

Macprudential Policy

- Korea's experiences

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THE BANK OF KOREA

Contents

- Introduction
- FX-related measures
- Housing sector related measures
- Conclusion

Introduction

- Korea has good experience in using macroprudential policies to address financial risks in the housing and FX markets.
- These two markets have been key sources of the systemic risks in Korea with high market volatility
- It was considered inappropriate to contain the looming financial risks in housing or FX market by using monetary policy alone, which affects the broader economy and may be blunt a tool to address localized financial risks
- More targeted policy was called for to achieve both price and financial stability

Introduction

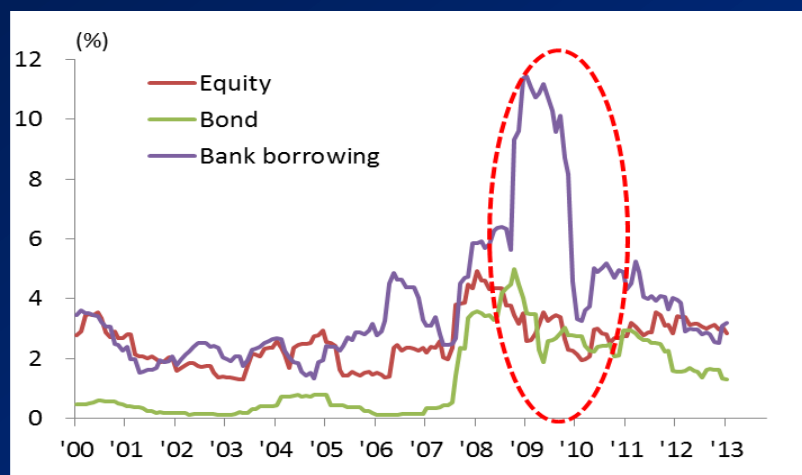
- For systemic risks stemming from capital flows, leverage caps on bank's FX derivatives position and a financial stability levy on non-core FX liabilities of banks were introduced
- For housing market risks, LTV and DTI regulations were deployed with a view to limiting the volume of bank financing of home purchases

FX-RELATED MEASURES

Capital Flow Volatility and Procyclicality

- Capital flows have been volatile and pro-cyclical at the back of high trade and financial openness.

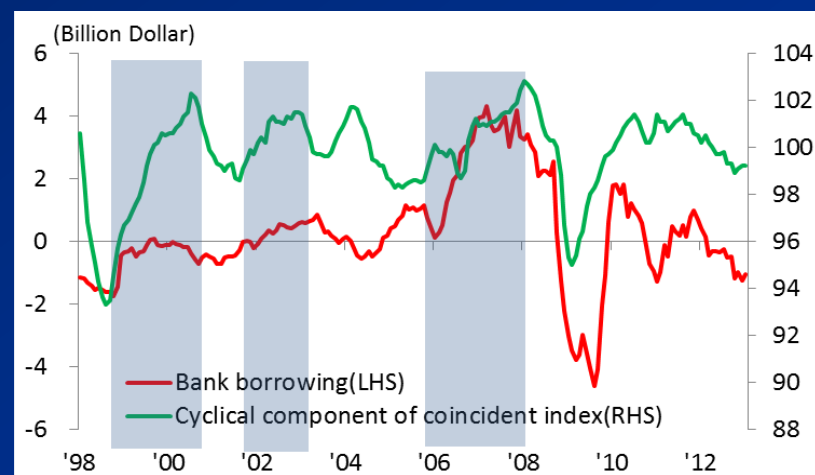
Capital Flow Volatility¹⁾



Note : 1) 12-month moving standard deviation of capital flows in percent of GDP (annualized)

Source: Bank of Korea

Bank Borrowing¹⁾ and Business Cycle



Notes: 1) 12-month moving average

2) Shaded area for cyclical upswings

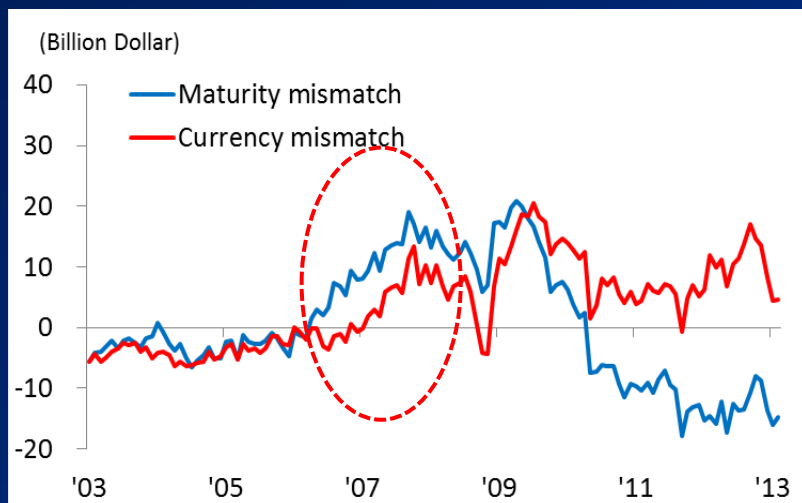
Source: Bank of Korea

Currency/Maturity Mismatches

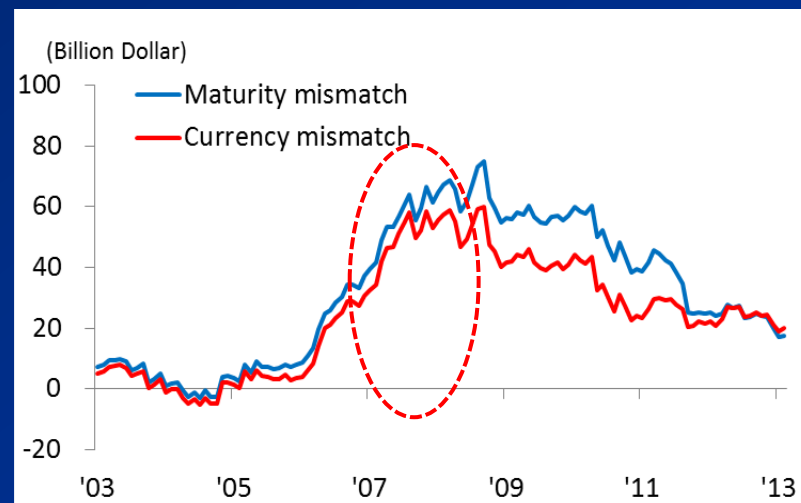
- Large currency and maturity mismatches prior to GFC were key source of systemic risk

Currency and Maturity Mismatches

Domestic Banks



Foreign Bank Branches



Notes: Currency mismatches = foreign liabilities – foreign assets

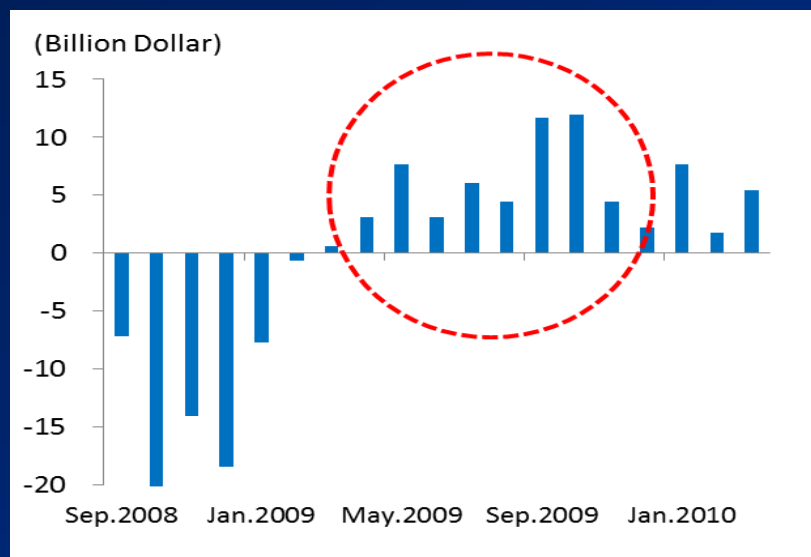
Maturity mismatches = short-term foreign liabilities – short-term foreign assets

Source: Bank of Korea

Post-GFC Inflow Surge

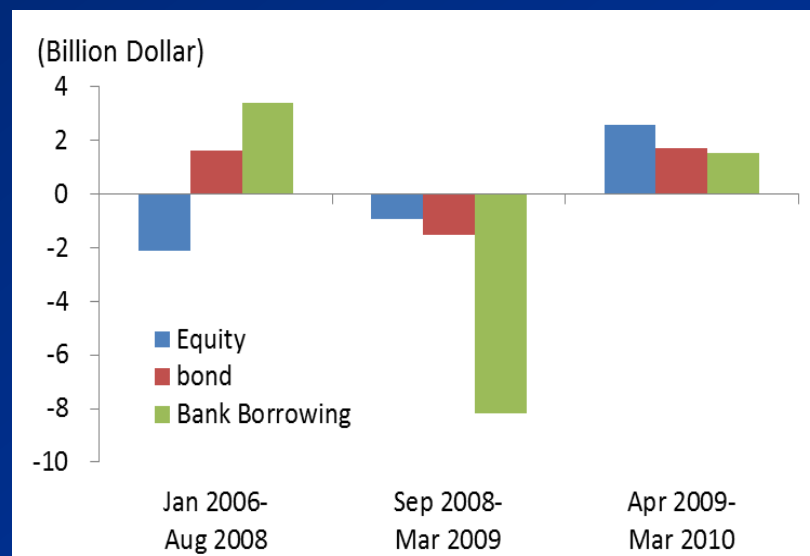
- Resumed inflow surge after GFC (fueled by abundant global liquidity) amid weak domestic recovery

Net Non-FDI Liability Flows



Source : Bank of Korea

Pre- and Post-Crisis Capital Flows (Monthly average)

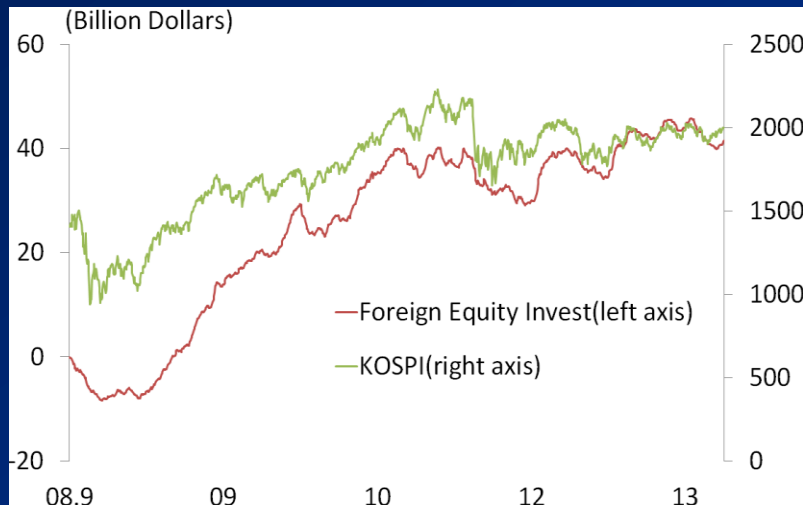


Source : Bank of Korea

Impact on Asset Markets

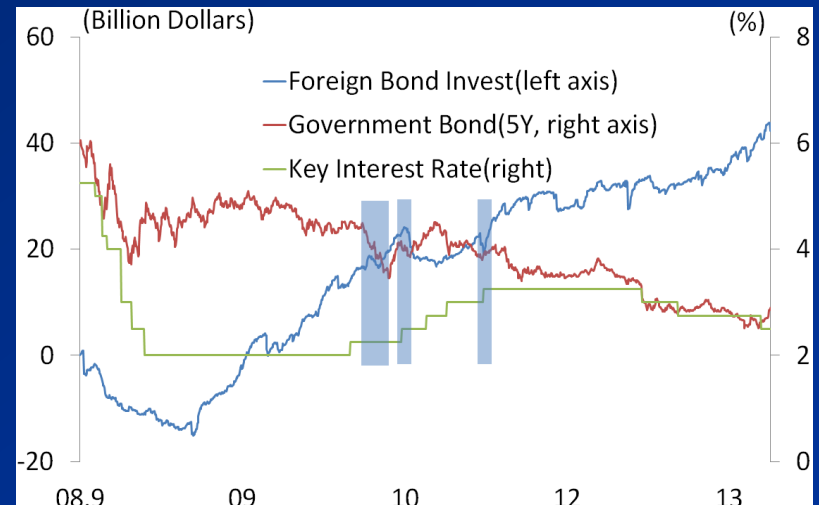
- Domestic asset prices have been affected by large capital inflows
- Vulnerabilities to external shocks still exist

Impact on equity market



Source : BOK, Bloomberg

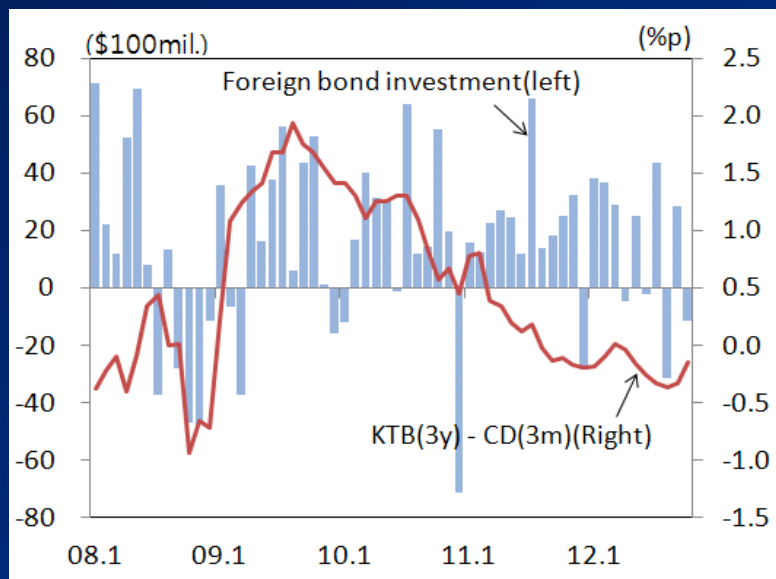
Impact on bond market



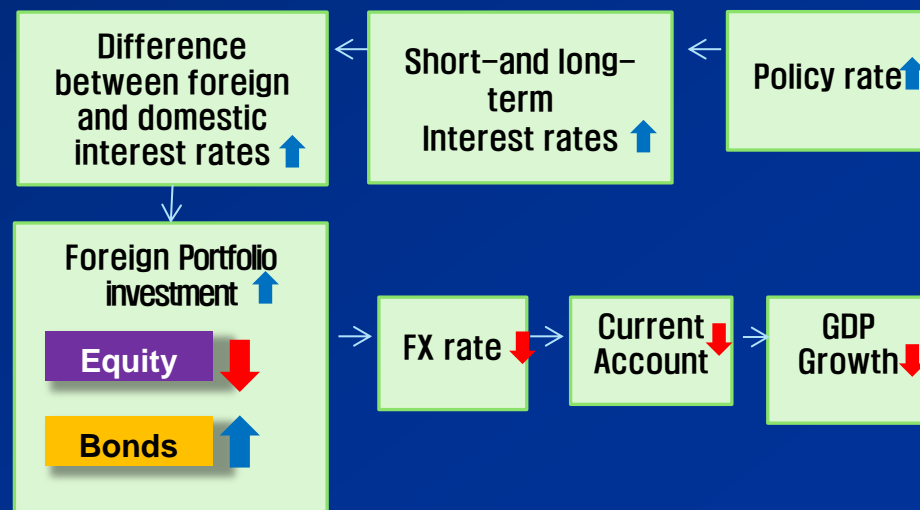
Dislocation of Policy Transmission

- Capital inflows weaken the linkage between short-and long-term interest rates
- Capital inflows disturb the exchange rate channel of monetary policy

Foreign bond investment & differential between short- and long-interest rate



Exchange rate transmission channel of monetary policy



Basic Approach

Within the Current Framework of the Open and Liberalized Economy

Problem to Solve

Capital inflows and outflows...

Scale

Massive

Composition

Mainly STs

Volatility

High

Two Options of Policy Response



Macroeconomic policies



Macroprudential measures

Limitations of Existing Macro- Economic Policies

Limitations of FX Policy

Tool

- Appreciation of currency
- Accumulation of FX reserve

Limits

- ***High cost and low effectiveness of FX market intervention***

Market-determined FX rates, smoothing operation (No target level)

Korea is the 13th largest country in terms of FX turnover

Source : FX Stabilization Fund (Gov't) vs.
Monetary Stabilization Bond (BOK)

Limitations of Existing Macro- Economic Policies

Limitations of Monetary Policy

Tool

- Lower policy interest rate

Limits

- Closely linked with *situations in domestic economy*

Time to *normalize policy interest rate* to tackle *inflationary pressures*

- US Fed funds rate leads Korea's policy interest rate

As *capital market become more globalized*, even economies using a flexible exchange rate system find it harder to *keep their monetary policies independent* from those of other countries

Since 1999, Korea's interest rate moved upward by $\frac{1}{4}$ of the increase in that of the US 2-3 months after it was raised in the US

(Source : Soyoung Kim and Kwanho Shin, "Globalization of capital markets and monetary policy independence in Korea")

Macroprudential Measures

The Need For Macro-Prudential Policies



New Macroprudential Measures

Leverage Cap on FX Derivatives Positions
(October, 2010)



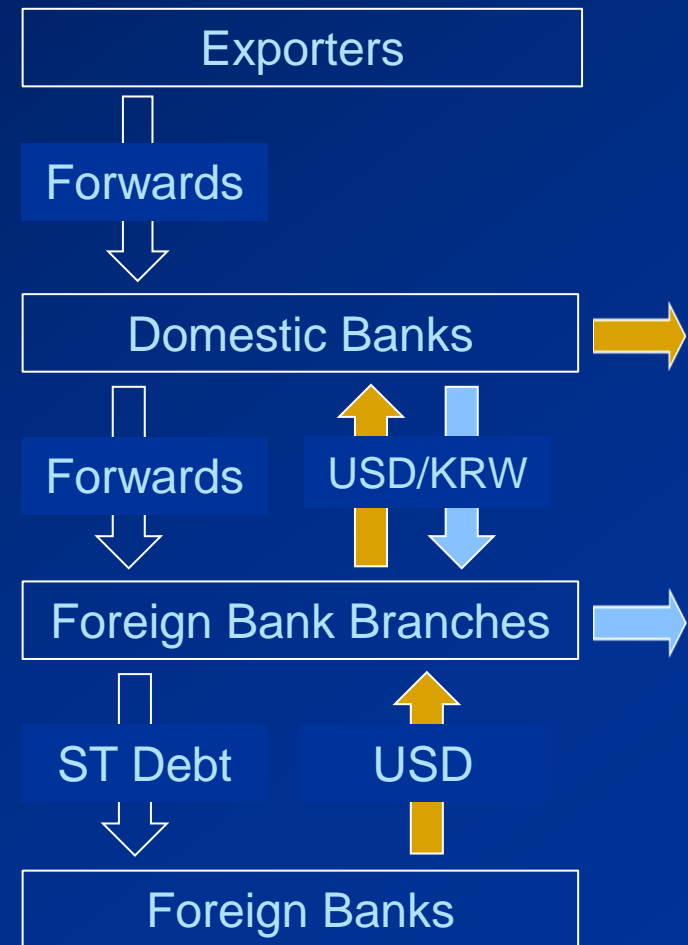
Taxation on Foreigners' Bond Investment
(Reinstated, January, 2011)



Macroprudential Stability Levy
(August, 2011)

Korea-Specific Context

- Exporters sold USD forwards to domestic banks
- Domestic banks hedged them by FX swaps contracts provided by foreign bank branches
- Foreign bank branches provided the USD funds for the swap contracts through ST borrowing
- Increase in ST debt and currency/maturity mismatches



Leverage Cap on Banks' FX Derivatives Position

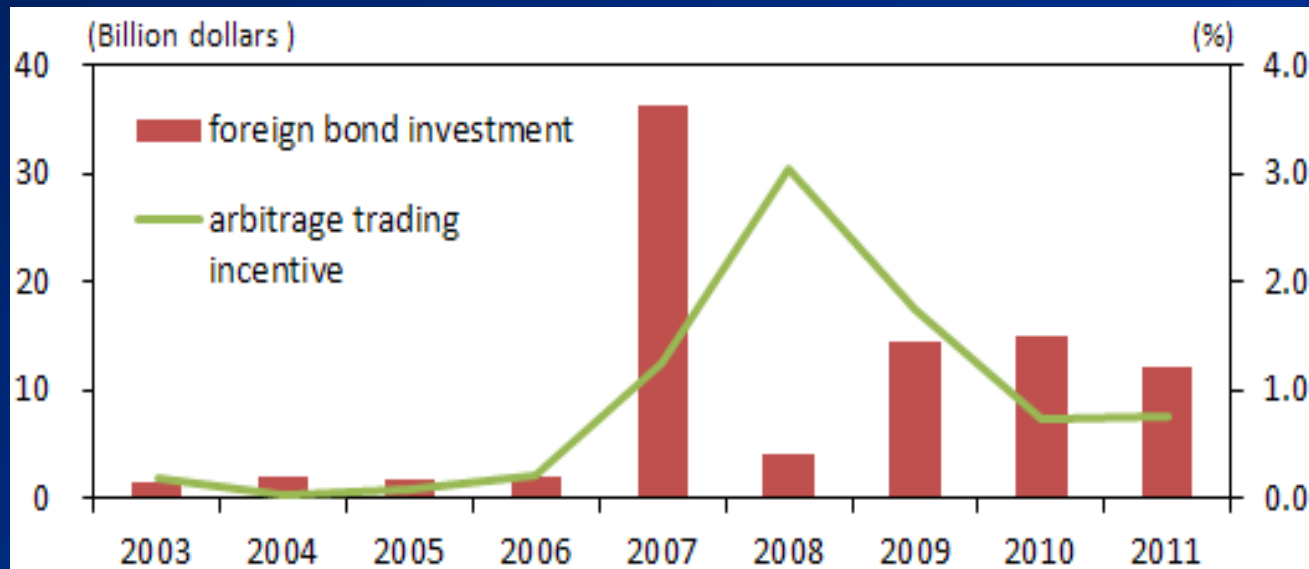
➤ Framework

- ✓ Leverage caps on banks' FX derivatives positions refer to limiting the caps on banks' FX derivative positions to a certain ratio of its equity capital as of the end of the previous month in order to prevent side-effects such as corporations' excessive FX derivative sales and the consequent increase in banks' short-term debt.
- ✓ The caps will be adjusted on a quarterly basis depending on the future economic conditions, market situation, and the impact on the business activities.
- ✓ It was introduced in October, 2010. The initial caps are determined at 50% for domestic banks and 250% for foreign bank branches.

Taxation on Foreign Bond Investment

- Reinstate taxes on foreign bond investment which were previously exempted at the height of global financial crises
- Taxes affect arbitrage incentives

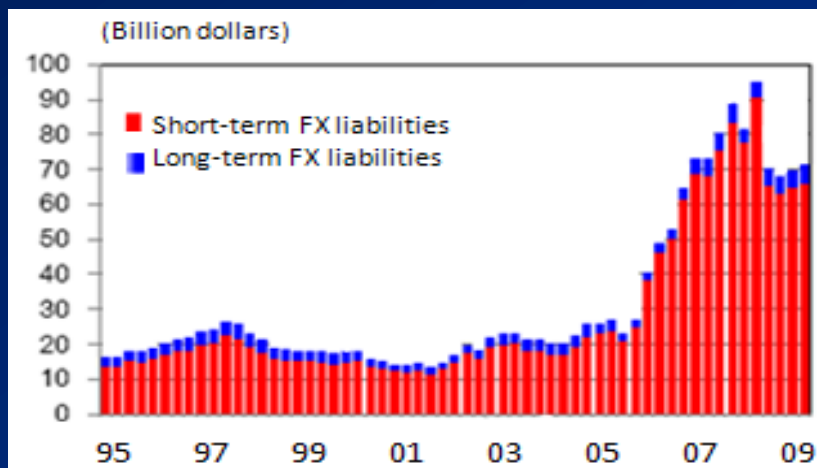
Arbitrage trading incentive and foreign bond investment



Macroprudential Stability Levy

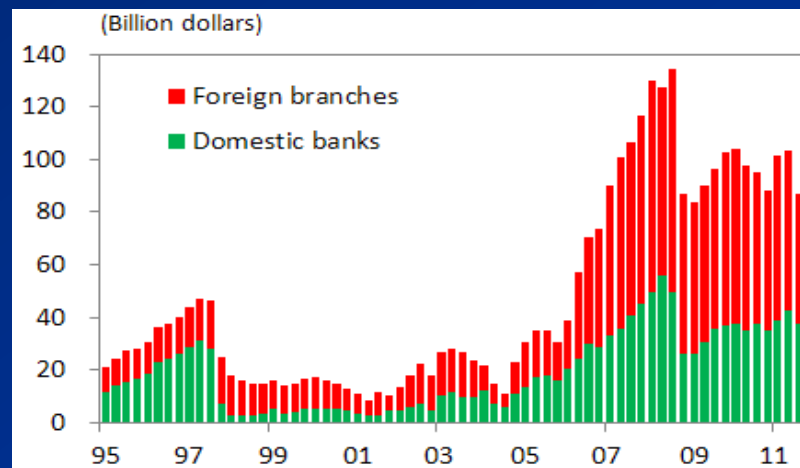
- Aimed at preventing excessive FX borrowing by banks
- Levy imposed on non-core FX liabilities of banks (and saved in a reserve fund for later use when liquidity is scarce)
- Graduated levy schedule by maturity (higher for shorter-term liabilities)

FX liabilities of foreign bank branches



Source: BOK

Net FX liabilities of domestic and foreign banks



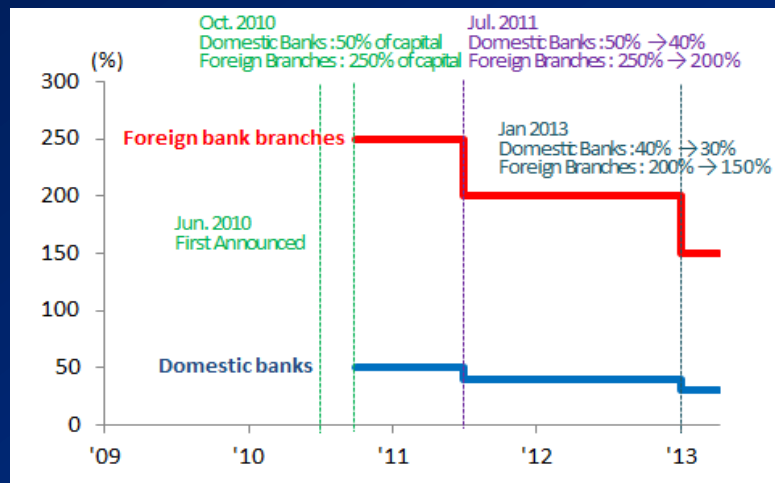
Source: BOK

➤ Banks' non-core liabilities

- ✓ According to Shin(2012), banks have core liabilities, such as deposits, which tend to be stable irrespective of boom-bust cycle. Therefore banks have no choice but to increase non-core liabilities, such as borrowing, to respond to the increase in their lending during the boom period.
- ✓ Excessive asset growth and greater reliance on non-core liabilities are closely related to systemic risk and interconnectedness between banks.
- ✓ In a boom when credit is growing rapidly, the growth of bank balance sheets outstrips available core funding, and asset growth is mirrored in the greater cross-exposure across banks.
- ✓ With the pool of retail deposits staying fixed, there must be increased cross-claims across banks. In this sense, the growth in bank assets and increased interconnectedness are two sides of the same coin.

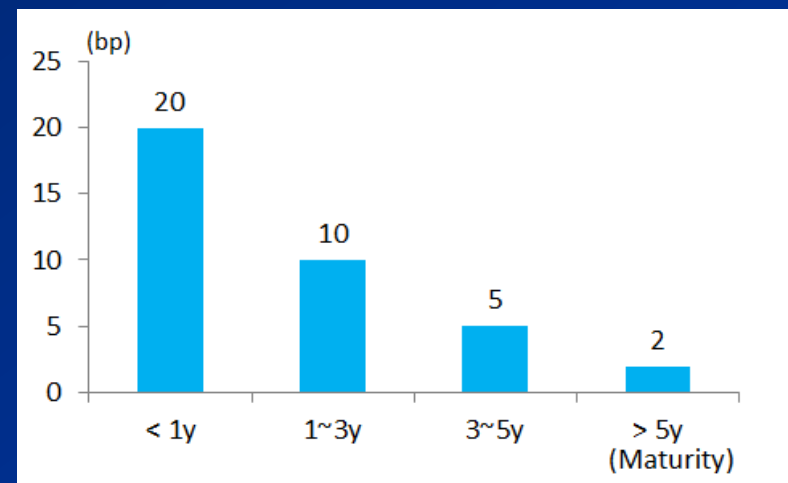
- Leverage caps (as % of bank capital) tightened recently
- Levy rate varies from 2 basis points to 20 basis points with a lower levy being applied to longer-maturity liabilities.

Leverage Cap on FX Derivatives Position



Source : Bank of Korea

Macroprudential Stability Levy



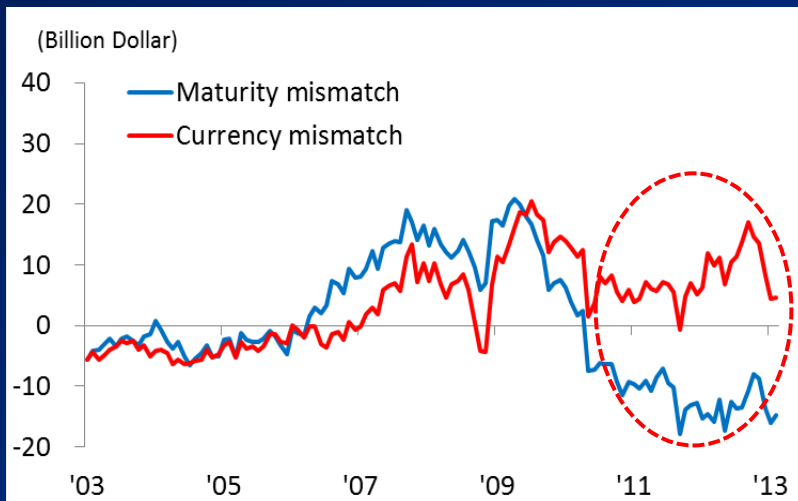
Source : Bank of Korea

Policy Effects

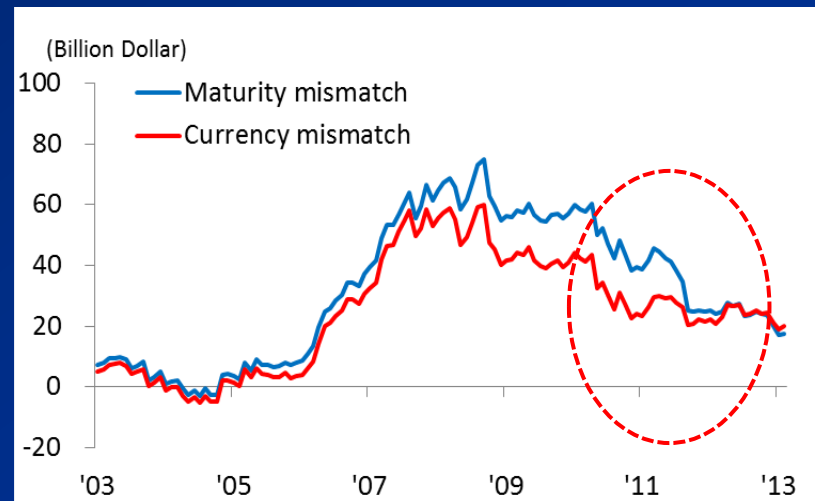
- Currency and maturity mismatches, which were the key source of systemic risk, decreased significantly

Currency and Maturity Mismatches

Domestic Banks



Foreign Bank Branches



Notes: Currency mismatches = foreign liabilities – foreign assets

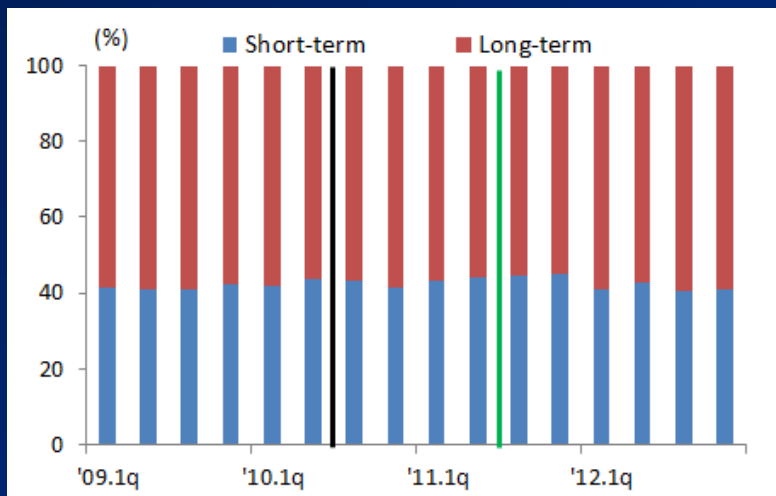
Maturity mismatches = short-term foreign liabilities – short-term foreign assets

Source: Bank of Korea

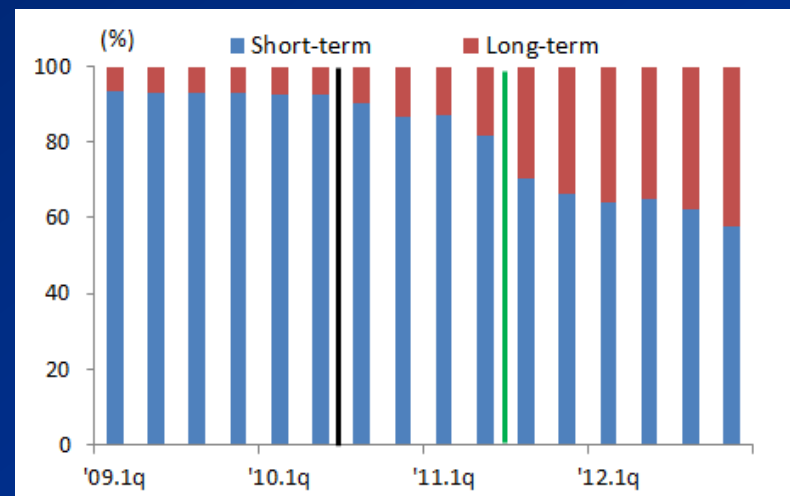
➤ Banks' external debt structure improved

Maturity Composition of External Debt

(Domestic banks)



(Foreign bank branches)



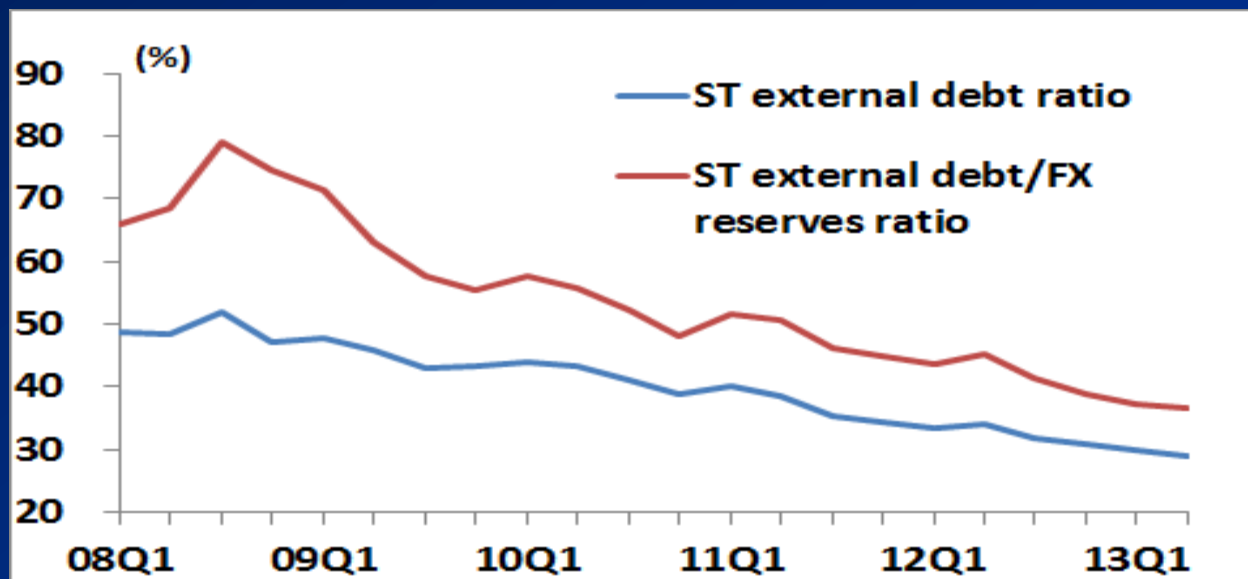
Note : 1) Black and green vertical lines refer to the dates of the introduction of Leverage Cap and Stability Levy.

Source : Bank of Korea

➤ Enhancing external debt soundness

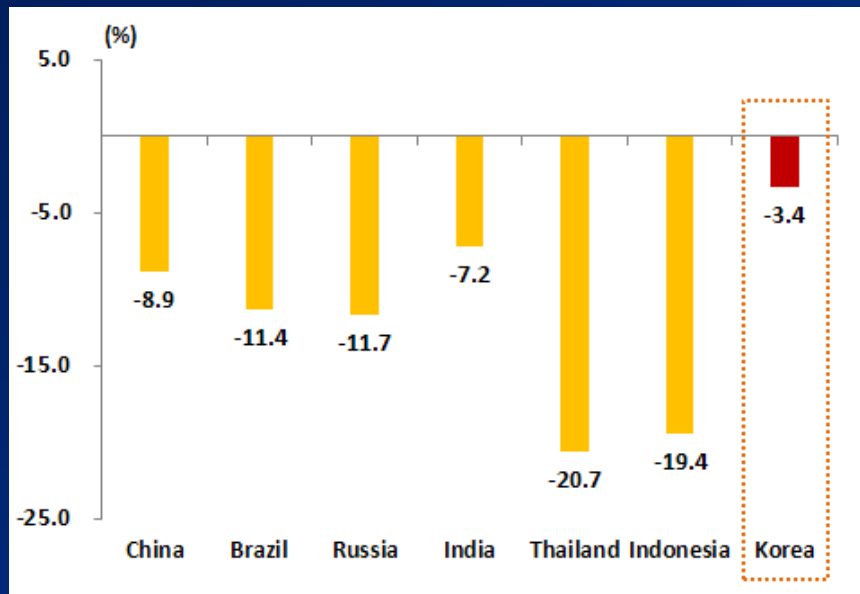
- ✓ Decrease in ST external debt ratio & ST external debt to FX reserve ratio

Short-term External debt ratio

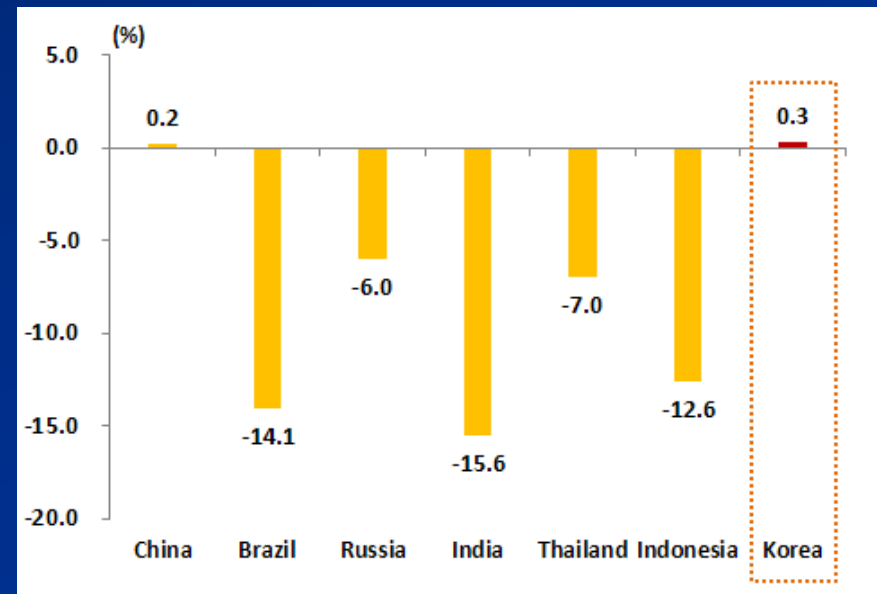


- Recently, Korea is differentiating itself from some troubled emerging market economies
 - ✓ Adding to current account surplus, these Macro-prudential measures may contribute to this relatively stable situation.

Changes in Stock Prices of EMEs
from May 22 to end August

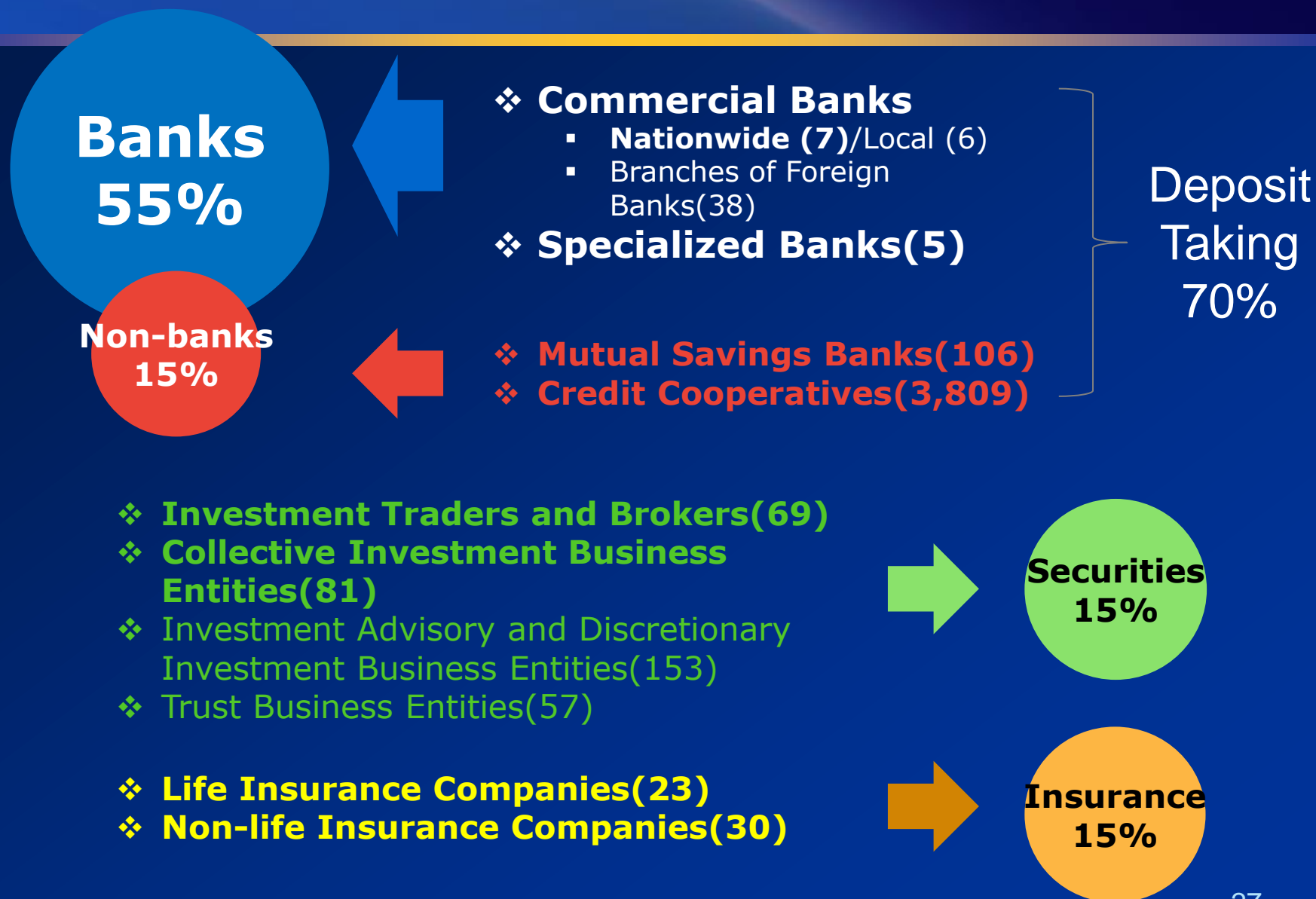


Changes in Exchange rates of EMEs
from May 22 to end August



HOUSING SECTOR RELATED RISKS

<FINANCIAL INSTITUTIONS IN KOREA>



<FINANCIAL MARKETS IN KOREA>

❖ Indirect Financing Markets

Deposits and loans market / Fund market
Trust business market / Insurance market

❖ Direct Financing Markets

Money markets

Call / CP / CD / RP /
Monetary stabilization bond /
Cover bill market

Foreign exchange markets

Capital markets

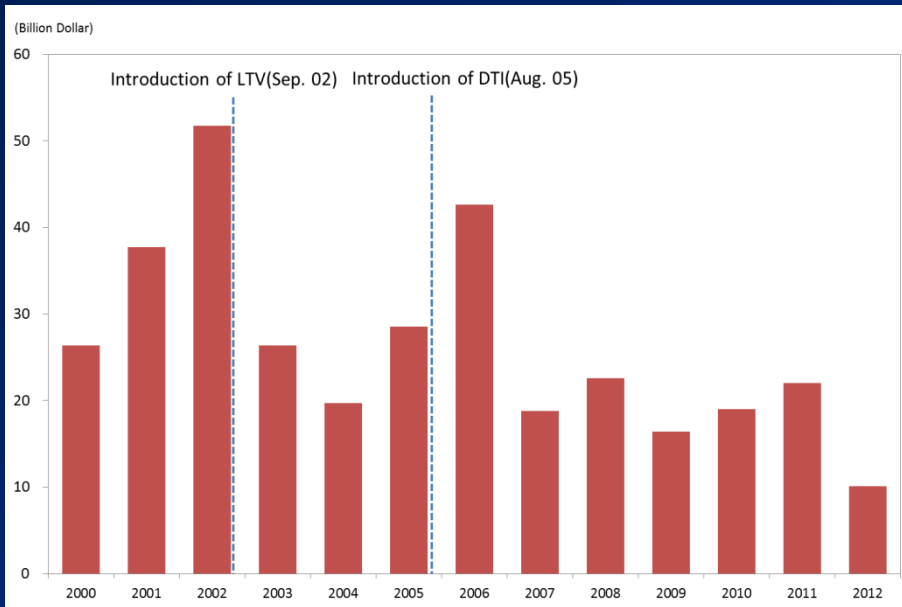
Stock market
Bond market

Financial derivatives markets

Housing Booms and Bank Lending

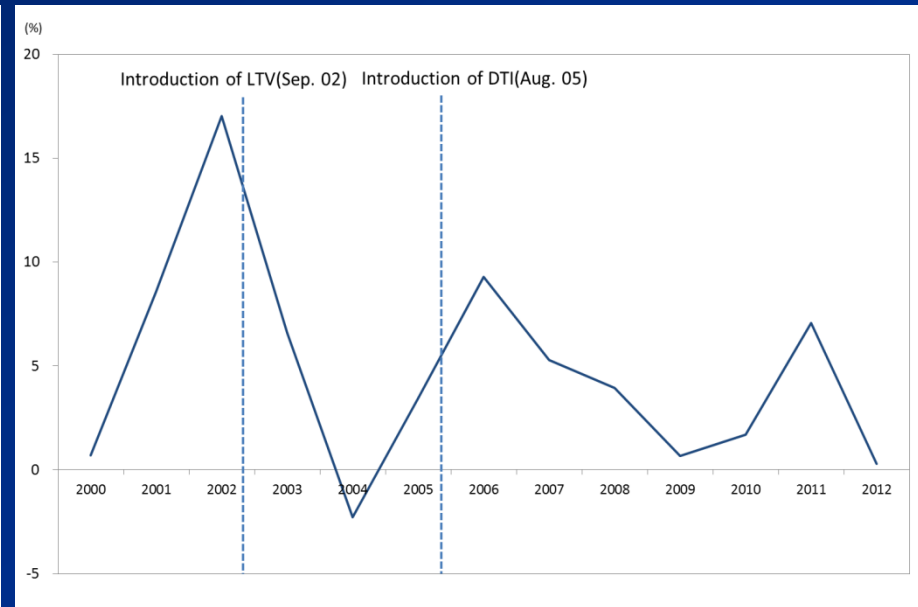
- Housing booms in the early and mid 2000s were fueled by rapid increases in home mortgage lending by banks

Home Mortgage Loans



Source: Bank of Korea

Housing Price



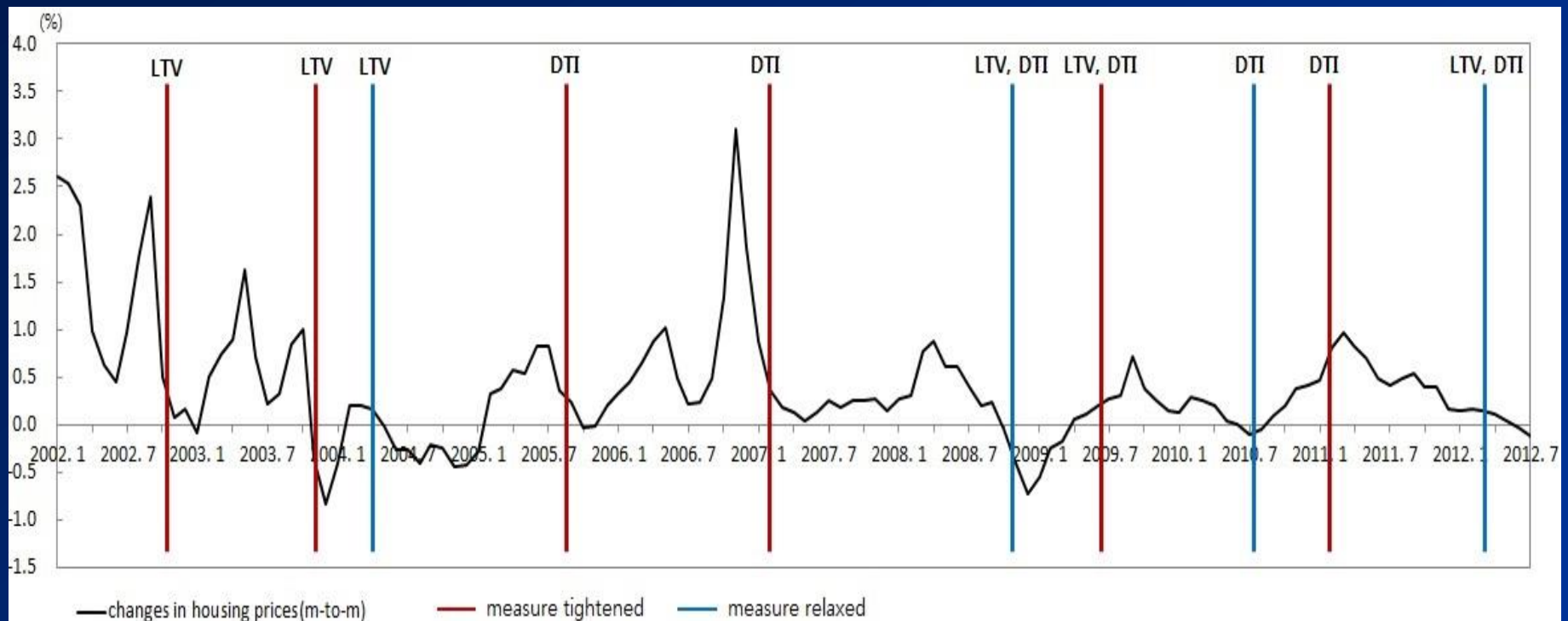
Source: Bank of Korea

Housing Sector Related Measures (1/2)

Measures	Time	Policy
LTV	Sep. 2002	Limit LTV ratio to under 60%
	Mar. 2004	Raise LTV ratio for installment loans: 60% → 70%
	Jul. 2009	Lower LTV ratio in Seoul Metropolitan area: 60% → 50%
DTI	Aug. 2005	Limit DTI ratio to under 40% for cases of single households under 30 years old or existence of loans by spouses within speculation areas
	Nov. 2006	Expand areas subject to DTI regulation (speculation-prone Seoul Metropolitan area)
	Sep. 2009	Expand areas subject to DTI regulation (non-speculation Seoul Metropolitan area)

Housing Sector Related Measures (2/2)

Evolution of LTV and DTI Regulations

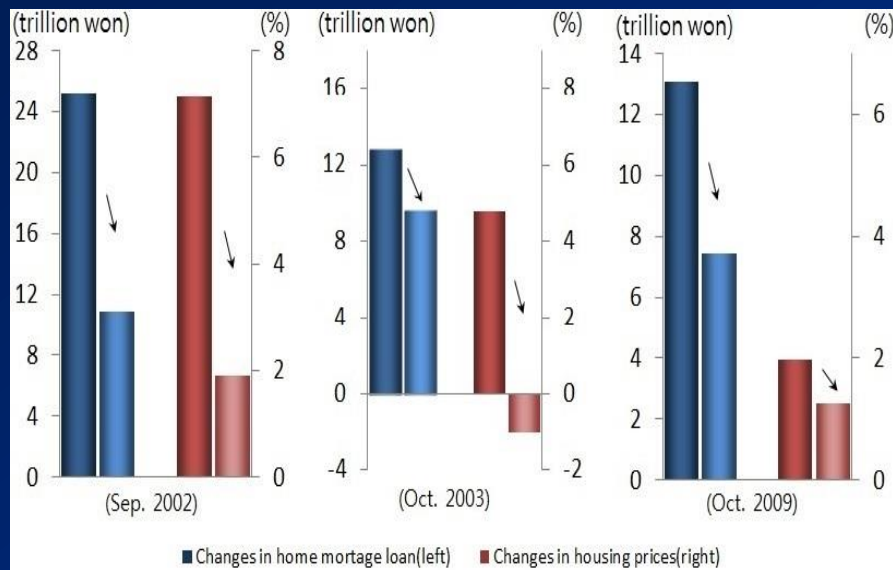


Source : Bank of Korea, Kookmin Bank

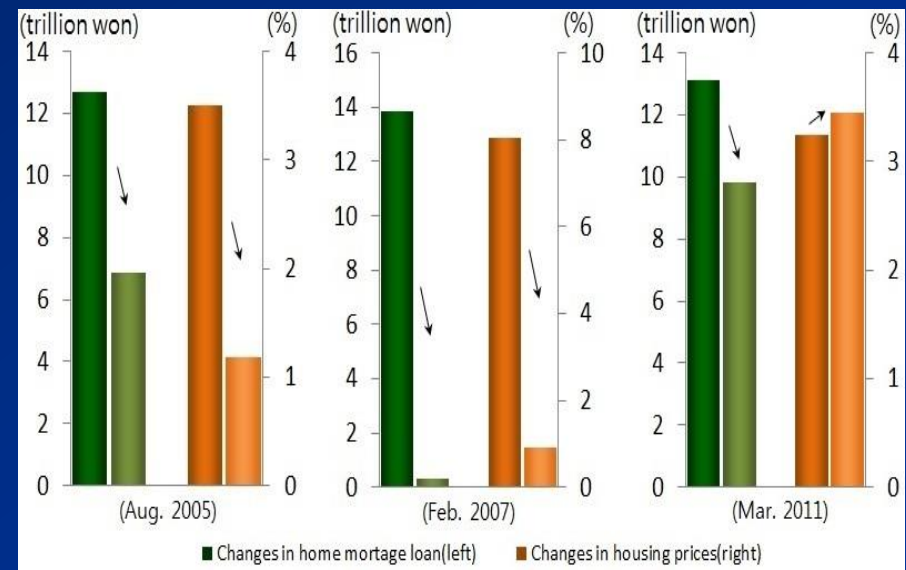
Policy Effects: Cursory Look

- LTV and DTI regulations appear to have had intended effects on housing prices and mortgage lending

Potential Effects of LTV
(six months before and after tightening)



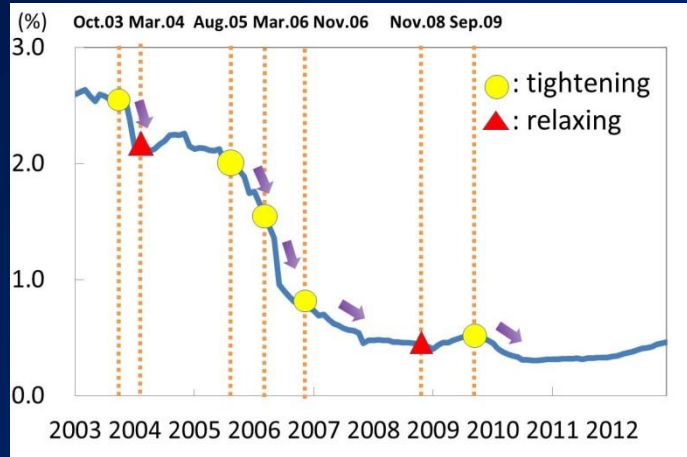
Potential Effects of DTI
(six months before and after tightening)



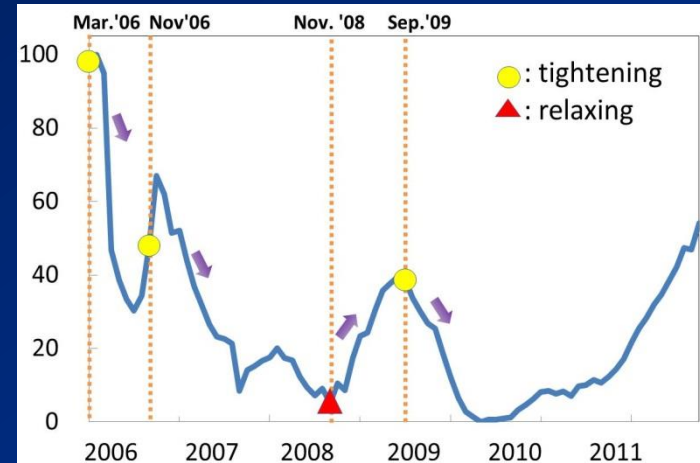
Source : Bank of Korea, Kookmin Bank

Effects on Systemic Risk

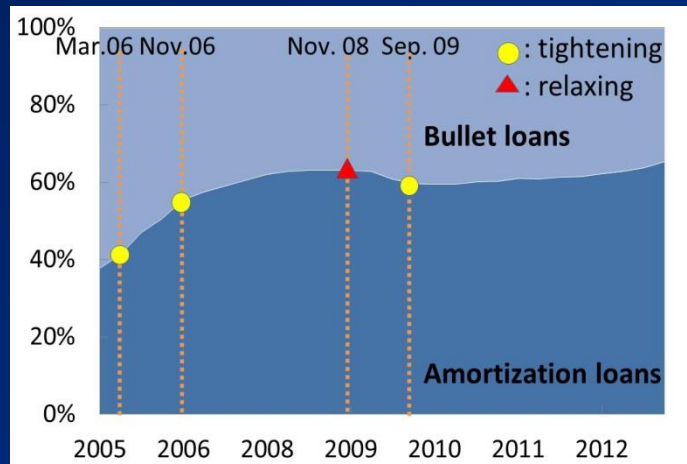
Bank mortgage loan default rate



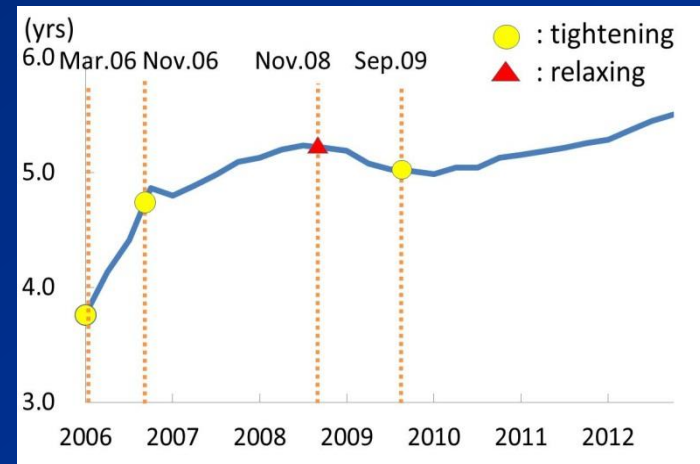
Bank mortgage loan VaR



Composition of mortgage loans by type



Duration of mortgage loans



Source: Bank of Korea

CONCLUSION

Conclusion

- The macroprudential measures have emerged from the past experiences
 - ✓ Each country should choose policy tools suitable to its specific economic environment
- The MPMs are assessed to have been successful, with main effectiveness on reducing volatile short-term foreign currency funding that has been the main cause of the previous crises
- Also, LTV/DTI are assessed to have helped reduce systemic risk in various dimension in Korea as shown by fallen banks' delinquency rate and mortgage loan VaR

Thank you