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Impacts of Internal Remittances on Child Labor and Child Schooling in Vietnam

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Abstract: Internal migration generates a substantial value of remittances, which become an important source of additional income for households, relaxing household budgetary restrictions, reducing child labor, and directing human capital investment. Using the dataset of the Vietnam Household and Living Standard Survey 2018, this study aims to investigate the impacts of internal remittances on child labor and school attendance in remittance recipient and remittance nonrecipient households. To overcome the endogenous problem of remittance status, the authors used bivariate probit estimations to examine the impact of internal remittance on the incidence of child labor and child schooling. The treatment effects models were employed to analyze the effects of internal remittances on the number of child working hours and the educational index. This research recommends developing policies that would make it easier for people to migrate for work and remit money. The importance of school investment was highlighted to reduce child labor.

Keywords: internal remittance, child labor, schooling, financial constraint, household decision

JEL codes: I31, G50, J01

In recent decades, remittances have attracted increasing attention because of their rising volume and impacts on society and the economy. Remittances are defined as money and goods that are sent to households by migrants working outside of their place of origin (Adams, 2010). Although the amount of each internal remittance transfer is likely to be smaller than a typical international remittance, they are more prevalent among households and become a highly important source of external income for reducing poverty and vulnerability in developing countries (Castaldo et al., 2012). Remittances can also reduce household budget constraints, which may decrease child labor and redirect resources to human capital investments such as child health care and education (Cuadros-Menaca et al., 2020).

Remittances are found to have a positive impact by increasing child schooling and decreasing child labor (Acosta, 2011; Arif & Chaudhry, 2015; Binci & Giannelli, 2018; Cuadros-Menaca et al., 2020; Yang, 2008). Arif and Chaudhry (2015) pointed out that remittances benefited child education in Punjab in terms of increased enrolment rate, accumulated levels of schooling, increased number of school days, and decreased dropout rates. Regarding child labor, Yang (2008) indicated that remittances decreased child labor in terms of working hours for 10 to 17 years old children in the Philippines. Besides, Elbadawy and Roushdy (2010) and Vogel and Korinek (2012) found that remittances were spent disproportionately on boys, whereas girls received a positive impact only if they came from higher-income households. The reason given was that boys were more appreciated than girls in most developing countries and some cultures. Thus, parents were motivated to invest more in them.

In Vietnam, there are several studies on migration and remittances. However, most of these studies focus on the patterns and determinants of migration or the impact of remittances on poverty. A few studies show concern for child welfare, especially child labor and schooling. Binci and Giannelli (2018) found that internal remittances are a significant income inflow that reduces child labor and increases school attendance in Vietnamese households. However, some important quantitative information about working hours and schooling interruption was not considered. Meanwhile, Nguyen and Nguyen (2015) pointed out that remittances do not significantly impact school enrolment and work participation of children and adolescents. Nevertheless, the authors used the number of years of schooling completed as a quantitative variable for child schooling, which could lead to bias because the number of schooling years completed mostly depended on the child's age rather than other factors.

This study analyzed the Vietnam Household Living Standard Survey (VHLSS) 2018 conducted by the General Statistics Office of Vietnam (GSO, 2020), extracting data on children aged 6–17 years from internal remittance-receiving households and non-receiving households. To overcome the endogeneity of remittances, the authors applied bivariate probit estimation to examine whether internal remittances can reduce the incidence of child labor and increase child enrolment. Besides, to obtain a clearer overall picture of remittance impact, the authors used the treatment effects model to investigate how internal remittances influence the number of child working hours and educational index. Variation in the child gender of remittance impacts on child welfare is also considered.

Methodology

1. Sample and variables:

The study's sample included children aged 6–17 from internal remittance-receiving and non-receiving households. The total number of children was 6476, coming from 4301 households. The variable of interest is REMIT, a binary indicator variable that shows whether the child belongs to a remittance-receiving household (1) or not (0). Besides, there is a set of control variables on the demographics, education, and characteristics of individuals and households that intend to affect child labor and schooling, as well as the remittance-receiving status of the household.

An instrumental variable (IV) technique is used to overcome the potential endogeneity problem of remittance. Considering the literature and data limitations, the set of IV includes having a bank account, the number of people over 65 years old in the household, and the log value of household medical expenses.

2. Statistical Analyses

The estimations were performed using the following equations:

$$Yi = \alpha_1 + \beta Remit + \delta_1 x_i + \varepsilon_{1i}\ (A1) \quad (1)$$

$$Remit = \alpha_2 + \delta_2 x_i + \tau Z_i + \varepsilon_{2i}\ (A2) \quad (2)$$

where: $\boldsymbol{Y_i}$ is a set of dependent variables including the following:

- CHILDLABOR – a dummy variable with the value 1 if the child has worked without regard receiving a wage and the value 0 if otherwise;
- LHOURS – the logarithm of the number of hours each child worked in a year;
- CHILDSCHOOLING – a dummy variable that takes the value 1 if the child goes to school, including school time and summer holiday, and does not have any jobs; the value 0 if otherwise;
- EDUINDEX – the adjusted ratio of years of schooling completed to age, which is used by Milligan and Bohara (2007). In Vietnam, children normally begin school at the age of 6. Thus, the child educational index (school attainment) is estimated by the following equation:

$$EDUINDEX_i = \frac{schoolingyear_i + 6}{age_i} \quad (3)$$

where:

schoolingyear$_i$ is the number of years of schooling completed by a student *i* at age_i;

- Remit takes the value of 1 if the household receives remittances and 0 if otherwise;

$\boldsymbol{X_i}$ comprises the individual and household characteristics that capture the human capital, physical capital, and demographic profile of the households and individuals;

$\boldsymbol{Z_i}$ denotes instrumental variables;

$\sum$ denotes the error term.

Regarding the decision to send children to work and school, the bivariate probit model developed by Heckman (1978) is used to analyze binary dependent variables (Y_1, Y_2) and model them jointly as a function of some explanatory variables. The dependent variables of CHILDLABOR (CHILDSCHOOLING) take a value of 1 if the underlying latent variable CHILDLABOR* (CHILDSCHOOLING*) is greater than zero and 0 if otherwise. Chiburis et al. (2011) found that bivariate probit performed especially better than two-stage least-squares regression when the treatment probability was close to 0 or 1. In 2018 VHLSS, approximately 82% of children received internal remittances. The model assumes a bivariate distribution for $\sum_{1i}$ and $\sum_{2i}$ with ρ equivalent to Cov($\sum_{1i}$,$\sum_{2i}$). To check for endogeneity between remittance-receiving status and child labor (child schooling), the authors performed the Gradient test proposed by Terrell (2002). The hypothesis of exogeneity is stated in terms of ρ, which can be interpreted as the correlation between the unobserved variables in the two equations. If ρ = 0, then ε_{1i} and ε_{2i} are uncorrelated, and there is exogeneity. On the contrary, ρ ≠ 0 implies that there is a problem of endogeneity.

It is possible that the simple dichotomous choice model could ignore some important quantitative information. The study used Heckman's two-stage estimation technique, which is known as the treatment effects model or the restricted control function method, to examine how much time a child spends working (LHOURS) and how properly a child studies in school (EDUINDEX). In the first stage, Equation 2 is estimated to obtain the predicted value of the hazard function. Then, it is substituted in Equation 1 to obtain consistent estimates of the coefficient of β. The outcome model is determined since the instruments Z_i is in Equation 2 and not in Equation 1. ρ is the Cov($\sum_{1i}$,$\sum_{2i}$). A likelihood ratio test against the null hypothesis (H_0: ρ = 0) provides a specification test for the model. If the null hypothesis is rejected, endogeneity presents due to a high correlation between the regression errors.

Results

After controlling for endogeneity in the bivariate probit model and treatment effects model, the results of Table 1 show that remittances have a negative and statistically significant impact on child labor and working hours. Meanwhile, remittances had a statistically significant positive impact on child schooling and educational index. The statistical significance of ρ from the Gradient and likelihood ratio tests further demonstrated the rationality of adopting the bivariate probit and treatment effects models, respectively.

Additionally, characteristics of children, households, and household heads significantly impacted child labor, child working hours, and child schooling and educational index. Particularly, the older the children were, the higher the likelihood of occupation and the lesser schooling prevalence children had. Older children also had more working hours and a lower educational index. Children from urban areas were less likely to be sent to work. In bigger families, children were less likely to attend school and had a lower educational index. Children in more prosperous families with ownership of tap water were more likely to be sent to school and less likely to be assigned for labor; they had fewer working hours. Besides, a higher number of months staying at home contributed to a decrease in the prevalence of child labor and

working hours, as well as an increase in school attendance and a higher educational index. Additionally, more educated families were more likely to invest in their children's human capital by assisting children in remaining in school instead of working.

Table 1

Impacts of internal remittances on child labor and child schooling

	Bivariate probit		**Treatment effects model**	
	Child labor	**Child schooling**	**Log of hours worked a year**	**Educational Index**
Remittance	-1.35***	1.312***	-0.986***	0.097***
	(0.141)	(0.139)	(0.034)	(0.004)
Child's characteristics				
Female	-0.163**	0.101*	-0.057**	0.003
	(0.054)	(0.047)	(0.019)	(0.002)
Aged from 13 to 14	0.839***	-0.588***	0.191***	-0.009***
	(0.079)	(0.064)	(0.027)	(0.003)
Aged from15 to 17	1.46***	-1.133***	0.596***	-0.021***
	(0.075)	(0.058)	(0.024)	(0.003)
Household's characteristics				
Urban	-0.216**	0.123	-0.018	0.003
	(0.084)	(0.068)	(0.025)	(-0.003)
Household size	0.025	-0.038*	0.012	-0.002*
	(0.018)	(0.016)	(0.007)	(0.0007)
Social organization	0.047	0.022	0.034	0.002
	(0.055)	(0.048)	(0.020)	(0.002)
Tap water	-0.453***	0.285***	-0.071**	0.003
	(0.077)	(0.061)	(0.023)	(0.002)
Household head's characteristics				
Number of months household head at home	-0.044**	0.028	-0.014*	0.0003
	(0.016)	(0.015)	(0.007)	(0.0007)
High-educated household head	-1.363***	1.365***	-0.285***	0.028***
	(0.25)	(0.207)	(0.042)	(0.005)
Medium-educated household head	-0.754***	0.664***	-0.299***	0.028***
	(0.073)	(0.063)	(0.026)	(0.003)
Low-educated household head	-0.42***	0.378***	-0.214	0.022***
	(0.066)	(0.059)	(0.027)	(0.003)
Constant	-0.028	-0.036	1.039***	0.961***
	(0.264)	(0.245)	(0.188)	(0.188)
Rate of members aged over 65 in a household	1.337***	1.314***	0.240***	0.184***
	(0.219)	(0.219)	(0.018)	(0.019)
Log of medical expenses	0.243***	0.234***	0.159***	0.174***
	(0.021)	(0.021)	(0.042)	(0.042)
Having bank account	0.201***	0.192***	1.208	0.871***
	(0.049)	(0.049)	(0.097)	(0.011)
Observations	6476	6476	6476	6476

ρ	0.652***	-0,61***	0.697***	-0.678***

Note: Standard errors are in parentheses. Significance levels = ***(p < 0.001), **(p < 0.01), *(p < 0.05). *Source:* Calculated by the authors

Regarding gender differences, Table 2 shows that remittances have a statistically significant impact on child labor and working hours, as well as child schooling and educational index for both genders. Boys and girls living in remittance-receiving households were less likely to work and had a lower number of working hours. Besides, children of both genders from remittance-receiving households had a higher chance of enrolling in school and a better educational index than their counterparts from households that do not receive remittance.

Table 2

Impacts of internal remittances on child labor and child schooling by gender

	Bivariate probit		**Treatment effects model**	
	Child labor	**Child schooling**	**Log of hours worked a year**	**Educational index**
Male	-1.451***	1.357***	-0.980***	0.077***
	(0.167)	(0.173)	(0.064)	(0.009)
Female	-1.319***	1.243***	-0.956***	0.109***
	(0.227)	(0.224)	(0.038)	(0.005)

Note: Standard errors are in parentheses. Significance levels = ***(p < 0.001), **(p < 0.01), *(p < 0.05). *Source:* Calculated by the authors

Discussion

Household decisions from improved budgets through additional income, such as internal remittances, are expected to benefit child education and reduce child labor to achieve better child and household development. The study is in line with the evidence found by Binci and Giannelli (2018) that internal remittances are a significant inflow of household money to reduce child labor and increase school attendance. If the household cannot send children to school due to financial constraints, children may be forced to work to supplement the family's income. Therefore, extra income inflow, such as internal remittances, can help families relax the budget constraint to send children to school instead of work.

Besides, this study provides a more comprehensive assessment of internal remittance's effects than previous studies in Vietnam. Households may send children to work for only a short time of urgent need. As a result, it is necessary to examine the relationship between internal remittances and the number of child working hours. As demonstrated by the treatment effects model's outcomes, child working hours are lower in remittance-receiving households than in non-receiving. Furthermore, the educational index provides additional information about a child's schooling period since there is a case that children attend school late due to disruptions from financial problems. The positive impact of remittances on schooling is strengthened when the educational index of children in households receiving remittances is higher than the ones belonging to those households that receive no remittances.

In addition to financial constraints, other household characteristics play a significant role in household decisions regarding child labor and schooling. Particularly, households that use tap water indicate better financial position; these households are less likely to send children to work and have lower working hours. Children can spend time studying rather than fetching water from afar. A bigger household size may constrain a household budget, reducing children's chances to attend school and increasing the disruption during the child's schooling period. Parental care can be expressed as the amount of time the household heads stay at home when they do not have to migrate for work and live far away from home. The more the parents spend time with their children, the more they can assist their children with domestic work and pay more attention to child welfare. In addition, parents with higher education are typically in a better economic condition and are more aware of the potential benefits of education and the consequences of child labor. Therefore, these parents are more likely to send their children to school rather than work.

Vietnam is influenced by Confucianism; girls will have more disadvantages in household decisions than boys (Vu & Yamada, 2020). Surprisingly, the regression results show that girls are less likely to be sent to work and have fewer working hours than boys. Most children participate in manual and low-skilled jobs, which require physical strength. Boys are preferred to do these jobs. Thus, their opportunity costs of schooling appear to be higher than those of girls. To obtain a clearer picture, this study assesses child labor and schooling in two distinct samples for boys and girls. The empirical results show that internal remittances can help reduce child labor and increase child schooling in both genders. However, the dataset does not cover the domestic tasks typically performed by girls. Therefore, future studies or surveys should include these types of work to have a more comprehensive assessment of remittance's impact on child welfare.

Conclusion and Policy Implications

Internal remittances appeared to reduce child labor and increase child schooling in Vietnam. It is critical to facilitate labor movement, particularly within national borders. Being free to migrate between provinces, frequently from rural to urban areas, migrants can maintain the welfare of their children at home by sending remittances. Reducing remittance transfer costs and improving the system for remittance would significantly increase the size of remittances. Furthermore, several internal migrants send remittances through informal channels because they often do not meet the requirements for opening a bank account or they live in remote areas without banks or post offices. The procedure for opening bank accounts should be simplified to make financial services more accessible to the poor and the less educated.

Due to the inverse relationship between child labor and child schooling, policies that support child education can help reduce the number of children engaged in work, such as minimizing the cost of education and increasing the quality of schooling. Furthermore, the educational facilities should be expanded, especially in mountainous and remote areas, to shorten the distance between home and school. In the case of households receiving remittances, those educational policies can affect household decisions on spending money on children's education instead of other expenses.

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