

# **Impact of Remittances on Household Food Security: A Micro Perspective of Rural Tigray, Ethiopia**

**By**

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*Paper Presentation at a UN\_WIDER Conference on Migration and  
Mobility – new frontiers for research and Policy  
ISSER Conference Hall , Accra Ghana . 4<sup>th</sup> -5<sup>th</sup> October 2017*

# Outline of the Presentation

- Motivation of the Study
- Research Questions
- Survey area and Data
- Empirical Strategy
- Results and Discussions
- Conclusion
- Policy Recommendations

# Motivation

- Remittances to Developing countries are estimated to total \$325 Billion USD (WB,2010)
- Surpassed the level of FDI and ODA to the region
- Ethiopia is also ranked to be the 8<sup>th</sup> largest remittance receiver in SSA with an inflow of remittances reaching 387 million USD, as compared with net FDI inflows of 100 million USD (WB, 2011)
- Not surprisingly, the potential impact of those flows on economic development has also generated considerable interest, both among academics and policy makers.

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However, most previous studies

- ❖ Use HH income and expenditure as measure of welfare impact (in which case temporary contributions do not always feature as significant)
- ❖ Focus on determinants and impacts, especially poverty and distribution – and other impacts; eg. education, health
- ❖ Little evidence on impact of remittances in food security in Sub-Saharan Africa

# Research Questions

- Does Remittances reduce household food insecurity?
- To what extent does Remittances contribute to household food security?

# Study area and Data

- The data for this paper come from the Livelihoods Change Over Time (LCOT) a four-round panel survey conducted in two Livelihood Zones of northern Ethiopia between 2011-2013 using 300 sample households.
- The objective of the LCOT panel survey is to assess household resilience in the face of an annually recurring shock: the “hunger season.”
- Research collaboration with World Vision, Feinstein International Center of Tufts University, USA and Collage of Dryland Agriculture , Mekelle University, Ethiopia
- Funded by Swedish International Development Agency(SIDA)

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- **Treatment variable**

Dummy variable = 1 if the household receives remittance 0, otherwise

- **Outcome variables**

**Coping Strategy index (CSI):** Defined as behaviours exercised in order to cope with a food deficit , and it measures the frequency and severity of coping strategies ( the higher the index , the more food insecure the household)

**Reduced Coping Strategy Index (rCSI):** Like the CSI , the reduced coping strategy (rCSI) index also combines the frequency and severity of coping strategies , so the higher the index score, the more food insecure the household is

# Data Con----

- **Household Food Insecurity and Access Scale (HFIAS):** focuses on three dimensions of food access: anxiety about not being able to procure sufficient food, the inability to secure adequate quality of food, and the experience of insufficient quantity of food intake. Higher scores indicating greater food insecurity.( Coates et al 2007),
- **Food Consumption Score (FCS).** is a measure of dietary diversity developed by (WFP 2009). It asks about frequency of consumption over the past month for cereals and tubers, pulses, vegetables, fruit, meat and fish, milk, sugar, and oil. unlike HFIAS and CSI, higher FCS indicates improved food security



## Empirical Strategy

$$Y = f(X + \text{Dummy}) + e$$

=1 if Remittance HH


= 0 if non-Remittance HH

This simple approach assumes that Remittance income is exogenous while it is voluntary and may be based on individual self selection.


Selection bias occurs and differences in Food security outcomes may not be due to the actual effect of remittance but simply due to unobserved heterogeneity

# ISSUES

Unobservable characteristics of hhs may affect both the probability that the HH receives remittance (migrates) and the food security outcomes, resulting in inconsistent estimates of the effect of remittances on food security Out comes



For example, if only the households with large members choose to migrate and send remittance and we fail to control hh size, then we will incur bias in the estimates



What if households that receive remittances would have higher food security outcomes than the hhs that did not receive remittances even if they did not receive remittances

Control Group

Treatment Group

Ideally we would like to have -----

Food Security outcomes  
for households that did  
not receive remittances



Food Security outcomes  
for households that  
receive remittance

To address the selectivity bias , we employ the Propensity Matching Score Method (PSM) technique in assessing the differences in food security outcomes among the two groups. where the Propensity score is defined as the conditional probability of receiving remittances given pre-participation characteristics.

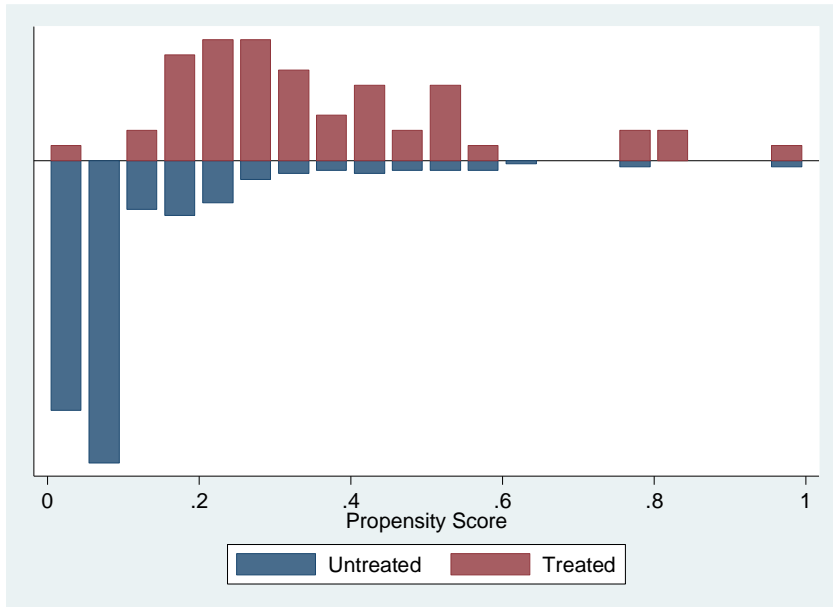
# Result and Discussions

Variable	All HHs	HH with Remittance	HHs without Remittance	T- values
Outcome Variables				
CSI	15.1(0.75)	11.6(1.32)	15.8(0.86)	0.033**
rCSI	8.10(0.39)	6.58(0.78)	8.42(0.44)	0.072*
HFIAS	7.91(0.30)	6.57(0.67)	8.19(0.33)	0.038**
Independent Variables				
Hh Size	5.73(0.14)	4.80(0.33)	5.94(0.15)	0.002***
Land size (tsimdi)	4.58(0.30)	3.29(0.66)	4.85(0.34)	0.048**
Livestock (TLU)	1.77(0.09)	1.40(0.18)	1.87(0.11)	0.067*
N. Migrants	0.42(0.03)	1.00(0)	0.29(0.03)	0.000***

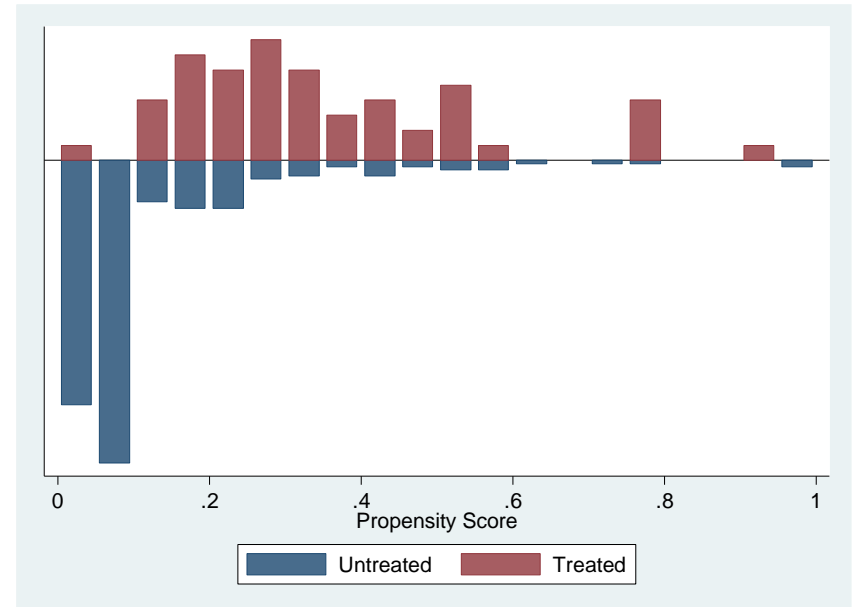
\* significant at 10%; \*\* significant at 5%, \*\*\* significant at 1 %

# Distribution of Propensity Scores

CSI

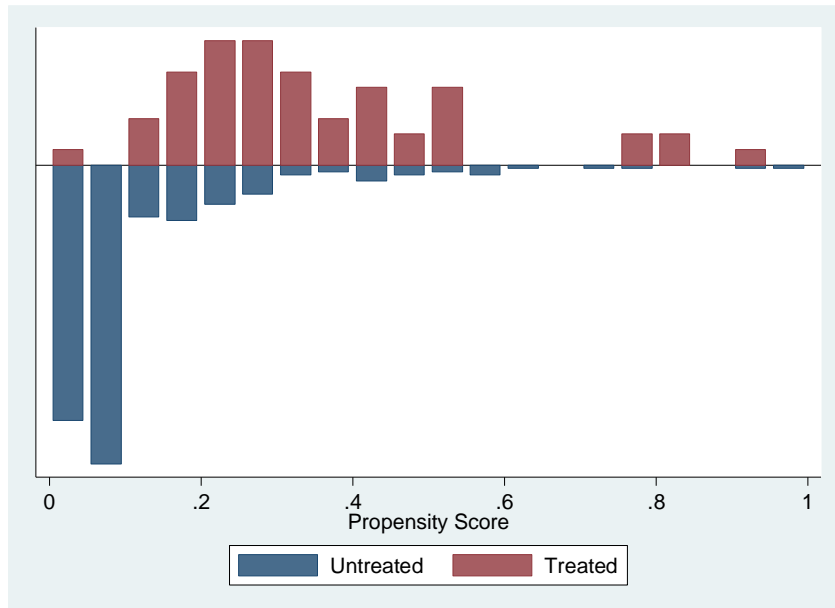


rCSI

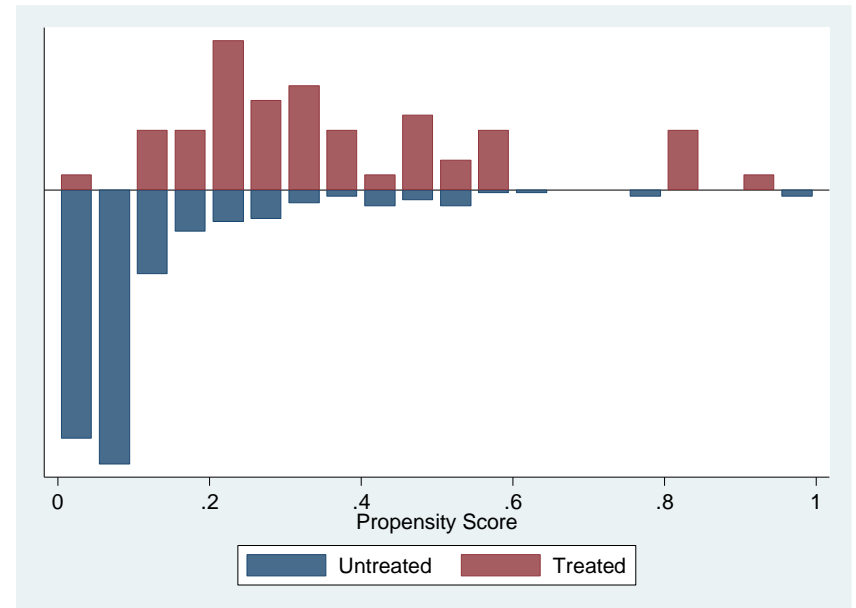


# Con----

## HFIAS



## FCS



# Average Treatment Effect

Outcome	M. Algorithm	E(Y) Treated	E(Y) Control	Differences in ATT	P-VALUE
CSI	N-neighbor	11.25	17.04	-5.79	0.006***
	K-matching	11.25	16.60	-5.35	0.006***
rCSI	N-neighbor	6.44	8.67	-2.23	0.029**
	K-matching	6.44	8.33	-1.89	0.029**
HFIAS	N-neighbor	6.37	8.67	-2.30	0.007***
	K-matching	6.37	8.61	-2.24	0.007***
FCS	N-neighbor	29.04	23.28	5.76	0.236
	K-matching	29.04	24.60	4.44	0.314

\* significant at 10%; \*\* significant at 5%, \*\*\* significant at 1 %

# Conclusions

- Remittances lower frequency and severity of coping strategies of households in Ethiopia  
lower CSI and rCSI
- Remittances also improve food access (i.e. Lower anxiety about not being able to procure sufficient food, increase ability to secure quality food, and lower experience of insufficient quality food as shown by HFIAS)



# Recommendations

- Strengthen local financial institutions to increase their participation in remittance market – expand funding sources and client base
- it imperative to include migration and remittances as important components of food security programs in developing countries such as Ethiopia
- It is also high time for governments to seriously consider the need for providing incentives to promote the flows of transfers among families