DISCUSSION PAPER SERIES

IZA DP No. 8007

Remittances and Child Labour in Africa: Evidence from Burkina Faso

Olivier Bargain
Delphine Boutin

February 2014

Forschungsinstitut
zur Zukunft der Arbeit
Institute for the Study
of Labor

Remittances and Child Labour in Africa: Evidence from Burkina Faso

Olivier Bargain
Aix-Marseille University,
CNRS, EHESS and IZA

Delphine Boutin
Lille Catholic University
and IZA

Discussion Paper No. 8007
February 2014

IZA

P.O. Box 7240
53072 Bonn
Germany

Phone: +49-228-3894-0
Fax: +49-228-3894-180
E-mail: iza@iza.org

IZA Discussion Paper No. 8007
February 2014

ABSTRACT

Remittances and Child Labour in Africa: Evidence from Burkina Faso*

This paper explores the effects of remittance receipt on child labour in an African context. We focus on Burkina Faso, a country with a high prevalence of child labour and a high rate of migration. Given the complex relationship between remittance receipt and child labour, our identification relies on different instruments capturing the employment conditions in remittance-sending countries. We first find that receiving remittances has no significant effect on child labour on average. However, when the disruptive effect from the absence of a family member is ruled out, remittances significantly reduce child labour. We provide an extensive robustness check and estimate heterogeneous effects. These show no gender difference but a significant age effect: remittances affect the labour market participation of younger children only, suggesting a progressive integration of children into work activities.

JEL Classification: F24, I25, J22

Keywords: remittances, migration, child labour, Africa

Corresponding author:

Delphine Boutin
EDHEC Business School
24 Avenue Gustave Delory
59057 Roubaix
France
E-mail: delph.boutin@gmail.com

* We would like to thank participants to the 2013 Norface-CREaM Conference on Migration and to the XVI IEA World Congress for theirs insightful comments on former drafts of this paper.

1 Introduction

The extent of remittances in Africa has recently attracted increasing attention from international organisations and from the economic literature. About 30 million Africans, according to official statistics, live today outside their home country (World Bank, 2010). A substantial fraction of these labour migrants send a part of their income to their families or relatives still living in their country of origin. For many poor families, these transfers constitute a vital "financial lifeline", guaranteeing a sustainable living standard. Another source of income smoothing is the reliance on child labour, still persistent and prevalent in many African countries. Recent estimates highlight that 21.4% of African children aged 5 to 17 years old were still economically active in 2012 (ILO, 2013). As poverty and household vulnerability are the oft-mentioned determinants of child labour (Basu and Van, 1998), remittances are likely to affect children's time allocation. However, the real impact of remittances on child labour is ambiguous and differs whether the transfers are perceived as a complementary or replacement income.

The present paper aims to analyse whether remittances are a substitute for child labour. Our empirical strategy consists in assessing the causal effect of remittance receipt on household's reliance on child labour using an instrumental variable approach. Precisely, we obtain exogenous variation in the propensity to remit using employment conditions in migrant-sending countries. This empirical strategy has been successfully used when studying the effect of migration on child labour and schooling (Antman, 2011a) or the effect of remittances on schooling (Amuedo-Dorantes and Pozo, 2010, and Amuedo-Dorantes et al., 2010). More generally, many empirical papers have emphasized the positive role of remittances on school attendance (for instance, see Cox Edwards and Ureta, 2003; Acosta, 2011 ; Calero et al., 2009; Amuedo-Dorantes and Pozo, 2010; Amuedo-Dorantes et al., 2010, or Yang, 2008), but few focus on child labour. Among exceptions we are aware of, Alcaraz et al. (2012) study the effect of remittances from the US on child labour in Mexico, Acosta (2011) explores the role of remittances from international migrants on labour supply of family members in El Salvador, and Calero et al. (2009) show that remittances via transnational networks reduce the incidence of child work in Ecuador.

This paper expands the existing literature in three different ways. First, while the small literature on remittances and children's time allocation has focused on the Latin American and Caribbean region, its findings can hardly be generalized to Africa. These two regions differ widely in terms of standards of living, credit and labour market imperfections and access to social programs. Because of these differences, African households rely more on both remittance receipt and children's earnings to meet the various needs of family members. In addition, norms regarding child labour differ between the two regions, in the sense that

African parents more often view child work as a form of education and socialization, while child labour tends to disappear from Latin American countries (ILO, 2013).[1] Against this background, we suggest the first assessment of the link between remittances and child labour in an African context.

Second, the literature often confounds the impact of migration with the effect of remittances on children's outcome. These two events may in fact have opposite consequences: while remittances are generally expected to alleviate household budget constraints and reduce child labour, the departure of family members can increase the needs for family labour force in left-behind households. Remittance and migration effects are difficult to identify, as these two separate events can be driven by the same factors (on the specific effect of migration on child labour, see for instance Antman, 2011a). Closest to us, Amuedo-Dorantes and Pozo (2010) address this issue in two steps: they estimate the remittance effect on households without declared migrants (i.e. potentially receiving remittances from non-family members) and assess the migration effect by comparing households with and without migrated family members. We follow a similar strategy by focusing on households with a migrated family member but interacting the remittance effect with information on years since migration, assuming that the disruptive effect of migration is felt only by families with a temporary migrant.

Finally, while some of the previous studies only avail of partial information on remittances and migrants' characteristics, we benefit from a unique dataset, the *Migration and Remittances Household Survey* conducted by the World Bank in 2010 in Burkina Faso. This survey was specifically designed to fill the knowledge gap on magnitude, causes and impacts of migration and remittances in Sub-Saharan Africa (Plaza et al., 2011). More precisely, this survey provides extensive information on remittances, migration motives and characteristics of different types of migrants and their family. Burkina Faso is especially interesting for it shows a high prevalence of child labour (40% of $7-14$ years old children participate in economic activities). There is also an old tradition of internal and Pan-African migration (75% of households have a migrant). We exploit the fact that migration does not necessarily imply remittance receipt, as only half of the surveyed households received remittances.

As a brief preview of our results, we find that receiving remittances do not significantly impact child labour when no distinction is made between migration and remittance effects. However, when we interact receiving remittances with the fact of being a permanent migrant (for whom we assume that the potentially negative effects of migration are not felt any more), remittances have a significant and negative impact on child labour. While we find

[1] African behaviour towards remittance receipt could also be specific. For example, Azam and Gubert (2006) show that remittances are to a large extent sent to buttress family consumption, while moral hazard could lead recipient households to minimize productive efforts.

no difference between boys and girls, the age of children matters. Remittances significantly reduce child labour only among the younger children (5-9 years old), suggesting a progressive integration of children into work activities.

The paper is organized as follows: Section 2 describes the potential links between remittance receipt and child labour while Section 3 presents the data and descriptive information. We explain the empirical strategy in Section 4. We present and discuss the main findings in Section 5 while an extensive robustness check completes our analysis. Section 6 concludes.

2 Remittances and Child's Time Allocation: A Short Review

The effects of remittances on child labour are complex, and no clear evidence has been found in the literature. In this section, we explore the theoretical links between these phenomena.

2.1 The Ambiguous Effect of Remittances

The most obvious and direct effect of remittances consists in increasing the disposable income of recipient households (Lucas, 2004). Remittances may help the family to reach a subsistence level and, hence, make child labour unnecessary (Basu and Van, 1998). Besides, the extra income from remittance transfers may also free up some money which can be spent on education, particularly to finance direct and opportunity costs of schooling (Giulanio et al., 2009). Various studies have shown that remittances are associated with an increase in school attendance (for instance Cox Edwards and Ureta, 2003, and other studies cited in the introduction). Indeed, in the context of imperfect financial markets, investment in education is typically compromised by income variability (see Beegle et al., 2006), and it tends to increase with alternative and external funding sources such as remittances. However a greater probability of attending school does not necessarily means a lower probability to work, especially in an African context (Edmonds and Pavcnik, 2005). The relationship between school attendance and child labour is indeed complex and far from being antagonist: a significant proportion of African children cumulate both work and studies (ILO, 2013).

Remittances can be used as a diversification device to mitigate adverse impacts on household resources. As such, they constitute an additional adjustment variable in case of shocks and may reduce the reliance on child labour. Several studies indeed show that among the strategies used to anticipate or cope with shocks, one consists in varying the supply of child labour depending on needs (Beegle et al., 2006; Edmonds and Pavcnik, 2005; Duryea et al., 2007). Remittances can also be used to diversify income sources and smooth consumption

(Yang, 2008). In effect, remittances are sometimes found to be counter-cyclical (Ratha, 2005), with an increase in transfers observed after a region is hit by natural disasters, conflicts or an economic crisis (Ebeke, 2010). Yet, while remittances would mitigate the use of child labour following such a shock, their relationship is hard to establish on the basis of pure cross-sectional data, as both may increase simultaneously. With evidence from Ecuador, Calero et al. (2009) also show that remittances may not be high enough to prevent the increase of child labour in case of shocks.

In the longer term, remittances can modify household production and investment behaviour. By relaxing financial constraints, remittances are likely to encourage investments in physical capital and notably inputs in microenterprises (Taylor and Lopez-Feldman, 2010; Woodruff and Zenteno, 2007; and the review of Rapoport and Docquier, 2006). The effect on child labour is therefore ambiguous, especially in rural areas. Remittances can be used to purchase labour-saving equipment, possibly decreasing the reliance on child labour (Acharya and Leon-Gonzalez, 2013). Conversely, capital investments may require an increase in complementary inputs and notably in labour force recruited among family members. Increasing the production capacity of small household farms may have the same consequence on child labour. Incentives to hire their own children are large in the absence of perfect land and labour markets (Bhalotra and Heady, 2003; Boutin, 2012).

2.2 Remittances versus Migration Effects

The issue is getting even more complex when the effect of remittances is muddled with the consequences of migration. A robust evaluation of the impact of remittances on children's outcomes needs to make this distinction. As mentioned in the introduction, remittances and migration indeed affect human capital accumulation differently. By relaxing household's constraints on income and capital, remittances can help migrants' families improve their living standards and welfare. At the same time, migration can introduce new vulnerabilities. Migration of productive family members may have disruptive effects on the life of a household. Children may engage in economic activities to compensate the household's lost income or to replace the absent parent in his former activity. Antman (2011a) finds for instance that Mexican children increase work hours in the short run in response to a father's migration to the US. The absence of a parent due to migration is also likely to have consequences on children's psycho-social development and their performance at school, with some consequences on their participation to economic activities (Antman, 2012; Bansak and Chezum, 2009; Cox Edwards and Ureta, 2003). In what follows, we address this issue by focusing specifically on the effect of remittances sent by long-term migrants, whose families have certainly adapted to such disruptive effects.

3 Data and Descriptive Facts

3.1 Data

We use data from the *Migration and Remittances Household Survey*, conducted in Burkina Faso by the Africa Migration Project in 2010.[2] This comprehensive survey provides detailed information on characteristics, remittances sent and migration motives of former household members (current and former place of residence, reasons for moving, education level, pre- and post-migration employment situation, demographic characteristics, remittance behaviour, channels for sending remittances, amount sent), as well as housing conditions, household assets, household expenditures and time allocation of all household members. This survey contains useful information on migration and remittance profiles but the sampling frame does not cover the whole population in the country. Only areas with a high incidence of migration were surveyed, based on the 2006 population census.[3] Urban regions were under-represented (only 5% of surveyed households lived in urban areas), simply because they contain fewer migrant-sending households than in rural areas. For this reason, we focus our analysis on rural households. In addition, we select only households with children aged 5 to 14 years old. This age range is consistent with the ILO (broad) definition of child labour which we adopt in this study (ILO, 2013). Finally, we focus on households with exactly one former member now defined as a migrant (i.e. that has left home at least 6 months prior to the survey, according to the data definition).

3.2 Descriptive Analysis

The original survey contains 2,102 households. Selection consists in excluding urban households (-5% of the initial sample), households without migrants (-31%) or more than one migrant (-3%) and households without children aged 5-14 (-7%). We obtain a final sample of $1,136$ households. Table 1 presents the main descriptive statistics of migrants in the selected sample. We distinguish households with an ex-member who migrated more than 5 years prior to the survey, defined as "permanent migrant households", from the overall selected group. The threshold of 5 years corresponds to the median of the number of years since migration. In what follows, we shall explore the fact that permanent migrant households are less likely to be affected by the disruptive effect of migration. While migrants in this group are more often aunts or uncles of potentially working children (i.e. siblings of the household head), the two groups are not significantly different in terms of demographic characteristics and reasons for

[2]The Africa Migration Project, conducted by the World Bank, aims at collecting information on migration and remittances in Sub-Saharan Africa. Six countries were surveyed using the same methodology (Burkina Faso, Kenya, Nigeria, Senegal, South Africa, and Uganda).

[3]Ten provinces were selected: Banwa, Sourou, Kadiogo, Namentaga, Sanmatenga, Boulkiemdè, Boulgou, Tuy, Passoré and Yatenga.

migrating (Table 1), nor in terms of migrant's education and labour market characteristics (cf. Appendix Table A1) or household characteristics (cf. Table A3).

As shown in Table 1, migration generally involves young adult men leaving to search for a job. Women migrate mainly for matrimonial reasons and in the majority of cases reside in another city in Burkina Faso. While the main fraction of these migrants are household head's children now adults (46%), more than one third are household head's siblings, currently living with their spouses (66% of them) and/or with their children (55% of them). Table A1 in the Appendix reports additional information concerning migrants' education and labour market status. We notice that the education level of migrants is very low: 64% of them did not attend primary school.

Table 1: Characteristics of migrants

	Permanent migrant HH	Full sample
Gender		
Women (%)	9.30	9.23
Men (%)	90.70	90.77
Age		
At survey time (mean)	35	31
At migration departure (mean)	23	24
Relationship to the household head		
Son/Daughter (%)	41.47	48.5
Brother/Sister (%)	42.05	36.03
Other relative (%)	16.48	15.47
Primary reason for migration		
Education (%)	8.35	8.75
Search for work (%)	72.43	73.23
Job transfer/job opportunity (%)	6.02	6.10
Marriage arrangement (%)	5.24	4.77
Others reasons (%)	7.96	7.15
Number of observations	516	1,136

Source: Migration and Remittances Household Survey, Burkina Faso, 2010.

In Table A2 in the Appendix, we also report some statistics about the level and the use of remittances. Half of migrants send money back to their former household, for an average annual amount of 36.305 FCFA (around 10% of household average annual expenditure). Although the actual amount of remittances appears relevant for our study, we use in the following analysis a dichotomous variable measuring remittance receipt (1 if the household

receives remittances and 0 otherwise). The rationale behind our choice is that exact amount of remittances received for the last 12 months prior to the survey can be misreported and affected for instance by recall errors. Table A2 also informs us about the allocation of remittance money across different types of household expenditures. Consistent with previous studies (Rapoport and Docquier, 2006; Yang, 2008), remittances are mainly used to finance normal and necessary goods, especially food. In relation with our discussion in section 2.1, we can conjecture that remittances replace some of the child production in farm goods consumed by the household. A substantial share of the received remittances are also used on goods that directly affect children, like education and health. The extent to which child labour is affected by these transfers is however unknown and the purpose of our empirical investigation.

Hereafter, we consider that a child is working (i.e. participates in economic activities) if the household head declared that she is "paid employed" or "self-employed". In the African context, the latter category has to be understood as unpaid family work and characterize the vast majority of children engaged in artisan, domestic or farm labour (only 0.2% are in paid work). According to this information and using the 5-14 age window, we find a rate of child labour of 40% for the ten provinces covered in the survey, slightly lower than the national rate of 47% (ILO, 2013).

For the rest of the study, the variable of interest is going to be the proportion of working children per household. We motivate this choice as follows. Remittances are defined at the household level and we have no information on how their use could target the reduction in the labour of a particular child in the household. Hence, the outcome variable has to be assigned at the household level. We could well estimate the probability of working or not for each child but then, we would have to control for the simultaneity of child labour decisions upon the different children of the household. Working with the proportion of child labour per household hence allows us to cover the dimensions of interest.

Table 2 reports the proportion of working children for different types of households. The mean proportion is consistently of the same order as the overall rate of child labour (37.4%). Yet it decreases to 34.8% when considering only "permanent migrant" households. This supports the view that the pure migration effect in households with temporary migrants increases the probability of child labour.[4] We do not observe gender differences in the full sample but girls tend to work less than boys among permanent migrant households. Children aged 10 to 14 years old are more economically active than children aged 5 to 9 years old and this pattern is consistent across all household types. Average differences according

[4]Arguably, the difference could also be due to a composition effect, even though statistics in Tables 1 and A1 convey that there is little difference between permanent migrant and temporary migrant households. This is what we shall investigate in the empirical analysis that follows.

to whether the household receives remittances or not give us a first insight in the potential role played by remittances. In fact, receiving remittances does not seem to affect the proportion of working children in the full selected sample. Statistics on this broad group may however combine the diverse, simultaneous effects of having migrants and notably the lost income/labour from missing family members when migration is recent. If we focus on permanent migrant households, we observe a lower proportion of working children in households that receive remittances, whatever the gender or age of the children. This suggests that the pure remittance effect may reduce the extent of child labour. The empirical approach that follows aims to check if this result holds when controlling for household characteristics and addressing the potential endogeneity of remittance receipt.

Table 2: Proportion in percentage of working children per household (5-14 years old).

	Total	Girls	Boys	05-09 years old	10-14 years old
Full sample					
Total	37.4	37.4	37.4	29.9	39.3
Remittances receiving	37.4	35.4	39.3	32.3	38.8
Non-remittances receiving	37.4	39.8	35.2	27.2	39.9
Permanent migrant HH					
Total	34.8	30.6	38.5	24.1	37.6
Remittances receiving	33.5	29.3	37.5	22.1	36.3
Non-remittances receiving	36.5	32.5	39.7	25.6	39.0

Source: Migration and Remittances Household Survey, Burkina Faso, 2010.

4 Empirical Approach

We specify the child labour supply function as follows:

$$Y_j = \beta_0 + \beta_1 R_j + \beta_2 X_j + \epsilon_j \tag{1}$$

where Y_j is the proportion of working children in household j, and R_j a binary variable equal to 1 if the household receives remittances. X_j is a vector of characteristics related to the household head (age, gender, employment status and level of education) or to the household (size, assets, proportion of adults employed, business ownership, Muslim, Mossi ethnic group and dummy variables for the province of residence). We also control for exogenous characteristics of migrants in emigrating regions (age, sex, level of education before migration). Residuals ϵ_j are assumed to be random and normally distributed.

The main econometric challenge for this paper lies in the endogeneity of remittance receipt, which is mainly due to a possible reverse causality or the presence of omitted variables. For the sake of exposition, assume that the true coefficient β_1 is negative, i.e. remittance receipt reduces the extent of child labour. Reverse causality could occur if for example a related parent sends money to the household with the specific intention of retiring children from work by financing their schooling. In that case, child labour determines remittance receipt and not the other way around (Amuedo-Dorantes and Pozo, 2010). Estimates of β_1 may possibly be upward biased in this situation, i.e. the coefficient becomes less negative than expected (or even positive). An upward bias may also come from omitted unobservables like a specific shock that forces the household to both rely more on child labour and claim more remittances from its migrant. Finally, and more problematic, a downward bias may also occur and lead us to wrongly conclude about the reducing effect of remittances on child labour. Such a bias may be due for instance to a common shock affecting both the migrant's location and the household's place of residence, especially when the migrant lives in a nearby region. In effect in this case, a bad economic situation could both hinder the possibility to remit by the migrant and increase the reliance on child labour by the left-behind household.

We opt for an instrumental variable strategy to address this endogeneity issue and identify the impact of remittances on child labour.[5] As always, the difficulty consists in finding a variable that provides exogenous variation in the explanatory variable (the propensity to remit) without falling into the category of weak instruments. Among the instruments deemed the least controversial in the related literature, we can cite the transaction costs of transferring funds as proxied by the availability of bank offices, historical migration rates and the presence of migration networks, exchange rate appreciation and variation in labour market conditions in destination areas.[6]

[5]Another choice would have been to use panel estimations. However, this proved not to be a valid option for three reasons: (i) the scarcity of panel data for African countries (or the fact that panels are short), (ii) the fact that children age over the panel (which disturbs the analysis of child labour defined according to a fixed age window), (iii) the fact that unobservables can be time-varying and, hence, are not taken into account by fixed effects estimators (see the discussion in Antman, 2013). Yet, combining both panel and IV estimations as done by Antman (2011a) is certainly a valuable option that we keep for future analyses on African data.

[6]Transaction costs of transferring funds are used to study the effect of remittances on child labour and schooling in Ecuador by Calero et al. (2009). Historical migration rates and the presence of migration networks are used to study the effect of migration on the left behind in Hanson and Woodruff (2003) and McKenzie and Rapoport (2011), and the role of remittances on family labour supply in El Salvador by Acosta (2011). Exchange rate appreciation with migrants' destinations is used to study the effect of remittances on schooling in Yang (2008). Variation in labour market conditions in destination areas is used by Antman (2011a) to study the effect of migration on child labour and schooling in Mexico, by Amuedo-Dorantes and Pozo (2010) and Amuedo-Dorantes et al. (2010) to assess the effect of remittances on schooling in Haiti and the Dominican Republic respectively, and by Adams and Cuecuecha (2013) to gauge the impact of remittances on investment and poverty in Ghana.

We cannot replicate all these instruments due to data limitation or simply because some of them are irrelevant in the African context. For instance, regional variation in availability of Western Union bank offices means little in countries where the majority of remittances flow through informal channels.[7] Instead we use variation in labour market conditions at migrant's destination. The probability of receiving remittances strongly depends on current economic conditions in remittance-sending regions or countries. We focus more particularly on the employment conditions in migrants' locations because migration decisions in Burkina Faso are mainly driven by employment considerations, as emphasized in Table 1. As previously discussed, women migrate mainly for matrimonial reasons and as a consequence, their transfers should be less sensitive to the economic situation at destination. Given the low percentage of female migrants (cf. Table 1), this should not affect the validity of our approach and the results.

We exploit information in the *Migration and Remittances Survey*. Each household is asked to report the current and past locations of their migrants. Eighteen remittance-sending countries or regions are identified, namely rural and urban Burkina Faso, Côte d'Ivoire, Mali, Niger, Ghana, Togo, Benin, Nigeria, Gabon, Libya, others African countries, Italy, France, Germany, Switzerland, USA and other countries. Three instruments are constructed from this information and from World Bank indicators on employment. Our first instrument refers to the mean level of job creation in sending countries over the 3 years period prior to remittance receipt ($2006 - 2009$). Our second instrument adds more variation at the household level by taking into account the duration of the migrant's leave. We calculate the mean level of job creation from the year of migrant's departure to 2009. Finally, since destination regions could be somehow correlated with household types, and hence to ensure the exogeneity of the instrument, we follow Adams and Cuecuecha (2013) by instrumenting remittances using the contemporary labour shock in destination countries. To construct this third instrument, we use World Bank information to construct a time-series variable on employment creation in remittance-sending countries from 1999 to 2008 and predict job creation rates for the year 2009 using an AR(1) process. Thus we can recover the unexpected rate of job creation, a proxy for exogenous labour market shocks, as the difference between predicted and observed job creation rates in 2009. For this third specification, we also control for youth employment levels at migrant locations in the model.

Our identifying assumption for the three instruments is that employment conditions at destination affect the probability of receiving remittances but are not correlated with the

[7] According to our data, money transfers via bank, post offices or others financial institutions (Western Union, Graman Bank) represent only 12% of all transactions. The main reasons for not using these officials channels are that banks and post offices are not widespread in the Burkinabe countryside, leading to a limited access to financial services (only 2% of surveyed households have a bank account)

decision to put children into work. Two limitations may come to mind with this approach. First, a substantial fraction of migrants are themselves located in Burkina Faso (42%). We provide thereafter some robustness checks regarding this issue, distinguishing across regions within the country (rural or urban destinations) and types of migrants (national or international). Second, one may argue that migration locations could be correlated with some household characteristics, especially with household wealth. Given the high costs of migration, wealthier households may be those able to send their migrants to the most attractive regions and, hence, ensure that they will receive remittances. As explained above, the third instrument aims at using unexpected variation in labour market conditions at destination to address this concern. In addition, we control in all specifications for relevant household characteristics and in particular for household wealth. We use an asset index which captures the relatively long term economic status of the household (i.e. which is less correlated with the short-term determinants of household income like remittances and child labour).

5 Empirical Results

5.1 Overall Impact of Remittance receipt on Child Labour

In Table 3, we first present evidence from OLS and IV estimations using the three instrumentation strategies described in the previous section. We only report the point estimates of the remittance receipt coefficient in the main equation, their standard errors, and the coefficients of the instrumental variables in the first equation (complete tables of estimates are available upon request).

Before discussing the remittance effect, we first ascertain the econometric relevance of our instruments. First-stage estimates of the effect of instruments on the propensity to remit are all significantly different from zero at the 1% or 5% levels, suggesting that our instruments are good predictors of the endogenous variable. Moreover, F-statistics of the first-stage equation are larger than the common threshold of 10 in all specifications of the IV model. Turning to our main results, the first row of Table 3 reports the estimated effects of remittance receipt on child labour. It turns out that remittances do not significantly affect the proportion of working children in the full selected sample. The OLS estimate is basically zero and the conclusion holds even after instrumenting remittance receipt. In this case, remittances seem to impact negatively on child labour but the effect is not significant at conventional levels.

Table 3: Impact of remittances on child labour

		OLS	Model (1)	Model (2)	Model (3)
Full Sample					
Second Stage equation					
	Remittances	-0.017	-0.058	-0.114	-0.108
		(0.019)	(0.390)	(0.149)	(0.148)
First stage equation					
IV1	Empl. Rate (mean 2006-2009)		0.107** (0.053)		
IV2	Empl. rate (mean migration year-2009)			0.280** 0.126	
IV3	Exogeneous labour shocks				0.174** (0.082)
	Youth employment rate in 2009				0.119*** (0.037)
Correlation of instruments with remittance receipt					
F-stat			10.88	10.94	22.62
Prob $P > F$			0.000	0.000	0.000

*** significant at 1%, ** significant at 5%, * significant at 10%. Number of households=1136.

Model (1): Mean employment rate 2006-2009; Model (2): Mean employment rate from year since migration to 2009; Model (3): Exogenous labour shocks (adding 2009 employment rate of the 15-24 years old as control).

Control variables: household head characteristics (age, gender, employment status and level of education), household characteristics (size, total expenditure, asset index, proportion of adult employed, business owner, Muslim, ethnic group (Mossi)), characteristics of migrants (age, gender and level of education before migration), household's province dummies (Banwa, Sourou, Kadiogo, Namentaga, Sanmatenga, Boulkiemdé, Boulgou, Tuy, Passoré and Yatenga).

Source: Migration and Remittances Household Survey, Burkina Faso, 2010.

5.2 Remittance Effect for Households with Long-term Migrants

This average effect may hide contrasted situations. In particular, it may differ when tacking into account the length of migrant's absence. As argued above, households may strongly rely on children's earning and workforce when the migrant has recently left. With the aim to disentangle the mere impact of remittances from the disruption due to the loss of a productive adult member, we interact the remittance receipt variable with a binary variable taking value

Table 4: Impact of remittances on child labour ("permanent migrant" households)

		OLS	Model (1)	Model (2)	Model (3)
5-14 years old					
Second-stage equation					
	Remittances*Permanent[a]	-0.109	-0.329***	-0.315***	-0.272**
		(0.088)	(0.123)	(0.121)	(0.118)
First-stage equation					
IV1	Empl. Rate (mean 2006-2009)		0.123*** (0.052)		
IV2	Empl. rate (mean migration year-2009)			0.192** 0.081	
IV3	Exogeneous labour shocks				0.232** (0.117)
	Youth employment rate in 2009				0.165** (0.070)
Correlation of instruments with remittance receipt					
F-stat			9.37	11.45	19.32
Prob $P > F$			0.000	0.000	0.000

[a]: Permanent is a binary variable equal to 1 if the migrant left more than 5 years prior to the survey.

*** significant at 1%, ** significant at 5%, * significant at 10%. Number of households=1136.

Models and variables descriptions: see Table 3.

Source: Migration and Remittances Household Survey, Burkina Faso, 2010.

1 if the ex-family member has migrated more than 5 years prior to the survey.[8] We use the question about the number of years since the migrant left the household for the last time, according to the household head. This way, our results are not affected by circular migration (discontinuous migration experiences would require a different interpretation from what we suggest below). Focusing our analysis on the group of "permanent migrant" household makes much sense. First, it is not a negligible group as it represents 45% of the selected sample. Second, while our approach disentangles the impacts of remittances from those of (temporary) migration, it also reduces the simultaneity problem frequently observed in remittances and migration studies (Adams, 2011). Indeed, decisions regarding migration, education and labour supply are taken simultaneously, making it difficult to establish a causal link. The simultaneity problem is attenuated when members have migrated a while ago and form their own household elsewhere. We assume that origin households have adapted to the disruptive

[8]As explained in the data section, the threshold of 5 years used to define "permanent migrant" households corresponds to the median of the number of years since migration. We check the result sensitivity to this threshold in the next sub-section.

effects of the missing member when the latter is a permanent migrant.

Results are reported in Table 4. The OLS estimate now indicates a negative effect of remittances for the sub-group of "permanent migrant" households, yet still insignificant. Turning to IV estimates, we first verify that the interacted instruments in the first-stage equation are relevant. This is indeed the case with each instrumental variable strongly correlated with remittance receipt. The F-statistic is larger than the threshold of 10 in models 2 and 3 while it is very close (9.4) in model 1. Interestingly, the effect of remittances on child labour is now significantly negative with IV estimations. It is very reassuring to see that the magnitude of the effect is very similar in all three IV specifications. Moreover, it is around three times the size of the OLS estimate, suggesting the presence of upward biases as discussed above. According to IV estimates, an increase of 10 percentage points in the likelihood of receiving remittances decreases the proportion of working children by around 3 percentage points (the proportion of working children decreases from an average of 0.38 to approximately 0.35).[9]

It is also interesting to check the effect of the binary variable indicating a "permanent migrant" household (not reported). This variable captures the mean difference between household types once controlling for household characteristics and exogenous migrants' characteristics. That is, it can be interpreted as the short-term effect of migration on child labour. As expected, second-stage estimates point to a significant and negative effect: -0.283 (standard error of 0.153) with IV1, -0.425 (0.256) with IV2 and -0.387 (0.217) with IV3. This is suggestive of a disruptive effect of having a temporary migrant, as extensively discussed in previous sections.[10]

These results are consistent with some of the studies on human capital and migration, notably those showing that the deleterious effects of migration on child human capital mitigates the positive impact of remittances (Amuedo-Dorantes and Pozo, 2010, Alcaraz et al., 2012, Acosta, 2011). In particular, Antman (2011a) finds a negative effect of paternal migration on study hours for boys within the first year after the migration took place, when it might be too early to expect a positive effect from remittances to outweigh the father's absence from the home.[11] McKenzie and Rapoport (2011) also find a negative effect of migration

[9] In addition to the model with interaction presented here, we have also replicated estimations on the sub-sample of permanent migrant households. We still obtain a significant and negative effect of remittance receipt. Estimates are larger in absolute value than in the interaction model, albeit the relatively smaller sample size also induces larger standard errors.

[10] We also obtain a significant and positive effect of permanent rather than temporary migration on the propensity to remit in the first-stage equation, with an estimate of 0.967 (0.381) for IV2, 0.875 (0.303) with IV2 and 0.793 (0.263) with IV3. While permanent migrants may be less closely related to potential child workers (aunts, uncles), they may be more economically assimilated, wealthier and hence more able to send remittances than recent migrants.

[11] Acharya and Leon-Gonzalez (2013) find more heterogeneous effects of the migration-remittance process

on the schooling of older children. Very similarly to our study, Amuedo-Dorantes and Pozo (2010) find a positive effect of remittances on children's schooling residing in non-migrant households, that disappears when they extend their analysis to include children in migrant households.

5.3 Robustness Check

We now suggest additional results aimed at checking the robustness of our conclusions. First, as briefly discussed in section 4, results can be sensitive to common shocks experienced by both the migrant and his household. To address this concern, we replicate our estimations on two alternative sub-samples. The first one excludes households with rural-to-rural or urban-to-urban migrants within Burkina Faso (this leaves us with a sample of 817 households). In this way, we rule out the possibility that a nearby migrant and his family experience the same shock, which would possibly affect simultaneously the ability to remit for the former and the reliance on child labour for the latter. Results are reported in Panel A of Table 5. We find very similar results for permanent migrant households as discussed above. While the magnitude of the effect is slightly smaller than in Table 4, the effect is significantly negative in all IV models. The concern of a downward bias due to common shocks partly remains, however, if the shock takes place at the country level. Hence, the second set of results (Panel B) in Table 5 focuses on households with international migrants only (a sub-sample of 618 households remains). Results are very similar to the previous set of estimates, with significant IV estimates of around two thirds the size of our baseline estimates.

A second sensitivity analysis consists in varying our definition of "permanent migrants". In the baseline, we assumed that after 5 years of migration (the median), a member's absence had no disruptive effect on children's time allocation. We suggest relaxing this assumption and replicating our estimations for different thresholds. To the extent that the number of migration years captures the time households had to adapt to the migrant's absence, we can conjecture that the effect of remittances increases with migration duration. This pattern does not have to be linear if, say, long-term migrants have different remittance motives, and in particular altruistic intention vis-à-vis left-behind children, than medium-term migrants. Panel C in Table 5 reports estimates using alternative thresholds, from a migrant absence of one year (the year before the remittance receipt) up to fourteen years (i.e. before any child present in the survey was born). We find a gradual increase in the effect of remittances, from no effect when recent (but more than one year old) migrants are included to a maximum effect for households with migrants gone for more than 10 years. The smaller coefficient on

on the educational attainment of Nepalese children. Some studies also report opposite effects regarding the impact of paternal migration on the educational attainment for girls (Antman, 2012, Hanson and Woodruff, 2003). This may be related to a change in bargaining power within the household. We discuss this point below.

Table 5: Impacts of remittances on child labour: robustness checks

	OLS	Model (1)	Model (2)	Model (3)
Panel A: Crossed domestic and international migration only				
Remittances*Permanent[a]	-0.271*	-0.219**	-0.224**	-0.191**
	(0.160)	(0.109)	(0.112)	(0.081)
Panel B: International migration only				
Remittances*Permanent[a]	-0.172	-0.206*	-0.177*	-0.196**
	(0.137)	(0.121)	(0.096)	(0.078)
Panel C: Full sample				
Migrated more than 1 year ago				
Remittances*Permanent[b]	0.095	-0.076	-0.101	-0.103
	(0.211)	(0.061)	(0.069)	(0.065)
Migrated more than 2 years ago				
Remittances*Permanent[b]	0.105	-0.099*	-0.084*	-0.051**
	(0.118)	(0.050)	(0.040)	(0.025)
Migrated more than 3 years ago				
Remittances*Permanent[b]	-0.103	-0.221*	-0.206*	-0.174**
	(0.107)	(0.120)	(0.099)	(0.077)
Migrated more than 10 years ago				
Remittances*Permanent[b]	-0.195*	-0.310**	-0.306**	-0.225**
	(0.117)	(0.134)	(0.126)	(0.107)
Migrated more than 14 years ago				
Remittances*Permanent[b]	-0.094*	-0.205*	-0.193*	-0.155*
	(0.053)	(0.126)	(0.104)	(0.089)

[a]: Permanent: binary variable equal to 1 if the migrant left more than 5 years prior to the survey

[b]: Permanent: binary variable of the indicated "permanent migrant" definition

*** significant at 1%, ** significant at 5%, * significant at 10%. Number of households=1136.

Models and variables descriptions: see Table 3.

Source: Migration and Remittances Household Survey, Burkina Faso, 2010.

the last group (at least 14 years of absence) may indicate that the migrant has had too little connection with the potentially working children, or too little influence on the way remittances are used, to orientate remittance usage towards reduced child labour.

5.4 Heterogeneity

We explore the possible heterogeneity of the effect, starting with potential variation in remittance effects with households' standards of living. There is a complex relationship be-

Table 6: Impact of remittances on child labour by household expenditure quartile ("permanent migrant" housholds)

	OLS	Model (1)	Model (2)	Model (3)
Remittances*Q1	-0.328*	-0.415***	-0.409**	-0.389**
	(0.175)	(0.157)	(0.185)	(0.196)
Remittances*Q2	-0.119	-0.209*	-0.192*	-0.191*
	(0.184)	(0.124)	(0.097)	(0.102)
Remittances*Q3	0.099	-0.102*	-0.098*	-0.103*
	(0.058)	(0.061)	(0.056)	(0.060)
Remittances*Q4	-0.121*	-0.279**	-0.271**	-0.258***
	(0.064)	(0.141)	(0.112)	(0.089)

*** significant at 1%, ** significant at 5%, * significant at 10%. Number of households=1136.

Models and variables descriptions: see Table 3.

Source: Migration and Remittances Household Survey, Burkina Faso, 2010.

tween child labour and household wealth, especially in rural areas (Basu et al., 2010; Boutin, 2012). Since poor households may have to put their children to work to make ends meet (Basu and Van, 1998), we may expect a larger remittance effect among the poor. Yet the pattern does not need to be monotonic with income. Indeed, some studies point to an increase in child labour with the land size owned by her family, especially in the presence of imperfect labour markets (Bhalotra and Heady, 2003). To capture this heterogeneity, we interact remittance receipt with quartiles of household expenditure (similar results are obtained when using wealth indices). Still focusing on permanent migrant households, Table 6 shows that the impact of remittances on child labour is larger for the poorest households, which is in line with the interpretation in terms of poverty alleviation. It decreases with income then increases for the wealthiest group, which could be interpreted along the line of the wealth paradox, yet differences across groups are not statistically significant.

We also capture the heterogeneity of the remittance effect according to children's characteristics.[12] We run separate estimations for the proportion of working boys and that of working girls per household (similar results are obtained when interacting the proportion of working children with the gender ratio). Results are reported in Table 7 (upper panel), pointing to very similar effects for boys and girls. The absence of a gendered remittance effect is possibly due to the fact that we focus here on long-term migrants. In contrast, the dis-

[12]Gendered divisions in children's work can be strong in African rural areas: generally boys are more likely to work than girls in agriculture, while the latter are more susceptible to perform domestic tasks (ILO, 2013).

ruptive effect of short-term migration may also affect the balance of power in the household. In particular, Antman (2011b) shows that when the migrant is the (male) household head, a smaller fraction of resources is spent on boys relative to girls in both clothing and education, reflecting gender-biased preferences by the spouse and a change in her relative bargaining position following the migration of the head.

Table 7: Impacts of remittances on child labour by child characteristics

		OLS	Model (1)	Model (2)	Model (3)
Boys:					
	Remittances*Permanent[a]	-0.366	-0.332***	-0.310*	-0.262**
		(0.282)	(0.128)	(0.185)	(0.132)
Girls:					
	Remittances*Permanent[a]	-0.106	-0.327***	-0.319***	-0.301*
		(0.105)	(0.096)	(0.122)	(0.178)
5-9 years old:					
	Remittances*Permanent[a]	-0.213*	-0.355**	-0.356***	-0.349**
		(0.126)	(0.140)	(0.054)	(0.140)
10-14 years old:					
	Remittances*Permanent[a]	0.168	-0.056	-0.103	-0.046
		(0.167)	(0.251)	(0.086)	(0.043)

[a]: Permanent is a binary variable equal to 1 if the migrant left more than 5 years prior to the survey.

*** significant at 1%, ** significant at 5%, * significant at 10%. Number of households=1136.

Models and variables descriptions: see Table 3.

Source: Migration and Remittances Household Survey, Burkina Faso, 2010.

Finally, we investigate how remittance effects may vary with child age. We replicate estimations for the proportion of working children among younger (5-9 years old) or older children (10-14 years old) separately. Results in Table 7 (lower panel) point to a significant and negative effect of remittances on the labour of young children, similar to the baseline estimation. In contrast, we find no significant impact of receiving remittances on the proportion of child labour among older children. This may not be surprising in such a rural African context, where farm households are engaged in labour-intensive activities. In a context of incomplete labour markets, household may require the help of their older, more productive children to perform complex tasks (Freije and Lopez-Calva, 2001). More generally, African children are steadily integrated into economics activities, all the more so as work is viewed as a form of education and the best way to learn practical skills (Rosenzweig and Wolpin, 1985). This may be reinforced by the perception of low returns to formal education, which actually results in relatively low rates of school attendance and an increase in school drop-out from the age of 11 (school attendance is 58% among children under 10 and 50% among the 10-14 years

old). Overall, older children's labour supply is probably little income elastic compare to their younger siblings', and junior formal education more of a luxury good than primary education.

6 Conclusion

This paper suggests a first investigation of the effect of remittances on child labour in Africa. The analysis draws upon a unique survey on migrants and their families in Burkina Faso. We focus on rural households with a migrant and children aged 5-14. We estimate the effect of remittance receipt, instrumented by labour market conditions at destination, on the proportion of working children in the household.

We find no significant effect of remittances on the overall selection. When focusing on households with a permanent migrant, for whom the disruptive effect of migration may no longer be felt by the household, we find a reducing effect of remittances on child labour. This effect does not vary with the gender of the child but becomes insignificant for the 10-14 years old, indicating a gradual integration of children into work activities and the relatively inelastic labour supply of older children. This finding potentially has strong implication in terms of policy. Indeed, redistribution towards poor rural households in Burkina Faso may not result in a reduction in child labour among older siblings. Even for younger children, the remittance-elasticity of child labour is relatively small (a 3.5 percentage point reduction in the proportion of working children is associated with a 10 percentage point increase in the likelihood of receiving remittances). More generally, a decline of child labour may require deeper and longer-term changes in African societies along with more profound economic transformations.

Further work should attempt to better understand the overall decision process of the extended family. In particular, it seems necessary to assess who, among family members, is sent abroad and which types of sorting process makes that migrants settle in destination countries and become permanent migrants. Indeed, as modestly addressed in the present paper, the migration decision is directly related to motives and usages of remittance transfers. Finally, recent research on asymmetry of information within the extended family and the possible differences between intended and actual use of remittances may better explain why remittance money does not necessarily improve the conditions of left-behind children.

References

[1] Acharya, C. P. and Leon-Gonzalez, R. (2013), How do Migration and Remittances Affect Human Capital Investment? The Effects of Relaxing Information and Liquidity Constraints, *Journal of Development Studies*, 1-17.

[2] Acosta, P. (2011), School attendance, Child Labour, and Remittances from International Migration in El Salvador, *Journal of Development Studies*, 47(6), 913-936.

[3] Adams, R.H. (2011), Evaluating the Economic Impact of International Remittances On Developing Countries Using Household Surveys: A Literature Review, *Journal of Development Studies*, 47(6), 809-828.

[4] Adams R.H. and Cuecuecha A. (2013), The Impact of Remittances on Investment and Poverty in Ghana, *World Development*, 50, 24-40.

[5] Alcaraz C., Chiquiar D. and Salcedo A. (2012), Remittances, Schooling, and Child Labour in Mexico, *Journal of Development Economics*, 97(1), 156-165.

[6] Amuedo-Dorantes C. and Pozo S. (2010), Accounting for Remittance and Migration Effects on Children's Schooling, *World Development*, 38(12), 1747-1759.

[7] Amuedo-Dorantes, C., A. Georges and S. Pozo (2010), Migration, remittances and children's schooling in Haiti, Annals of the American Academy of Political and Social Science, 630 (1), 224-244.

[8] Antman, F.M., (2011a), The intergenerational effects of paternal migration on schooling and work: What can we learn from children's time allocations? *Journal of Development Economics*, 96(2), 200-08.

[9] Antman, F.M., (2011b), International migration and gender discrimination among children left behind, *American Economic Review*, 101(3), 645-49.

[10] Antman, F.M., (2012), Gender, Educational Attainment, and the Impact of Parental Migration on Children Left Behind, *Journal of Population Economics*, 25, 1187-1214.

[11] Antman, F. M. (2013), The Impact of Migration on Family Left Behind, chapter 16 in A. F. Constant and K. F. Zimmermann (eds.) *International Handbook on the Economics of Migration*, Edward Elgar, Cheltenham, UK and Northampton, USA

[12] Azam, J.P. and Gubert, F. (2006), Migrants' Remittances and the Household in Africa: A Review of Evidence, *Journal of African Economics*, 15, 426-462.

[13] Bansak, C., and Chezum, B. (2009), How Do Remittances Affect Human Capital Formation of School-Age Boys and Girls? *American Economic Review*, 99(2), 145-48.

[14] Basu, K. and Van, P.H. (1998), The Economics of Child Labour, *American Economic Review*, 88(3), 412-427.

[15] Basu, K. (1999). Child labor: Cause, consequence, and cure, with remarks on international labor standards, *Journal of Economic Literature*, 37(3), 1083-1119.

[16] Basu, K., Das, S. and B. Dutta. (2010), Child labor and household wealth: Theory and empirical evidence of an inverted-U, *Journal of Development Economics*, 91(1), 8-14.

[17] Beegle K., Dehejia R. and Gatti R. (2006), Child Labour and Agricultural Shocks, *Journal of Development Economics*, 81(1), 80-96.

[18] Bhalotra, S. and Heady, C. (2003), Child farm labor: The wealth paradox, *The World Bank Economic Review*, 17(2), 197-227.

[19] Boutin, D. (2012), Family farming, child labour and the wealth paradox: evidence from Mali, *Economics Bulletin*, 32(4), 3471-3479.

[20] Calero, C., Bedi S. and Sparrow R. (2009), Remittances, Liquidity Constraints and Human Capital Investments in Ecuador, *World Development*, 37(6), 1143-54.

[21] Cox Edwards, A. and Ureta, M. (2003), International Migration, Remittances, and Schooling: Evidence from El Salvador, *Journal of Development Economics*, 72(2), 429-461.

[22] Duryea S., Lam D. and Levison D. (2007), Effects of economic shocks on children's employment and schooling in Brazil, *Journal of Development Economics*, 84(1), 18–214.

[23] Ebeke, C.H. (2010), The effect of remittances on child labour: Cross-Country Evidence, *Economics Bulletin*, Volume 30, issue 1, 351-364.

[24] Edmonds, E. and Pavcnik, N.(2005), Child Labor in the Global Economy, *Journal of Economic Perspectives*, 19(1): 199-220.

[25] Freije, S. and L. F. Lopez-Calva (2000), Child Labor, Poverty and School Attendance in Mexico and Venezuela, *El Colegio de Mexico, Working Paper.*

[26] Hanson, G.H. and Woodruff, C. (2003), Emigration and educational attainment in Mexico, *Working paper, University of California*, San Diego.

[27] International Labour Organisation (ILO)(2013), Global Child Labour Trends 2008-2012, September 2013, Geneva.

[28] Lucas, R. and O. Stark (1995), Motivations to remit: Evidence from Botswana, *Journal of Political Economy*, 901-918.

[29] Lucas, R. (2004), Life Earnings and Rural-Urban Migration, *Journal of Political Economy*, 112(S1), S29-S59.

[30] McKenzie, D. and Rapoport, H. (2011), Can migration reduce educational attainments? Evidence from Mexico, *Journal of Population Economics*, 24(4), 1331-58.

[31] Plaza, S., Navarrete, M. and Ratha D. (2011), Migration and Remittances Household Surveys: Methodological Issues and New Findings from Sub-Saharan Africa, The World Bank, Washington D.C.

[32] Rapoport, H. and Docquier, F. (2006), The Economics of Migrants' Remittances, Handbook on the Economics of Giving, Reciprocity and Altruism, Elsevier.

[33] Ratha, D. (2005), Worker's Remittances: An Important and Stable Source of External Development Finance, in Maimbo, Ratha (ed.) Remittances, Development Impact and Future Prospects. Washington: World Bank, 19-52.

[34] Rosenzweig, M. and Wolpin, K. (1985), Specific experience, household structure, and intergenerational transfers: farm family land and labor arrangements in developing countries, *Quaterly Journal of Economics* 100, 961-987.

[35] Taylor, J.E. and López-Feldman, A. (2010), Does migration make rural households more productive? Evidence from Mexico, *Journal of Development Studies*, 46, 68-90.

[36] World Bank (2010), Leveraging Migration for Africa: Remittances, Skills and Investments, March 2011.

[37] Woodruff, C. and Zenteno, R. (2007), Migration networks and microenterprises in Mexico, *Journal of Development Economics*, 82, 509-528.

[38] Yang, D. (2008), International Migration, Remittances and Household Investment Evidence from Philippine Migrants' Exchange Rate Shocks, *Economic Journal*, 118(528), 591-630.

Appendix

Table A1: Education level and employment characteristics of migrants

Household migrant type	**Permanent**	**Full sample**
Education level (before migration)		
None	61.46	63.93
Primary	27.96	25.89
Secondary	9.22	8.63
Higher	1.36	1.55
Work situation before migration		
Self employed	81.92	82.41
Paid employed	3.03	3.05
Full-time student	9.38	9.38
Unemployed	1.76	1.62
Others	3.90	3.54
Current work situation		
Self employed	61.80	65.91
Paid employed	21.92	19.81
Full-time student	6.22	5.18
Unemployed	1.88	1.49
Others	8.19	7.59

Source: Migration and Remittances Household Survey, Burkina Faso, 2010.

Table A2: Remittances characteristics in Burkina Faso

Household migrant type	**Permanent**	**Full sample**
Household receive remittances	52.14	55.22
Total amount (FCFA)	37,394	36,305
Channels (%)		
Friends	64.33	60.73
Brought back himself	20.3	21.74
Formal institutions (Bank, Western Union)	10.25	11.56
Courier	2.47	3.36
Informal individual	2.28	2.43
Others	0.37	0.18
Use of remittances (%)		
Food	56.03	55.53
Education	5.71	6.37
Health	10.15	9.53
Marriage	4.80	4.47
Home building	4.12	5.22
Business	2.26	2.99

Source: Migration and Remittances Household Survey, Burkina Faso, 2010.

Table A3: Descriptive statistics

	Full sample		Permanent migrant HH	
	Mean	**Std. Dev.**	**Mean**	**Std. Dev.**
Outcomes				
Proportion of working children	0.40	0.37	0.36	0.35
Proportion of children attending school	0.46	0.36	0.47	0.35
Proportion of girl working children	0.42	0.42	0.37	0.42
Proportion of boy working children	0.40	0.40	0.37	0.39
Proportion of working children (5-9 years old)	0.36	0.42	0.32	0.40
Proportion of working children (10-14 years old years old)	0.45	0.43	0.45	0.43
Endogenous variables				
remittance receipt	0.52	0.50	0.58	0.49
Instruments				
Empl. rate (mean 2006-2009)	70.73	10.00	69.94	9.73
Empl. rate (mean year since migration -2009)	70.70	9.96	69.86	9.86
Exogeneous labor shocks	-0.16	0.13	-0.15	0.14
Employment rate in 2009	70.71	9.88	69.93	9.62
Control Variables				
Household characteristics				
Size	10.23	0.20	10.63	0.23
Asset index	5.53	1.99	5.82	2.08
Business ownership	0.06	0.23	0.05	0.23
Muslim	0.56	0.50	0.57	0.49
Mossi	0.71	0.46	0.74	0.44
At least one return migrant	0.38	0.49	0.41	0.49
Number of adult employed	79.24	26.37	74.27	28.75
Household head characteristics				
Female headship	0.06	0.23	0.05	0.21
Household head employed	0.95	0.22	0.95	0.23
Educlevel of household head	0.16	0.46	0.11	0.35
Age of household head	53.59	15.99	55.56	16.92
Migrant characteristics				
Male	5.35	1.78	5.78	1.76
Educlevel of migrant	0.87	0.34	0.89	0.32
Distance with the household head	1.80	1.19	1.71	1.24
Labour migration motivation	0.71	0.45	0.72	0.45

Source: Migration and Remittances Household Survey, Burkina Faso, 2010.