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Remittances and Economic Growth of Developing Countries in Asia

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ABSTRACT

Based on the relatively limited number of studies on the impact of remittances on economic growth, especially research on emerging economies and high-income countries, the study will supplement additional research. and experiment in this field, and more importantly, provide quantitative and objective research results on the impact of remittances on GDP growth in developing countries in Asia. From the results drawn from the model, the group recommends a number of solutions and policies for income countries, thereby proposing future research. First, systematize the theoretical basis on remittances and the two-way impact of remittances on economic growth. Second, discuss quantitative research methods, models and appropriate research hypotheses to find the impact of remittance flows on the economic growth of developing economies in Asia. .

Third, propose recommendations, solutions, and policies to improve the ability to use remittances, becoming an important source of external capital and capital accumulation for the economy, helping the country's economy become more and more important. more developed.

To achieve the above research objective, the research article focuses on answering two main research questions, including: Are there any significant differences in remittances between groups of developing Asian countries? How do remittances affect the economic growth of developing countries in Asia? Is there any difference in the level of impact of remittances on economic growth between different groups of countries?

1. Introduction

Remittances play an important role in the economy, helping to increase national savings, reducing constraints related to foreign exchange and the balance of payments, and it also contributes to the development budget. Even if the scale of remittances is not large enough to have a positive and significant impact on GDP growth, these cash flows can initially contribute to improving and increasing the income of individuals and households. receiving remittances, especially bringing households above the poverty line, allowing for greater accumulation and investment in human capital such as education and vocational qualifications, and can reduce pressure on barriers credit (Nguyen Anh Tuan, 2017). On the other hand, this financial source can also harm the development process of the host country. When highly educated and skilled workers work and live abroad, this is called brain drain. Besides, remittances can be considered to increase non-labor income, making recipient families dependent on remittances and causing them to lose motivation to work and move away from productive activities. Therefore, losses in human capital can negatively affect economic growth as reflected in neoclassical growth theory. In addition, remittances can hinder economic growth by increasing exchange rates, thereby making domestic goods less competitive in international trade.

The two-way impact of remittances on economic growth and social security of developing countries has become an open issue of interest to domestic and foreign scientists. Previous studies have evaluated the relationship of remittances and economic growth in developing countries worldwide, Central Europe, Africa, Latin America, South Asia, ... However, the conclusions of studies on the influence of remittance flows still have many contradictions and have not reached consensus. Specifically, some studies show a positive correlation of remittances to economic development such as Meyer & Shera (2020), Kajtazi & colleagues (2022), Rao & Hassan (2011), Orrenius & colleagues (2010). On the contrary, studies by Maune & Matanda (2022), Naidu & colleagues (2017), Phan Thi Thanh Thuy (2014) show the negative impact of remittances on GDP growth. On the other hand, Chowdhury (2015) has not found evidence of the impact of remittances on the economies of developing countries.

Based on the synthesis and analysis of studies on the impact of remittances on economic growth, the author finds that the research results are mixed, the number of quantitative studies is still relatively limited, especially Research specifically on developing countries in Asia. The results of previous studies on the Asian region were developed in two main directions, which are: Researching one country such as Japan, China, Vietnam,... or several countries in the region such as South Asia, ASEAN, etc. but have not yet done research covering the whole of Asia. Therefore, this study, as a pioneering study on developing countries in the Asian region, will add more research and empirical evidence to this research field, and is important. Furthermore, providing objective quantitative research results on the impact of remittances on GDP growth in developing countries in Asia.

2. Content

2.1. Overview of environmental pollution

studied the relationship between remittances and economic growth of Albania, Bulgaria, Macedonia, Moldova, Romania and Bosnia Herzegovina between 1999 and 2013 and showed that remittances have a positive influence on stability and growth. economic chief. Research suggests that remittance inflows cause households to increase their spending and spend part of their capital on investment, thereby increasing demand for domestic products and investment.

Also researching this area and using the same research method as Meyer & Shera (2020), Kajtazi & Fetai (2022) continued to confirm that remittance inflows have a positive impact on economic growth when studying Study the case of 10 developing countries in the Central European region in the period from 2009 to 2019. In particular, the study emphasizes the contribution of remittances to macroeconomic development in these countries. This growing is steady and important through investment and consumption. In addition, the results of Comes & colleagues (2018) also show the similarities of 7 countries in the Central and Western European region of the EU: Romania, Bulgaria, Croatia, Czech Republic, Hungary, Slovakia, Slovenia in the years from 2010 - 2016. Remittances not only have an impact through increasing consumer demand, thereby indirectly increasing GDP, but also have a positive impact on the health and education sectors when remittances flow directly into these fields. contribute to improving people's quality of life.

When assessing the impact of remittances on economic growth in the world's top remittance-earning countries, Rao & Hassan (2011) demonstrated the positive influence of remittances on the economies of 40 countries. The country with the largest amount of remittances globally using the Solow growth model. The Solow-Swan growth model or exogenous growth model, is an economic model of long-term economic growth explained by three basic sources to calculate GDP: capital, labor, productivity. Through this model, the authors showed that through different capital channels, remittances indirectly positively affect the financial sector, which has the greatest influence on market volatility. A simple simulation of doubling remittances from 5 percentage points to 10 percentage points shows that the growth rate could be permanently increased by about 0.3 percentage points.

Islam (2021) points out the positive relationship between remittances and economic development when studying the cases of three countries India, Pakistan, and Bangladesh in the period 1986-2019 by using the total least average method. (GLS) and long-term impact estimates (FMOLS). The results of both methods show that remittances have a positive impact on long-term economic growth.

Orrenius & colleagues (2010) when studying countries in the Americas, specifically Mexico, showed that remittances had an important influence on this country's economic growth, in the period 2003 - 2007. Research show that higher remittances correlate with reduced unemployment in states with high migration rates, although remittances do not significantly increase employment. In addition, remittances also help push up average wages in the case of states with a high proportion of overseas workers.

Ekanayake & Moslares (2020) continued to confirm this point of view when studying data on 21 Latin American countries, showing a positive correlation between remittances and economic growth in the short term. long-term and long-term period from 1980 to 2018. The results show that, in the long term, remittances positively affect the economies of most of the countries mentioned. Remittances influence economic development through many different channels, such as acting as a stable income for households, which can reduce credit restrictions for the poor, underfunding capital shortage. In addition, remittances also increase total domestic savings, minimize restrictions related to exchange rates as well as lower borrowing costs, thereby promoting business activities of enterprises, increasing GDP of the country receiving remittances.

Specifically, Anetor (2019) studied how remittances in Nigeria have negatively impacted the economy. Remittances do not boost economic growth because a large portion of them are used for excessive spending instead of productive investments that generate profits. Sutradhar (2020) continues to confirm this point of view when studying four countries: Bangladesh, India, Pakistan and Sri Lanka during the period from 1977 - 2016 with panel data and OLS, FEM, REM regression models. Research results show that in Bangladesh, Pakistan, Sri Lanka, remittances have a negative impact on economic growth, only in India shows a positive correlation between remittances and GDP growth.

Nguyen Phuc Hien & Hoang Thanh Ha (2019) confirm the negative impact between remittances and economic growth in Vietnam in the period 1991 - 2017 by using panel data and OLS regression models. Research suggests that every 1% increase in remittances will reduce GDP

2.3. RESEARCH METHODS AND DATA

To evaluate the impact of remittances on economic growth - Research Question 02, the study performed a quantitative regression process on STATA 17 software according to the following steps:

Step 1: Collect and synthesize information: Research and analyze relevant domestic and foreign research, thereby selecting and collecting data on independent and dependent variables to include in the research model. .

Step 2: Processing data on Stata: Stata 17.0 software is used to analyze and calculate the data and information collected in step 1.

Step 3: Descriptive statistics: Provide descriptive statistics about the number of observations, mean value, standard deviation, maximum value, minimum value of the variables used in the model

Step 4: Test before conducting the regression model using the Pearson correlation coefficient matrix and the variance inflation factor VIF to determine the multicollinearity phenomenon between independent variables. From there, to ensure the reliability and accuracy of the regression model results, the author proceeds to eliminate or change the way of estimating variables with multicollinearity. In there:

Pearson correlation analysis was used to evaluate the strength of the linear correlation between variables used in the model. The Pearson correlation coefficient has a value ranging from -1 to +1. The correlation coefficient between variables in the range (-0.8; 0.8) is considered appropriate, if the correlation between variables is tight, with the Pearson coefficient greater than 0.8 or less than -0. ,8; It is likely that multicollinearity will occur, making model estimates unreliable. In addition, we need to test the hypothesis whether this correlation coefficient is statistically significant or not at the 5% significance level with the following pair of hypotheses:

H0: The correlation coefficient is 0

H1: The correlation coefficient is different from 0

Besides, the variance magnification factor VIF also determines the strength of the correlation between independent variables in the model. If the VIF value of an independent variable is greater than 10, this variable is determined to have multicollinearity (Wooldridge, 2002).

Step 5: Quantitative model

To evaluate the impact of remittances on GDP growth, the study uses a comprehensive and complex econometric model for panel data including: Pooled Ordinary Least Squares – Pooled OLS), fixed effects model (Fixed Effects Model - FEM) and random effects model (Random Effects Model - REM). The model to estimate the impact of remittances on the economic growth of countries is built on the basis of reference and inheriting research from Meyer & Shera (2020); Olayungbo & Quadri (2010); Islam (2021); Chowdhury (2015) with different explanatory variables described in Table 2, including the amount of remittances received.

Research data

The study uses the World Monetary Fund's (IMF) ranking of economies to identify developing countries including the group of emerging economies and low-income countries in Asia. Countries with per capita income less than 2700 USD are classified as low income countries. Countries that have passed this income level but have not yet met the conditions to be classified as developed countries will be called emerging economies.

The data used in the study is panel data of countries taken from the World Bank data set (World Bank Development Indicators) over a 20-year period from 2001 to 2020. Detailed information and how to Specific calculations of the independent variables in the research model are presented in Table 3.1. During the process of estimating the model parameters, to ensure balanced data, the authors reduced the research sample to 14 countries including: Bangladesh, Nepal, China, India, Oman, Pakistan, Tonga, Fiji, Vietnam, Cambodia, Indonesia, Malaysia, Thailand, Philippines due to limitations in providing data from the World Bank and records of some countries in the region.

In addition to assessing the impact of remittances on economic growth on a research sample of 14 developing Asian countries, the research team continued to further analyze the differences in the relationship between remittances and growth. economics of different groups of countries. Therefore, the research team divided this sample of 14 countries into a research sample to examine the impact of remittances on two different economic regions: the ASEAN region and the non-ASEAN region. Specifically:

Research sample 1 includes the ASEAN region: Vietnam, Cambodia, Indonesia, Malaysia, Thailand, and the Philippines.

Research sample 2 includes 8 countries outside the ASEAN region: Bangladesh, Nepal, China, India, Oman, Pakistan, Tonga, Fiji**.**

2.2.2 Research model

Pooled Ordinary Least Squares Model (Pooled OLS)

Pooled OLS estimates the parameters of a linear function of a set of independent variables according to the principle of least squares, or minimizing the sum of squares of the differences between the observed dependent variable (the value of the variable). observed) in the given data data set and the values predicted by the linear function of the independent variable. The regression equation of the OLS model is as follows:

GDP Growth = β1*remi,t + β2*fdii,t + β3*popi,t +β4*infti,t + β5*lnexchi,t + β6*consumi,t +β7*gcfti,t + β8*tradei,t + β9*typei,t + ui,t

In which: β1,...β8 are the coefficients of the corresponding independent variables, i is the ith country,

typei,t: dummy variable takes values 0 and 1

ui,t: white noise

Fixed Effects Model (FEM)

The FEM model is used to evaluate the impact of explanatory variables on the dependent variable within countries with the assumption that each country has different characteristics and is not affected by other countries. The regression equation of the fixed effects model is as follows:

GDP Growth = β_1*remi,t + β_2*fdii,t + β_3*popi,t +β_4*infti,t + β_5*lnexchi,t + β6*consumi,t +β7*gcfti,t + β8*tradei,t + β9*typei,t + αi + ui,t

In which: β1,...β8 are the coefficients of the corresponding independent variables, i is the ith country,

typei,t: dummy variable takes values 0 and 1

ui,t: white noise

αi: is the intercept coefficient for country i

Random Effects Model (REM)

In the REM model, between-subjects variation is assumed to be random and uncorrelated with the predictor or independent variable in the model.

The regression equation of the random effects model is as follows*:*

GDP Growth = β_1*remi,t + β_2*fdii,t + β_3*popi,t +β_4*infti,t + β_5*lnexchi,t + β6*consumi,t +β7*gcfti,t + β8*tradei,t + β9*typei,t + αi + ui,t + Ɛi,t

In which: β1,...β8 are the coefficients of the corresponding independent variables, i is the ith country

typei,t: dummy variable takes values 0 and 1

ui,t: white noise

αi : represents all unobserved factors that differ across countries but do not change over time.

Ɛi,t: represents all unobservable factors that change over time but do not differ between subjects

After estimating the impact of remittances and other explanatory variables on economic growth of each research sample according to the Pooled OLS, FEM and REM models, the author uses Fisher's test (F-test) to Select the optimal model between the Pooled OLS model and the FEM model at the 5% significance level with the following pair of hypotheses:

H0: There is no difference between study subjects over time, or the OLS model is more optimal

H1: There exist differences between research objects over time, or the FEM model is more optimal

In addition, the Hausman test is used to determine the correlation of ϵi with the independent variables, thereby determining whether the FEM model or REM model is the optimal model for each research sample with the pair of hypotheses (with 5% significance level):

H0: There is no correlation between the characteristic errors between subjects and the explanatory variables in the model, or the REM model is more optimal.

H1: There exists a correlation between the characteristic errors between objects and the explanatory variables in the model, or the FEM model is more optimal

To choose the more optimal model between the REM model and the Pooled OLS model, the author uses the Breusch-Pagan Lagrangian test, at the 5% significance level with the following pair of hypotheses:

H0: The model does not have the phenomenon of PSSS changing, or the OLS model is more appropriate

H1: The model exists in the phenomenon of PSSS changes, or the REM model is more appropriate

Check model defects

After determining the optimal model, to ensure the stability of the research model as well as the reliability of the estimates, the author continues to test the phenomenon of heteroscedasticity (PSSS) and automatically correlate. In there:

To test the phenomenon of PSSS changes, the authors use the White test (for the Pooled OLS model), the Wald test (for the FEM model) or the Breusch-Pagan Lagrangian test (for the REM model). with the hypothesis pair (at 5% significance level)

H0: The model does not have a change in PSSS

H1: The model exists for the PSSS phenomenon to change

To test the autocorrelation phenomenon of the model, the author uses the Wooldridge test with the following pair of hypotheses:

H0: The model does not have autocorrelation

H1: The model exists autocorrelation phenomenon

If the p value < 5%, it is enough to reject H0, implying the existence of autocorrelation in the model. On the contrary, a p value > 5% is not enough to reject H0, or in other words, the model does not have autocorrelation.

In case the optimal model has model defects that make the estimates unreliable, the author uses the estimates of the FGLS model to handle and overcome the model defects. The FGLS model is estimated according to the Pooled OLS model, using data on the error-variance covariance matrix to calculate weights and focusing on evaluating the relationship between independent variables. and dependent variable.

Table 1: Statistical table of variables of the research model

Variable name	**Calculation**	**Symbol**	**Sign expectations**	**Reference source**
Independent variables				
Amount of remittances received	The amount of remittances received is calculated as a percentage of GDP	rem	+	Meyer & Shera (2020); Sutradhar (2020); Rao & Hassan (2011); Olayungbo & Quadri (2010); Ekanayake & Moslares (2020); Orrenius et al (2010); Chowdhury (2015); Islam (2021); Maune & Matanda (2022); Comes et al (2017); Naidu & colleagues (2017)
Total national fixed capital	Total national fixed capital formation as % of GDP	gcf	+	Rao & Hassan (2011); Anetor (2019); Kajtazi & Fetai (2022); Sutradhar (2020); Sarkar et al (2018); Chowdhury (2015)
Foreign direct investment capital	The amount of net foreign direct investment as a % of GDP	fdi	+	Olayungbo & Quadri (2010); Chowdhury (2015)
Population increase	Percentage (%) of annual population increase	pop	+/-	Meyer & Shera (2020)
Inflationary	Annual inflation percentage based on CPI	inf	-	Olayungbo & Quadri (2010); Chowdhury (2015); Anetor (2019)
Exchange rate	Calculated using the natural logarithm of the official exchange rate of USD/domestic currency	lnexch	+/-	Sutradhar (2020); Kajtazi & Fetai (2022); Meyer & Shera (2020)
Trade openness	Value of exports and imports of goods and services as % of GDP	trade	+	Olayungbo & Quadri (2010); Chowdhury (2015); Islam (2021)
Household final expenditure	Household final expenditure as % of GDP	consum	+	Meyer & Shera (2020)
	The dummy variable takes the value 1 if the country belongs to the ASEAN region, takes the value 0 if the country is outside the ASEAN region	type		
Dependent variable				
Economic growth	Percentage (%) of annual GDP increase	gdpgrowth		Olayungbo & cộng sự (2010); Anetor (2019); Kaltrina & Fetai (2022); Sarkar & cộng sự (2018); Naidu & cộng sự (2017)

Source: Compiled by author

2.3. Research results and discussion

Descriptive statistics

Table 2: Descriptive statistics of variables used in the model (Entire research sample)

Variable	The average value	Standard deviation	Minimum value	Maximum value
rem	4.6834	5.4989	0.0933	27.6261
fdi	3.3170	3.5606	-1.8557	19.2786
lnexch	4.5311	2.7934	0.2034	10.0523
inf	5.6787	5.5272	-2.5952	54.4002
pop	1.2250	0.5521	-0.1701	3.0921
consum	64.0138	11.4677	42.1912	88.4311
gcf	24.1537	5.4081	12.0466	35.8129
trade	85.2668	45.0609	24.7016	210.3743
gdpgrowth	4.7500	3.4290	-17.0002	13.5

Source: Compiled by author

Table 3: Descriptive statistics of variables used in the model (Research sample 1)

Variable	The average value	Standard deviation	Minimum value	Maximum value
rem	3.8266	3.6279	0.3957	12.7839
fdi	3.8583	3.4404	-1.8557	14.1457
lnexch	6.0254	3.2666	1.1184	10.0523
inf	4.1564	4.0343	-1.2417	24.0968
pop	1.3346	0.5006	0.2351	2.5701
consum	62.6592	10.9944	43.9979	85.1312
gcf	24.6199	4.9549	15.8289	35.1597
trade	111.8854	42.8416	32.9756	210.3743
gdpgrowth	5.1641	3.0837	-9.5182	13.2501

Source: Compiled by author

Table 4: Descriptive statistics of variables used in the model (Research sample 2)

Variable	The average value	Standard deviation	Minimum value	Maximum value
rem	5.3259	6.4991	0.0933	27.6261
fdi	2.9109	3.6056	-0.9901	19.2786
lnexch	3.410424	1.6604	0.2034	6.0233
inf	6.8204	6.1939	-2.5952	54.4002
pop	1.1427	0.5756	-0.1701	3.0921
consum	65.0298	11.7416	42.1912	88.4311
gcf	23.804	5.7147	12.0465	35.8128
trade	65.3029	35.4039	24.7015	140.437
gdpgrowth	4.4394	3.6454	-17.0002	13.5

Source: Compiled by author

Some pre-test estimates

Check the VIF magnification factor

To determine the multicollinearity phenomenon of the variables in the model, the author continues to use the VIF magnification factor with the results shown in Table 5. With the magnification coefficient values of all variables being small, more than 5 (Wooldridge, 2002), from which it can be confirmed that the model does not have multicollinearity in the entire sample as well as study sample 1 and study sample 2. The results of testing the VIF magnification factor are presented in Table 4.6. The VIF coefficients all have values less than 5, from which it can be confirmed that the model does not have multicollinearity.

Table 5: VIF magnification factor of variables in the model

Variable	Complete sample		Research sample 1 ASEAN		Research sample 2 Ngoài ASEAN	
	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF
consum	3.61	0.2772	4.90	0.2039	4.76	0.2102
rem	2.28	0.4388	3.31	0.3018	3.53	0.2832
trade	1.86	0.5390	2.86	0.3500	3.47	0.2878
gcf	1.73	0.5794	1.99	0.5032	2.22	0.4497
fdi	1.43	0.6991	1.93	0.5180	1.69	0.5907
lnexch	1.36	0.7331	1.92	0.5197	1.47	0.6807
pop	1.20	0.8303	1.56	0.6412	1.39	0.7210
inf	1.14	0.8779	1.26	0.7938	1.21	0.8295
Average VIF	1.83		2.47		2.47	

Source: Compiled by author

Test the Pearson correlation coefficient

The results of the Pearson correlation coefficient matrix of the entire sample, study sample 1 and study sample 2 are presented in Table 6, Table 7 and Table 8, respectively. The results of the Pearson coefficients of the variables are all in in the range (-0.8;0.8), implying there is not enough evidence to conclude multicollinearity. For the entire sample and study sample 2, the rem variable is positively correlated with the dependent variable, but for study sample 1, the gdpgrowth variable is negatively correlated with the rem variable. However, these two correlations are not Statistical significance.

In addition, the Pearson correlation coefficient matrix of study sample 1 shows that the independent variables fdi, inf, consum, lnexch, trade, pop all have a positive correlation with the dependent variable and are statistically significant at the lower level. 5% significance. For study sample 2, only the variables lnexch and gcf have a positive correlation with the variable gdpgrowth and are statistically significant.

Table 6: Pearson correlation coefficient matrix of variables in the model (Entire sample)

	rem	fdi	inf	pop	trade	lnexch	consum	gcf	type1	gdpgrowth
rem	1.0000									
fdi	-0.1846* 0.0019	1.0000								
inf	0.0246 0.6817	-0.0355 0.5537	1.0000							
pop	-0.0778 0.1940	-0.1587* 0.0078	0.1258* 0.0354	1.0000						
trade	-0.2952* 0.0000	0.4418* 0.0000	-0.3060* 0.0000	-0.1523* 0.0107	1.0000					
lnexch	0.0562 0.3489	0.1398* 0.0193	0.0003 0.9961	0.0224 0.7089	0.0000 0.9995	1.0000				
consum	0.6564* 0.0000	-0.0656 0.2742	0.1418* 0.0176	0.2046* 0.0006	-0.4421* 0.0000	0.1854* 0.0018	1.0000			
gcf	-0.0660 0.2713	-0.1117 0.0620	0.0297 0.6201	-0.1642* 0.0059	-0.0377 0.5296	0.2782* 0.0000	-0.3800* 0.0000	1.0000		
type1	-0.1352* 0.0237	0.1319* 0.0273	-0.2389* 0.0001	0.1723* 0.0038	0.5125* 0.0000	0.4641* 0.0000	-0.1025 0.0869	0.0748 0.2122	1.0000	
gdpgrowth	-0.0341 0.5697	0.0964 0.1073	0.0296 0.6223	0.1471* 0.0137	0.0294 0.6242	0.2500* 0.0000	0.0267 0.6569	0.2612* 0.0000	0.1048 0.0801	1.0000

Source: Compiled by author

Table 7: Pearson correlation coefficient matrix of variables in the model (Research sample 1)

	rem	fdi	inf	pop	trade	lnexch	consum	gcf	gdpgrowth
rem	1.0000								
fdi	0.1038 0.2590	1.0000							
inf	0.0876 0.3412	-0.0910 0.3228	1.0000						
pop	0.2918* 0.0012	-0.0331 0.7197	0.0164 0.8590	1.0000					
trade	-0.2666* 0.0032	0.3415* 0.0001	-0.1225 0.1825	-0.1199 0.1923	1.0000				
lnexch	0.0788 0.3923	0.3170* 0.0004	0.4207* 0.9961	-0.3105* 0.0006	-0.3010* 0.0008	1.0000			
consum	0.6080* 0.0000	0.3575* 0.0001	0.1954* 0.0325	0.2547* 0.0050	-0.3542* 0.0001	0.4020* 0.0000	1.0000		
gcf	-0.2129* 0.0196	-0.0838 0.3629	0.1524 0.0965	-0.4872* 0.0000	-0.0661 0.4734	0.4160* 0.0000	-0.4220* 0.0000	1.0000	
gdpgrowth	0.1076 0.2422	0.2755* 0.0023	0.2290* 0.0119	0.1862* 0.0417	0.1175 0.2013	0.2850* 0.0016	0.2737* 0.0025	0.0146 0.8742	1.0000

Source: Compiled by author

Table 8: Pearson correlation coefficient matrix of variables in the model (Research sample 2)

	rem	fdi	inf	pop	trade	lnexch	consum	gcf	gdpgrowth
rem	1.0000								
fdi	-0.2859* 0.0002	1.0000							
inf	0.0340 0.6693	-0.0486 0.5421	1.0000						
pop	-0.1837* 0.0201	-0.2810* 0.0003	0.2438* 0.0019	1.0000					
trade	-0.2922* 0.0002	0.5301* 0.0000	-0.2935* 0.0002	-0.6098* 0.0000	1.0000				
lnexch	0.2323* 0.0031	-0.2164* 0.0060	-0.1105 0.1641	0.2347* 0.0028	-0.3572* 0.0000	1.0000			
consum	0.6939* 0.0000	-0.3271* 0.0000	0.0903 0.2562	0.2101* 0.0077	-0.5495* 0.0000	0.1174 0.1392	1.0000		
gcf	-0.0014 0.9864	-0.1475 0.0628	0.0061 0.9387	-0.0070 0.9298	-0.1089 0.1706	0.1491 0.0598	-0.3475* 0.0000	1.0000	
gdpgrowth	-0.0659 0.4078	-0.0318 0.6901	-0.0140 0.8603	0.1018 0.2003	-0.1410 0.0753	0.2042* 0.0096	-0.1020 0.1996	0.3877* 0.0000	1.0000

Source: Compiled by author

4.2.3.2. Quantitative model selection

Based on the research process built above and the results of the F-test, Hausman test and Breusch-Pagan Lagrangian test, the study proposes optimal model specifications for each research sample. Specifically:

For the entire sample, the p value of the Fisher test and the Hausman test are both less than the 5% (0.0000) significance level, showing that there is not enough basis to reject H0 or in other words, (i) the FEM model is The model is more suitable than the Pooled OLS model; (ii) the FEM model is more optimal than the REM model. From there, the FEM model is the most suitable model to study the entire sample.

For study sample 1, the p value of the Fisher test is greater than the 5% significance level (0.5060), which is enough to reject H0, or the Pooled OLS model is more suitable than the FEM model. The Chi-squared value of the Hausman test is also greater than the 5% significance level (0.8267), showing

enough basis to reject H0 or that the REM model is a more optimal model than the FEM model. The Chi-squared value of the Breusch-Pagan Lagrangian test is greater than the 5% (1.0000) significance level, showing that the Pooled OLS model is more suitable than the REM model. Therefore, the Pooled OLS model is the optimal model when evaluating the relationship between remittances and economic growth in study sample 1.

For study sample 2, the p value of the Fisher test is greater than the 5% significance level (0.0000), which is not enough to reject H0 or that the FEM model is more appropriate than the Pooled OLS model. The Chi-squared value of the Hausman test is also less than the 5% (0.0000) significance level, which is not enough basis to reject H0 or that the FEM model is a more optimal model than the REM model. Therefore, the FEM model is the most optimal model among the three models to analyze research samples

After analyzing 3 research samples when implementing the Pooled OLS FEM REM model

The author has gone to Discussion of regression results

Table 9: FGLS model results of 3 research samples

Dependent variable: gdpgrowth	**Research sample 1 ASEAN**	**Research sample 2 Ngoài ASEAN**	**Complete sample**
rem	-0.0471 (-0.51)	-0.168* (-1.98)	-0.0477 (-0.69)
fdi	0.0210 (0.23)	0.0909 (0.77)	0.122 (1.43)
inf	0.0076 (0.18)	-0.0315 (-0.59)	0.0053 (0.15)
pop	1.845** (2.39)	-0.630 (-0.88)	0.762 (1.47)
trade	0.0167** (2.05)	-0.0031 (-0.18)	0.0044 (0.67)
lnexch	0.266** (2.61)	0.472 (1.39)	0.03 (0.34)
consum	0.0627 (1.57)	0.0782 (1.39)	0.0596 (1.56)
gcf	0.0829 (1.39)	0.242*** (4.00)	0.207*** (4.30)
Số quan sát	120	160	280

*p<0.05 **p<0.01 ***p<0.001

Source: Compiled by author

For study sample 1, the ASEAN group, the estimated value of the rem variable is not statistically significant at the 0.1%, 1% and 5% significance levels. Thus, the estimated model results do not find evidence of the impact of remittances on the economic growth of the ASEAN countries studied during the period from 2001 to 2020. This conclusion is similar to the result. Research results of Chowdhury (2015). Specifically, Chowdhury (2015) explains that when a country has a low income level, remittances are mainly used for expenses, payments, and improving the quality of life at a minimum and basic level, and Therefore, the portion of remittances used for investment and savings accounts for a very small proportion, and thus the contribution to economic growth is insignificant. Besides, Nguyen Phuc Hien & Phan Ngoc Thuy Dung (2023) also point out that, in the short and long term, remittances need a certain amount of time for remittances to have an impact on economic development. This is considered by the author to be consistent with the practical situation in the ASEAN region for a number of reasons:

Firstly, in Southeast Asian countries with low average income per capita and financial knowledge, the amount of remittances received by households is mainly used for household consumption purposes. to improve the quality of life, then the amount of capital for investment in production, business and savings is considered insignificant.

Second, these ASEAN countries do not have a complete legal framework on the issue of receiving inflows of remittances and sending them home, so transaction costs through official channels (through commercial banks) are still high. (related to verifying the identity of the recipient, sender, risk of money laundering, terrorist financing, international crime) (ADBI, OECD & ILO, 2018). And therefore, either workers abroad limit sending remittances or choose to transfer, the operation of the banking system has many limitations, so there is a large part of remittances transferred through unofficial channels. formally, not through commercial banks, with more preferential costs and easier procedures. However, to be able to manage remittances well, encourage remittances as well as mobilize and direct remittance flows to be allocated to economic activities, thereby promoting savings and improving access to remittances. Official loans from households in order to increase the positive impact of remittances on economic growth, it is necessary to encourage sending remittances back home and especially if encouraged to circulate through commercial banking systems, thereby promoting savings and improving households' access to formal loans.

Third, the rate of remittances received in the 6 countries studied is very low compared to GDP, on average only about 3.8266% (Table 4.3). The magnitude of this remittance flow is not large enough to affect economic activities.

For study sample 2 - non-ASEAN country group, the estimated value of the remittances variable has a negative correlation (-0.168) at the 5% significance level. In other words, research shows that remittances have a negative impact on economic development in developing Asian countries outside the ASEAN region. Specifically, a 1% increase in remittances reduces the GDP growth rate by 0.168%. This conclusion is similar to Sutradhar (2020) and Maune & Matanda (2022). When the amount of remittances flowing in is greater than the economy's absorption capacity, there will be a decline in export competitiveness, explained by the "Dutch disease" (Nguyen Phuc Hien, 2017). In addition, remittances can cause remittance recipients to lose motivation to work, be creative, and live passively idle lives reliant on money sent from relatives, thereby affecting the supply and quality of human resources. In addition, outside of China, TVEs (Township and Village Enterprises) funds have been established (Hoang Viet Ha, 2019) since the late 70s when they witnessed many families with relatives abroad gathering remittances and sending them back home. To directly support local businesses lacking capital, the remaining countries in the study sample do not have complete mechanisms and policies to direct remittance flows into the production sector through funds. remittances. Policies developed mainly focus on mobilizing remittances with the aim of improving the living standards of people in the country, but have not met the capital needs of production and business sectors.

For the entire research sample, developing countries in Asia, the variable rem has a negative correlation with economic growth, however this correlation is not statistically significant at the 0, first%; first%; 5%. Since then, the study has not found the direction of the impact of remittances on the economic growth of developing countries in Asia, similar to the research conclusions found for the ASEAN region. In addition to the reasons explained in the ASEAN region, the author further explains the conclusion as follows: When remittances flow, it will improve the quality of life and increase people's income, from which workers can reduce working hours, work overtime

3. CONCLUSION

Research through comprehensive and complex quantitative research models and tests to ensure model robustness to assess the impact of remittances on developing Asian countries has contributed, Supplementing conclusions for studies in this area. In addition, the study has systematized the theoretical basis of remittances, the flow of global remittances and quantified the impact of remittances and explanatory variables on GDP growth.

The results of the model suggest that no evidence has been found on the impact of remittances on the economic growth of ASEAN countries. For low-income countries, remittances are mainly used for consumption purposes and improving people's lives, so the rate of remittances participating in investment in the market is still low. The scale of remittances is still low compared to the overall scale of the economy and a large amount is not transferred through official channels (commercial banks) due to transaction costs, making remittances not really effective. effective in influencing GDP growth.

The study found a negative impact on economic development in developing Asian countries outside the ASEAN region. When the amount of remittances flowing in is greater than the economy's absorption capacity, there will be a decline in export competitiveness, explained by the "Dutch disease". In addition, remittances can cause remittance recipients to lose motivation to work, be creative, and live passively idle lives reliant on money sent from relatives, thereby affecting the supply and quality of human resources.

In addition, other explanatory variables such as foreign direct investment, inflation, exchange rates and household final expenditure do not affect economic growth in all countries studied. For ASEAN countries, population growth and trade openness both have a positive impact on GDP growth, while the study did not find a significant correlation of these two factors in the non-ASEAN region. . Besides, gross domestic fixed capital positively affects economic development in countries outside the ASEAN region but does not show a similar impact in the ASEAN region.

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