

# **Determinants of economic growth in Mekong-Region countries**

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## **Abstract**

This paper examines the difference of economic growth between Thailand and a group which consists of three countries (Vietnam, Cambodia, and Lao PDR), analyzing determinants of the growth with a multiple regression model.

Although all those countries are parts of Mekong region and have had a historic relation of cooperation in various fields, the situations of economic growth are different at present among them. Regarding Gross Domestic Product and Gross Domestic Product per capita, Thailand is at the top of the four. However, GDP growth rates of Cambodia, Lao PDR, and Vietnam are higher than that of Thailand in recent years. In this study, we call three countries other than Thailand a “developing group”, and compare the economic growth of Thailand with that of the developing group. Using data of foreign aid, domestic investment, trade openness, and government expenditure as explanatory variables, each correlation with GDP per capita is to be observed.

The results of the analyses show that as for trade openness, it is negatively related with GDP per capita in the case of the developing group, while it has a positive effect in Thailand as a theory goes. Moreover, although domestic investment and government expenditure have a positive impact on GDP per capita in both cases, much stronger links are observed in the developing group than Thailand. Regarding foreign aid, it works positively in the developing group, but in Thailand it turns out to be a negative factor to the economic growth.

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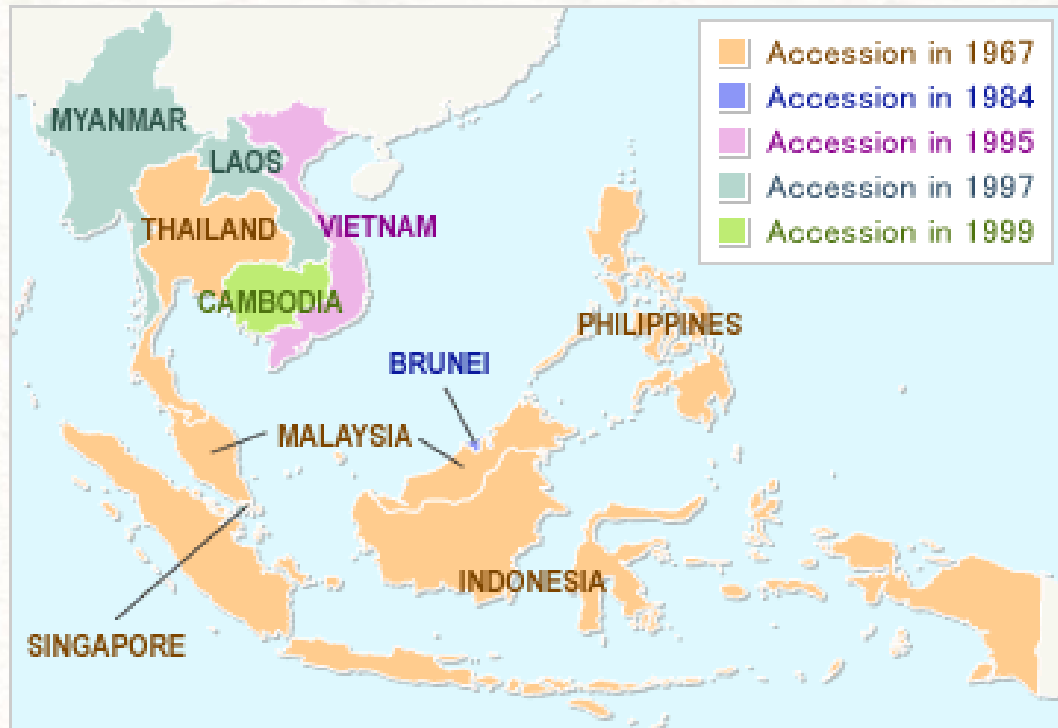
# Agenda

1. Introduction
2. Prior Studies
3. Model and Method
4. Result and Analysis
5. Conclusion Remarks
6. References

# Introduction 1

## ➤ About ASEAN

### Accession Year and Country of ASEAN



(Source: ASEAN-JAPAN Centre)

- Established in 1967 (Bangkok Declaration)
- Total population: 600 millions
- Nominal GDP: 8,100 billion US\$
- “Roadmap for ASEAN Community”  
(announced in 2009)
  - (a) ASEAN Political-Security Community
  - (b) ASEAN Economic Community
  - (c) ASEAN Socio-Cultural Community

# Introduction 2

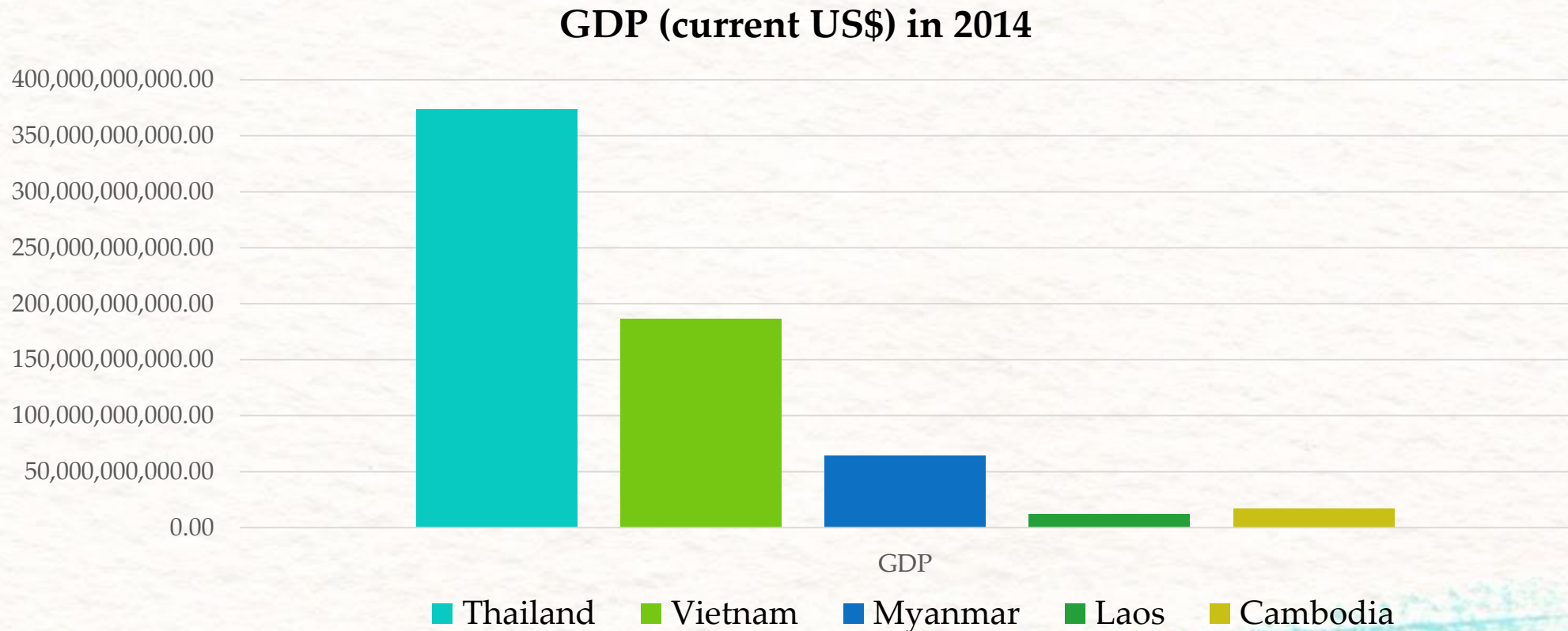
## ➤ About Mekong-Region



- Originated from “**the Greater Mekong Subregion Program**” in 1992 by Asian Development Bank
- Target countries: the five countries and China (specifically Yunnan Province and Guangxi Zhuang Autonomous Region)

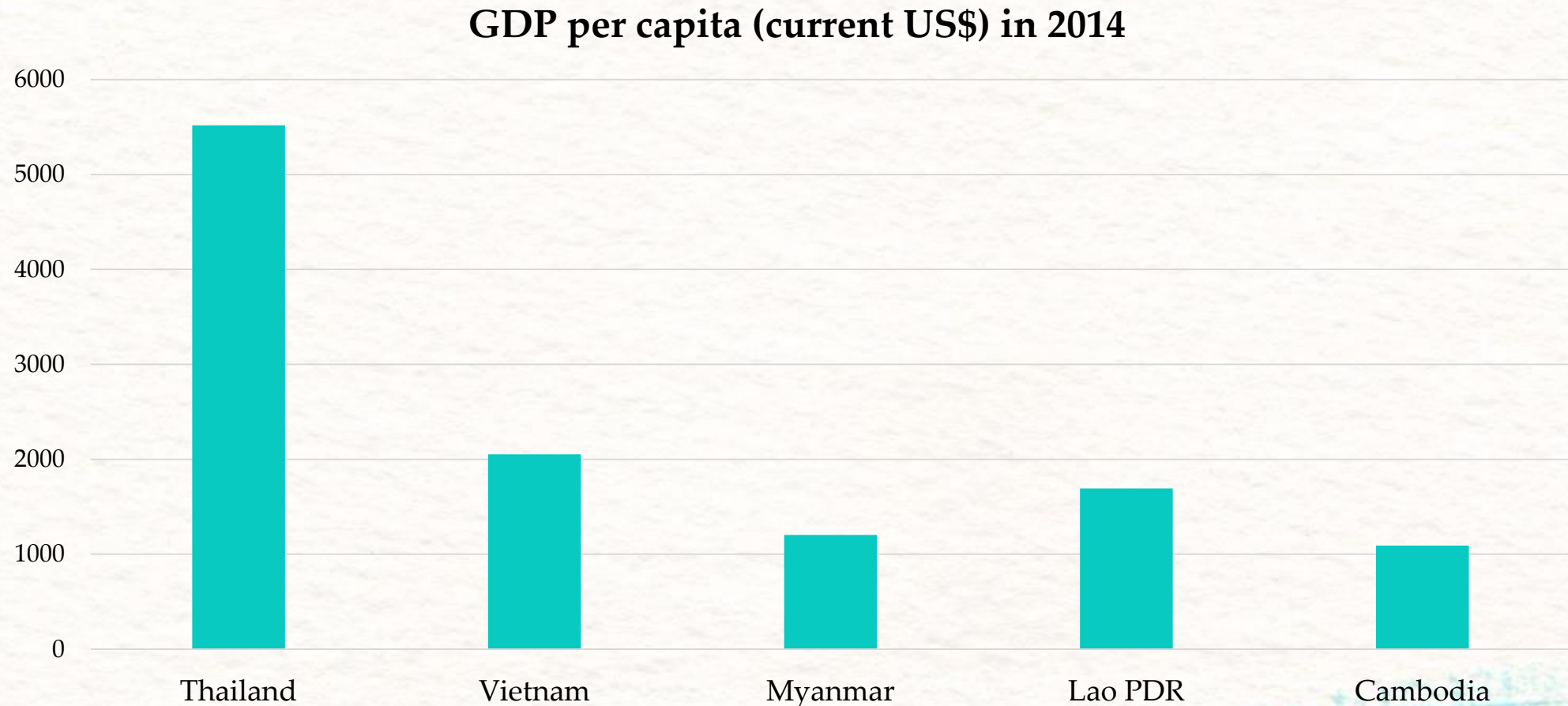
# Introduction 3

## ➤ The Present Situation in Mekong Region



(Source: World Development Indicators)

# Introduction 4



(Source: World Development Indicators)

# Introduction 5

- **Income Classification by GNI per capita**

Country	Classification
Thailand	Upper middle income
Vietnam	Lower middle income
Lao PDR	Lower middle income
Myanmar	Lower middle income
Cambodia	Low income

\*Criterion of this classification

GNI per capita in 2014

\$1,045 or less

: low income country

\$1,046 - 4,125

: lower middle income country

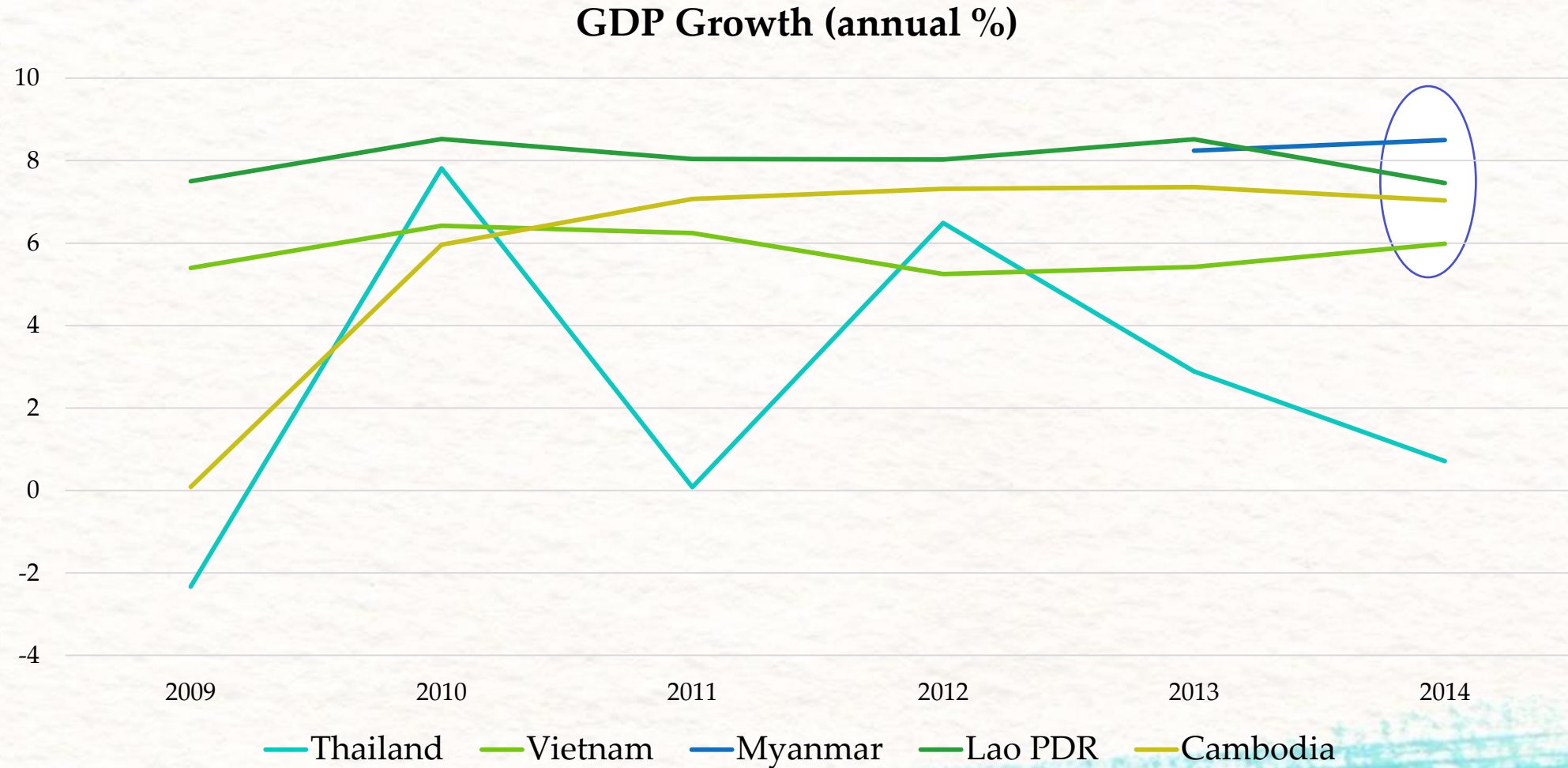
\$4,126 – 12,735

: upper middle income country

(Source: World Bank)



# Introduction 6



(Source: World Development Indicators)

# Introduction 7

- **The Prospect for the Economic Growth**

Country and region	Average annual GDP growth rate (2010–2013)	GDP per capita in 2030	
		Estimated amount (US\$)	Multiple compared with year 2010
ASEAN average	5.8	6,564	2.5
<b>Cambodia</b>	<b>8.2</b>	<b>3,244</b>	<b>3.9</b>
<b>Lao PDR</b>	<b>7.8</b>	<b>3,575</b>	<b>3.6</b>
<b>Myanmar</b>	<b>9.0</b>	<b>2,149</b>	<b>5.0</b>
Brunei	3.8	43,587	1.6
Indonesia	5.6	6,080	2.6
Malaysia	5.5	15,912	2.2
the Philippines	7.0	5,224	2.9
Thailand	4.8	9,702	2.4
Singapore	2.6	54,206	1.4
East Timor	5.0	937	1.5
Vietnam	7.3	4,136	3.6
China	7.0	15,748	3.7
India	7.6	4,312	3.5
NIES	3.4	33,539	1.9
Japan	1.1	52,749	1.3
World	3.6	15,135	1.4

(Source: Japan Center for Economic Research)

# Introduction 8

➤ In this paper,

- We compare economic growth of Thailand with that of the other three countries (Cambodia, Lao PDR, and Vietnam)



- “Mekong Region” includes Cambodia, Lao PDR, Thailand, and Vietnam.

# Prior Research

➤ Previous Studies on Determinants of Economic Growth

Explanatory Variable	Correlation with the economic growth			
	Phimphanthavong (2014)	Betyák (2012)	Assbring (2012)	Ndambiri and others (2012)
Domestic Investment	+	+	+	
Foreign Aid	+ (slightly)			-
Trade Openness	+ (slightly)	+/-		
Government Expenditure	+			-

# Model and Method

Based on the model adopted by Phimphanthavong (2014) that includes the controversial explanatory variables, we employ the following model with some modifications.

$$GDPP_t = a_0 + a_1DI_t + a_2GoEx_t + a_3AID_t + a_4OPEN_t + a_5Year_t + \varepsilon_t$$

**GDPP:** GDP per capita in US\$

**DI:** Domestic investment

**GoEx:** Government Expenditure

**AID:** Foreign aid inflows

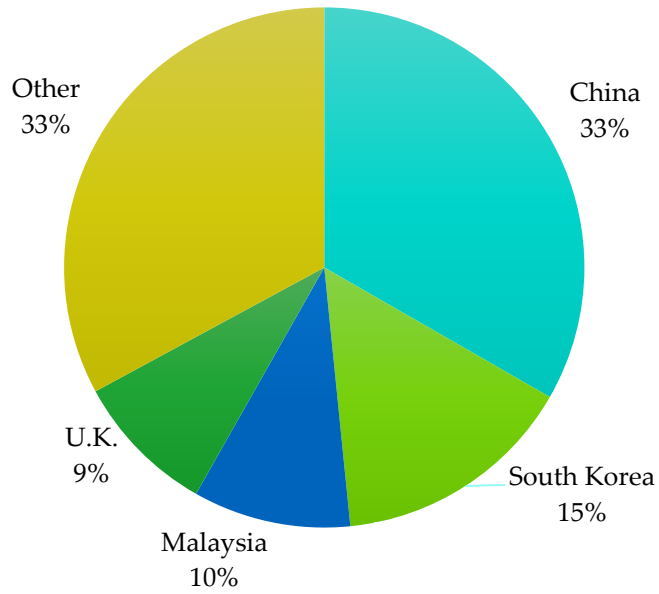
**OPEN:** Trade openness degree

**Year:** dummy variable

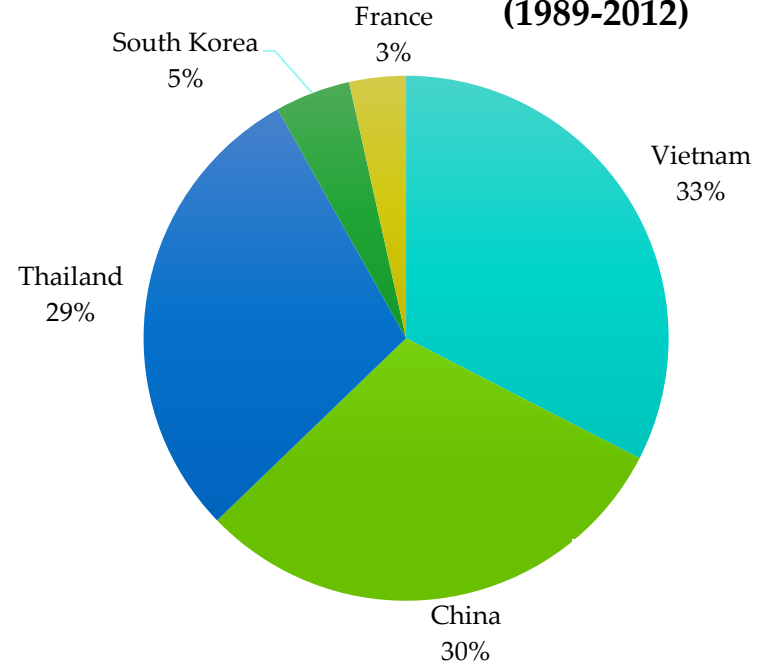
**$\varepsilon$ :** error term

**t:** time

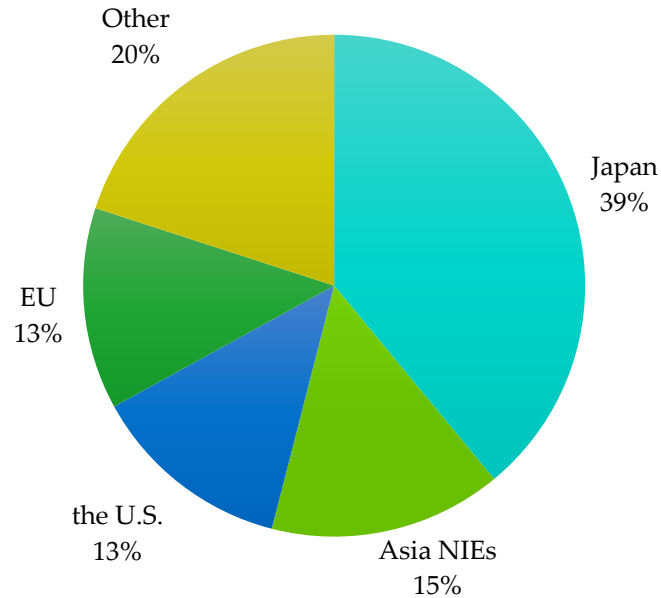
**Cambodia  
(1994-2011)**



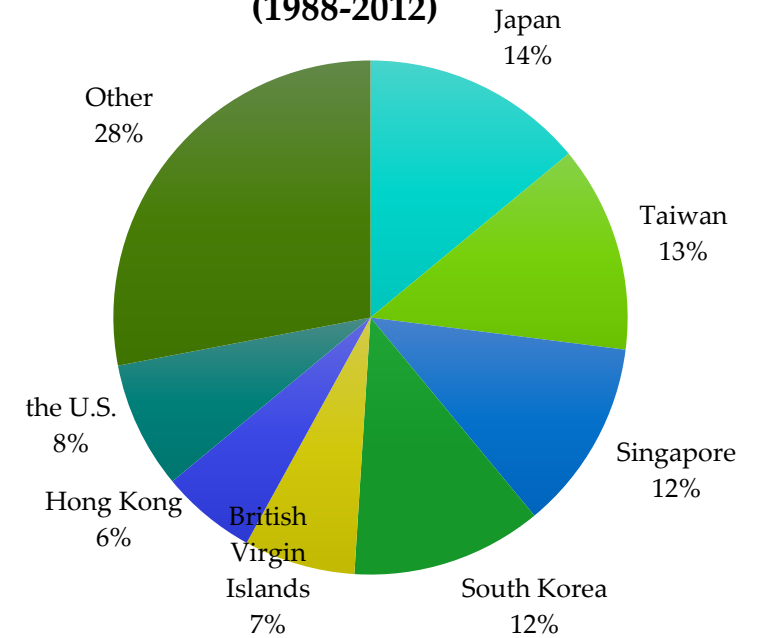
**Lao PDR  
(1989-2012)**



**Thailand  
(1999-2010)**



**Vietnam  
(1988-2012)**



# Model and Method

## ➤ Data

### Country and period of data used in the multiple regression

Country	Period	Number of Years
Thailand	1975 – 2013	39 years
Vietnam	1989 – 2013	25 years
Cambodia	1993 – 2013	21 years
Lao PDR	2000 – 2013	14 years

All data are cited from World Development Indicators.

# Results and Analysis

## 1. Results of the multiple regression analysis: Thailand

Regression Statistics	
Multiple R	0.92989433
R Square	0.86470347
Adjusted R Square	0.84420399
Standard Error	587.369397
Observations	39

ANOVA					
	df	SS	MS	F	Significance F
Regression	5	72764090.79	14552818.16	42.18174	2.12517E-13
Residual	33	11385092.67	345002.8081		
Total	38	84149183.46			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
intercept	-8261.66194	1429.77746	-5.7782852	1.85E-06	-11170.56606	-5352.76
DI	78.8044039	20.12786416	3.915189573	0.000428	37.85395634	119.7549
GoEx	491.940113	109.0128355	4.512680648	7.69E-05	270.1518316	713.7284
AID	-16.3729507	21.48804636	-0.76195623	0.451498	-60.09070975	27.34481
OPEN	19.9913681	8.735397414	2.288547063	0.028643	2.219068427	37.76367
Year	988.09448	621.584561	1.589638067	0.121452	-276.528818	2252.718



# Results and Analysis

## 2. The developing group (pooled data on Vietnam, Cambodia, and Lao PDR)

Regression Statistics	
Multiple R	0.92489927
R Square	0.85543866
Adjusted R Square	0.84205336
Standard Error	151193.318
Observations	60

### ANOVA

	df	SS	MS	F	Significance F
Regression	5	7.30459E+12	1.46092E+12	63.90877	1.89002E-21
Residual	54	1.23441E+12	22859419500		
Total	59	8.539E+12			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
intercept	-709588.54	134879.0608	-5.26092438	2.53E-06	-980004.775	-439172
DI	9381.076	3498.91906	2.681135471	0.009711	2366.165647	16395.99
GoEx	95156.8248	13166.16364	7.227376735	1.76E-09	68760.25599	121553.4
AID	8287.11484	1554.270946	5.331834109	1.96E-06	5170.989216	11403.24
OPEN	-3822.41303	986.2470589	-3.875715519	0.00029	-5799.719333	-1845.11
Year	157355.973	73957.31887	2.127659238	0.037948	9080.475904	305631.5

# Results and Analysis

## Correlation with the explained variable

Explanatory Variable	Result	
	Thailand	Developing group
Foreign Aid	-	+
Domestic Investment	+	+
Trade Openness	+	-
Government Expenditure	+	+

# Results and Analysis

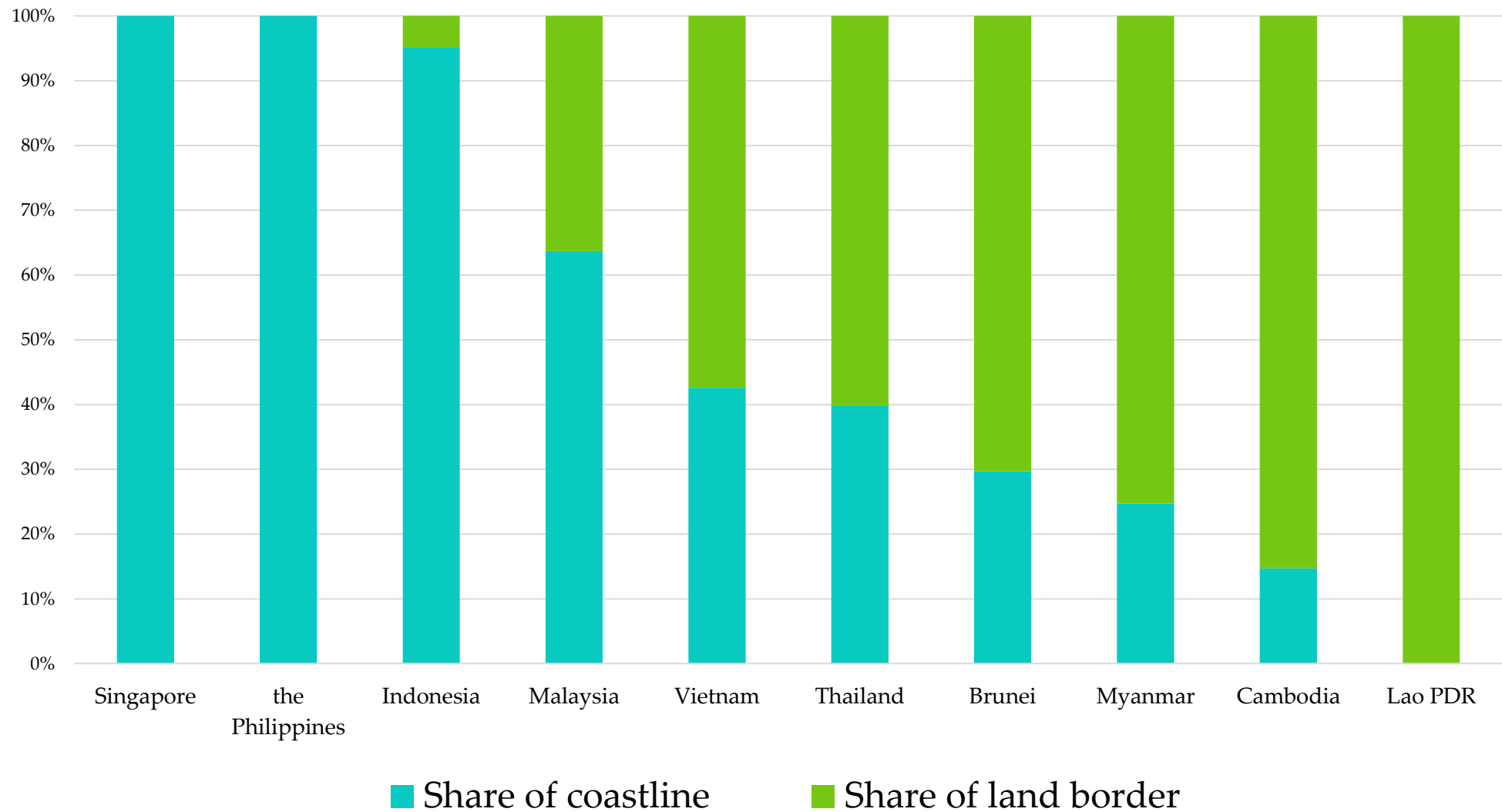
Net ODA Received per capita (current US\$) : Thailand



# Concluding Remarks

- The results of the analyses show that as for trade openness, it is negatively related with GDP per capita in the case of countries in the developing group, while it has a positive effect in Thailand as a theory goes. Moreover, although domestic investment and government expenditure have a positive impact on GDP per capita in both cases, much stronger links were observed in the developing group than Thailand. Foreign aid influence on economic growth positively in the developing group, however, it has a negative effect in Thailand.

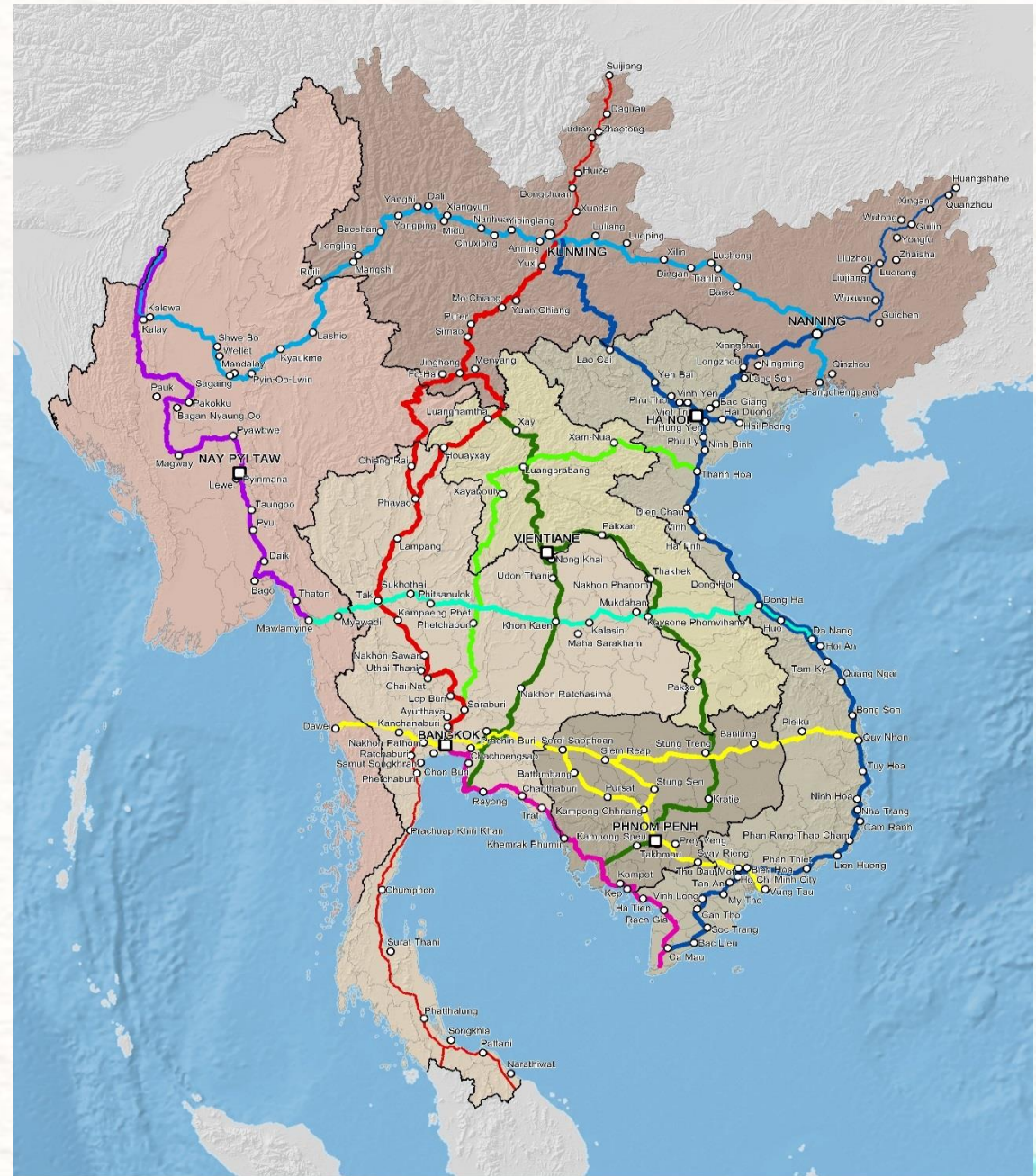
## Share of Coastline and Land Border in ASEAN countries



(Source: Bank of Tokyo Mitsubishi UFJ)

## ➤ Three Economic Corridor in Mekong Region

- East-West Economic Corridor
- North-South Economic Corridor
- Southern Economic Corridor



(Source: Asian Development Bank)

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