Emigrant's remittances, Dutch Disease and capital accumulation in Mekong countries

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Abstract

This paper examines the sectoral and intertemporal impacts of international emigrant remittances by using a vector auto-regression (VAR) estimation focusing on Cambodia, Lao PDR, Myanmar and Vietnam (CLMV countries). The reason for targeting the CLMV countries is that they have still depended largely on remittance-earnings from their emigrant workers in their economies, and that the macroeconomic impacts of received remittances would be critical for their sustainable growth. The empirical study identified the decline in manufacturing-service ratio (the Dutch Disease effect) as a sectoral effect of remittances, and also the decline in investment-consumption ratio (the deteriorated capital accumulation effect) as their intertemporal effect, judging from the causalities and dynamic responses from remittances to both ratio in the VAR estimation outcomes. The strategic implication is that the CLMV countries should establish a framework to mobilize their remittance-earnings for more productive use.

Keyword: Emigrant's remittances, Dutch Disease, Capital accumulation, Vector auto-regression estimation, CLMV

JEL Classification Codes: F22; F66; O53

1. Introduction

The latecomer's economies in Mekong region, namely, Cambodia, Lao PDR, Myanmar and Vietnam have recorded high economic growth in the recent decades. In fact, Lao PDR, Myanmar and Vietnam (thereafter, CLMV) already graded up their economies towards the "Middle Income" stage in 2010, 2014 and 2009, respectively, according to the "Income Classifications" by the World Bank.[1] For the upcoming decades, these economies are expected to sustain their economic growth to avoid the "Middle Income Trap".[2]

One of the characteristics of these Mekong four economies is that they still have a lot of emigrant workers outside of their countries and depends on the revenues from emigrant's remittances[3] in their economies. Regarding the economic impacts of the remittances, the literature tells us that they have contributed to poverty alleviation and income equalization from microeconomic aspects. On the other hands, the studies from macroeconomic perspectives often argue that the remittance revenues have led to the "Dutch Disease". Then, for the CLMV economies who pursue sustainable growth for the upcoming decades, it could be of great significance to diagnose the macroeconomic impacts of their remittances, for instance, whether or not their dependence on the remittances accompanies the risk of the Dutch Disease. In case that some symptom of the disease was identified, the CLMV should have a strategy to remedy it to ensure their sustainable growth.

This article examines macroeconomic impacts of emigrant remittances with a focus on the CLMV economies by using a vector auto-regression (VAR) estimation as an analytical framework, and also represents some recommendations on how to mobilize the remittances for productive use, for instance, for human resource development. The rest of the paper is structured as follows. Section 2 illustrates the current situations on the number of emigrant workers and the size of the remittance revenues in the CLMV countries. Section 3 describes the literature review on micro- and macro-economic

[1] See the website of https://datahelpdesk.worldbank.org/knowledgebase/articles/378834-how-does-the-world-bank-classify-countries.

[2] The concept of "Middle Income Trap" was initially proposed by Gill and Kharas (2007).

[3] The remittances in this paper denote "personal remittances", which is defined as personal transfers and compensation of employees by the six edition of Balance of Payments Manual issued by the International Monetary Fund (IMF).

impacts of remittances, in particular, with a focus on their Dutch Disease effects. Section 4 represents a theoretical framework for analyzing the Dutch Disease effect and the capital accumulation effects of remittances in small open economies. Section 5 conducts empirical studies of remittance impacts in the CLMV economies, containing the descriptions of data for key variables, methodologies for a VAR estimation, and estimation outcomes with its interpretation. Section 6 proposes some policy recommendation on how to mobilize the remittances for productive use. The last section summarizes and concludes.

2. Emigrant Workers and Their Remittances in CLMV

This section displays the current situations on the number of emigrant workers and the size of the remittance revenues in the CLMV countries.

First of all, we observe the emigrant flows of the CLMV by their origin and destination in Table 1. The size of emigrants as a percentage of population in 2015 is larger in the total CLMV at 4.7 percent than in the world average at 3.3 percent. As an individual country, Lao PDF has the largest ratio, 19.8 percent, among the CLMV. According to "migration and remittances factbook 2016" published by the World Bank, the CLMV are classified as "Top 10 emigration countries" in the category of "East Asia and Pacific".[4] When we see their origin and destination in Table 1 again, the destination clearly differs between a group of CLM and Vietnam: the CLM emigrants concentrate on Thailand by around 70 percent, whereas Vietnamese on U.S. and the other develop countries.

The remittance flows are reflected by the emigrant flows. Table 2 indicates that the remittances as a percentage of GDP are larger in the total CLMV at 4.9 percent than in the world average at 0.7 percent in 2015. The remittance growth rate from 2000 to 2015 in the total CLMV by 9.1 times also exceeds that in the world average by 4.6 times. Since the remittance growth is higher than the GDP growth, the remittance-GDP ratios have an increasing trend in the total CLMV as well as in the world. As an individual country among CLMV, Vietnam has the largest remittance-GDP ratio, 6.8 percent, in 2015, and Lao PDR has the highest growth of remittances, 141 times, from 2000 to 2015.

[4] See the website: https://siteresources.worldbank.org/INTPROSPECTS/Resources/334934-1199807908806/4549025-1450455807487/Factbookpart1.pdf.

When we compare the level of remittances with those of the other foreign currency gains such as net inflows of official development assistance (ODA) and foreign direct investment (FDI), and natural resources rents (NRR)[5] as a percentage of GDP in Table 3, we can see that the remittances are at comparable levels with the other foreign incomes. In particular, the remittances are the top in the list of foreign incomes in Vietnam.

3. Literature Review and Contribution

Regarding the literature of empirical studies on the economic impacts of emigrant's remittances, the microeconomic aspects such as poverty alleviation and household incomes have been centered in their researches. From this perspectives, the favorable effects of remittances for the recipient developing economies were identified on poverty (e.g., Adams and Page, 2005; Acosta, et al., 2008; Lokshin, et al. 2010), on income distribution (Barham and Boucher, 1998; Adams and Cuecuecha, 2010), on school attendance (e.g., Cox-Edwards and Ureta, 2003; Gorlich, et al., 2007), on financial development (e.g., Aggarwal, et al., 2006; Giuliano and Ruiz-Arranz, 2009; Chowdhury, 2011), and on entrepreneurship of microenterprises (e.g., Woodruff and Zenteno, 2001; Yang, 2005).

For the macroeconomic viewpoint, the arguments have been focused on whether remittances would cause the Dutch Disease. The theoretical framework of analyzing the Dutch Disease effect of "capital inflows" in small open economies was usually represented by the Salter-Swan-Corden-Dornbusch model, which was initially demonstrated by Corden and Neary (1982). This model has also been applied to examine the economic impacts of emigrant's remittances, since they constitute a major component as an origin of capital inflows. There have been, however, relatively few empirical studies of remittance impacts by using the Dutch Disease model.

Acosta, et al. (2009) examined the remittance effects in El Salvador by applying a dynamic stochastic general equilibrium model with a Bayesian technique, based on the Dutch Disease concept. They extended the original Dutch Disease model by incorporating an additional transmission mechanism of remittances through labor supply: remittances increase the reservation wage of recipients and, thus, cause a decline in labor supply; a

[5] The natural resources rents are defined as the sum of oil rents, natural gas rents, coal rents (hard and soft), mineral rents, and forest rents by World Development Indicators of the World Bank.

shrinking labor supply accompanies a higher wage that, in turn, leads to higher production costs and a further contraction of the tradable sector. Through their empirical analyses, they identified the existence of the Dutch Disease effects of remittances: the reallocation of labor away from tradable sectors toward non-tradable sectors.

However, Bourdet and Falck (2007) argued, from the viewpoint of different time-horizon, that in the longer-term, emigrants' remittances could boost capital accumulation through their domestic saving and investment, thereby resulting in an increase in the production of both tradables and non-tradables. They found, from the case study of Cape Verde, that the Dutch Disease effects of remittances was not so large, and suggested that growth- and export-oriented policies could contribute to limiting the Dutch Disease effect.

As a comprehensive empirical study, Lartey, et al. (2012) applied the Dutch Disease model to the remittance assessment for 109 developing and transition countries for the period 1990-2003. They identified their Ditch Disease effects that favored the nontradable sector sacrificing tradable goods production, accompanied with real exchange rate appreciation. Fayad (2011), on the other hand, sampled 27 countries in the 1980s and 28 countries in the 1990s, and identified a transmission channel through which remittances were conductive to the relative growth of exporting industries in the manufacturing sector of recipient economies, contrary to what the standard Dutch Disease theory implied.

In this way, even among the limited studies on the application of the Dutch Disease model to emittance evaluation, the theoretical message have remained unsettled in the time horizons between short and long term, and the empirical evidence has also been inconclusive. In this context, this study contributes to enriching evidence on remittance impacts by targeting those of remittance-dependent economies, the CLMV, who pursue sustainable growth by mobilizing the remittances for productive use. Another contribution of this study is to adopt a VAR estimation for the remittance analysis, which enables us to avoid the endogeneity problem of remittance variable.

4. Theoretical Framework of the Dutch Disease

This section describes the theoretical framework for analyzing the Dutch Disease effect of "capital inflows" in small open economies by the Salter-Swan-Corden-Dornbusch model. We first introduce the basic framework that is composed of "spending effect" and "resource movement effect" based on Corden and Neary (1982). Then we add

"capital accumulation effect" from the longer-term perspective by following Bourdet and Falck (2006). This model could, of course, be applied to examine the effects of emigrant's remittances, since they constitute a major component as an origin of "capital inflows".

In Figure 1, the horizontal axis exhibits non-tradable while the vertical one shows tradable. The curve P-P represents the initial transformation curve between tradable and non-tradable. Point A is an initial equilibrium, where the transformation curve is tangential to the social indifference curve (not drawn) and the slope of the curves, i.e., the relative price of non-tradable to tradable, is fixed at that point.

The transformation curve shifts upwards to P-PF with the introduction of the capital inflows (emigrant's remittances in this study) shown at point F, since the supply of non-tradable is constant and the availability of tradable expands with higher disposal income. There would be excess demand for non-tradable with unchanged relatives price of non-tradable to tradable shown at point A', if we assume positive income elasticity of non-tradable. The price of non-tradable, therefore, has to go up to clear the market, and the relative price of non-tradable to tradable also rises, since the price of tradable is determined in the world market. This effect is referred to as an appreciation of real exchange rate (spending effect). The rise of relative price, then, encourages the movement of production factors from the tradable sector to the non-tradable sector, and leads to an expansion in the output of non-tradable and a decline in that of tradable from point A' to point B (resource movement effect).

Bourdet and Falck (2006) added the following story from the longer-term perspective. They considered the role of capital accumulation, and argued that the transformation curve could shift further towards P'-P' when an economy utilized capital inflows for domestic capital accumulation. As a consequence, the relative price of non-tradable might be expected to fall from point B to point C, thereby facilitating the recovery of tradable sector. Thus, the "capital accumulation effect" might offset or mitigate the economic damages caused by original Dutch Disease effect.

To sum up, the basic theory tells us that capital inflows (emigrant's remittances in this study) reduce the production of tradable through real currency appreciation by the sectoral resource movement. In the longer-term, however, capital inflows would lead to the increase in the outputs of both tradable and non-tradable due to capital accumulation, i.e., the intertemporal resource movement. In short, capital inflows are not compatible with economic growth under the Dutch Disease, but could be friendly with growth under

the capital accumulation in the longer-term.

5. Empirics

This section represents empirics for examining sectoral and intertemporal impacts of emigrant's remittances with a focus on the CLMV economies under the aforementioned theoretical framework, containing the description of the data for key variables, methodologies for a VAR model estimation, and the estimation outcomes with its interpretation.

5.1 Data for Key Variables

At the beginning, we identify the following economic variables for a VAR model estimation to examine sectoral and intertemporal impacts of emigrant's remittances based on the theoretical framework in Section 4.

The variable of emigrant's remittances (*roy*) is expressed as a percentage of Gross Domestic Product (GDP). The data are retrieved from the item "Personal remittances, received (% of GDP)" of World Development Indicators (WDI) published by the World Bank.[6]

For examining sectoral impacts of the remittances, namely, the Dutch Disease effect, consumer prices (*cpi*) and manufacturing-service ratio (*mos*) are introduced to investigate "spending effect" and "resource movement effect", respectively. The consumer prices are assumed to be a proxy of real exchange rate. The reason for not using exchange rate is that the CLMV have adopted peg system rather than floating one as their currency regimes for most of the sample periods, according to Ilzetzki et al. (2011). Frankel (2010) argued in the context of Dutch Disease that the real currency appreciation takes the form of money inflows and inflation if the country has a fixed exchange rate, whereas taking the form of nominal currency appreciation if the country has a floating exchange rate. Following this argument, consumer prices are adopted instead of exchange rate. The data is retrieved from the item "Consumer price index (2010 = 100)" of WDI. The manufacturing-services ratio, for assessing "resource movement effect", is assumed to be

[6] See the website: http://data.worldbank.org/.

a proxy of tradable-nontradable production ratio following the empirical method of Lartey, et al. (2012). The ratio is derived by dividing "manufacturing in value-added term" by "services in value-added one" in the database of UNCTAD Stat.[7] The spending effect is identified if consume prices are positively affected by the remittances, while the resource movement effect is confirmed if the manufacturing-services ratio is negatively influenced by the remittances.

To assess intertemporal impacts of the remittances, namely, capital accumulation effect presented by Bourdet and Falck (2006), the investment-consumption ratio (*ioc*) is introduced in the estimation model. The ratio is produced by dividing "gross fixed capital formation" by "final consumption expenditure" in the database of UNCTAD Stat. The capital accumulation effect is verified if the investment-consumption ratio is positively affected by the remittances.

Another category of variables are those to control their sectoral and intertemporal impacts and to extract pure effects of the remittances. Those are net inflows of official development assistance (*oda*), foreign direct investment (*fdi*) and natural resource rents (*nrr*), all of which are expressed at a percentage of GDP. These variables should be contained as control variables since they also have the Dutch Disease effect and capital accumulation effect as the components of capital inflows as described in Section 4, and also since these components have some weights comparable to received remittances in the CLMV economies as shown in Table 3. The data are retrieved from the items of "Net ODA received (% of GDP)"[8], "Foreign direct investment, net inflows (% of GDP)" and "Total natural resources rents (% of GDP)" of WDI, respectively.

Figure 2 displays the overviews of three key variables: remittance-GDP ratio (*roy*), manufacturing-services ratio (*mos*) and investment-consumption ratio (*ioc*) in the CLMV. It appears by rough observation that there are no clear correlation between remittance-GDP ratio, and manufacturing-services ratio and investment-consumption ratio. It might be because those endogenous variables of manufacturing-services and investment-consumption ratios are also affected by the other components of capital inflows. Thus, the variable interactions should be statistically tested by a more sophisticated manner, i.e., a VAR model estimation, by containing necessary control variables in the following

[7] See the website: http://unctadstat.unctad.org/EN/.

[8] The WDI have only "Net ODA received (% of GNI)", and so the variable is recalculated by replacing GNI with GDP.

Section. For the VAR estimation, we construct a panel data with the four CLMV economies for the period from 1984 to 2015.[9]

5.2 Methodologies for a VAR Model Estimation

We herein conduct a VAR model estimation. The reason why we adopt a VAR model for our remittance assessment is that the VAR model allows for potential endogeneity between the variables of concerns, and also for tracing out the dynamic responses of variables to exogenous shocks overtime.

We now specify a VAR model with panel data for estimation in the following way.

$$y_{it} = \mu + V_1 y_{it-1} + V_2 z_{it} + \varepsilon_{it} \qquad (1)$$

where y_{it} is a column vector of the endogenous variables with country *i* and year *t*, i.e., $y_{it} = (roy_{it}\ cpi_{it}\ mos_{it})'$ for examining the Dutch Disease effect, and $y_{it} = (roy_{it}\ ioc_{it})'$ for examining the capital accumulation effect, z_{it} is a vector of the control variable, i.e., $z_{it} = (oda_{it}\ fdi_{it}\ nrr_{it})'$, μ is a constant vector, each of V_1 and V_2 is a coefficient matrix, y_{it-1} is a vector of the lagged endogenous variables, and ε_{it} is a vector of the random error terms in the system. The lag length (-1) is selected by the Schwarz information criterion with maximum lag equal to (-2) under the limited number of observations.

Based on the VAR model estimation specified in (1), we examine the Granger causalities and impulse responses from remittance-GDP ratio (*roy*) to consumer prices (*cpi*) and manufacturing-services ratio (*mos*) for the analysis of the Dutch Disease effect, and those from remittance-GDP ratio (*roy*) to investment-consumption ratio (*ioc*) for the analysis of the capital accumulation effect. When the causalities and impulses response from *roy* to *cpi* and *mos* are identified (positively to *cpi* and negatively to *mos*), we could argue that the CLMV economies have suffered the Dutch Disease effect from their received remittances. If the causality and impulse response from *roy* to *ioc* are confirmed in positive ways, we could argue that the CLMV have enjoyed the capital accumulation effect from their remittances.

[9] The data availability of the remittances in WDI differs in the CLMV: Cambodia for 1994-2015, Lao PDR for 1984-2015, and Myanmar and Vietnam for 2000-2015.

5.3 Estimation Outcomes and Its Interpretation

Table 4, Table 5 and Figure 3 respectively report estimation outcomes of the VAR model, the bilateral Granger causalities and the impulse responses.[10]

Regarding the Granger causalities shown in Table 5, as far as the analysis of Dutch Disease effect is concerned, it was only the causality from remittance-GDP ratio (*roy*) to manufacturing-services ratio (*mos*) that was identified at the conventional (95 percent) level of significance. Considering the estimated VAR model in Table 4, this causality was supposed to be a "negative" one. As for the analysis of capital accumulation effect, the causality from remittance-GDP ratio (*roy*) and investment-consumption ratio (*ioc*) was verified, but at the weak (90 percent) level of significance. The causality was also supposed to be a "negative" one judging from the estimated model in Table 4.

The impulse response analysis was focused on the two cases where the Granger causalities were identified above: the one from remittance-GDP ratio (*roy*) to manufacturing-services ratio (*mos*) and the other from remittance-GDP ratio (*roy*) to investment-consumption ratio (*ioc*). According to Figure 3, the manufacturing-services ratio (*mos*) responded negatively to the shock of remittance-GDP ratio (*roy*) within a 95 percent error band after two-year lag, and the investment-consumption ratio (*ioc*) also responded negatively to that shock but within a 90 percent error band.

The implications of the estimation outcomes above are summarized as follows. First, the CLMV might suffer the Dutch Disease effect from their received remittances, judging from the causality and impulse response from remittance-GDP ratio to manufacturing-services ratio. It should be, however, noted that an increase in remittances did not accompany real exchange rate appreciation in terms of the hike of consumer prices, judging from no causality from the remittances-GDP ratio to consumer prices. Thus, the usual Dutch Disease mechanism of "spending effect" and "resource movement effect" suggested by Corden and Neary (1982) might not be applicable to the CLMV case. Instead, the Dutch Disease effect in this case could be interpreted such that received remittances shrank tradable sector directly through a decline in labor supply as Acosta, et al. (2009) suggested as an additional transmission mechanism (See Section 3). Second,

[10] In the VAR model estimation in Table 4, the constant term was excluded since its parameter was not significant and its inclusion made the model performance get worse.

for the intertemporal impact of received remittances, capital accumulation effect might be deteriorated by the remittances in the CLMV, although the negative causality and impulse response from remittance-GDP ratio to investment-consumption ratio was not so robust.

6. Recommendation: To Mobilize Remittances for Productive Use

The precious section implied that the received remittances might cause the Dutch Disease effect and even deteriorate capital accumulation effect in the CLMV. This section proposes some policy recommendation on how to reform the remittance flows in such the received remittances could be utilized for capital accumulation in manufacturing sector in the CLMV.

Some countries with high dependence on migrant remittances have ever employed a large variety of policy measures to enhance the development impact of remittances, and international organization such as the World bank have also proposed different policy options and recommendations on mobilizing remittance-earnings for productive use. Carling (2004) categorized these policy measures into the direct and indirect frameworks. In the direct framework, the home government for emigrants straightly intervenes the remittance flows for their public use. The typical example is that the government imposes taxes or levies on remittance transfers and to use their revenues for public infrastructure. The second scheme is an indirect support by the government for remittance flows to be used for private investment. The style of the government support is, for instance, to create such frameworks as the sale of remittance bonds, opening of foreign currency and premium interest rate accounts for remittances, promoting remittance transfers through microfinance institutions, etc.

When we consider the cases of the CLMV, we focus on the latter indirect scheme, since the direct intervention might not be suitable for the CLMV due to their weak government governance. According to the Worldwide Governance Indicators by the World Bank in 2015[11], the CLMV shows the rankings far behind the 215 countries in the world in terms of each item: control of corruption, government effectiveness, political stability and absence of violence/terrorism, regulatory quality, rule of law and voice and

[11] See the website: http://data.worldbank.org/data-catalog/worldwide-governance-indicators.

accountability (See Table 6).

Regarding the indirect scheme to mobilize the remittances, Pant (2008) introduced the progressive cases of South Asian countries, i.e., Bangladesh, India, Pakistan and Sri Lanka: their governments have devised a framework in which emigrants are granted such facilities as a) maintenance of bank accounts in both foreign and local currencies without tax burden; b) investments in securities and shares, and deposits with local firms and companies; and c) investments in immovable properties in their home countries. To be specific, India has shifted remittance flows from informal channels to formal ones by eliminating the black-market premium. Bangladesh has issued "Wage Earners' Development Bond" to attract domestic investment from remittance revenues.[12] Pant (2008) also proposed "remittance-linked microfinancing services" under the economies in which banking system is still premature at its development stage. His idea could be illustrated in Figure 4: a) emigrant workers save their money in the branch banks of their home country; b) the banks of home country invest their saved money for microfinance institutions; and c) the microfinance institutions finance the small and family business for returned workers and/or family members of emigrant workers.

The framework of South Asian countries and the remittance-linked microfinancing services proposed by Pant (2008) could be applicable and advantageous to the CLMV for mobilizing their received remittances for more productive use. First, the framework would contribute to capital accumulation in the sense that the savings from remittance revenues could be utilized for private investment. Second, the framework would also contribute to an effective usage of human capitals by creating job opportunities in small and local businesses for returned emigrant workers. The knowledge and skills gained by emigrant workers in foreign countries could be effectively utilized for local businesses in their home countries. Third, the remittance-linked microfinancing services are useful for the CLMV. Most of rural part of the CLMV is still out of access from formal banking networks, and easy access to microfinancing services would remove financial bottlenecks for local entrepreneurs.

7. Concluding Remarks

[12] Apart from the South Asian cases, World Bank (2016) introduced the case of Vietnam in which Vietnamese overseas have been permitted to buy houses in Vietnam by the change in law in 2015.

This paper examined the sectoral and intertemporal impacts of international emigrant remittances by using a vector auto-regression (VAR) estimation focusing on the CLMV economies. The reason for targeting the CLMV countries is that they have still depended largely on remittance-earnings from their emigrant workers in their economies, and that the macroeconomic impacts of received remittances would be critical for their sustainable growth. The empirical study identified the decline in manufacturing-service ratio (the Dutch Disease effect) as a sectoral effect of remittances, and also the decline in investment-consumption ratio (the deteriorated capital accumulation effect) as their intertemporal effect, judging from the causalities and dynamic responses from remittances to both ratio in the VAR estimation outcomes.

The strategic implication is that the CLMV countries should establish a framework to mobilize their remittance-earnings for more productive use. The bridging scheme between savings from remittance revenues and private investment such as remittance-linked microfinancing services should be highly recommended in the CLMV economies.

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Table 1 International Migrant Stock by Origin and Destination in CLMV (2015)

Origin of Emigrants	Population (thousand)	Destination of Emigrants (thousand)			
		World (% of Pop.)	1st Coutry (% of World)	2nd County (% of World)	3rd Country (% of World)
Cambodia	15,578	1,187 (7.6)	Thailand 805 (67.8)	U.S. 167 (14.1)	France 63 (5.3)
Lao PDR	6,802	1,345 (19.8)	Thailand 969 (72.0)	U.S. 200 (14.9)	France 43 (3.2)
Myanmar	53,897	2,882 (5.3)	Thailand 1,978 (68.6)	Malaysia 252 (8.9)	Saudi Arabia 203 (7.0)
Vietnam	93,448	2,559 (2.7)	U.S. 1,303 (50.9)	Australia 227 (8.9)	Canada 183 (7.2)
CLMV	169,725	7,973 (4.7)	-		
World	7,349,472	243,700 (3.3)	-		

Source: Based on International migrant stock 2015 by United Nations:
http://www.un.org/en/development/desa/population/migration/data/estimates2/estimates15.shtml

Table 2 International Remittances Received by CLMV

		2000	2015	2015/2000
Cambodia	remitttances, mil. USD	103	397	3.9
	GDP, mil. USD	3,654	18,050	4.9
	remitttances / GDP, %	2.8	2.2	-
Lao PDR	remitttances, mil. USD	1	93	140.9
	GDP, mil. USD	1,731	12,369	7.1
	remitttances / GDP, %	0.0	0.8	-
Myanmar	remitttances, mil. USD	102	387	3.8
	GDP, mil. USD	8,905	62,601	7.0
	remitttances / GDP, %	1.1	0.6	-
Vietnam	remitttances, mil. USD	1,340	13,200	9.9
	GDP, mil. USD	33,640	193,599	5.8
	remitttances / GDP, %	4.0	6.8	-
CLMV	remitttances, mil. USD	1,545	14,077	9.1
	GDP, mil. USD	47,930	286,619	6.0
	remitttances / GDP, %	3.2	4.9	-
World	remitttances, mil. USD	121,312	552,998	4.6
	GDP, mil. USD	33,551,372	74,292,304	2.2
	remitttances / GDP, %	0.4	0.7	-

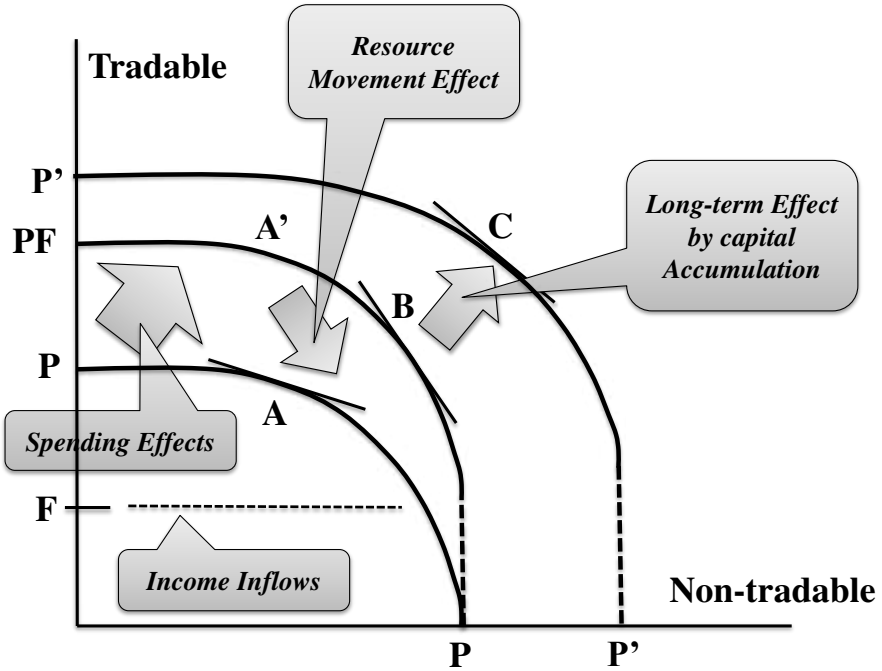
Sources: Based on World Development Indicators by World Bank Data: http://data.worldbank.org/

Table 3 Remittances, ODA, FDI and Natural Resource Rents (NRR) Received by CLMV (Percentage of GDP, 2015)

	Remittances	ODA	FDI	NRR
Cambodia	2.2	3.8	9.4	2.0
Lao PDR	0.8	3.8	8.7	11.6
Myanmar	0.6	1.9	6.5	4.8
Vietnam	6.8	1.6	6.1	2.6

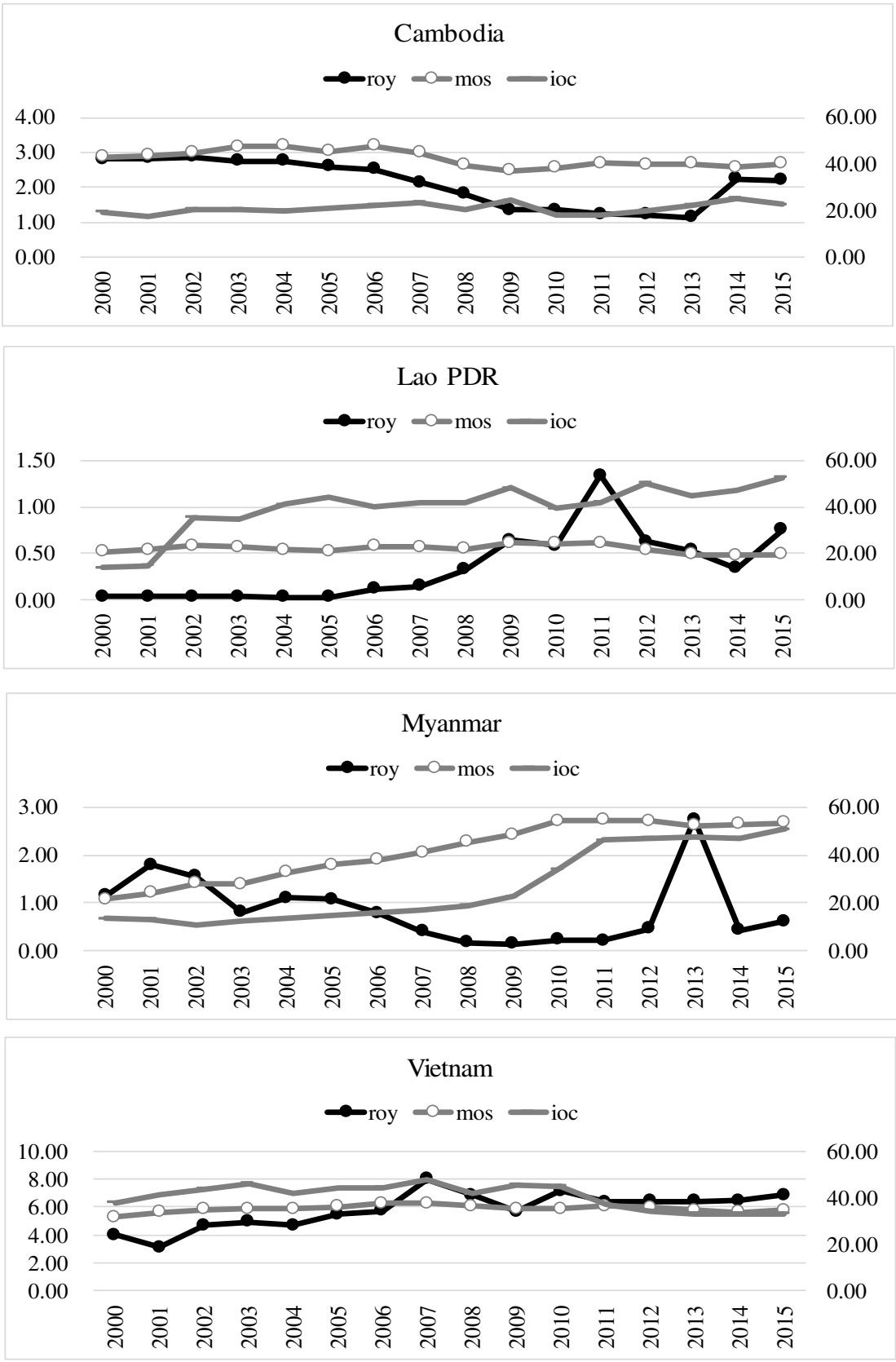
Sources: Based on World Development Indicators by World Bank Data: http://data.worldbank.org/

Figure 1 Theoretical Framework of the Dutch Disease



Sources: This diagram is based on Corden and Neary (1982) and Bourdet and Falck (2006).

Figure 2 Overviews on Key Variables in CLMV



Source: World Development Indicators (World Bank) and UNCTAD Stat.

Table 4 Estimated VAR Model

Dutch Disease Effect	*roy*	*cpi*	*mos*
roy -1	0.854***	0.540	-0.004 **
	[13.026]	[0.855]	[-2.334]
cpi -1	-0.003	1.026***	-0.000
	[-1.353]	[40.385]	[-1.428]
mos -1	1.891*	4.067	1.052***
	[1.695]	[0.378]	[33.816]
oda	-0.006	-13.781	0.022
	[-0.702]	[-0.894]	[0.511]
fdi	0.006	0.118	-0.000
	[0.231]	[0.434]	[-0.018]
nrr	0,019	0.537**	0.000
	[0.875]	[2.482]	[1.404]
adj. R^2	0.811	0.982	0.968

Capital Accumulation Effect	*roy*	*ioc*
roy -1	0.889***	-0.004*
	[14.777]	[-1.704]
ioc -1	0.893	1.058***
	[0.917]	[22.916]
oda	-0.421	0.066
	[-0.281]	[0.935]
fdi	0.013	0.000
	[0.534]	[0.639]
nrr	0.002	-0.000
	[0.084]	[-0.510]
adj. R^2	0.821	0.886

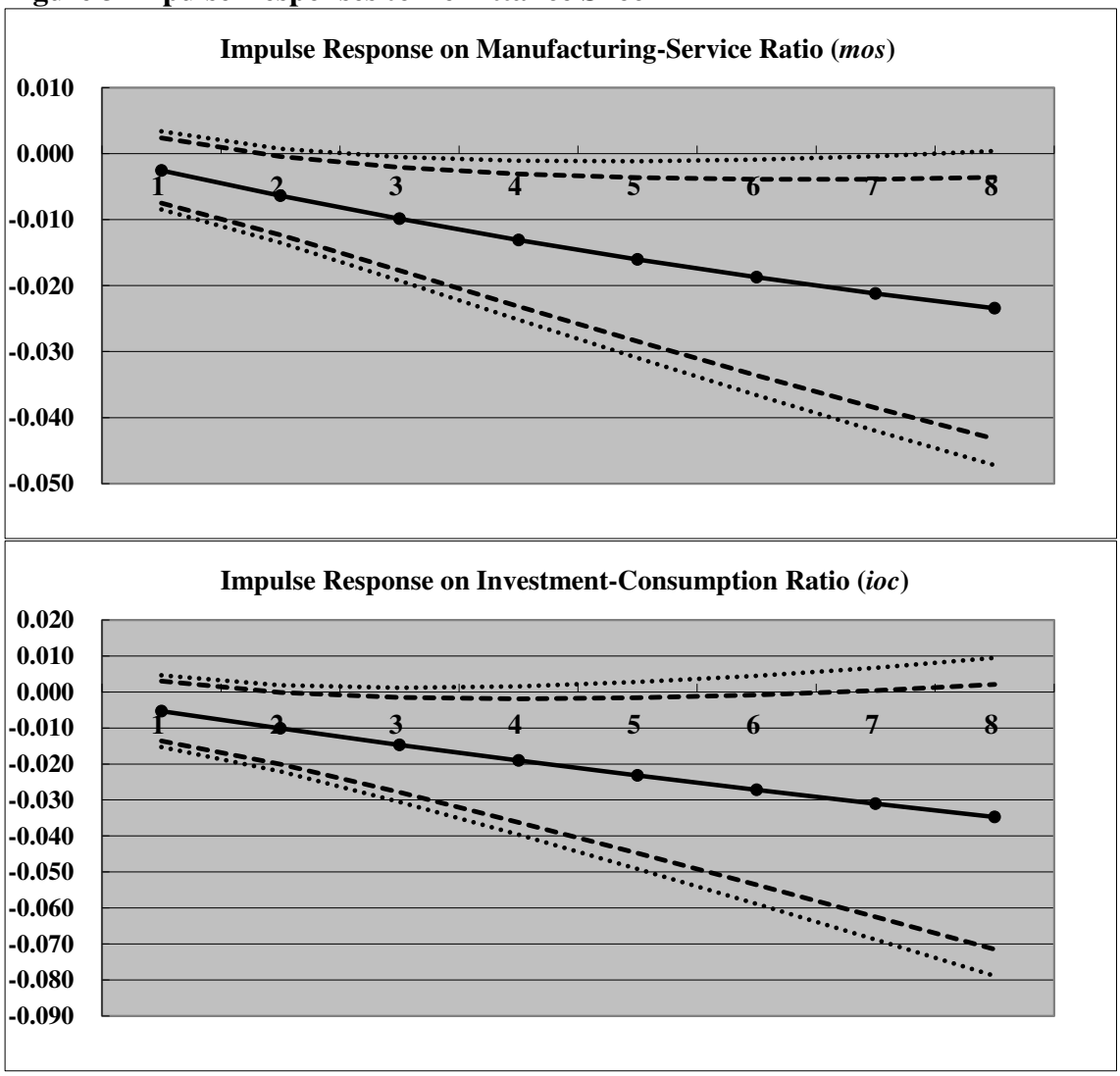
Note: ***, **, * denote rejection of null hypothesis at the 99%, 95% and 90% level of significance, respectively.

Table 5 Granger Causality Tests

mos	Lags	Null Hypothesis	Chi-sq
roy & mos	1	*roy* does not Granger Cause *mos*	5.448**
	1	*mos* does not Granger Cause *roy*	2.873*
roy & cpi	1	*roy* does not Granger Cause *cpi*	0.731
	1	*cpi* does not Granger Cause *roy*	1.833
cpi & mos	1	*cpi* does not Granger Cause *mos*	2.040
	1	*mos* does not Granger Cause *cpi*	0.142
ioc	Lags	Null Hypothesis	Chi-sq
roy & ioc	1	*roy* does not Granger Cause *ioc*	2.906*
	1	*ioc* does not Granger Cause *roy*	0.840

Note: ***, **, * denote rejection of null hypothesis at the 99%, 95% and 90% level of significance, respectively.

Figure 3 Impulse Responses to Remittance Shock



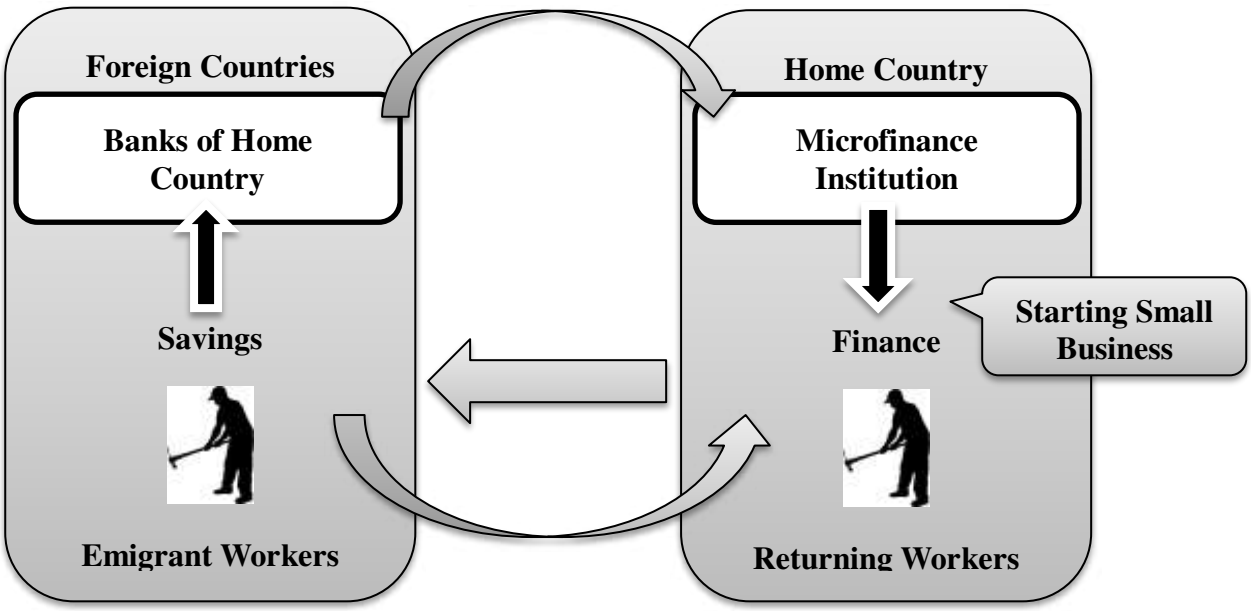
Note: The coarse and fine dotted lines denote a 90 and 95 percent error band, respectively, over 8-year horizons.

Table 6 World Governance Indicators in CLMV in 2015

Ranking in 2015 among 215 countries	Cambodia	Lao PDR	Myanmar	Vietnam
Control of Corruption	183	168	174	127
Government Effectiveness	156	133	188	94
Political Stability and Absence of Violence/Terrorism	119	84	189	109
Regulatory Quality	136	160	194	139
Rule of Law	173	156	193	113
Voice and Accountability	166	195	177	182
Average	156	149	186	127

Sources: Worldwide Governance Indicators (World Bank)

Figure 4 Idea on Remittance-Linked Microfinancing Services



(Source) produced by author