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Original Research Article

The Impact of Remittances on Household Consumption Pattern In Indonesia

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Abstract

Using household data from Indonesian Family Live Survey (IFLS), this paper assesses how remittances affects consumption pattern in recipient household remittances. Using the Last Square Dummy Variable (LSDV), the estimation results presented that the consumption responses to remittances is greater than the wage and earning profit. The effect of remittances on food is smaller than non-food, education spending, health spending and housing spending. Remittance is a type of transitory income that will have an impact on economic development through the formation of human capital. That remittance is the type of income which most responded by consumption. The effect of remittances is greater on non-food consumption compared to food consumption.

Keywords: Remittance, Consumption and Economic Development, Indonesian Family Live Survey.

INTRODUCTION

Theoretically, there are three views on how household spend remittance. The first, the household views that remittance is fungible, meaning that remittance as well as wages in its use, the household does not distinguish it. The second, remittances can cause behavioral changes of household consumption to be more consumptive in which remittances tend to be spent on consumption goods in order to improve social status rather than being used for investment goods. A third, remittance are a transitory type of income households tend to spend them more at the margin on investment goods (increase of human capital or physical capital) rather than for consument goods so as to encourage economic development [1, 2].

There are contradiction result on how remittance affect household consumption [1]. External remittances received by households in Vietnam tend to increase health, education and housing expenditures [3]. International remittances received by rural households in Pakistan tend to increase household owned assets such as irrigation land, rainfed land, livestock and non-agricultural assets. In contrast, international remittances received by households in Pakistan tend to increase food consumption [4]. Similarly, in Tajikistan households that international remittances do not encourage productive spending [5].

Domestic remittances received by households in Pakistan tend to increase spending on education [4]. In a similar study conducted by [2] in Senegal, the paper show that domestic remittances are driving the trend of spending on housing. This finding shows that households receiving domestic remittances tend to invest and increase family assets. In contrast, households in Vietnam show that domestic remittances tend to increase food consumption [3]. Once households in Tajikistan point out that domestic remittances do not increase the trend of productive spending such as education and health [5]. And in rural households in Pakistan that remittances do not increase the assets of rural households receiving remittances.

The results of studies in Indonesia shows that international remittances are received by households tend to be spent on consumption rather than on investment [1]. Lu, Y [6] finds that there is improved nutrition in households receiving remittances in Indonesia. These results show that households receiving remittances have a tendency to increase food consumption. Dartanto, T *et al.*, [7] find that households use remittances to function in case of shocks to consumption such as crop failure or illness and death or in other words remittances obtained by households saved first.

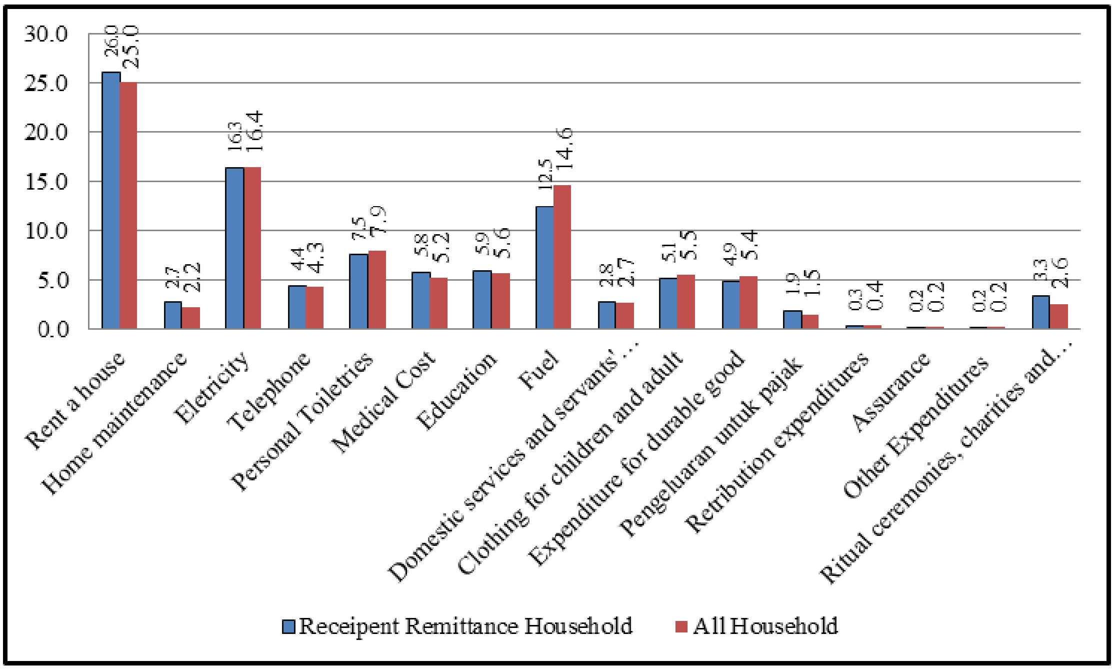

Fig-1: The Composition of Non-Food Consumption in Households in Indonesia

In terms of household expenditures, there is an interesting pattern in recipient household remittances versus others. Figure-1 shows differences the patterns of consumption or expenditure between households receiving remittances and the whole household. The households of recipient remittance have a higher average share of rental expenses or home contracts, expenditures for maintenance or home improvement, expenses for phone accounts, health expenditures, education expenditures, driver and helper expenses, tax and income expenditures expenses for party and ceremonial purposes. There is an interesting phenomenon of the allocation of household expenditures remittance recipients are: 1) the proportion of non-food consumption is greater than whole households; 2) expenditures for the productive activities of households receiving remittances is higher in proportion than others.

The phenomenon indicates that there is a potential remittance in promoting long-term economic development through the use of education, health and social and economic infrastructure development [8, 9]. Therefore, this study seeks to empirically asses the impact of remittance on household consumption in househol of remittance recipients and examine the impact of remittances (domestic and int ernational) on education, health and housing expenditures in Indonesia [8].

Theoritical Framework

The behavior of household consumption in Absoluth Income Hypothesis (AIH) from Keynes that consumption increases as income rises, but the increase is not as big as income increase. In addition, AIH theory shows that consumption is influenced by current income. In equation written as:

$$C = \bar{C} + c_i Y, \quad \bar{C} > 0, \quad 0 < c_i < 1, \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (1)$$

Where C is consumption, Y is the disposable income, $\bar{C}$ is the constant and c_i is the marginal propensity to consume (MPC).

AIH model in households that earn income from various sources then income Y, become n kinds of income source Yn and C become i category of consumption Ci and then there is marginal propensity to consume MPCm, j,i.e.

$$C_i = \sum_{n=1}^{N} MPC_{i,n} Y_n \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (2)$$

For sources of income categorized as remittance income and non-remittance income, equation (2.8) can be rewritten into:

$$C_i = MPC_{i,1} * Y_R + MPC_{i,2} * Y_W + MPC_{i,3} * Y_{NW} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (3)$$

Where, Y_R is remittance income and Y_W is wage income and Y_{NW} is income from business result (non wage). In AIH the effect of these three income variables is of the same nature, since in this AIH model income is not broken down into several types and based on this model current consumption is only affected by current income.

In model of the life cycle hypothesis (LCH) and permanent income hyphothesis (PIH) models are influenced by lifetime income [10]. LCH deals with how to maximize customer satisfaction throughout the life of a consumer, but LCH emphasizes the evolution of life-cycle both on income and household consumption and PIH refers to the basics in microeconomics, the representation of economic agents, and most importantly highlights not only the current conditions this but also with respect to the future [10]. In PIH, consumer income consists of permanent income (Yp) and temporary income (Yt) [11]. On the other hand [11], considers consumption to be consumption derived from permanent income (permanent income), which is permanent consumption (cp) and consumption derived from the temporary income of transitory consumption (ct). Based on the descriptions in or Ci it is fundamentally dependent on income such as W wages, Non-wage income Ynw (farm and non farm income) and remittance R. then the behavioral behavior equation becomes:

$$C = F\,(W, Y_{nw}^{t}, R) \quad \text{.....} \quad (4)$$

In empirical studies based on household micro-data, there are other determinant of consumption, namely demographic variables [12], demographic variables are household characteristics (number of household members, gender head of household, type of main job of head of household , number of children, education of family members and head of family and ethnic head of household, age of head of household) [12, 1]. In the panel can also be included variable birth year (cohort) to capture the specific characteristics of individual consumption and household. So the specification of the next consumption model in this research becomes:

$$C = F\,(W, Y_{nr}^{t}, R, Z_k) \quad \text{.....} \quad (5)$$

Where, Zk is a household characteristic.

Household consumption may consist of food and non-food consumption. In non-food consumption there are expenditure that has character different from other consumption because it has store of value that is expenditure for education, health and housing. Education, health and housing expenditures can be seen as investments or savings [1, 9]. Therefore, the model specifications of LCH consumption function in this study are as follows:

$$Cj = F\,(W, Y_{nr}^{t}, R, Z_k) \quad \text{.....} \quad (6)$$

Where, j indicates non-food consumption that includes education, health and housing.

METHOD

This paper using household micro data from the Indonesia Family Life Survey (IFLS) issued by the Rand Institute. The data used in this research is IFLS 3 data is data from IFLS year 2000, IFLS 4 is data from IFLS in 2007 and IFLS 5 is data from IFLS year 2014. IFLS data is survey data conducted at household of several provinces in Indonesia so is micro data. IFLS is data sourced from household surveys and community groups that are longitudinal, meaning that respondents who have been enumerated or interviewed in 1993 (IFLS1) will continue to be followed and returned as respondents in the subsequent years of subsequent surveys so that the information obtained vary between observation units also between time.

IFLS is implemented in 13 provinces of North Sumatra, West Sumatra, South Sumatra and Lampung, DKI Jakarta, West Java, Central Java, Yogyakarta, East Java, Bali, NTB, South Kalimantan and South Sulawesi. With the composition of households selected 40 percent residing in urban areas and 60 percent in rural areas..

In the estimation of this research model will use data pool data using Least Square Dummy Variable (LSDV) method. Specification of econometric model of this research will use the logarithmic functions as follows:

$$\begin{aligned} LnC_i = {} & \alpha_{1.0} + \beta_{1.1} LnW_{it} + \beta_{1.2} Ln\, Y_{nwit}^{t} + \beta_{1.3} LnR_{it} + \beta_{1.4} kohor + \alpha_{1.1} DR_{it}^{1} + \alpha_{1.2} DR_{it}^{2} + \alpha_{1.3}\, DR_{it}^{Y} + \alpha_{1.4}\, DJ^{ART} + \alpha_{1.5}\, DG_{it}^{krt} + \alpha_{1.6}\, DPnd_{it}^{krt} + \alpha_{1.7}\, DEtnis_{it}^{krt} + \alpha_{1.8}\, DA_{it}^{SMP} + \alpha_{1.9}\, DA_{it}^{SMA} + \alpha_{1.10}\, DA_{it}^{PT} + \alpha_{1.11}\, DA_{it}^{usia<6} + \alpha_{1.12} DA_{it}^{(6-18)} + \alpha_{113} tahun_{it} + \alpha_{1.14} wilayah_{it} + \sum_{j=2026}^{5561} \alpha_{1.j}\, DUsia_{i}^{KRT} + e_{1i} \end{aligned} \quad \text{..... (7)}$$

Where, C is consumption; W is wages; R is remittance; Y_nr is the revenue of the business; cohort is the birthday of the head of household DR^1 is a dummy for international remittance type; DR^2 is a dummy for domestic remittance types; DJ^{ART} is a dummy for the number of household members, DG^{krt} is the gender dummy of the head of the family; $DPnd^{krt}$ is the dummy of the head of the family; $DEtnis^{krt}$ is the ethnic dummy of the head of the family; DA^{SMP} is a dummy for the existence of the first educated child first; DA^{SMA} is a dummy for the presence of an upper educated child; DA^{PT} is a dummy for the presence of an upper educated child; $DA^{age<6}$ is the dummy of a child under five years of age; DA^{age} (6-18) is a dummy of the presence of children between the ages of 6-18 years, the year is the dummy year of data; region is the dummy of provincial household location; $DUsia^{KRT}$ is the dummy age of the head of the family between 20 - 61 years old; i is the household receiving remittance; t is the year of data that is 2000, 2007 and 2014.

RESULTS

Using OLS regression in pool data of the recipient houshol remittance, consumption response to all types of income both wages, income and remittance (Table-1). Remittance is the most responded by consumption. This result is in line with the results research of that remittances have a greater effect on total expenditure than in the workforce of the origin.

Table-1: Result of Estimation of Consumption Function on Revenue, Characteristic of Household, Characteristic of Household Head, Location and Year

Variabel	Model 2000		Model 2007		Model 2014		Model Panel	
	Koef.	S.E	Koef.	S.E	Koef.	S.E	Koef.	S.E
Konstanta	***25,184***	4,118	***11,642***	5,405	***19,807***	4,758	***18,992***	2,697
Upah Kerja	***0,068***	0,005	***0,147***	0,013	***0,026***	0,004	***0,043***	0,003
Pendapatan Usaha Sendiri	***0,015***	0,003	***0,010***	0,002	***0,011***	0,002	***0,012***	0,001
Pendapatan Remitan	***0,068***	0,009	***0,057***	0,008	***0,046***	0,007	***0,058***	0,005
Dummy Remitan Internasional	0,083	0,092	*0,167*	0,094	-0,015	0,092	0,004	0,049
Dummy Remitan Domestik	0,048	0,048	**0,174**	0,079	0,059	0,077	0,017	0,036
Dummy Jumlah ART	***-0,185***	0,041	0,034	0,032	-0,014	0,035	***-0,057***	0,020
Dummy Gender KRT	***-0,210***	0,033	**-0,070**	0,033	***-0,132***	0,028	***-0,148***	0,018
Dummy Pendidikan KRT	***0,380***	0,038	***0,188***	0,039	***0,167***	0,034	***0,261***	0,021
Dummy Suku Jawa KRT	-0,047	0,043	0,032	0,041	***-0,137***	0,040	-0,033	0,024
Dummy Suku Sunda KRT	-0,030	0,056	-0,022	0,054	-0,058	0,054	-0,010	0,031
Dummy Agama KRT	***-0,239***	0,061	-0,096	0,062	-0,046	0,053	***-0,131***	0,034
Dummy Perdesaan	***-0,145***	0,032	**-0,056**	0,029	**-0,051**	0,026	***-0,104***	0,017
Dummy SMP ART	***0,135***	0,046	**0,058**	0,028	0,023	0,027	***0,073***	0,018
Dummy SMA ART	0,072	0,051	0,052	0,032	0,035	0,028	0,011	0,019
Dummy PT ART	***0,388***	0,074	***0,146***	0,040	***0,268***	0,031	***0,220***	0,023
Dummy ART Usia < 6 Tahun	***0,101***	0,033	***0,122***	0,027	***0,194***	0,026	***0,154***	0,017
Dummy ART Usia (6 - 18) Tahun	***0,104***	0,036	***0,100***	0,031	***0,086***	0,029	***0,106***	0,019
kohor	***-0,007***	0,002	-0,001	0,003	-0,004	0,002	***-0,003***	0,001
umur (20 - 24)	**0,176**	0,079	*0,156*	0,091	***0,191***	0,063	***0,189***	0,043
umur (25 - 29)	***0,291***	0,082	***0,300***	0,085	***0,424***	0,065	***0,355***	0,043
umur (30 - 34)	**0,170**	0,081	***0,282***	0,085	***0,355***	0,065	***0,294***	0,043
umur (35 - 39)	**0,169**	0,087	***0,396***	0,089	***0,419***	0,070	***0,360***	0,046
umur (40 - 44)	***0,247***	0,094	***0,314***	0,094	***0,472***	0,079	***0,386***	0,050
umur (45 - 49)	0,143	0,102	***0,409***	0,104	***0,481***	0,087	***0,407***	0,055
umur (50 - 54)	***0,270***	0,109	***0,402***	0,110	***0,423***	0,096	***0,412***	0,060
umur (55 - 59)	*0,180*	0,108	**0,243**	0,120	***0,390***	0,106	***0,324***	0,064
umur (60 - 64)	0,037	0,112	0,388	0,133	***0,341***	0,115	***0,289***	0,068
umur (65 - 69)	0,000	0,119	0,200	0,138	*0,226*	0,129	***0,194***	0,074
umur (70 - 74)	*-0,219*	0,128	*0,274*	0,158	0,062	0,142	0,046	0,082
umur (75 - 79)	-0,029	0,147	0,120	0,175	0,062	0,158	0,068	0,093
umur (80 - 84)	-0,170	0,185	0,054	0,234	0,166	0,216	0,056	0,121
Sumatera Utara	*-0,188*	0,109	0,013	0,089	***-0,310***	0,077	***-0,196***	0,052
Sumatera Barat	0,044	0,112	0,138	0,091	***-0,309***	0,088	-0,051	0,055
Riau	0,140	0,255	0,084	0,155	0,114	0,149	0,110	0,100
Jambi					-0,175	0,269	-0,137	0,265
Sumatera Selatan	-0,111	0,098	*0,184*	0,097	***-0,247***	0,085	*-0,082*	0,054
Lampung	***-0,280***	0,101	0,105	0,087	**-0,193**	0,088	**-0,125**	0,054
Kepulauan Bangka Belitung			**0,504**	0,211	0,030	0,203	*0,245*	0,149
Kepulauan Riau			-0,151	0,360	0,070	0,249	-0,019	0,207
Jawa Barat	-0,064	0,074	-0,077	0,071	***-0,164***	0,063	***-0,128***	0,040

Jawa Tengah	-0,114	0,078	-0,055	0,075	***-0,307***	0,065	***-0,200***	0,042
Yogyakarta	**-0,203**	0,084	**-0,164**	0,085	***-0,291***	0,073	***-0,239***	0,047
Jawa Timur	***-0,263***	0,076	-0,190	0,073	***-0,255***	0,064	***-0,263***	0,041
Banten			0,011	0,087	***-0,208***	0,078	**-0,122**	0,055
Bali	***-0,375***	0,104	-0,083	0,101	-0,100	0,085	***-0,165***	0,056
Nusa Tenggara Barat	***-0,333***	0,083	***-0,257***	0,084	***-0,387***	0,072	***-0,323***	0,046
Kalimantan	**-0,202**	0,094	*0,145*	0,087	**-0,180**	0,085	*-0,077*	0,052
Sulawesi	**-0,232**	0,098	0,149	0,095	**-0,213**	0,084	**-0,112**	0,053
Tahun 2007							***-0,090***	0,026
Tahun 2014							***0,253***	0,030
Jumlah Obsevasi		2158		2218		3175		7551
F-hitung		30,621		18,217		24,067		72,272
Prob > F		0,000		0,000		0,000		0,000
R^2		0,384		0,283		0,270		0,325
Adj-R^2		0,371		0,267		0,259		0,321
Root MSE		0,646		0,599		0,641		0,642

Source: data processed

Notes: Bold-Italic, Bold and italic cases indicate statistical significance at the 1%, 5% and 10% levels, respectively.

Table-2: Results of Regression Model for the Impact of Remittances on Impact to Food and Non Food Consumption on Receipent Remittances Household in Indonesia

Variable	Food		Non Food		Non Food Type 1		Non Food Type 2	
	Coef.	S.E	Coef.	S.E	Coef.	S.E	Coef.	S.E
Constanta	**21,758**	2,502	**8.805**	3.872	**12,833**	3,886	3,548	4,680
Wages	**0,037**	0,003	**0,063**	0,004	**0,064**	0,004	**0,065**	0,005
Net Farm and Non Farm Income	**0,010**	0,001	**0,019**	0,002	**0,015**	0,002	**0,021**	0,002
Remittances	**0,041**	0,004	**0,099**	0,007	**0,084**	0,007	**0,118**	0,008
Obs.		7466		7253		6991		7348
F-Test		76,794		73,015		77,996		54,567
Prob > F		0,000		0,000		0,000		0,000
R^2		0,341		0,336		0,360		0,272
Adj-R^2		0,337		0,332		0,355		0,267
Root MSE		0,591		0,902		0,906		1,112

Source: data processed

Other variables affecting consumption are age, cohort, size household, household head (HH) gender, religion HH, rural, junior high school, senior high school, Age Less than 6 Years, Age between 6-18 Year, Province and Year. Variables that have a negative coefficient sign is the size household, HH Gender, religion HH, rural, fixed effect Province and fixed effect Year 2007. While other variables such as education and age variables have a sign coefficient positive. Coefficient negative means household conditions which has a character as in the consumption variable is lower than the other.

Table-3: Results of the Regression Model for the Impact of Remittances on Education, Health and Housing Spending in Remittance Recipient Households in Indonesia

Variable	Education		Medical Cost		Housing	
	Coef.	S.E	Coef.	S.E	Coef.	S.E
Constanta	6,624	6,509	***36,580***	7,018	***18,916***	3,843
Wages	-0,002	0,006	***0,046***	0,007	***0,047***	0,004
Net Farm and Non Farm Income	***0,007***	0,003	***0,015***	0,003	0,002	0,002
Remittances	***0,071***	0,009	***0,114***	0,012	***0,061***	0,007
Obs.		4124		6638		7529
F-test		51,722		23,876		64,789
Prob > F		0,000		0,000		0,000
R^2		0,388		0,153		0,302
Adj-R^2		0,381		0,147		0,298
Root MSE		0,924		1,537		0,915

Source: data processed

Table-2 shows that the larger remittance affects non-food consumption compared to food consumption. Meanwhile, Table-3 shows that the remittances have greatest impact on education, health and then housing compared other income. Looking at the coefficients, the results show that the remittance coefficient for education, health and housing is greater than that of food coefficients. As [1] points out, if the coefficient of remittance for education is greater than for food then it can be said that remittance is a transitory income.

CONCLUSION

Based on the results, it can be concluded that remittance is the type of income wich most responded by consumption. The effect of remittances is greater on non-food consumption compared to food consumption. Remittance is the trasnitory income, because the effect of remittance on education, health and housing is greater than on food consumption. Thus remittances can have a positive effect on economic development in Indonesia.

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