

How do remittances affect the food expenditure of remittance recipients, food secure, and food insecure households in the Philippines?

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Motivation

- Remittances are an essential source of funds for the economy
- Direct effect on recipient families
- Lack of empirical studies focuses on the disaggregated analysis especially on food expenditure



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Objectives

To examine how total food expenditure on specific food groups are associated with remittances among the remittance recipients, food secure, and food insecure households. Specifically addressing the following:

- (1) Do remittance recipients have higher food expenditure than non-recipients? Do food secure households have higher food expenditure than food insecure households?
- (2) Is there a difference in the budget share of food expenditure when households do receive remittances?
- (3) How do remittance recipients, food secure, and food insecure households used their remittances on food spending?
- (4) Which of the other factors are significantly affecting the budget share of food expenditure of households?



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Theoretical Framework

- Engel's law
- Permanent income hypothesis



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Engel's law

- The fraction of income spent on food declines as income increases and became known as Engel's law (Nicholson, 2005). On the other hand, the fraction of income spent on non-food such as health and education are expected to increase as income rises.



Permanent income hypothesis

- $y = y^P + y^T; c = c^P + c^T$

Where:

y = total disposable income

y^p = permanent income

y^t = transitory income

c^p = consumption smoothing

c^t = investment purposes



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Model

- Based on the Working-Lesser Model
- Applied 3-stage Tobit estimates rather than OLS
- Instrumental variables
 - Household assets (Ang et al., 2009)
 - OFW either family or friend/relative (Coscodan, 2008)



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Three-stage Tobit model (Working-Lesser functional form)

1st stage

a probit model is estimated for the remittance dummy variable

$$R_i = \alpha + \gamma_i Z_i + \psi_i IV_i + \varepsilon$$

2nd stage

a probit model is estimated for the household's participation in each budget expenditure group. The dependent variable in each probit equation is equal to 1 if $SE_{ij} > 0$ and zero if reported expenditure on the category equals zero

second stage of the analysis is designed to predict the inverse-mills ratio (IMR), which controls for selection bias

3rd stage

estimation includes the inverse-Mills ratio as one of the independent variables in each expenditure equation

Final stage: Tobit model is applied:

$$SE_{ij} = \alpha_j + \beta_1 \ln PCE + \beta_2 R_i + \beta_3 R_i * \ln PCE + \gamma_1 SEX + \gamma_2 AGE + \gamma_3 EDUC + \gamma_4 FSIZE \\ + \gamma_5 URB + \varphi IMR + \varepsilon_{ij}$$



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Results and Discussions

Remittance-recipient vs. non-recipient households

- 1/3 of total households receive remittances
- 4 % are highly vulnerable to food insecurity
- Household heads are older, more educated, dominated by males, urban dwellers in remittance-recipient households (remittance-recipients)
- With roughly 30% higher per capita expenditure
- Same family size



Food insecure vs. food secure

- 13% of the food insecure households do receive remittance while 36% of the food secure households do receive remittance
- Household heads are older, less educated, dominated by males, urban dwellers in food insecure household
- Family size is bigger and per capita income is twice as low than to those food secure households



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(1) Do remittance recipients have higher food expenditure than non-recipients? Do food secure households have higher food expenditure than food insecure households? (per capita, annual consumption in pesos)

Food Expenditure Category	Whole Sample	Remittance recipients	Non-remittance recipients	Food Insecure	Food Secure
Cereals	31,468	35,790	29,114	19,395	31,729
Animal-Sourced Foods	28,571	34,460	25,364	12,266	28,924
Fruits	2,611	3,269	2,252	677	2,653
Vegetables	4,006	4,668	3,645	2,125	4,047
Oil	1,475	1,744	1,329	766	1,491
Sugar	1,654	1,896	1,522	1,227	1,663



(2) Is there a difference in the budget share of food expenditure when households do receive remittances?

	Predicted Remittance Effect on Food Basket		
	Whole	Food Insecure	Food Secure
Total Food			
Cereals	+***		+***
Animal-sourced foods	+***	+*	+***
Fruits	-***		-***
Vegetables	+***	+***	+***
Oil			
Sugar	-***	-**	-***



(3) How do remittance recipients, food secure, and food insecure households used their remittances on food spending?

	Interaction Term Effect on Food Basket		
	Whole	Food Insecure	Food Secure
Total Food	_*		_*
Cereals	_*_*_*		_*_*_*
Animal-sourced foods	_*_*_*	_*	_*_*_*
Fruits	+_*_*_*		+_*_*_*
Vegetables	_*_*_*	_*_*_*	_*_*_*
Oil			
Sugar	+_*_*_*	+_*_*	+_*_*_*



(4) Which of the other factors are significantly affecting the budget share of food expenditure of households?

		Other Explanatory Variables					
		Sex	Age	Education	Family size	Urban	IMR
Total Food	Whole	***	***	**	***		***
	Food Insecure						
	Food Secure	***	***	**	***		***
Cereals	Whole	***	***	***	***		***
	Food Insecure	***		***			*
	Food Secure	***	***	***	***		***
Animal-sourced foods	Whole	***	***		***		***
	Food Insecure				***		***
	Food Secure	***	***		***		***
Fruits	Whole	***	***		***		***
	Food Insecure	**	**			*	***
	Food Secure	*	***		***		***
Vegetables	Whole		**	**	***	*	***
	Food Insecure	**			***		**
	Food Secure		**	**	***	*	***
Oil	Whole				***		***
	Food Insecure	***					**
	Food Secure				***		***
Sugar	Whole	**	***		***	**	***
	Food Insecure						
	Food Secure	**	***		***	**	***



Conclusions

- Households receiving remittances tend to spend more on food than non-recipients
- Additional income thru remittances lowers the budget share on total food, thereby confirming Engel's law
- With regard to the test of the permanent income hypothesis, the study finds that remittances are treated as sporadic or variable source of additional income
- Majority of the controlled variables such as sex, age, education, family size, and location dummy (urban or rural) are significant in most cases and comply with the expected signs
- This study provides evidence that remittances tend to play an important role in food expenditure



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Thank you
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