Macro-financial Linkages
- Issues and Challenges -

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I. Increasing Importance of Macro-Financial Linkages (MFLs) (1/4)

- Importance of Macro-Financial Linkages (MFLs) highlighted since global financial crisis
  - **Before**: Shocks amplified through borrowers’ and banks’ balance sheet channels
  - **After**: Procyclicality among economic agents builds up systemic risk

![Diagram showing the increase in importance of MFLs before and after the crisis](image-url)

- Before Crisis:
  - Borrowers’ B/S
  - Banks’ B/S
  - Financial Accelerator
  - Liquidity supply depending on banks’ leverage, maturity mismatches, mark-to-market factors

- After Crisis:
  - Households, Corporations
  - Pro-cyclical Behaviors and Feedback
  - Financial Sector

The diagram illustrates the shift from shocks amplified through balance sheet channels to procyclicality among economic agents, highlighting the increase in importance of macro-financial linkages.
Before: Economic phenomena understood by focusing on the real sector

After: Understanding MFLs essential to promoting sustainable growth

Before Crisis

Real Sector

Intermediation

Financial Institutions

Financial institutions intermediate for real sector

After Crisis

Real Sector

Financial Sector

Sectors interact on equal footing

Financial sector plays important role in economy, just like real sector
I. Increasing Importance of MFLs (3/4)

- Macro-financial delinkages occurring over past few years
  → Financial sector liquidity not flowing into the real sector
- Necessity for central banks to restore normal MFLs, through credit policy, etc.

Now: Macro-financial Delinkage

- Central Bank injects liquidity (by QE, LTRO, Zero interest rate)
- Banks return as reserves
- Delinkage
- Liquidity circulates within financial sector

Households, Corporations
I. Increasing Importance of MFLs (4/4)

- Further research and analysis of MFLs necessary (BIS, 2011)
  - Analyze MFL feedback effects in macro-stress test models, and effects when capital flows included in the models
  - Research on effects of borrowers’ normal balance sheet positions on terms of credit, access to credit, and real economy as a whole
  - Development of models reflecting MFLs’ non-linearity, structural changes, etc.
Macro-financial Linkages, by Type of Financial Intermediation
Identify characteristics of Macro-Financial Linkages (MFLs) by type of financial intermediation, centering on financial sector.
MFLs in credit market show up in form of pro-cyclical behaviors of economic agents

- **Good times**: Credit-related systemic risk gradually accumulates

⇒ Monitor whether or not credit expansion reflects real sector growth
Bad times: Negative interactions between two sectors increase, and credit crunch occurs.

Especially, information asymmetry between banks and corporations rises sharply.

⇒ Appearance of macro-financial delinkages

⇒ Credit policy can provide incentives for banks to increase credit supply.
Ⅱ. MFLs, by Type of Financial Intermediation (4/7)

( Capital Market )

- MFLs in capital market show up indirectly, through changes in value of securities as assets or collaterals

  ✓ Asset price bubbles form and burst, due to herd behavior and speculative funds

    → Volatility of real as well as financial cycle rises
Ⅱ. MFLs, by Type of Financial Intermediation (5/7)

✓ Capital market a pivotal route transmitting overseas shocks to domestic economy

⇒ For emerging countries, more efforts to reduce capital flow volatility needed

**Capital Flow Volatility**

- 1) 12-month moving standard deviations of capital flows in percentages of GDP (annualized)

**Bank Borrowings** and **Business Cycle**

- 1) 12-month moving averages
- 2) Shaded areas indicate cyclical upswings
II. MFLs, by Type of Financial Intermediation (6/7)

(Shadow Banking)

- Shadow banking functions as intermediary similar to traditional banking system, but without public supervision/backstop

- In advanced economies, shadow banking creates high yields through high-leverage strategies
  - In times of crisis, however, shadow banking network structure is too complicated to control
  - Enhancing transparency by public disclosure, applying regulation, and strengthening of monitoring required
In EMEs, shadow banking has complementary functions such as diversifying funding sources, contributing to economic growth, and facilitating financial inclusion.

⇒ Balance of shadow banking’s positive and negative effects should be considered.

**Shadow Banking Shares of Assets**
(as of 2011)

**Degrees of Financial Deepening**
(as of 2012)

Notes: 1) Bonds, Equities, and Bank Assets (% of GDP)
2) NIEs: Newly-industrialized Asian economies
Policy Implications
Central banks now have dual mandates – for price stability and financial stability

Deeper understanding of Macro-financial Linkages (MFLs) a key to successful central bank policy implementation
In Korea, several macroprudential measures already introduced or being considered

- Macroprudential policy tools to mitigate procyclicality → LTV, DTI, and Loan-to-Deposit ratio, as well as credit policy for SMEs
- FX-related macroprudential measures to reduce capital flow volatility → Leverage cap, Macroprudential Stability Levy, Resumption of withholding tax
LTV and DTI regulations have helped to stabilize housing markets, and to keep credit expansion under proper control. (Choongsoo Kim, 2013)
Leverage cap and Macroprudential Stability Levy appear to have contributed to improving the maturity structure of banks’ external debt and reducing the likelihood of sudden stops. (Choongsoo Kim, 2013)

**Maturity Composition of External Debt**

(Domestic banks)  (Foreign bank branches)

Note: 1) Black and green vertical lines refer to dates of introduction of Leverage Cap and Macroprudential Stability Levy
Ⅲ. Policy Implications

◆ Things to bear in mind when introducing macroprudential measures

✓ Differences in Macro-financial linkages between emerging and advanced economies

✓ One size does not fit all.
Thank you!