International Capital Inflows and Poverty: Evidence from Developing Countries

Le Thanh TUNG
Faculty of Economics and Public Management
Ho Chi Minh City Open University¹, Vietnam
tung.lt@ou.edu.vn

Article's history:

Received 12 June 2019; Received in revised form 29 June 2019; Accepted 09 July 2019;
Published 30 September 2019. All rights reserved to the Publishing House.

Suggested citation:

Tung, L.T. 2019. International capital inflows and poverty: Evidence from developing countries. *Journal of Applied Economic Sciences*, Volume XIV, Fall, 3(65): 695-704. DOI: [https://doi.org/10.14505/jaes.v14.3\(65\).07](https://doi.org/10.14505/jaes.v14.3(65).07)

Abstract:

Poverty reduction is an important one of the long-term global goals. This paper analyses the impact of international capital inflows on poverty with a sample covering 26 developing countries in the Asia-Pacific region. A panel dataset is collected over the period of 1980-2015. The results conclude some new findings, which show international capital inflows have two kinds of effects on the poverty rate. The result shows that remittances and trade openness has positive effects on the poverty rate of the economies. On the other hand, external debt and official development assistance have negative effects on poverty in the region. Our findings lead to some valuable implications, in which, the policymakers need more careful when using the external debt as well as official development assistance to support economic growth because these tools can make the more serious on the poverty in countries. However, the policymakers can use the remittances as an important international capital to solve the lack of internal financial resource. Besides, the result points out that trade openness is a good tool for decreasing the poverty rate by trading with the outside.

Keywords: international capital; remittances; external debt; official development assistance; trade openness; poverty; panel regression; developing countries; Asia-Pacific region.

JEL Classification: B55; E44; F15; I32.

Introduction

Poverty remains one of the world's biggest challenges in the long run. The extreme poverty rate has sharply decreased since the 90s, however, many people are still stuck in the worst forms of poverty over the world. Repealing poverty is a mission need many endeavors of governments in the long run. Despite the continuous improvement in productivity as well as output growth is accelerating worldwide, however, poverty still popularly persists in many countries and even in some large regions. According to estimates from the World Poverty Clock (the world poverty statistics website by World Data Lab International Statistics), in January 2018 the world had about 8.3% (as 621.47 million people) live in extreme poverty with expenditure less than 3.2 USD per day. Data from this website show that the world has 16.4 thousand people per day out of poverty, but in the opposite direction, there are more than 5.5 thousand people/day fell into extreme poverty.

The statistics of the World Poverty Clock clearly show that poverty has been constrained when the number of people out of poverty is three times higher than the number of people falling into poverty at the same time. Besides the progressive areas in the fight against poverty, many countries around the world are still struggling in fighting poverty, however, many people are still suffering from severe hunger. According to the report of the United Nations (2018), the year 2017 is the third consecutive year that the world witnessed the increasing of hunger as well as the number of malnourished people. About 11% of the world's population, equivalent to 821 million people, are in serious food shortage. These are statistics that imply that poverty continues to be a serious global problem in the coming decades.

Thus, poverty, poverty reduction and the causes of falling poverty rate, are still the top topics of interest of policymakers as well as in academic in the world. However, there are some countries or regions that stand out in poverty reduction achievement. The statistics of the Asian Development Bank (ADB) have also demonstrated clear evidence that the Asia-Pacific region continues to make steady progress in reducing poverty and improving the infrastructure as well as increase participation in global production networks. Specifically, during the period from 2002 to 2013, about nearly 780 million people in this area were escaped extreme poverty. Furthermore, in 2018,

¹ 97 Vo Van Tan Street, Ward 6, District 3, Ho Chi Minh City, Vietnam

according to estimates from the Economic and Social Committee for Asia and the Pacific (ESCAP), the Asia-Pacific region where produces 40% of GDP has been put at the highlighted position on the poverty reduction field. Besides, if the countries in the Asia-Pacific region increase spending on education, health and social protection to matching the global averages, the result is very impressive when around 328 million people will be lifted out of moderate poverty and 52 million will move out of extreme poverty in the next years.

In the Asia-Pacific region, some countries have especially recorded in reducing the poverty rate, for example, China reduced the rate of poverty at 24.1% population in 1990 to 0.2% in 2015, Indonesia dropped from 27.5% in 1984 to 1.2% in 2015, the Kyrgyz Republic from 11.6% in 1998 to 0.5% in 2015, or Vietnam was at 16.5% in 1992 to 0.6% in 2014 (World Bank 2018). Besides, the statistics of the World Bank showed that the poverty rate has decreased rapidly and in large areas in many countries in the Asia-Pacific region (see Figure 1).

Figure 1. A comparison in poverty rate in the Asia-Pacific region (Unit: %)

Source: World Development Indicators (World Bank 2018).

In addition, the Asian Development Bank also stated that the governments in the Asia-Pacific region have taken actions towards sustainable poverty reduction through the improving the economic environment, development of private enterprises, upgrading education and creating jobs.

The fight against poverty, as well as the goal of poverty reduction, is really a long-term effort. Poverty reduction is a difficult mission in many countries, however, the risk of falling back into poverty is also quite high if governments are not cautious about their policies. The general formula for poverty reduction can be understood by the efforts to improve productivity, increase capital, improve the quality of education, etc. However, some countries are still stuck in the vicious cycle of poverty because economies have high poverty rates are usually lacking capital as well as low efficiency in capital using. The domestic financial resources are very small and almost impossible to increase, forcing countries with high poverty rates to rely on external capital flows. So the international capital inflows are very important not only to decrease poverty in the short run but also destroy the vicious cycle of poverty in the long run.

Because poverty always is a highlighted problem over time. So there are intensively and controversially discussed whether international capital inflows of recipient countries really help in alleviating poverty. The decrease in the poverty rate has become one of the most concerned topics in recent decades. There are amongst of the empirical studies focusing on this issue as well as some studies provide suggestions for the policy-making process in order to reduce the poverty rate. Thus, there are some questions need for discussion. For example, "Are all of the international capital inflows well for recipient countries in reducing poverty?" or "Which international capital inflows are good for reducing poverty?". However, the previous research results have not got really clear evidence about the impact of international capital flows on poverty reduction in recipient countries. Therefore, based on impressive poverty reduction achieved in the past decades, in this paper, we will use a research sample collected from the Asia-Pacific developing countries to clarify the impact of resources from outside on poverty in this region during the period 1980-2015. There are 26 countries will be collecting data to conduct research.

Nowadays, despite the global consensus to enhance poverty reduction, which is one of the top priorities in development cooperation and integration, however, there are many doubts about the efficiency of policies which are operated by governments worldwide. So the evidence from the Asia-Pacific region is expected to have a good reference for policymaking progress as well as the operation of international co-integration in the effort to reduce poverty in the next decades. Besides regarding the policy implications, the results of our study also provide further evidence for the theoretical framework of poverty reduction as well as the role of international capital flows in poverty reduction in related academic fields.

Our article is structured in 5 sections. The second section is the literature review, which provides relevant researches. Section 3 presents the econometric model, methodology and data description of the research. Section 4 reports the result of quantitative research and discussion. Finally, conclusions and some policy implications are provided in Section 5.

1. Literature review

Poverty is a long-term problem for mankind, so there are a lot of arguments about how a country can escape (or reduce) from poverty. Many research results support the using of international capital inflows as a core solution to win the vicious cycle of poverty and thereby reduce poverty in a sustainable way. There have been a number of studies on this topic, however, their results are not consistent on how to help a country or a region can reduce poverty.

In order to against the vicious cycle of poverty, Ramzan and Ahmad (2014) analysis the effect of external debt on economic growth in the case of Pakistan. The authors collect an annual database in the period of 1970–2009. The empirical result points out that external debt may have a harmful effect on growth (and maybe more serious in the poverty situation). However, the adverse impact can be minimized if the economy has good macroeconomic policies. Zaghdoudi and Hakimi (2017) explore the effect of external debt on poverty in some developing countries in 2000-2015. The study result confirms the existence of a positive and significant relationship between poverty and external debt in the long run. By applying the Granger-causality method, the authors find a bidirectional causality amongst external debt and poverty in both the short run and long run. Finally, their paper provides a view which presents the external debt resulting in increasing poverty in developing countries.

Official development assistance (development aid) is financial funding given by governments and other agencies to support the growth, economic environmental or social development in developing countries. It can be noted as a one in the largest external capital resources into developing countries. Minasyan *et al.* (2017) have a study which compares the impacts of quality-adjusted aid and unadjusted aid on changes in GDP per capita with a panel data of countries. The authors note that quality-adjusted effectiveness is very important in using the aid.

The result implies that only recipient countries which have high-quality effectiveness can increase their GDP per capita by the benefits of aid inflows. The authors conclude that the quality of aid matters depends on the sample of recipient countries. Cheng *et al.* (2018) focus on the relationship between official debt restructuring and macro indicators of recipient economies. Their study result concludes that more generous in restructuring conditions relating an increase in the growth of GDP per capita as well as a reduction in poverty and inequality.

In recent decades, remittances have been on a way to become the largest source of external financing into developing countries. Combes and Ebeke (2011) investigate the effect of remittances on the instability of household's consumption with a panel database collected from developing countries. Their results find remittances can reduce the consumption instability of households. In detail, remittances have a role as insurance funding by decrease the impacts of various sources of consumption instability in developing countries (e.g., financial crises or agricultural shocks). So, the evidence of paper implies that remittances maybe reduce poverty through help the stability of the household's consumption. Tung *et al.* (2015) note that remittance is one of the most important external sources flowing into developing countries. The authors find that remittances inflow significantly raise inflation as well as exists a one-way Granger causality from remittances to inflation. This evidence leads to a worrying argument that remittances may be hurt the poor people through increasing the general price level.

Furthermore, Akobeng (2016) explores the effectiveness of remittances on inequality and poverty in Sub-Saharan Africa countries. The study finds that remittances have a reducing effect on poverty, however, the size of the poverty reduction much depends on the measured kind of poverty. Besides, trade openness is found having a positive impact on the poverty rate. Finally, the paper implies that a good financial sector can support the effectiveness of remittances in Sub-Saharan Africa. In a study in the region-level, Tung (2018) shows that the Asia-Pacific region is the largest received-remittance region compares others. Besides, the estimated results strongly indicate new evidence that remittance inflows have a negative effect on the trade balance of the countries in the study sample. This evidence is explained that the increasing trend of remittance inflows can make a rising in the trade deficit in this region.

Besides, international trade plays a very important role with economies in the context of globalization. Naranpanawa *et al.* (2011) analysis the relationship between trade liberalization and poverty in the case of Sri Lanka. The authors point out that the liberalization of the manufacturing industries is more helpful for reducing poverty than that of the agricultural industries. The empirical result implies that the innovations in the trade can widen the income gap between the rich and the poor people because of the unequal benefits across different household groups in Sri Lanka. The authors' suggestions emphasize short-term policies might focus on supporting the vulnerable income groups, in the other hand, the long-term policies can enhance trade liberalization more inclusive as well as fair to maintain both economic and political stability in this economy.

Furthermore, Tsai and Huang (2007) investigate the impact of economic growth, openness, and the role of government contribute to poverty alleviation in Taiwan in the period of 1964–2003. The authors find that sustained economic growth is the major driving force for poverty reduction as well as openness (trade with outside) helps to decrease the poverty by both direct distribution effect and indirect growth effect. These effects are worked in both the long run and short run. Goff and Singh (2014) argue that the impact of trade openness on poverty reduction is ambiguous in the theoretical literature. In order to have evidence help resolve this ambiguity, the authors examine whether the impact of openness on poverty relating to some macroeconomic characteristics. A panel database of African countries is collected over the period 1981–2010. The result concludes that an increase in trade openness level leads to a reduction in poverty in countries in the context the financial sectors are deep, education levels high as well as institutions strong. Liyanaarachchi *et al.* (2016) conclude that a 100% tariff-cut lead to an increase in economic growth and a reduction in poverty incidence both in the short run as well as in the long run. This effect is done without any fiscal policy adjustments. However, the research result also indicates that trade liberalization may raise income inequality in Sri Lanka.

In a recent study, Neaime and Gaysset (2017) exam the impact of financial inclusion on poverty and inequality in the Middle East and North Africa (MENA) countries. The study sample is collected from eight MENA countries in the period of 2002–2015. The authors find that financial inclusion decreases inequality, however, population size and inflation are found to raise inequality in this region. Besides, their result concludes that financial inclusion has no effects on poverty, on the other hand, trade openness is shown to significantly raise poverty. With this finding, the authors note that international trade maybe makes poverty more serious in the Middle East and North Africa countries.

2. Methodology and data

2.1. Methodology

Following some previous studies, there are some variables which can be considered in the group of international capital variables including foreign direct investment, remittance inflow, external debt, official development assistance. However, foreign direct investment has much evidence so it will be cut out of our econometric model. Three remaining variables will be added to the poverty model as the international capital variables. Besides, international trade is very important for reducing the poverty rate so this variable also will be put in the model in order to analyze the impact of international trade on poverty in the case of developing countries. The international trade will be denoted by trade openness variable. The research model is implemented in the form as follows:

$$\text{Poverty}_{i,t} = \beta_0 + \beta_1 \text{Remittances}_{i,t} + \beta_2 \text{External_debt}_{i,t} + \beta_3 \text{ODA}_{i,t} + \beta_4 \text{Openness}_{i,t} + \varepsilon_{i,t} \quad (1)$$

where: Poverty is measured by the poverty rate, Remittances is the remittance inflow, External debt is the foreign debt, ODA is the official development assistance, and Openness is the trade openness measures the international trade of the economy and $\varepsilon_{i,t}$ is the error term. Besides, t denotes time periods, and i is cross-sectional units with $i \in [1, N]$.

According to the World Bank' definition, the poverty gap at \$1.90 a day (2011 PPP) is the mean shortfall in income or consumption from the poverty line \$1.90 a day (counting the nonpoor as having zero shortfalls), expressed as a percentage of the poverty line. This calculation method reflects the depth of poverty and its incidence. The definition of the variables is shown in the below table.

Table. 1. Definition of the variables

Variable symbol	Definition	Unit
Poverty	Poverty gap at \$1.90 a day (2011 PPP)	%
Remittances	Personal remittances, received (% of GDP)	%
External debt	External debt stocks (% of GNI)	%
ODA	Net Official development assistance received (% of GNI)	%
Openness	Calculated by the sum of exports and imports divide by GDP	%

Source: Calculated from the research data (World Bank 2018)

The paper applies two methods including the Ordinary Least Squares (OLS) and the Generalized Method of Moments (GMM) methodology to estimate the equation 1. In order to deeply analysis, the methods will be estimated by some different models and compared with others to have the best result which answering about the exact effects between variables. In the estimation process, there are two main steps.

Firstly, the OLS technique is employed with three models including Pooled model (Pool), Fixed effects model (FEM) and Random effects model (REM). After that, the F-test is used to choose Pooled model or Fixed effects, if the null hypothesis is rejected (the p-value is smaller than 0.05), the testing result confirms that the result of the Pooled result is biased and the Fixed effects is the better one. The Hausman test helps to choose which is the better one between the Fixed effects or the Random effects. If the null hypothesis is rejected (p-value is smaller 0.05), the evidence implies that the Random effects is biased and the Fixed effects is chosen.

Secondly, there is a problem namely the endogenous phenomenon amongst some variables in the estimation progression. This problem leads to violating the assumptions of a good linear regression model. The endogenous phenomenon makes a biased result in the econometric result. In order to solve this problem, we must find the instrumental variables to replace the endogenous variables.

The GMM method is applied to solve the endogeneity in the econometric model, and the result of OLS can be used for comparison. The Fixed effects and the Random effects model continuously use for estimated progress as well as the Hausman test helps to choose which is the better one in the results. Based on the suggestion of Vella and Verbeek (1999), the instrumental variables will replace the endogenous variables in the econometric function by their lag values. The GMM regressions will help the estimated results pass the endogeneity problem in the econometric model. So this regressive result is good evidence in order to make some implications for the policymakers in the future.

2.2. The source of data

Our paper uses a dataset which covering 26 countries in the Asia-Pacific region. A secondary data of 29 years from 1980 – 2015 of variables including poverty rate (Poverty), remittance inflow (Rem), external debt (External_debt), official development assistance (Oda) and trade openness (Openness). Our panel data is collected

from the World Development Indicators database of the World Bank. The list of countries used in the study sample including Armenia, Azerbaijan, Bangladesh, China, Fiji, Indonesia, India, Iran, Jordan, Kazakhstan, Kyrgyz Republic, Lao, Sri Lanka, Maldives, Mongolia, Malaysia, Pakistan, Philippines, Papua New Guinea, West Bank and Gaza, Solomon Islands, Thailand, Tonga, Vietnam, Vanuatu and Yemen. The description of the variables in this research is shown in the below table.

Table 2. The descriptive statistics of variables

Statistic	Poverty	Remittances	External_debt	ODA	Openness
Mean	4.252	5.530	49.780	6.479	83.610
Median	1.800	2.423	38.540	2.727	79.430
Maximum	28.100	36.410	384.000	68.570	375.300
Minimum	0.000	0.012	0.238	-0.644	9.105
Std. Dev.	5.750	7.178	42.280	8.716	44.470
Skewness	2.062	1.792	2.548	2.332	1.381
Kurtosis	7.162	5.721	13.680	10.450	8.436
Jarque-Bera	283.300	635.300	4,307.200	2,696.000	1,309.400
Probability	0.000	0.000	0.000	0.000	0.000
Observations	198	753	738	837	845

Source: Calculates from the research data (World Bank 2018)

3. Result and discussion

3.1. Correlation analysis

In fact, we can use the correlation matrix as a good way to summarize data, as an input into a more advanced analysis as well as a diagnostic for advanced step. In Table 2, the correlative result amongst variables in the poverty function is clearly shown. The sign in correlation value will tell us what direction the variables move. In detail, a positive correlation result means the two variables go in the same direction. In the other hand, a negative correlation implies these variables move in opposite directions. So there are some interesting issues coming through this correlation analysis. Firstly, the relationship between remittances and poverty has a negative sign (-0.3494) which implies an increase in remittances can make a reduction in the poverty rate. Besides, trade openness has a negative relationship with poverty (-0.3210) which shows that integration can decrease poverty. Based on the correlation analysis, If a country raises trade openness level, it can have a good effect on poverty.

Table 3. Correlation coefficients between the variables

Variable	Poverty	Remittances	External debt	ODA	Openness
Poverty	1.0000				
Remittances	-0.3494	1.0000			
External_debt	0.0533	0.2312	1.0000		
ODA	0.1335	0.2454	0.3921	1.0000	
Openness	-0.3210	0.3509	0.3716	0.2726	1.0000

Source: Calculates from the research data (World Bank 2018)

However, external debt and ODA have a negative relationship with the poverty rate in the countries. It means when external debt and ODA increase, they will make a raising in the poverty level in the Asia-Pacific developing countries. This evidence can have some worries for policymakers in the situation foreign debt and ODA are popular financial tools for supporting the economic growth in this region. Based on the correlative matrix result, the coefficients between independence variable are quite low (the biggest is 0.3921) so we can conclude that the function 1 does not have the multicollinearity problem (This problem leads to a biased result in the econometric regression). The correlation matrix result is really a good step for advanced regression in the next part of the paper.

3.2. Panel regression result

In the first regressive process, the OLS is employed with three quantitative methods including the Pooled, Fixed effects and Random effects. After that, the F-test and Hausman test will help to select the optimal result for the relationships among variables in the function. However, all of the models are in the same direction. The estimated results are represented in the table below.

Table 4. The Ordinary Least Squares (OLS) estimation results

Dependent variable: Poverty			
Variables	Pooled	Fixed_effects	Random_effects
Remittances	-0.2464***	-0.0460	-0.1977***
External_debt	0.0251***	0.0553***	0.0367***
ODA	0.2417***	0.4597***	0.2936***
Openness	-0.0553***	-0.0640**	-0.0527***
Constant	7.7789***	4.6375**	6.2928***
R-squared	0.2618	0.5407	0.2180
Observations	5,882	173	172
F-test	4.0297 [0.0000]		
Hausman test	6.1942 [0.1851]		

Note: *, **, *** significant at 10%, 5%, 1%. The P-values are in parentheses below the coefficients.

Source: Calculates from the research data (World Bank 2018)

As the quantitative result, there are some small differences between estimated models. They are in-line with the effect directions (denoted by the same in the coefficient signs). In detail, there is only a difference in the statistical significance level. As described in the estimated strategy, the F-test as 4.0297 (with P-value is 0.0000) implies that the Fixed effects is better than the Pooled result. Besides, the Hausman test is 6.1942 (with P-value is 0.1851) also confirms that the Random effects is better than the Fixed effects model. Moreover, the estimated result has reflected the correlation matrix result which has discussed in the previous part. Totally, these tests conclude that the Random effects result is the best one to describe the effect of international capital inflow variables on the poverty rate in the Asia-Pacific developing countries.

There are some good findings in OLS's estimation. Firstly, the estimated results confirm that both remittances and trade openness have a negative impact on the poverty rate at the statistical significance of 1% level. This evidence reflects an increase in remittances, as well as a raising in trade openness level, will help reduce the poverty rate in the countries. This finding is good evidence to encourage policymakers in promoting international trade amongst economies. Besides, the role of remittances for social development is also clearer because this financial resource helps decrease the poverty rate in host countries. Our result contributes new evidence in the case of the Asia-Pacific region comparing other regions investigated by Combes and Ebeke (2011), Akobeng (2016) or Tsai and Huang (2007). Furthermore, the coefficient value of remittances is much large than trade openness, which shows the important role of remittances in order to reduce poverty in this region.

Secondly, there are some concerns about the effects of external debt and official development assistance variable. In detail, both external debt and ODA have negative impacts on poverty at the statistical significance of 1% level. This quantitative result concludes if the external debt and ODA continuously increase, they will lead to a raising in the poverty level in the region. Our result expands and helps more clarify previous research results of Zaghdoudi and Hakimi (2017) or Cheng *et al.* (2018). This evidence is clear because of high statistical significance. However, the coefficient value of ODA is much large than external debt, which is meaning that the ODA may be a serious problem for poverty in the long run. Our finding is an alarm in the context the official development assistance and external debt are popular tools for supplying the financial funding for government's activities worldwide.

Table 5. The Generalized Method of Moments (GMM) estimation results

Dependent variable: Poverty		
Variables	Fixed_effects	Random_effects
Remittances	-0.0466	-0.1981***
External_debt	0.0573**	0.0371***
ODA	0.4279**	0.2843***
Openness	-0.0649**	-0.0529***
Constant	4.7735**	6.3380***
R-squared	0.5398	0.2134
Observations	170	
Hausman test	5.5189 [0.2381]	

Note: *, **, *** significant at 10%, 5%, 1%. The P-values are in parentheses below the coefficients.

Source: Calculates from the research data (World Bank 2018)

Overall, the estimation results by the GMM method are quite similar to the results of OLS estimation in the previous part. In particular, the Hausman testing value is 5.5189 (with P-value is 0.2381) which confirms that the

result of the Random effects is better than the Fixed effects in describing the impact of international capital inflows to the poverty rate in the Asia-Pacific developing countries. We exam the endogenous phenomenon by applying some endogenous tests of Arellano-Bond and Sargan. The testing results confirm that the GMM's estimation is free of the endogenous phenomenon. These tests include AR (1) is -1.26 with P-value is 0.209, AR (2) is 0.91 with P-value is 0.365, and Sargan test is 11.19 with P-value is 0.595. Thus, the testing results conclude our GMM's result is no longer endogenous.

The GMM estimation results also show that both remittances and trade openness have positive effects on poverty rate with 1% statistical significance. In addition, external debt and ODA continue to have negative effects on poverty with a statistical significance of 1%. The results also show that the negative impact of ODA is much larger than external debt. The regression results show the multidimensionality of international capital flows for poverty reduction in recipient countries. Our findings are very useful for policymaking progress in reducing poverty in the long term not only in the Asia-Pacific region but also in other regions worldwide.

The results of our study show an alarm about the risks of confusion in the use of external capital for poverty reduction. Normally, international capital inflows are welcome, even countries always try their best to absorb as much external capital as possible. However, our findings note that remittances play a positive role in poverty reduction, however, external debt and ODA are not good for developing countries. Our research results show that developing countries need to be more cautious when using loans or development assistance fundings because these capital inflows can exacerbate poverty in the long term. This evidence is useful in the context of more and more governments abusing foreign debt instruments to reduce poverty, but in fact, these actions exacerbate the poverty of their countries.

In order to further clarify the impact of each independent variable on the dependent variable, some graphs will be presented. In addition, each graph will have a regression line to reflect the impact of each independent variable on poverty rates in the countries in the study sample. The correlation graphs are shown below.

Figure 2. The graphs between poverty and international capital inflows

Source: Calculates from the research data (World Bank 2018)

In these graphs, the horizontal axis is international capital inflow variables while the vertical axis is the poverty rate of the countries. The graphs are closely fitted with the quantitative analysis of the panel regression. The trend lines of the graphs well clarify the impacts of independent variables on the poverty rate in the countries. In detail, the trend lines represent positive effects of remittances as well as trade openness on the poverty rate. Besides, the negative impacts are showed by the trend lines help evidence about the harmful effects of external debt and official development assistance on the poverty rate. The graphs are good proofs for policymakers in order to have a better way for there policies in the context of increasing globalization.

Conclusion and policy implication

The poverty reduction process is really a long war of mankind. Many countries have been successful in reducing poverty quickly, on the other hand, there are countries stuck in high poverty rates. The successful experiences in poverty reduction in some countries (or regions) are useful information to help other countries with higher poverty rate adjust and operate policies more effectively. Our paper aims to quantitatively analyze the impact of international capital flows on poverty in the Asia-Pacific region, where had many countries with impressive achievements in the past three decades. The research sample is a panel data collected from 26 developing countries in the period of 1980-2015. International capital flows taken into consideration include remittances, external debt, official development assistance, and trade openness (trade openness is also considered as a proxy for international integration). The study result shows some notable findings, in which, international capital flows have two different kinds of impact on poverty in the host countries. In detail, there are only remittances and trade openness have positive impacts on poverty, however, external debt and official development assistance are found to have negative impacts on poverty at the receiving countries. These conclusions are very valuable in studying the factors affecting poverty in developing countries.

Our findings have contributed new evidence to the policymakers in order to reduce poverty not only in the short run but also in the long run. Firstly, countries need to strongly promote remittances as one in the keys to poverty reduction. The solutions should be done to attract more remittance inflow such as modernizing the banking system, improving the money transfer system to have more and more remittances to help reduce poverty. In addition, governments need to support domestic capital sources (such as private investment), thereby limiting the using of international loans as well as official development assistance. Policymakers should note policies to promote domestic resource in order to gradually replace external capital. Finally, the expansion of international trade policy will increase the likelihood of escaping poverty by gaining more income from the exchange of products with foreign countries. Trade expansion is very good to promote the formation and development of the business system and thereby promote the development of the economy. This is a highlighted note for policymakers that international trade is a very important key for poverty reduction in developing countries worldwide.

References

- [1] Akobeng, E. 2017. Out of inequality and poverty: Evidence for the effectiveness of remittances in Sub-Saharan Africa. *Quarterly Review of Economics and Finance*, 60(2): 207-223. DOI: <https://doi.org/10.1016/j.qref.2015.10.008>
- [2] Cheng, G., Díaz-Cassou, J., and Erce, A. 2018. Official debt restructurings and development. *World Development*, 111: 181-195. DOI: <https://doi.org/10.1016/j.worlddev.2018.07.003>
- [3] Combes, J-L., and Ebeke, C. 2011. Remittances and household consumption instability in developing countries. *World Development*, 39 (7): 1076-1089. DOI: <https://doi.org/10.1016/j.worlddev.2010.10.006>
- [4] Goff, M.L., and Singh, R.J. 2014. Does trade reduce poverty? A view from Africa. *Journal of African Trade*, 1(1): 5-14. DOI: <https://doi.org/10.1016/j.joat.2014.06.001>
- [5] Inoue, T. 2018. Financial development, remittances, and poverty reduction: Empirical evidence from a macroeconomic viewpoint. *Journal of Economics and Business*, 96: 59-68. DOI: <https://doi.org/10.1016/j.jeconbus.2017.12.001>
- [6] Liyanaarachchi, T.S., Naranpanawa, A., and Bandara, J.S. 2016. Impact of trade liberalization on labor market and poverty in Sri Lanka. An integrated macro-micro modelling approach. *Economic Modelling*, 59: 102-115. DOI: <https://doi.org/10.1016/j.econmod.2016.07.008>
- [7] Minasyan, A., Nunnenkamp, P., and Richert, K. 2017. Does aid effectiveness depend on the quality of donors? *World Development*, 100: 16-30. DOI: <https://doi.org/10.1016/j.worlddev.2017.07.023>

- [8] Naranpanawa, A., Bandara, J.S., and Selvanathan, S. 2011. Trade and poverty nexus: A case study of Sri Lanka. *Journal of Policy Modelling*, 33(2): 328–346. DOI: <https://doi.org/10.1016/j.jpolmod.2010.08.008>
- [9] Neaime, S., and Gaysset, I. 2018. Financial inclusion and stability in MENA: Evidence from poverty and inequality. *Finance Research Letters*, 24(1): 230-237. DOI: <https://doi.org/10.1016/j.frl.2017.09.007>
- [10] Ramzan, M., and Ahmad, E. 2014. External debt growth nexus: Role of macroeconomic polices. *Economic Modelling*, 38: 204–210. DOI: <https://doi.org/10.1016/j.econmod.2013.12.014>
- [11] Tsai, P-L., and Huang, C-H. 2007. Openness, growth and poverty: The case of Taiwan. *World Development*, 35(11): 1858-1871. DOI: <https://doi.org/10.1016/j.worlddev.2006.11.013>
- [12] Tung, L.T. 2018. Impact of remittance inflows on trade balance in developing countries. *Economics and Sociology*, 11(4): 80-95. DOI: <https://doi.org/10.14254/2071-789X.2018/11- 4/5>
- [13] Tung, L.T., Ly, P.T.M., Nhu, P.T.Q., Thanh, P.T., Anh, L.T., and Phung, T.T.P. 2015. The impact of remittance inflows on inflation: Evidence in Asian and the Pacific developing countries. *Journal of Applied Economic Sciences*, Volume X, Winter, 7(37): 1076-1084.
- [14] Vella, F., and Verbeek, M. 1999. Two-step estimation of panel data models with censored endogenous variables and selection bias. *Journal of Econometrics*, 90(2): 239–263. DOI: [https://doi.org/10.1016/S0304-4076\(98\)00043-8](https://doi.org/10.1016/S0304-4076(98)00043-8)
- [15] Zaghdoudi, T., and Hakimi, A. 2017. Does external debt-poverty relationship confirm the debt over hang hypothesis for developing countries? *Economics Bulletin*, 37(2): 653-665.
- *** ESCAP. 2018. *Social outlook for Asia and the Pacific 2018: Poorly protected*. Available at: <https://www.unescap.org/publications/social-outlook-asia-and-pacific-2018>
- *** United Nations. 2018. *The state of food security and nutrition in the world 2018*. New York, USA.
- *** World Bank. 2018. *World development indicators online database*, Washington, DC. Available at: <http://data.worldbank.org/indicator>