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OF WOLLONGONG  
AUSTRALIA

# INCOME GAP AND EXCHANGE RATE REGIME IN ASEAN

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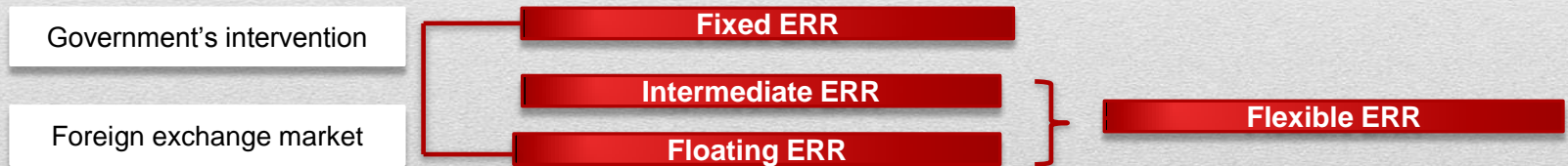
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# 1. KEY TERMS

- **ASEAN** (Association of Southeast Asian Nations): Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam.
- **Income gap**: is the difference in income per capita between countries
- **Exchange rate** is the price of one currency in terms of another currency.
- **Exchange rate regime (ERR)**: is the way that a country manage the exchange rate.

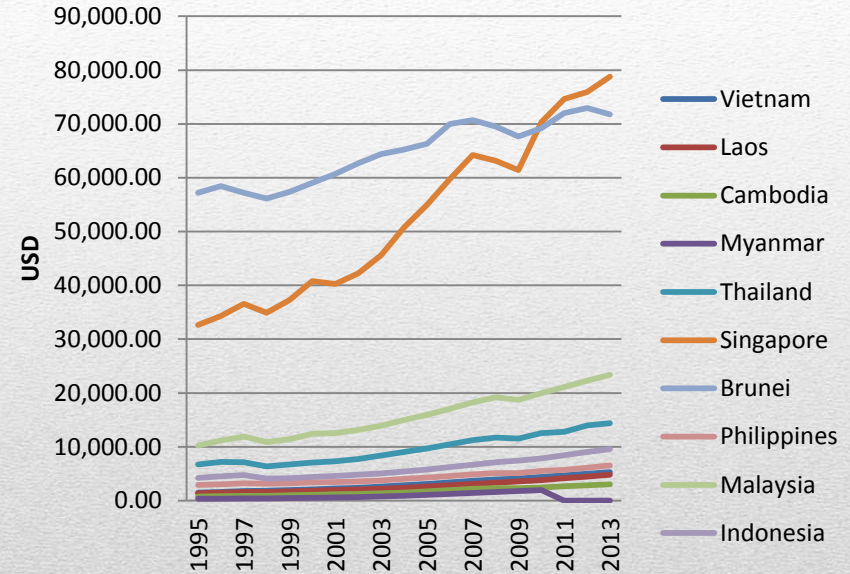


## 2. MOTIVATION

The ASEAN economic community (AEC): established in 2015 with aims:

- to get closer regional economic integration
- to protect region from future economic shocks
- to support economic growth, macroeconomic stability
- to reduce income gap between ASEAN countries.

Graph 1: GDP/CAPITAL, PPP OF ASEAN COUNTRIES (1995-2013)



Source: World Bank, quandl.com

- Economic integration: ASEAN is more vulnerable to unexpected external shocks.
- a negative factor on economic growth & macroeconomic stability ([Raddatz 2007](#))
- the greater income gap for ASEAN countries, ([Masron & Yusop 2008](#)).

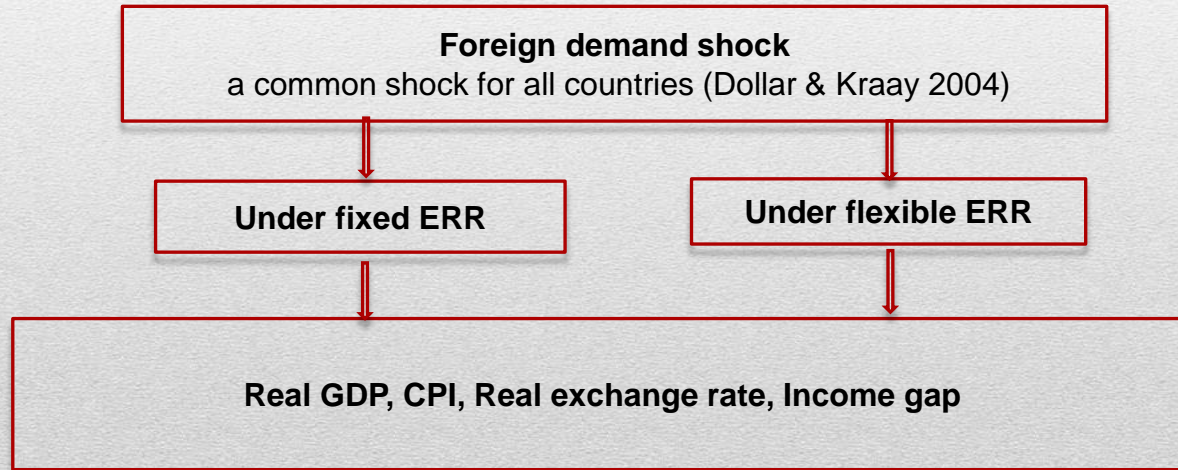
➔ External shocks may affect the success of AEC

Exchange rate regime: an instrument to deal with external shock

### 3. AIMS AND SIGNIFICANCE OF STUDY

#### 3.1. Aims:

- This study will investigate the optimal exchange rate regime for ASEAN countries to minimise the negative effects of external shocks.



## 3.2. Significance of study

- The first time the effect and contributions of foreign demand on macroeconomic variables under different ERRs are investigated.
- Enriching the empirical evidences for the choice of ERR by sample of ASEAN countries.
- Extending the existing literature on the choice of ERR by adding income gap into a theoretical and empirical model.
- The first time de facto exchange rate regime classification of IMF is applied.



## 4. BACKGROUND

<b>AIM</b>	- to investigate which is the optimal exchange rate regime.
<b>SHOCKS</b>	Foreign/domestic nominal shocks, foreign/domestic real shocks
<b>MACROECONOMIC VARIABLES</b>	Real GDP, CPI, real exchange rate, trade balance.
<b>METHODOLOGY</b>	Panel VAR, panel VAR with exogenous, panel structural VAR

<b>Factors</b>	<b>Fixed ERR</b>	<b>Flexible ERR</b>
<b>Shocks</b>	Domestic nominal shock	Foreign nominal/ real shocks, domestic real shock
<b>Size of economies</b>	Small	Large
<b>Openness</b>	Open	Closed
<b>Capital mobility</b>	Low	High

## 5. RESEARCH QUESTIONS

1. What are the differences in the effects and contribution of foreign demand shocks on macroeconomic variables between fixed and flexible ERRs?
2. What is the exchange rate policy for ASEAN countries?

## 6. METHODOLOGY

Structural Vector Autoregressive model:

$$AY_{it} = c_{it} + A(L)Y_{it} + E(L)X_{it} + d + u_{it}$$

$Y_{it}$ : endogenous variables: foreign demand, real GDP, real exchange rate, CPI and income gap.

$X_{it}$ : control variables: trade openness, government spending, financial development, current account.

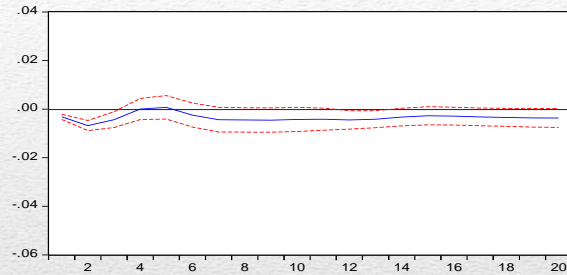
To distinguish the responses of variables between fixed & flexible ERRs,  $Y_{it}$  and  $X_{it}$  will be interacted with dummy variables for ERR ( $D_{fixed}=0$  if fixed and  $D_{flex}=1$  if flexible ERR).

## 7. EMPIRICAL RESULTS

### Figure 1: Impulse response to a negative foreign demand shock

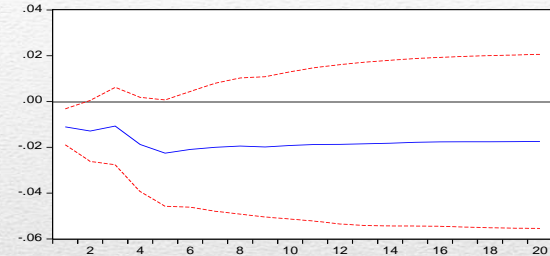
**Fig. 1.1a: Real GDP under fixed regime**

Accumulated Response of  $D(LREALGDP\_NATIONAL\_CPI)^*(ERR2=0)$  to Shock1



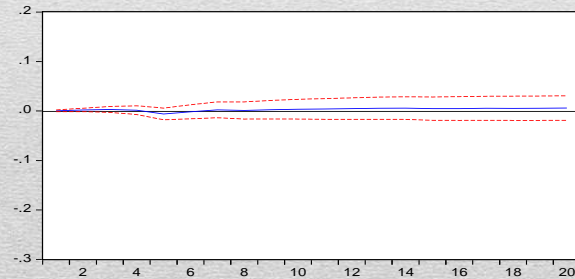
**Fig. 1.1.b: Real GDP under flexible regime**

Accumulated Response of  $D(LREALGDP\_NATIONAL\_CPI)^*(ERR2=1)$  to Shock1



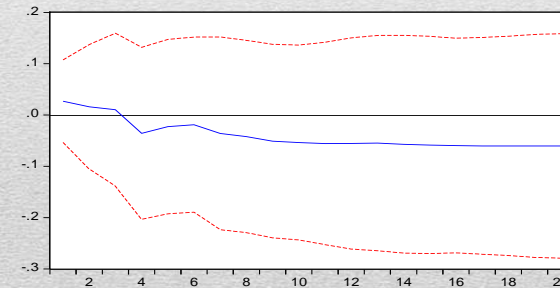
**Fig. 1.2a: Real exchange rate under fixed regime**

Accumulated Response of  $DLREALER^*(ERR2=0)$  to Shock1

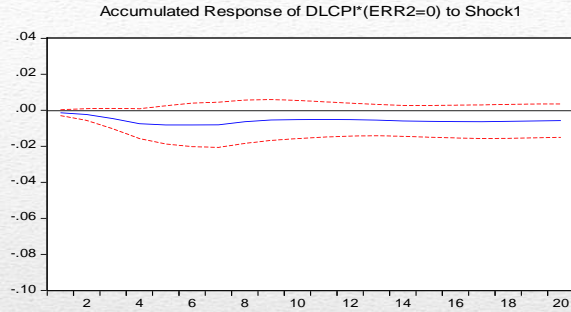


**Fig. 1.2.b: Real exchange rate under flexible regime**

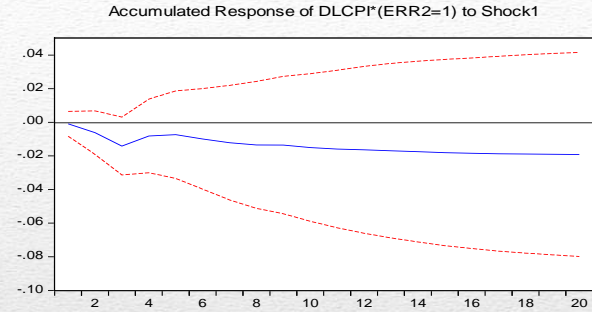
Accumulated Response of  $DLREALER^*(ERR2=1)$  to Shock1



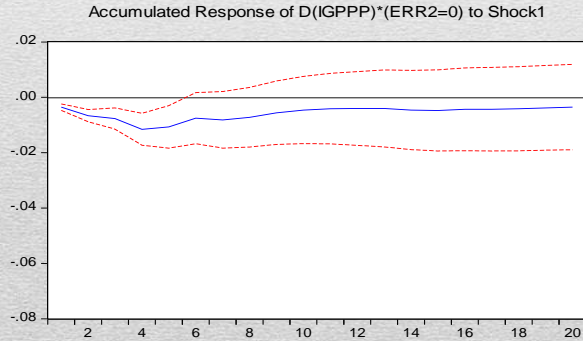
**Fig. 1.3a: CPI under fixed regime**



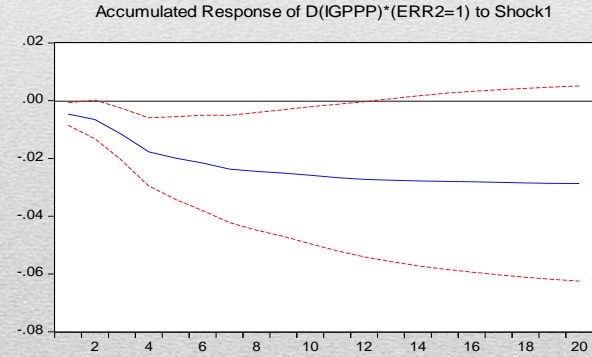
**Fig. 1.3b: CPI under flexible regime**



**Fig. 1.4a: Income gap under fixed regime**



**Fig. 1.4b: Income gap under flexible regime**



## Figure 2: Percent variance of variables due to a negative demand shock

Fig. 2.1a: Real GDP under fixed regime

Percent D(LREALGDP\_NATIONAL\_CPI)\*(ERR2=0) variance due to Shock1

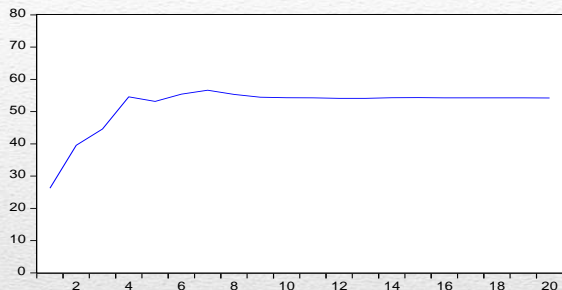


Fig. 2.1b: Real GDP under flexible regime

Percent D(LREALGDP\_NATIONAL\_CPI)\*(ERR2=1) variance due to Shock1

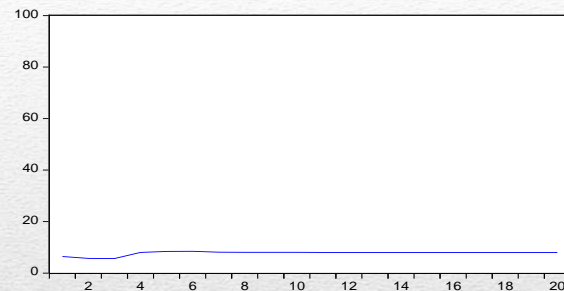


Fig. 2.2a: Real exchange rate under fixed regime

Percent DLREALER\*(ERR2=0) variance due to Shock1

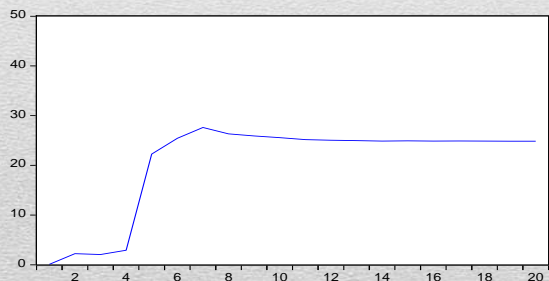
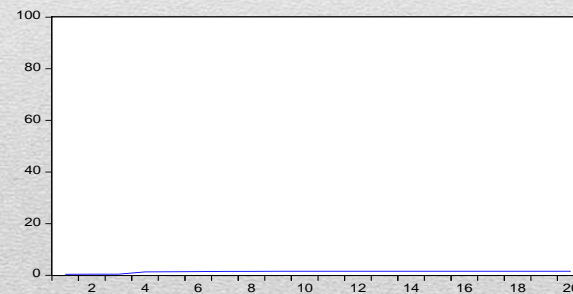


Fig. 2.2b: Real exchange rate under flexible regime

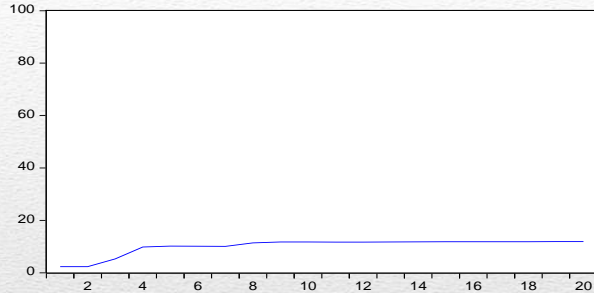
Percent DLREALER\*(ERR2=1) variance due to Shock1



## Figure 2: Percent variance of variables due to the foreign demand shocks

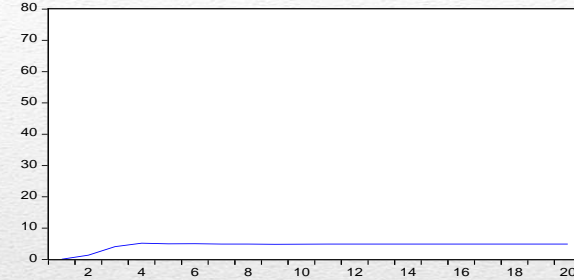
**Fig. 2.3a: CPI under fixed regime**

Percent  $DL CPI^*(ERR2=0)$  variance due to Shock1



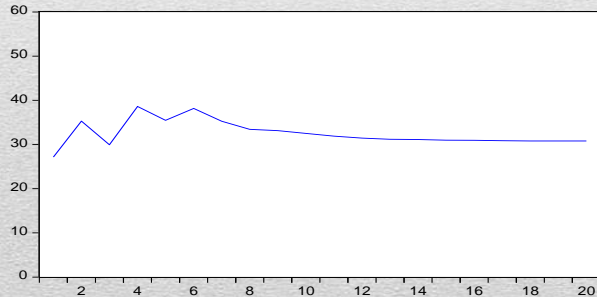
**Fig. 2.3b: CPI under flexible regime**

Percent  $DL CPI^*(ERR2=1)$  variance due to Shock1



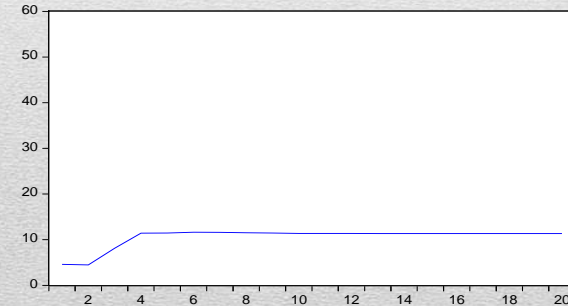
**Fig. 2.4a: Income gap under fixed regime**

Percent  $D(IGPPP)^*(ERR2=0)$  variance due to Shock1



**Fig. 2.4b: Income gap under flexible regime**

Percent  $D(IGPPP)^*(ERR2=1)$  variance due to Shock1



# POLICY IMPLICATIONS

Criteria	Optimal ERR
Real output, real exchange rate	Fixed exchange rate regime
Inflation	Flexible exchange rate regime
Income gap	Flexible exchange rate regime

Fixed ERR	Consider the unanticipated foreign demand shocks
Flexible ERR	Foreign demand shocks are not important.