BSP International Research Conference on Remittances

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

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


…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

- **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 ≒ the effect of FDI + Portfolio Investment

<table>
<thead>
<tr>
<th>Dependent Variables</th>
<th>Economic Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDI</td>
<td>0.0059</td>
</tr>
<tr>
<td>Equity</td>
<td>0.0143</td>
</tr>
<tr>
<td>Bond</td>
<td>0.0087</td>
</tr>
<tr>
<td>Remittace</td>
<td>0.0270</td>
</tr>
</tbody>
</table>

(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

- Household in domestic country
  - Labor
  - Output
  - Loan
  - Bond
  - Deposit
  - Bank
  - Central Bank

- Household in foreign country
  - Overseas Workers
  - Labor
  - Output

- Firms
  - Bond

- Domestic Country

- Foreign Country

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DSGE Model Setup: Household Sector

Optimization

Assumption: Maximum Expected Utility Function

\[
\begin{align*}
\text{Max}_{C_1, C_2, N_t, \text{remit}_t, M_t} & \quad \beta^{t-1} \sum_{t=0}^{\infty} EU_t \\
= & \beta^{t-1} \sum_{t=0}^{\infty} E \left( a_1 \log C_{1t} + a_2 \log C_{2t} - \log N_t + \log(\text{remit}_t) + \chi \log \left( \frac{M_t}{P_t} \right) \right)
\end{align*}
\]

Subject To

(Restriction 1) The amount of remittances

\[ \text{remit}_t \leq P_{2t} Y^*_t - P_{2t} C_{2t} \]

(Restriction 2) Money Balance of household sector

\[
\begin{align*}
K_t - (1 - \sigma)K_{t-1} + P_{1t} C_{1t} + M_t + P_{Bt} B_t + T_t \\
\leq P_{t-1} Y_{t-1} + M_{t-1} + P_{Bt-1} B_{t-1} + S_{t-1} \times \text{remit}_{t-1}
\end{align*}
\]
DSGE Model Setup: Financial Sector

Subject to balance sheet

\[ L + B + \text{Reserve} = D + \text{Remit} + \text{Capital} \]
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 ⇒
Positive effect on Consumption

Diversification of Steady State (%)

Time (Q)
Result 2

Impulse of Output to Remittances $\Rightarrow$

Fail to confirm the Counter-Cyclical with output

Diversification Impulse: output to remittance of Steady State($\%$)

Time(Q)

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Result 3

Impulse of Exchange rate to Remittances ⇒
appreciated effect on exchange rate

Diversification of Steady State (%)

Impulse: exchange to remittance

Time (Q)
Result 4

Impulse of Loan and Bond to Remittances ⇒

from Loan to Bond effect

Diversification of Steady State (%)

Impulse: Bond or Loan to remittance

Bond

Loan

Time (Q)
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:


◆ 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

FAVAR IMPULSE; Exchange Rate to remittances

- Indonesia
- Mexico
- Philippine
- Thailand
Robustness Check 2 using FAVAR: Capital Formation

FAVAR IMPULSE; Capital Formation to remittances

- Philippines
- Indonesia
- Thailand
- Mexico

Time (Q)
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Thank you