Financial Integration and External Spillovers

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Outline

• Evolution of financial integration in Asia
  – Quantity and price indicators

• Role of external shocks
  – Importance and transmission mechanism

• Main messages and policy recommendations
Financial Integration in Asia

Cross-border Portfolio Asset Holdings, Developing Asia, $ billion

Note: Developing Asia consists of the 48 regional members of ADB, excluding Australia, Japan and New Zealand (15 reporting countries)
Source: ADB calculation using data from Coordinated Portfolio Investment Survey, International Monetary Fund.
Financial Integration in Asia

Cross-border Portfolio Liability Holdings, Developing Asia, $ billion

Note: Developing Asia consists of the 48 regional members of ADB, excluding Australia, Japan and New Zealand. (15 reporting countries)
Source: ADB calculation using data from Coordinated Portfolio Investment Survey, International Monetary Fund.
Financial Integration in Asia

Cross-border Portfolio Asset Holdings, Developing Asia, (% GDP)

Note: Developing Asia consists of the 48 regional members of ADB, excluding Australia, Japan and New Zealand.
Source: ADB calculation using data from Coordinated Portfolio Investment Survey, World Economic Outlook database, International Monetary Fund; and CEIC.
# Financial Integration in Asia

**Average Simple Correlation of Index Weekly Returns**

<table>
<thead>
<tr>
<th>Stock Prices</th>
<th>Bonds</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre-AFC</strong> 1Q1990-1Q1997</td>
<td><strong>Pre-GFC</strong> 1Q1999-3Q2007</td>
</tr>
<tr>
<td>Asia-Asia</td>
<td>0.16</td>
</tr>
<tr>
<td>Asia-Japan</td>
<td>0.15</td>
</tr>
<tr>
<td>Asia-PRC</td>
<td>0.03</td>
</tr>
<tr>
<td>Asia-EU</td>
<td>–</td>
</tr>
<tr>
<td>Asia-US</td>
<td>0.20</td>
</tr>
</tbody>
</table>

GFC: global financial crisis; PRC: People's Republic of China; EU: European Union; US: United States

Asia includes:
- Bonds: Australia, PRC, Japan, Indonesia, India, Republic of Korea, Malaysia, Philippines, Singapore and Thailand.
- Stock prices: Bangladesh; PRC; Georgia; Hong Kong, China; India; Indonesia; Japan; Kazakhstan; Kyrgyz Republic; Korea, Rep. of; Lao PDR; Malaysia; Mongolia; Nepal; New Zealand; Pakistan; Philippines; Singapore; Sri Lanka; Taipei, China; Thailand; and Viet Nam.

For stock prices, Asia includes Australia; Source: ADB calculation using Bloomberg, CEIC, Stooq and World Development Indicators, World Bank.
Conditional Correlations of Bond Markets, Asia with select economies and regions

PRC = People's Republic of China; JPN = Japan; EU = European Union; US = United States.
Asia includes Australia; PRC; India; Indonesia; Japan; Korea, Rep. of; Malaysia; Philippines; Singapore; and Thailand.
Source: ADB calculation using Bloomberg.
Financial Integration in Asia

Conditional Correlations of Equity Markets, Asia with select economies and regions

AFC = Asian Financial Crisis; PRC = People’s Republic of China; JPN = Japan; EU = European Union; US = United States; SARS = Severe Acute Respiratory Syndrome.

Asia includes Australia; Bangladesh; PRC; Georgia; Hong Kong, China; India; Indonesia; Japan; Kazakhstan; Kyrgyz Republic; Korea, Rep. of; Lao PDR; Malaysia; Mongolia; Nepal; New Zealand; Pakistan; Philippines; Singapore; Sri Lanka; Taipei, China; Thailand; and Viet Nam.

Source: ADB calculation using Bloomberg, CEIC and Stooq.
Role of External Shocks

Research Questions:

• What are the determinants of Asian economies’ business cycle variations and how did they change over time?

• What are the effects of external shocks to Asian economies and how important is their relative contribution to Asian business cycles’ variations?

Analytical Tool:

• Vector-autoregressive model using quarterly data of 10 Asian economies, applying a sample split pre-GFC (2001Q1 to 2008Q1) and post-GFC (2011Q1 to 2016Q2)

• External shocks: US monetary policy shocks, US+ PRC growth shocks and global volatility shocks
External Shocks: Impulse Responses

**Fig: Response to Real GDP growth shock in the US**
(normalized to a 1 percentage point rise in US growth)

**Fig: Response to Real GDP growth shock in the PRC**
(percentage point response to a 1 standard deviation rise in PRC)

**Fig: Response to Higher Global Volatility**
(normalized to a 1 unit rise in the VIX index)

**Fig: Response to US monetary policy changes**
(normalized to a 100 basis point rise in US Federal Funds Futures)
External Shocks: Variance Decompositions of Asian Output Growth

Pre-GFC

Post-GFC

US Factor - GDP  US Factor - MP  PRC  VIX  Local
Key Messages

• Asia’s financial markets continue to become more integrated both within the region as well as globally

• The degree of integration differs across financial markets:
  
  ➢ Equity markets: more globally integrated than regionally

  ➢ Debt markets: exhibit a stronger regional comovement, which got particularly pronounced since the Taper Tantrum

• Decreasing contribution of US factors in driving Asian economies’ business cycles, while PRC’s role increased after the GFC
Policy Recommendations

• Financial integration results in increasingly interconnected financial markets, which may lead to additional vulnerabilities through risks arising from spillover effects and heightened global financial volatility.
  
  ➢ Highlights the importance of building up economic resilience

• Potential policy measures:
  
  ➢ Assuring an adequate level of fiscal space for countercyclical fiscal policy responses
  
  ➢ Reducing macroeconomic and financial vulnerabilities with more effective macroprudential measures and financial regulations
  
  ➢ Growing role for regional institutions to monitor macroeconomic and financial conditions and provide a financial safety nets
Thank you very much
Appendix: SVAR Model Specification

Reduced form model:

\[
\begin{pmatrix} X_t \\ Y_t \end{pmatrix} = C + \sum_{i=1}^{p} A_i \begin{pmatrix} X_{t-i} \\ Y_{t-i} \end{pmatrix} + U_t
\]

- Identification: Choleski Decomposition of \( \Sigma_U \) → recursive ordering
- \( X_t \): External block, contemporaneously exogenous to structural shocks in \( Y_t \)
- \( Y_t \): Internal block, reacts immediately to all shocks