

**Remittances and Financial Depth in Asian Countries:
Impact on Financial Sectors and Policy Implications**

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March 2009

Presentation: Professor Katsushi Tabata, Ph.D.

Contributions of this study 1

How remittances significantly contribute to Asian economic stability and growth ?

◆ Method

DSGE (Dynamic Stochastic General Equilibrium) is applied

◆ Reference

(1) IMF Working Paper(2006) by Ralph Chami et al Chile and USA

(2) IMF Working Paper(2005) by Robert Burgess Philippines

...Limited macro economic study on remittances in Asia

Contributions of this study 2

Attempt in finding following prepositions:

- Remittances will increase capital formation
- Capital formation effect depends on financial depth
- Economic significance of remittance securitization

Definition of Capital formation:

Fixed Capital Investment

Contributions of this study 3

➤ **Policy Implications for Asian countries**

- ✓ To strengthen financial development via bond issuance and securitization
- ✓ To control exchange rate appreciation impacts by central banks
- ✓ To promote infrastructures and policies for the immigrant from the long term views

➤ **Some examples of utilizing international activities**

- ✓ Basic education for financial instruments
- ✓ International remittance payment system
- ✓ Asian Bond Market Initiative (ABMI) Framework

Motivation of this study 1

Facts:

- ✓ Remittances become one of big channels of international capital transactions.
- ✓ The effect of remittances \doteq the effect of FDI+Portfolio Investment

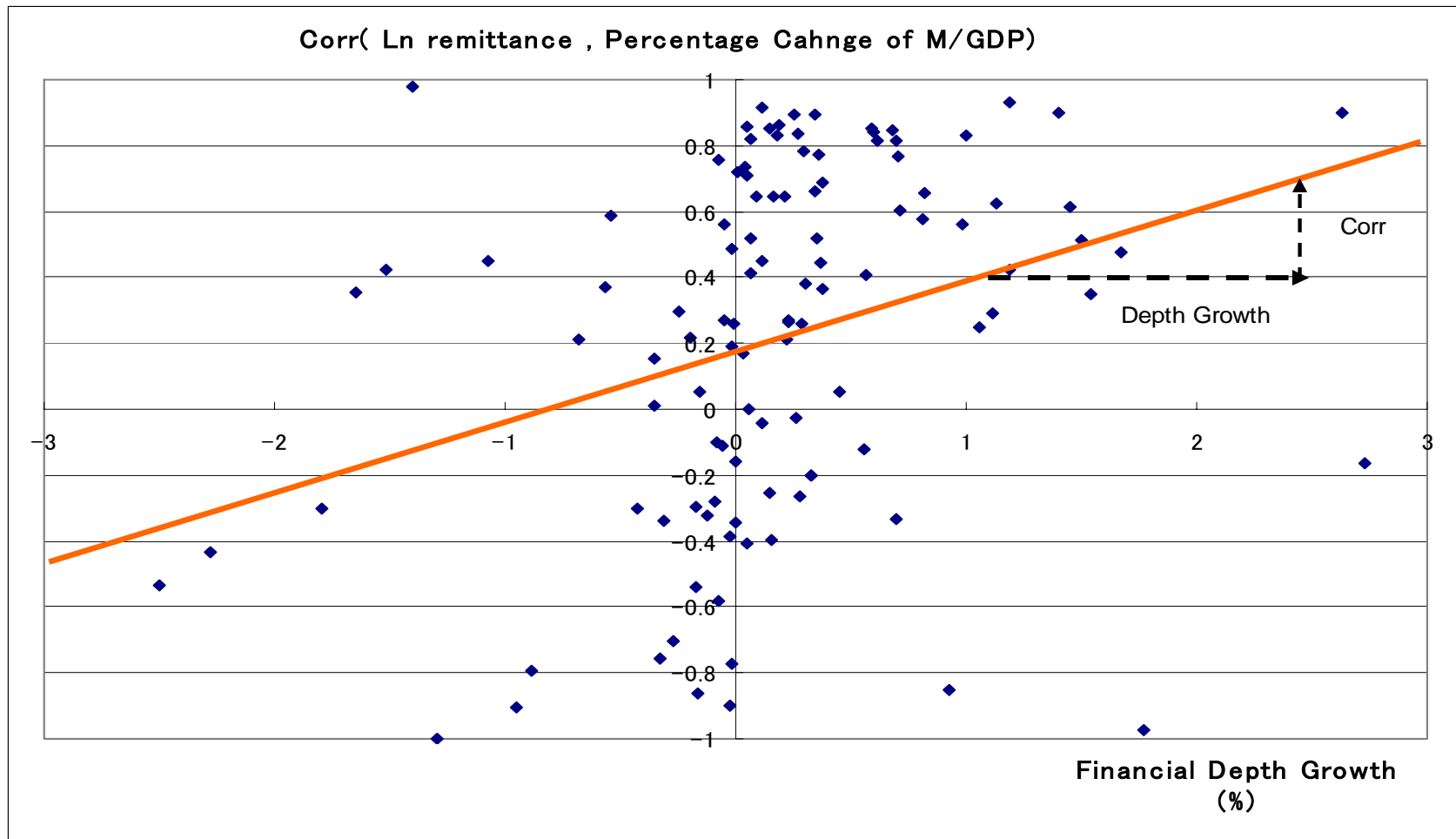
Dependent Variables : Economic Growth

FDI	0.0059	↕ 0.0289 ↕
Equity	0.0143	
Bond	0.0087	
Remittance	0.0270	

(Data Source) Japan, Korea, Malaysia, Philippines, PRC, Thailand, USA

Motivation of this study 2

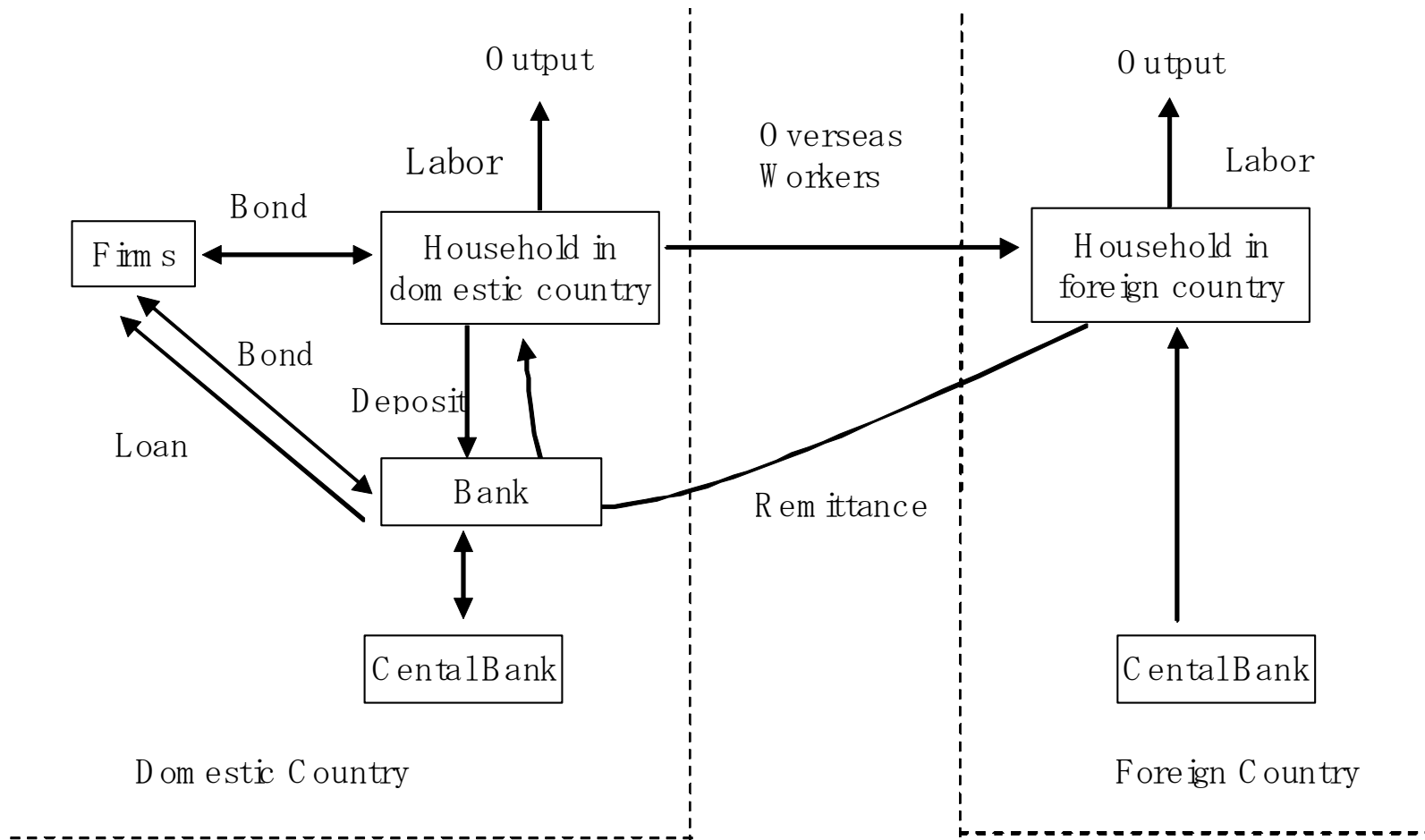
Impact of remittances is amplified by financial depth





DSGE Model Setup

Remittances flow chart



DSGE Model Setup: Household Sector

Optimization

Assumption: Maximum Expected Utility Function

$$\begin{aligned} & \underset{C_{1t}, C_{2t}, N_t; remit_t, M_t}{Max} \quad \beta^{t-1} \sum_{t=0}^{\infty} EU_t \\ & = \beta^{t-1} \sum_{t=0}^{\infty} E \left(a_1 \log C_{1t} + a_2 \log C_{2t} - \log N_t + \log(remit_t) + \chi \log\left(\frac{M_t}{P_t}\right) \right) \end{aligned}$$

Subject To

(Restriction 1) The amount of remittances

$$remit_t \leq P_{2t} Y_t^* - P_{2t} C_{2t}$$

(Restriction 2) Money Balance of household sector

$$\begin{aligned} & K_t - (1 - \sigma)K_{t-1} + P_{1t} C_{1t} + M_t + P_{Bt} B_t + T_t \\ & \leq P_{t-1} Y_{t-1} + M_{t-1} + P_{Bt-1} B_{t-1} + S_{t-1} \times remit_{t-1} \end{aligned}$$

DSGE Model Setup: Financial Sector

Subject to balance sheet

$$L + B + \text{Reserve} = D + \text{Remit} + \text{Capital}$$

Loan (L)	Deposit (D)
	Remittance (Remit)
Bond (B)	Capital
Reserve	

DSGE Model Estimation

Deep Parameter set

← **Prior**

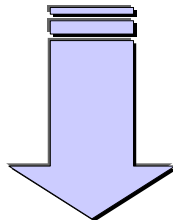


Bayesian Estimation

DSGE Model Estimation

← **Posterior based on**

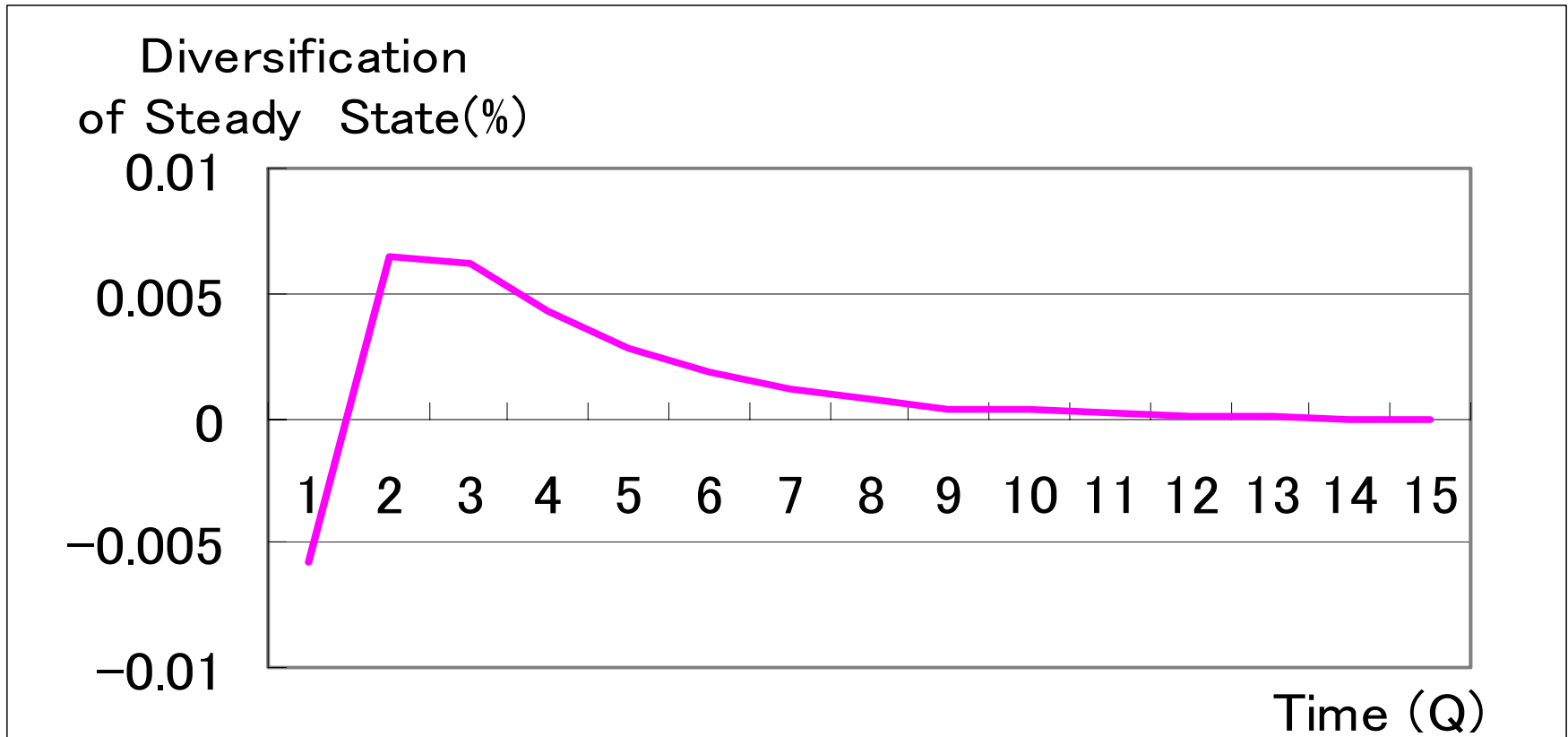
Philippines Data (81.1Q-2008.1Q)



Impulse Response

Result 1

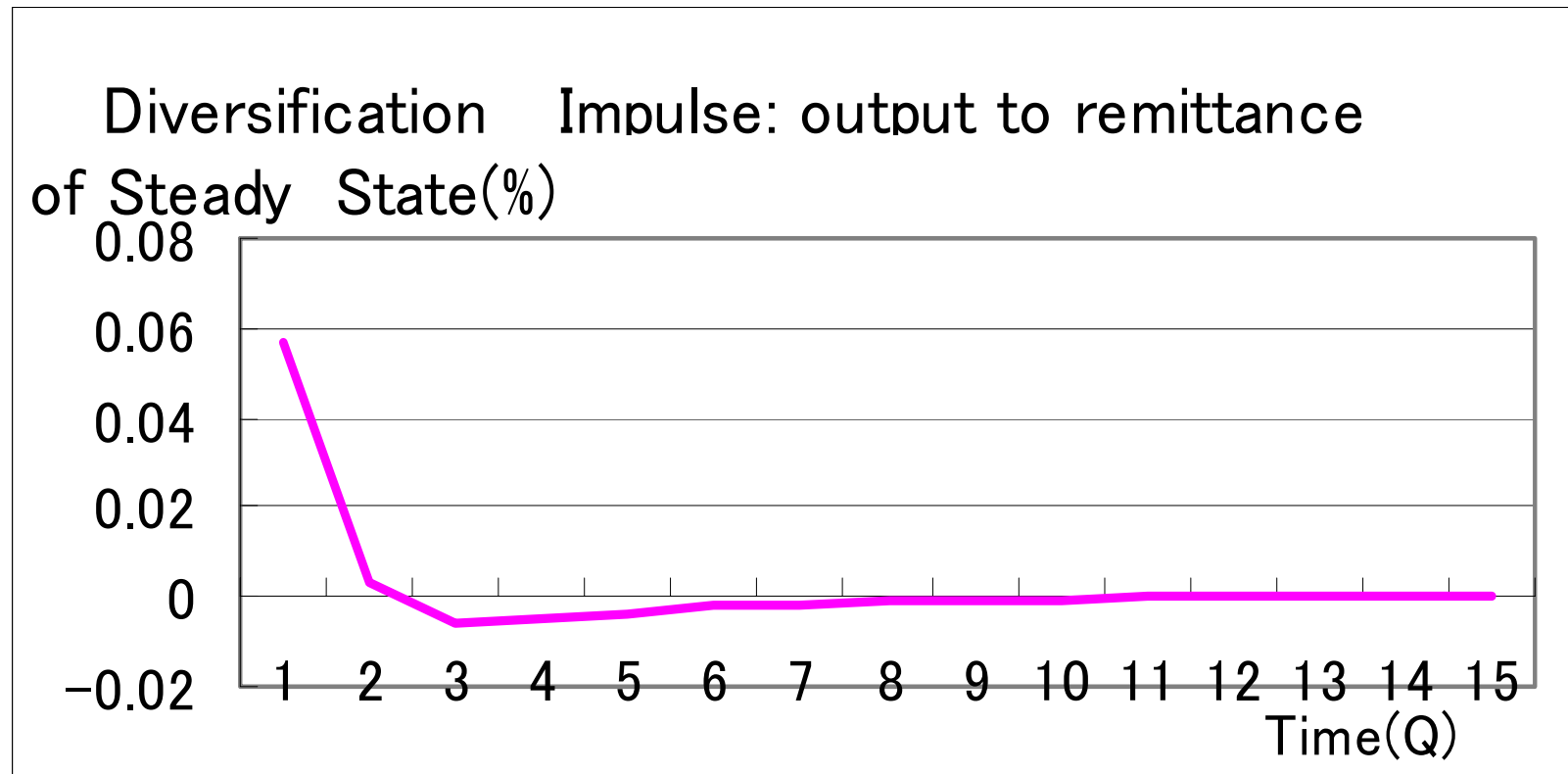
Impulse of Consumption to Remittances \Rightarrow
Positive effect on Consumption



Result 2

Impulse of Output to Remittances \Rightarrow

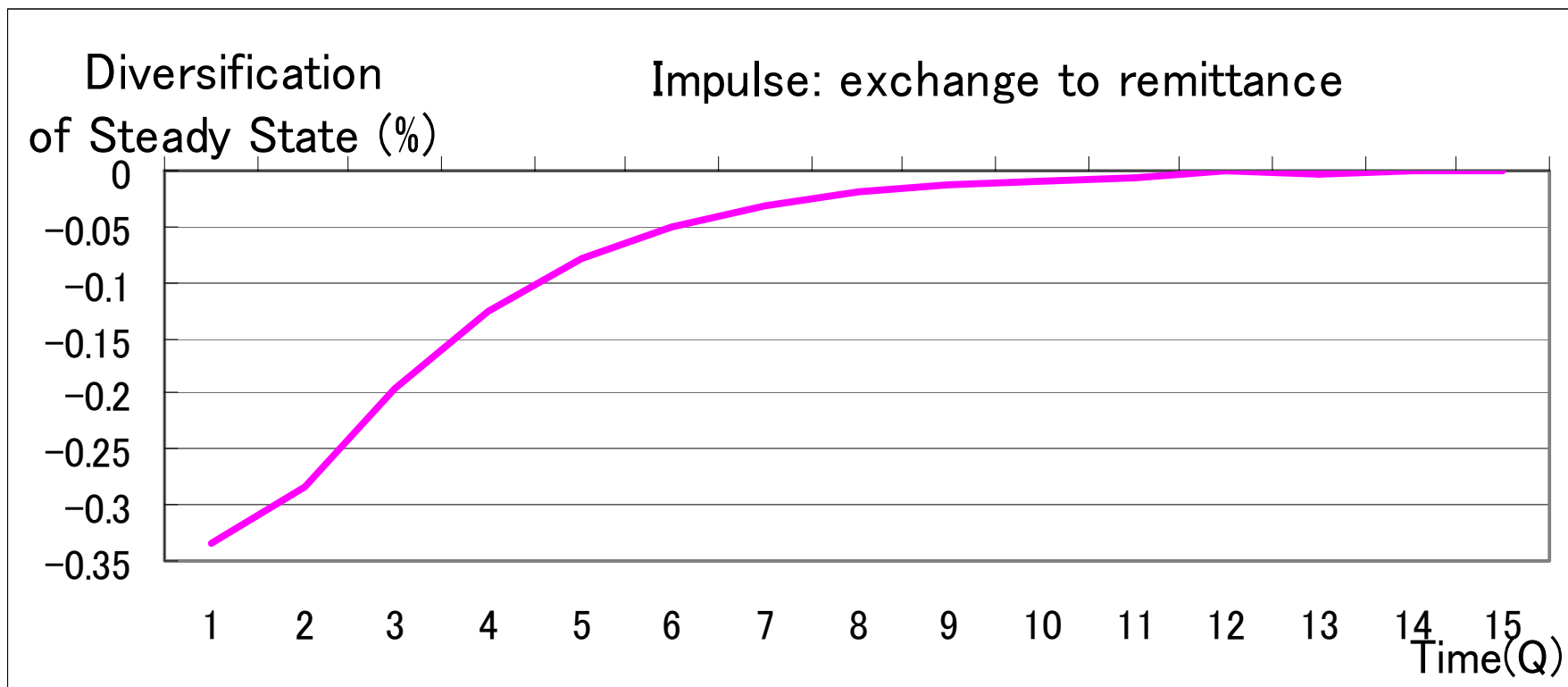
Fail to confirm the Counter -Cyclical with output





Result 3

Impulse of Exchange rate to Remittances \Rightarrow
appreciated effect on exchange rate

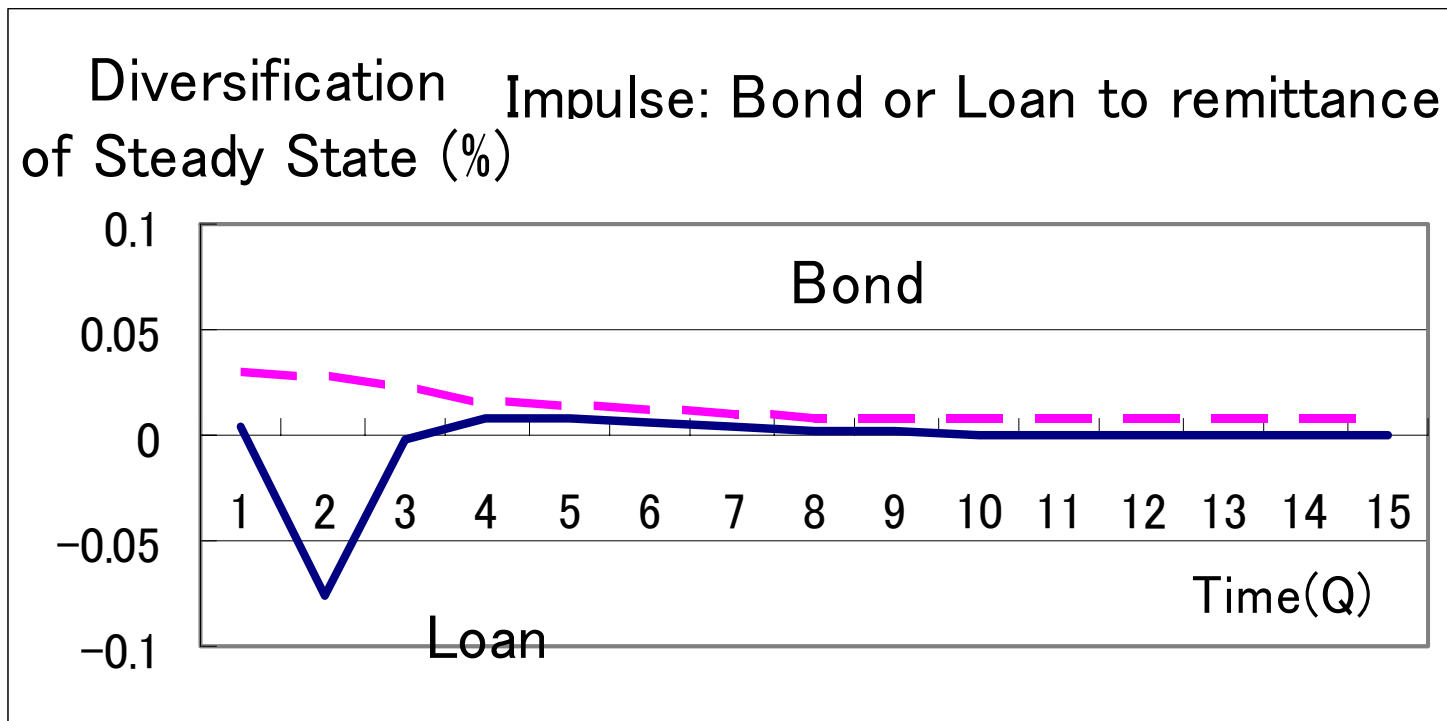




Result 4

Impulse of Loan and Bond to Remittances \Rightarrow

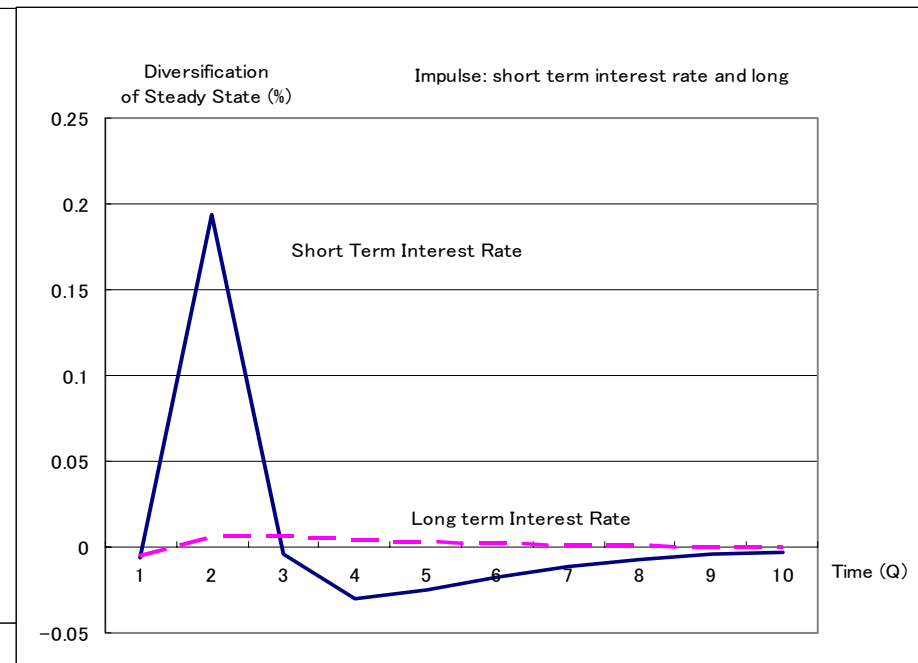
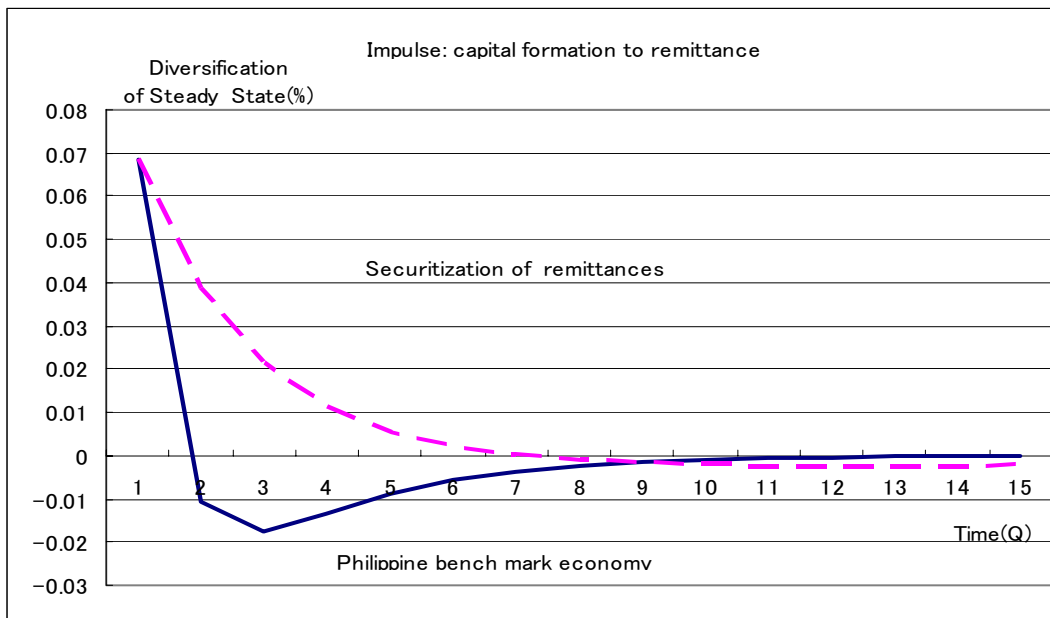
from Loan to Bond effect



Remittance Securitizations

Assumptions:

- Securitization of remittances will bring persistent remittance stocks
- It will contribute to stabilize the long-term interest rate

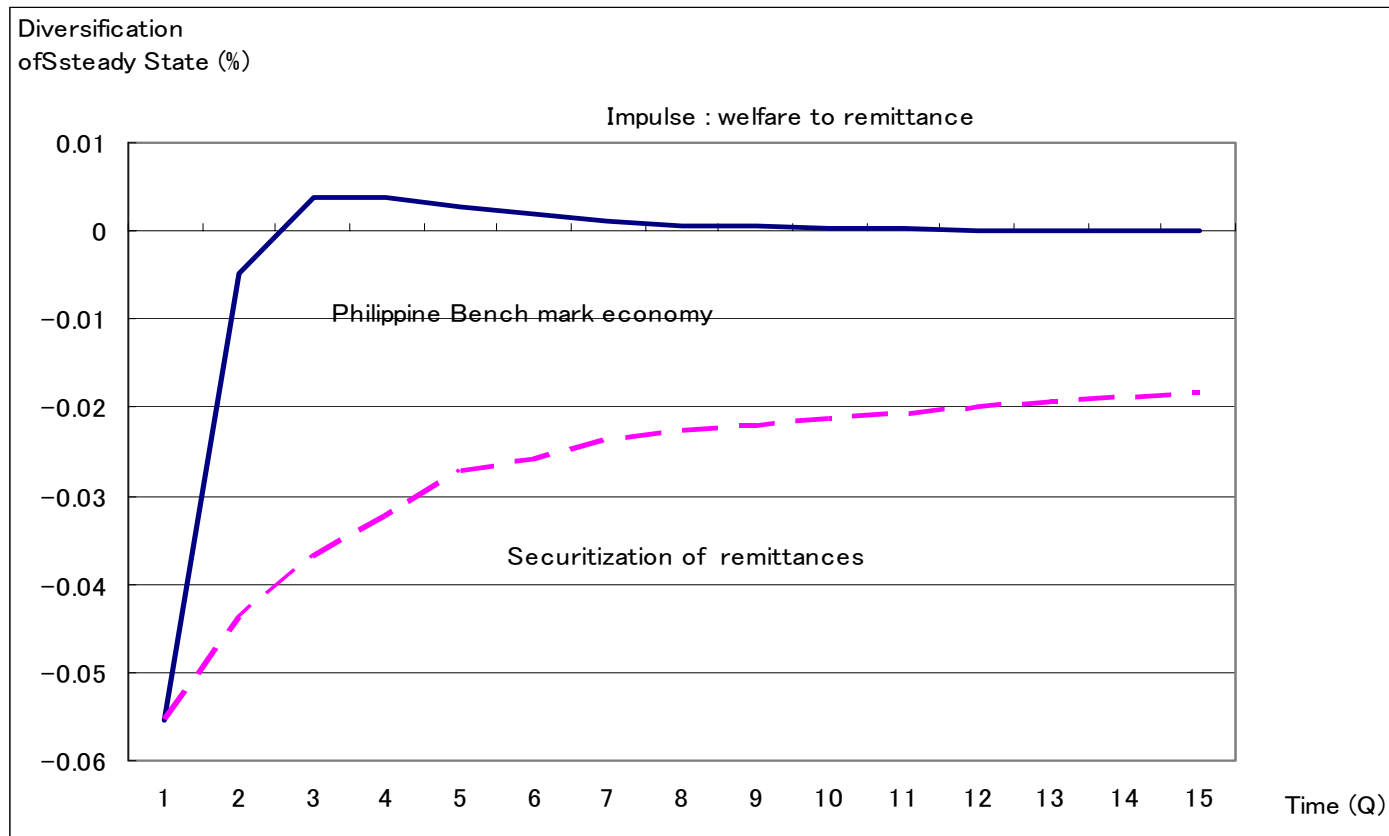


Welfare Analysis : Basic Idea 1

Definition of Welfare

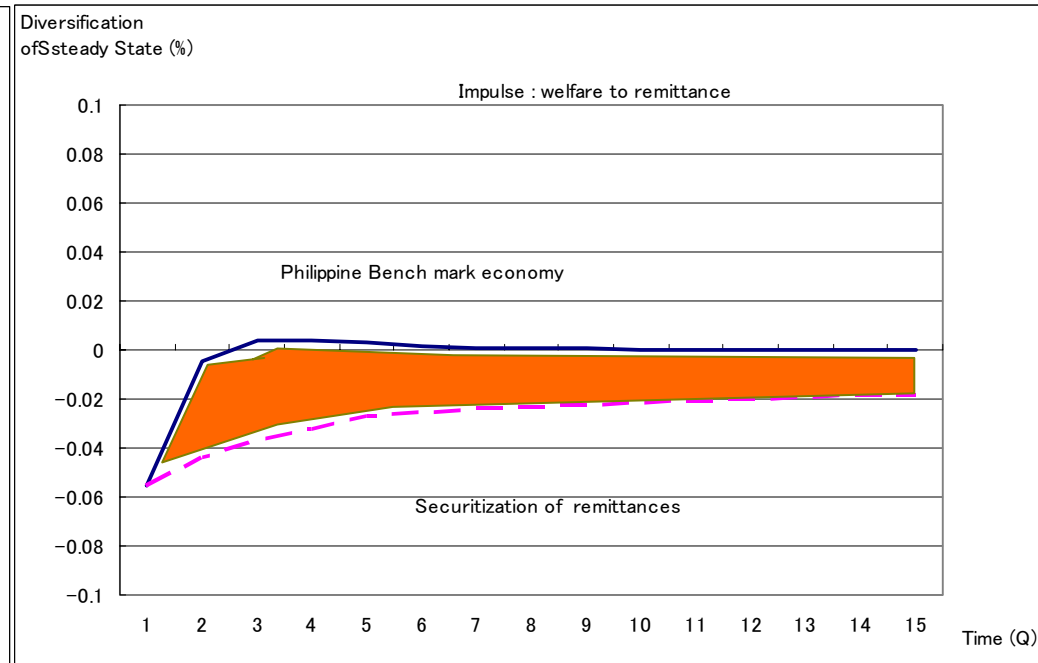
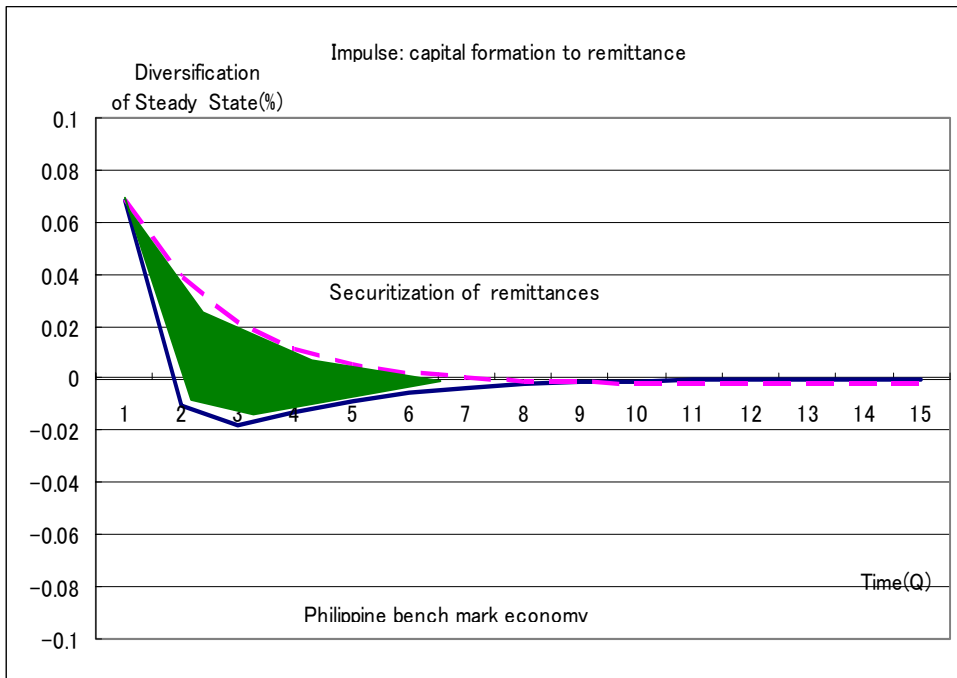
(Utility Increase of Consumption by remittances)

– (Disutility Increase of Labor by remittances)



Welfare Analysis : Basic Idea 2

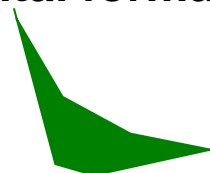
Government should seek for securitizing remittances in order to strengthen capital formation



Increase of capital formation

=

Loss of Welfare



Policy Implications

- **Financial depth supports at certain levels of economic development**
- **Strengthen transparency and importance of market regulations**
- **Corresponding to increase in remittance flows in Asian corridors, further enhancement of regional cooperation**
- **Include remittances as an issue in exchange of policy dialogs amongst Asian countries**
- **Promote financial market development through securitization**
- **Promote further recognition and studies on labor and immigration policies and regional coordination**

Additional Argument: Robustness of Our Estimations

◆ Method:

FAVAR by Stock and Watson(2002), Bernanke, Boivin and Elias(2002)

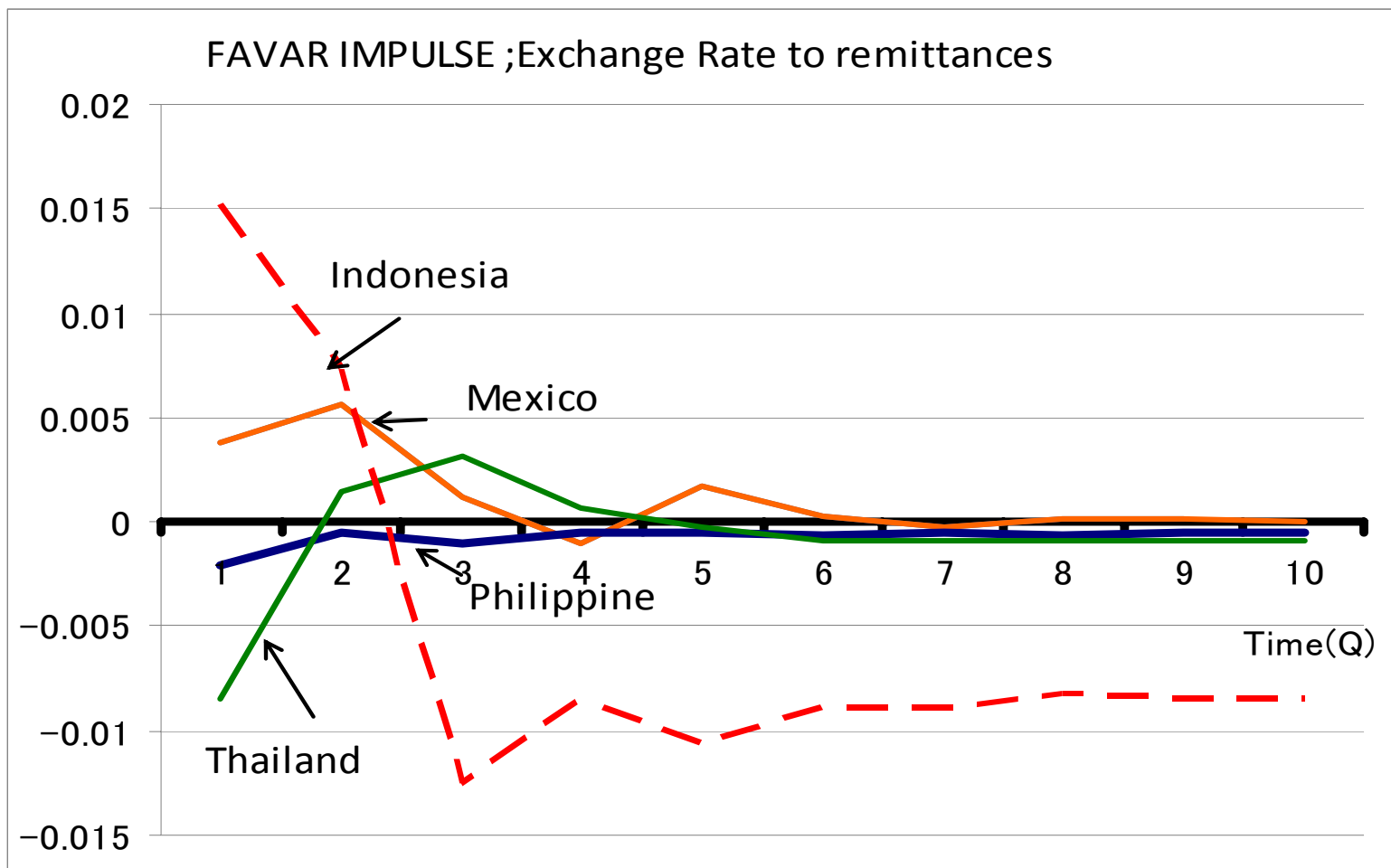
◆ Application:

(First Step) Make composite factors in order to capture invisible factors

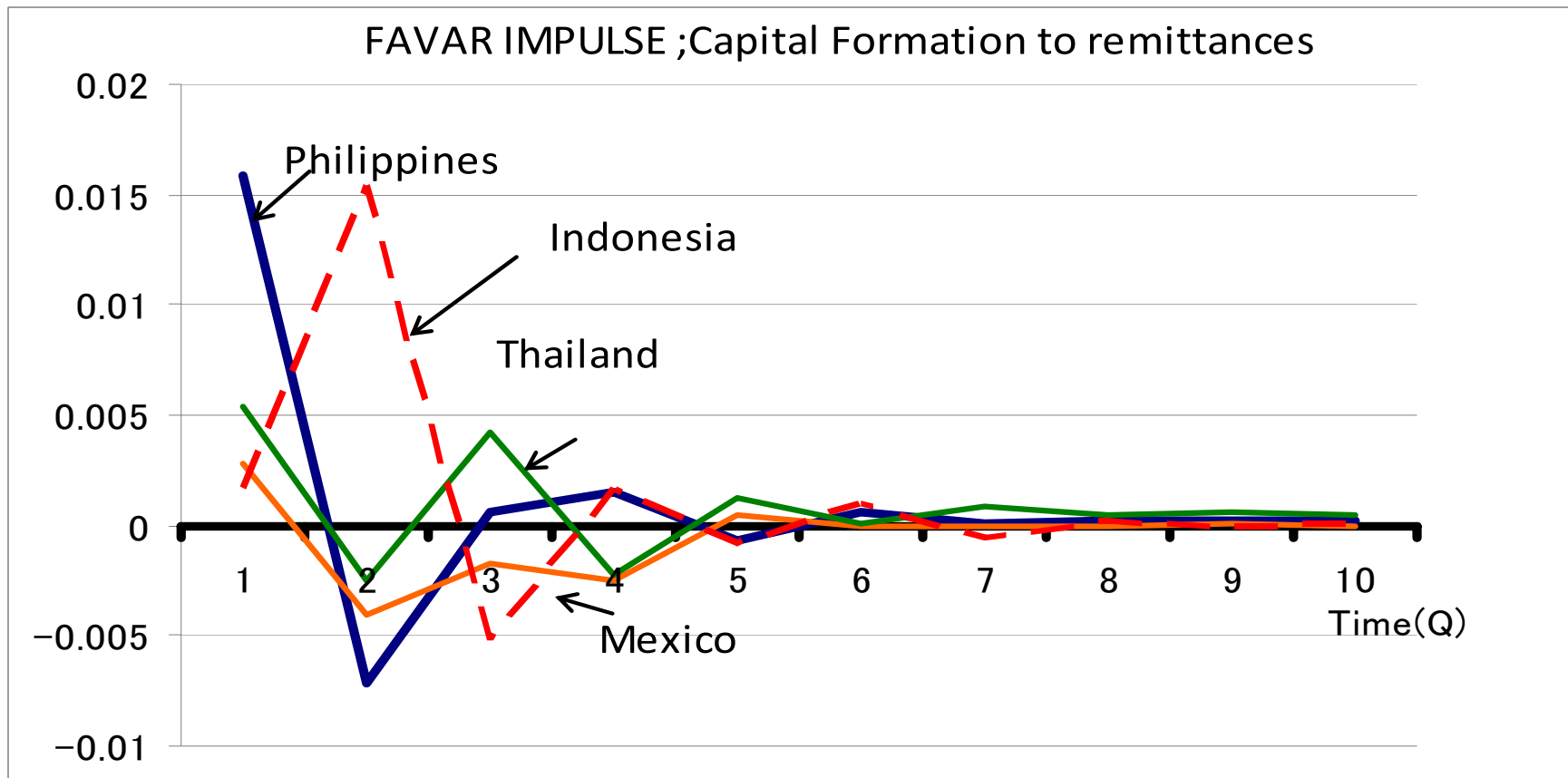
(Second Step) VAR Analysis with factors and Key factors remittance

Composite factors consist of following quarterly data: remittances, capital formation, real consumption, exchange rate, Foreign Direct Investment, Money/nominal GDP

Robustness Check 1 using FAVAR: Exchange Rate



Robustness Check 2 using FAVAR: Capital Formation



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Thank you