	-0.0177 (-0.80)	-0.00595 (-1.47)
Share of actives	0.0506** (2.41)	0.00410 (0.39)	0.00991 (1.55)	-0.00700 (-0.53)	-0.0131* (-1.94)	0.00162 (0.23)	0.0148 (1.26)	-0.0489** (-2.01)	0.00439 (1.32)
Migration length	0.000549 (0.53)	0.000588 (0.95)	-0.000335 (-0.71)	-0.00118** (-2.25)	-0.0000205 (-0.06)	0.000731* (1.68)	-0.000759 (-1.05)	-0.0000527 (-0.05)	0.000454** (2.25)
2.Last diploma of most educated	0.0133 (0.70)	0.0141 (1.44)	-0.000458 (-0.08)	0.0188** (2.35)	-0.00097 (-1.42)	0.00383 (0.64)	0.00921 (0.90)	-0.0389** (-2.01)	0.00306 (1.49)
3.Last diploma of most educated	-0.0128 (-0.60)	0.0227** (2.08)	-0.00127 (-0.18)	0.0164 (1.55)	-0.00830 (-1.07)	0.0103 (1.53)	0.00872 (0.73)	-0.0226 (-1.03)	0.00585** (1.99)
Constant	0.977*** (8.87)	-0.0737 (-1.15)	-0.0119 (-0.41)	-0.128 (-1.32)	-0.0283 (-0.81)	-0.0218 (-0.48)	-0.0864 (-1.49)	0.209** (2.04)	0.0568*** (3.80)
Observations	3484	3484	3484	3484	3484	3484	3484	3484	3484
r2_o	0.147	0.0716	0.0270	0.192	0.0518	0.0570	0.0489	0.0289	0.0239

*t* statistics in parentheses. Standard errors are computed using a bootstrap with 1000 replicates. Amount remitted is the natural logarithm of the current dollar-equivalent value of the amount remitted.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table G.23: FE - Migration from 6 months to 2 years

	(1) Food	(2) Basic	(3) Secondary	(4) Education	(5) Health	(6) Basic PCA	(7) Secondary PCA	(8) Energy	(9) Communication
Amount remitted	0.0360 (1.06)	0.0222 (1.11)	0.0225* (1.68)	0.0223 (0.95)	0.0137 (1.02)	-0.00858 (-0.65)	0.0650* (1.87)	-0.115** (-2.42)	-0.00118 (-0.24)
Log scaled expenditures	-0.100*** (-8.24)	0.0285*** (3.75)	0.00801** (2.14)	0.0366*** (3.93)	0.00406 (0.93)	0.0151** (2.24)	0.0254*** (3.41)	0.0296** (2.25)	-0.00640*** (-4.36)
One over expenditures	6.459*** (3.10)	2.085** (2.06)	0.642 (1.16)	-3.157** (-2.41)	0.194 (0.31)	2.279** (2.50)	1.048 (0.96)	-5.504*** (-2.67)	-0.719*** (-3.24)
Size of family	-0.000508 (-0.17)	0.00352** (2.52)	0.00253*** (2.74)	0.00647*** (3.37)	0.00116 (1.40)	-0.000166 (-0.18)	0.00694*** (3.51)	-0.0123*** (-3.79)	-0.000879** (-2.30)
Age of the head	0.00106 (0.34)	-0.00139 (-0.70)	-0.000355 (-0.43)	0.000106 (0.04)	0.000334 (0.36)	-0.00171** (-2.10)	-0.000255 (-0.12)	0.000134 (0.04)	0.000110 (0.22)
Square age of the head	-0.00000499 (-0.18)	0.0000153 (0.85)	0.00000241 (0.31)	0.00000274 (0.11)	0.00000107 (0.13)	0.0000161** (2.16)	0.00000385 (0.20)	-0.0000146 (-0.51)	-0.00000196 (-0.46)
Share of children	0.0611** (2.29)	-0.0298* (-1.86)	-0.00718 (-0.77)	-0.0382* (-1.77)	0.00301 (0.34)	-0.00494 (-0.51)	-0.0328 (-1.44)	0.0168 (0.51)	-0.00572 (-1.32)
Share of actives	0.0570*** (2.62)	0.00946 (0.81)	0.0144** (1.96)	-0.00208 (-0.15)	-0.00985 (-1.35)	0.000211 (0.03)	0.0283* (1.85)	-0.0732*** (-3.03)	0.00423 (1.18)
Migration length	-0.00615 (-0.72)	-0.00498 (-0.97)	-0.00505 (-1.38)	-0.00631 (-1.08)	-0.00341 (-1.01)	0.00220 (0.67)	-0.0148 (-1.54)	0.0253* (1.85)	0.000621 (0.51)
2.Last diploma of most educated	0.0129 (0.67)	0.0138 (1.37)	-0.000774 (-0.12)	0.0185** (2.24)	-0.0102 (-1.41)	0.00393 (0.63)	0.00827 (0.69)	-0.0372* (-1.75)	0.00307 (1.47)
3.Last diploma of most educated	-0.0115 (-0.53)	0.0238** (2.12)	-0.000351 (-0.05)	0.0174 (1.58)	-0.00764 (-0.96)	0.0100 (1.45)	0.0115 (0.82)	-0.0276 (-1.12)	0.00582* (1.96)
Constant	0.971*** (8.55)	-0.0784 (-1.19)	-0.0158 (-0.49)	-0.133 (-1.35)	-0.0312 (-0.85)	-0.0205 (-0.44)	-0.0983 (-1.40)	0.230* (1.90)	0.0570*** (3.76)
Observations	3484	3484	3484	3484	3484	3484	3484	3484	3484
r2_o	0.126	0.0356	0.00828	0.161	0.0266	0.0481	0.0122	0.00627	0.0245

*t* statistics in parentheses. Standard errors are computed using a bootstrap with 1000 replicates. Amount remitted is the natural logarithm of the current dollar-equivalent value of the amount remitted.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table G.24: FE-IV - Migration from 6 months to 2 years



	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Food	Basic	Secondary	Education	Health	Basic PCA	Secondary PCA	Energy	Communication
Amount remitted	0.00667 (1.38)	0.00737*** (2.66)	0.000187 (0.12)	0.00140 (0.49)	-0.00435** (-2.20)	0.00470*** (2.67)	0.00285 (0.91)	-0.0113*** (-2.94)	0.0000307 (0.06)
Log scaled expenditures	-0.0934*** (-7.94)	0.0271*** (3.77)	0.00899*** (2.78)	0.0389*** (4.06)	0.00366 (0.83)	0.0139** (2.36)	0.0271*** (4.21)	0.0221** (2.05)	-0.00725*** (-4.77)
One over expenditures	6.946*** (3.50)	2.170** (2.18)	0.423 (0.91)	-3.319*** (-2.72)	-0.288 (-0.42)	2.324*** (2.93)	0.848 (0.97)	-5.168*** (-2.85)	-0.764*** (-3.41)
Size of family	-0.00210 (-0.96)	0.00320*** (2.67)	0.00102 (1.44)	0.00570*** (3.72)	0.000241 (0.34)	0.00111 (1.29)	0.00330** (2.49)	-0.00741*** (-3.71)	-0.000647* (-1.90)
Age of the head	-0.00135 (-0.44)	-0.00279 (-1.61)	0.000134 (0.15)	0.00248 (0.92)	0.000425 (0.40)	-0.00277*** (-3.59)	0.000378 (0.40)	0.00109 (0.19)	0.00000814 (0.02)
Square age of the head	0.0000149 (0.55)	0.0000280* (1.78)	-0.00000187 (-0.22)	-0.0000166 (-0.71)	0.00000105 (0.11)	0.0000252*** (3.52)	-0.00000127 (-0.07)	-0.0000245 (-1.02)	-0.00000101 (-0.23)
Share of children	0.0710*** (2.85)	-0.0241* (-1.78)	-0.00176 (-0.25)	-0.0241 (-1.40)	0.00430 (0.59)	-0.00801 (-1.10)	-0.0152 (-0.99)	-0.0177 (-0.83)	-0.00769* (-1.90)
Sare of actives	0.0415* (1.90)	0.00494 (0.44)	0.0115* (1.85)	-0.00174 (-0.13)	-0.0156** (-2.10)	0.00120 (0.16)	0.0187 (1.56)	-0.0454** (-2.15)	0.00475 (1.32)
Migration length	-0.000148 (-0.42)	-0.000182 (-0.94)	0.000176 (1.54)	-0.000237 (-0.97)	0.000105 (0.72)	-0.0000777 (-0.77)	0.000150 (0.58)	0.0000253 (1.11)	0.0000326 (0.99)
2.Last diploma of most educated	0.0120 (0.61)	0.0221** (2.27)	0.00153 (0.25)	0.0142* (1.82)	-0.0118 (-1.55)	0.00541 (0.88)	0.0189* (1.76)	-0.0417** (-2.06)	0.00365* (1.85)
3.Last diploma of most educated	-0.0143 (-0.66)	0.0345*** (3.13)	0.00401 (0.57)	0.00760 (0.68)	-0.0105 (-1.22)	0.0143** (2.10)	0.0244** (2.00)	-0.0279 (-1.28)	0.00666** (2.26)
Constant	1.014*** (8.93)	-0.0427 (-0.67)	-0.0242 (-0.75)	-0.206** (-2.20)	-0.0204 (-0.55)	0.00298 (0.07)	-0.110* (-1.70)	0.215** (2.14)	0.0634*** (4.14)
Observations	3402	3402	3402	3402	3402	3402	3402	3402	3402
r2_o	0.146	0.0804	0.0225	0.188	0.0461	0.0686	0.0463	0.0273	0.0235

*t* statistics in parentheses. Standard errors are computed using a bootstrap with 1000 replicates. Amount remitted is the natural logarithm of the current dollar-equivalent value of the amount remitted.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table G.25: FE - Migration above 2 years

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Food	Basic	Secondary	Education	Health	Basic PCA	Secondary PCA	Energy	Communication
Amount remitted	0.0377 (1.10)	0.0302 (1.55)	0.0124 (1.01)	0.0268 (1.12)	0.00500 (0.38)	-0.00496 (-0.39)	0.0531* (1.83)	-0.109*** (-2.67)	-0.00360 (-0.72)
Log scaled expenditures	-0.0943*** (-7.83)	0.0265*** (3.58)	0.00866** (2.53)	0.0382*** (3.94)	0.00341 (0.76)	0.0142** (2.37)	0.0257*** (3.53)	0.0247** (2.06)	-0.00716*** (-4.64)
One over expenditures	6.920*** (3.42)	2.150** (2.11)	0.413 (0.84)	-3.340*** (-2.67)	-0.296 (-0.43)	2.333*** (2.89)	0.806 (0.80)	-5.085** (-2.54)	-0.761*** (-3.30)
Size of family	-0.000640 (-0.23)	0.00428*** (2.80)	0.00159* (1.81)	0.00689*** (3.47)	0.000681 (0.78)	0.000651 (0.62)	0.00566*** (2.91)	-0.0120*** (-4.03)	-0.000818** (-2.10)
Age of the head	-0.00332 (-0.85)	-0.00424** (-1.99)	-0.000644 (-0.46)	0.000868 (0.28)	-0.000169 (-0.12)	-0.00215* (-1.73)	-0.00282 (-0.87)	0.00727* (1.76)	0.000239 (0.38)
Square age of the head	0.0000300 (0.89)	0.0000392** (2.14)	0.00000408 (0.33)	-0.00000425 (-0.16)	0.00000559 (0.47)	0.0000205* (1.93)	0.0000232 (0.83)	-0.0000719** (-2.08)	-0.00000278 (-0.53)
Share of children	0.0675*** (2.64)	-0.0267* (-1.79)	-0.00314 (-0.43)	-0.0270 (-1.41)	0.00324 (0.40)	-0.00692 (-0.85)	-0.0209 (-1.12)	-0.00665 (-0.24)	-0.00728** (-1.69)
Share of actives	0.0550** (2.20)	0.0148 (1.10)	0.0168** (2.01)	0.00926 (0.57)	-0.0115 (-1.23)	-0.00299 (-0.32)	0.0404** (2.15)	-0.0875*** (-3.19)	0.00317 (0.74)
Migration length	-0.00140 (-0.96)	-0.00111 (-1.32)	-0.000318 (-0.59)	-0.00126 (-1.28)	-0.000273 (-0.49)	0.000313 (0.56)	-0.00188 (-1.48)	0.00418** (2.35)	0.000179 (0.87)
2.Last diploma of most educated	0.0120 (0.58)	0.0221** (2.15)	0.00153 (0.23)	0.0142 (1.57)	-0.0118 (-1.53)	0.00541 (0.84)	0.0189 (1.46)	-0.0416* (-1.71)	0.00365* (1.73)
3.Last diploma of most educated	-0.0137 (-0.60)	0.0350*** (2.99)	0.00428 (0.58)	0.00816 (0.68)	-0.0103 (-1.19)	0.0141* (1.96)	0.0255* (1.77)	-0.0301 (-1.15)	0.00658** (2.15)
Constant	1.061*** (8.31)	-0.00829 (-0.11)	-0.00580 (-0.14)	-0.167* (-1.65)	-0.00630 (-0.14)	-0.0116 (-0.25)	-0.0346 (-0.36)	0.0689 (0.51)	0.0580*** (3.27)
Observations	3402	3402	3402	3402	3402	3402	3402	3402	3402
r2_o	0.126	0.0562	0.0117	0.154	0.0385	0.0550	0.0159	0.0111	0.0182

*t* statistics in parentheses. Standard errors are computed using a bootstrap with 1000 replicates. Amount remitted is the natural logarithm of the current dollar-equivalent value of the amount remitted.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table G.26: FE-IV - Migration above 2 years