Central Bank of the Republic of Turkey Conference on Reserve Requirements & Other Macroprudential Policies: Experiences in Emerging Economies (Oct. 8-9, 2012)

Macro-Prudential Policies in Korea

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Outline

I. Introduction

II. Credit-related Macro-prudential Measures

III. Reserve Requirement on Deposit

IV. Capital Flow-related Macro-prudential Measures

V. Concluding Remarks

I. Introduction: Key Issues

- Macro-prudential motivation
  - Procyclicality, externality, macro-financial linkages, interconnectedness
  - Macro-prudential policies help reduce bubbles and enhance the economy's resilience to shocks

- Korea's macro-prudential measures
  - Credit-related MPM: Loan-to-Deposit (LTD), LTV, DTI
  - Reserve Requirement (RR) on Deposit
  - Capital Flow-related MPM:

    Ceiling on banks' FX derivative positions;

    Bank levy;

    Restoring tax on foreigner's bond investment

Ⅱ. Credit-related Prudential Measures

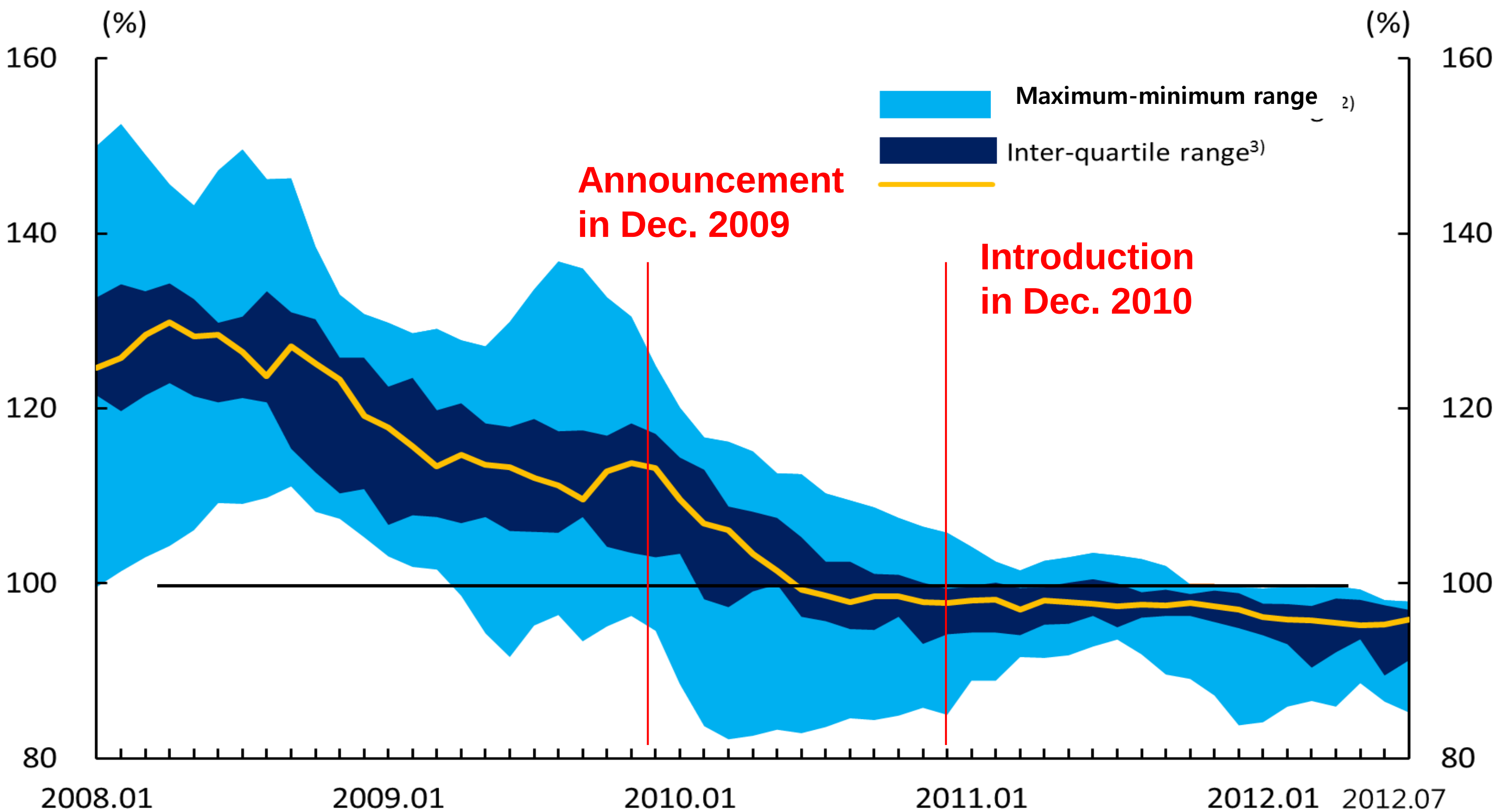
Credit-related Prudential Measures

- The Loan-to-Deposit (LTD) ratio test will limit bank loans
  - Target LTD rates was announced in end-2009 and introduced in Dec. 2010, but its fulfillment is postponed until end-2013
  - Banking industry is required to keep the ratio equal or less than 100% from Jan. 2014

- LTV and DTI ratio tests help constrain overleverages in the house market
  - Introduced LTV (Sep. 2002) and DTI (Aug. 2005)—Financial Supervisory Service(FSS) monitors and sets their limits

Credit-related Prudential Measures: LTD

Commercial bank loan-to-deposit ratios[1)]



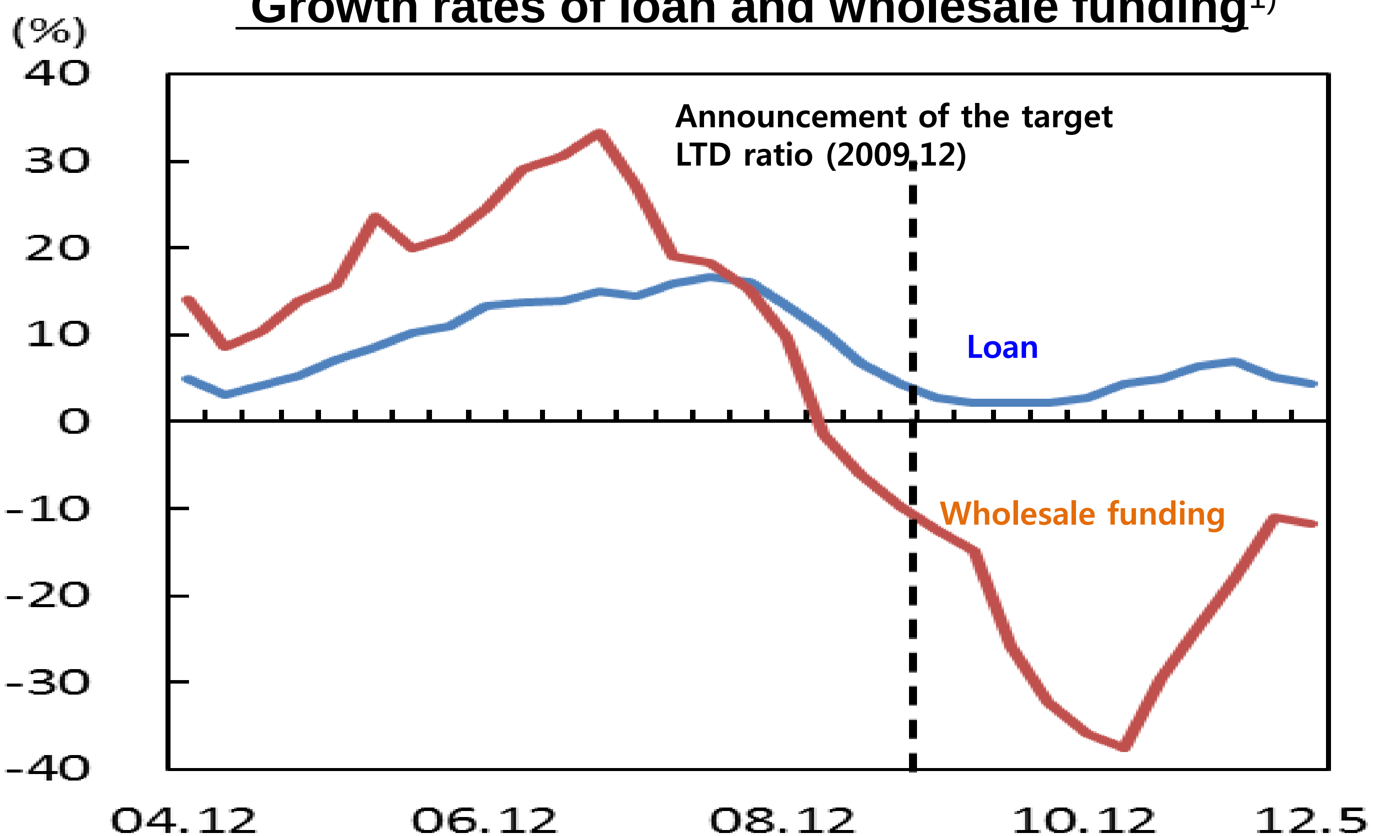
Notes: 1) Loan-to-deposit rates=(Korean currency loan/Korean currency deposit) ≤ 100%
Calculate the ratio from average balance, Deposit and loan values are based on banks' balance sheet
2) 1st to 4th quartile range
3) 2nd to 3rd quartile range

Source: Financial Stability Report (April 2012), updated by BOK staff

Credit-related Prudential Measures: LTD

Lead to further decreases in wholesale funding (especially in CD); slowdown in loan growth; and reduce inter-linkages between banks → reduce systemic risk and the pro-cyclicality of loans

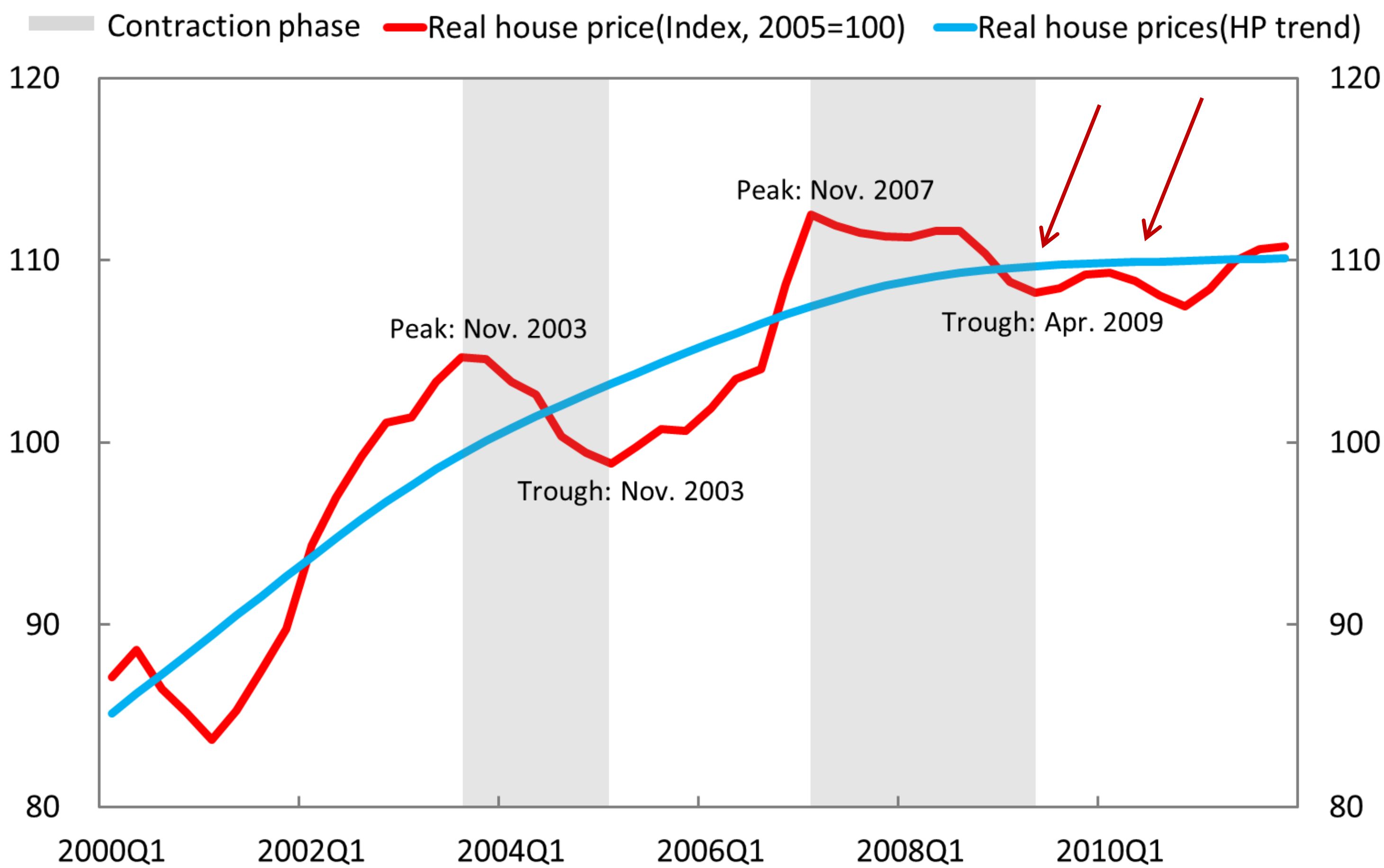
Growth rates of loan and wholesale funding[1)]



Notes: 1) year-on-year growth rates

Limiting Overleveraging in the House Market (1/3)

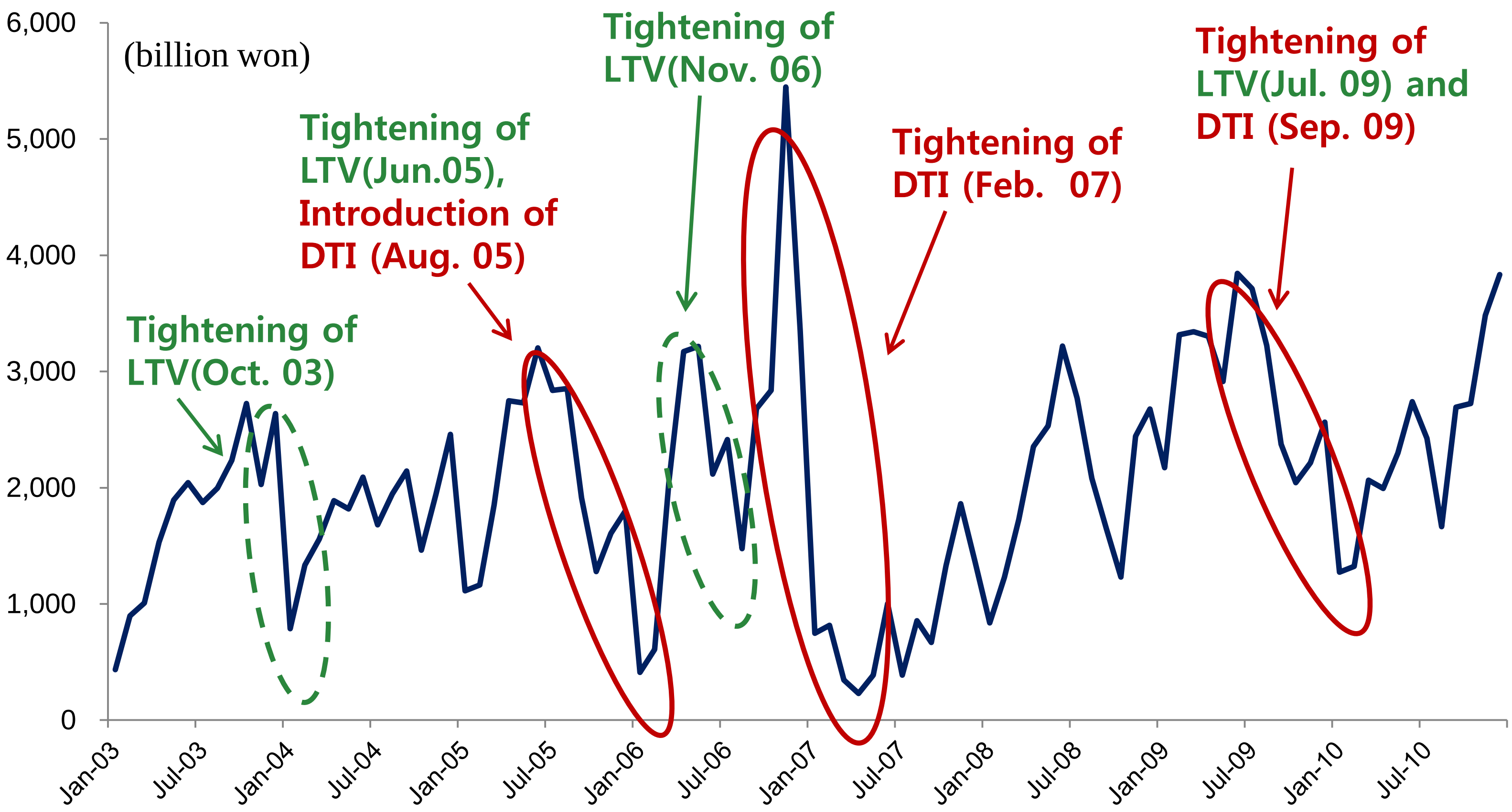
House Price Cycle in Korea: 2000-2011



source: Bloomberg

Limiting Overleveraging in the House Market (2/3)

Mortgage Loan Fluctuations



source: Bank of Korea

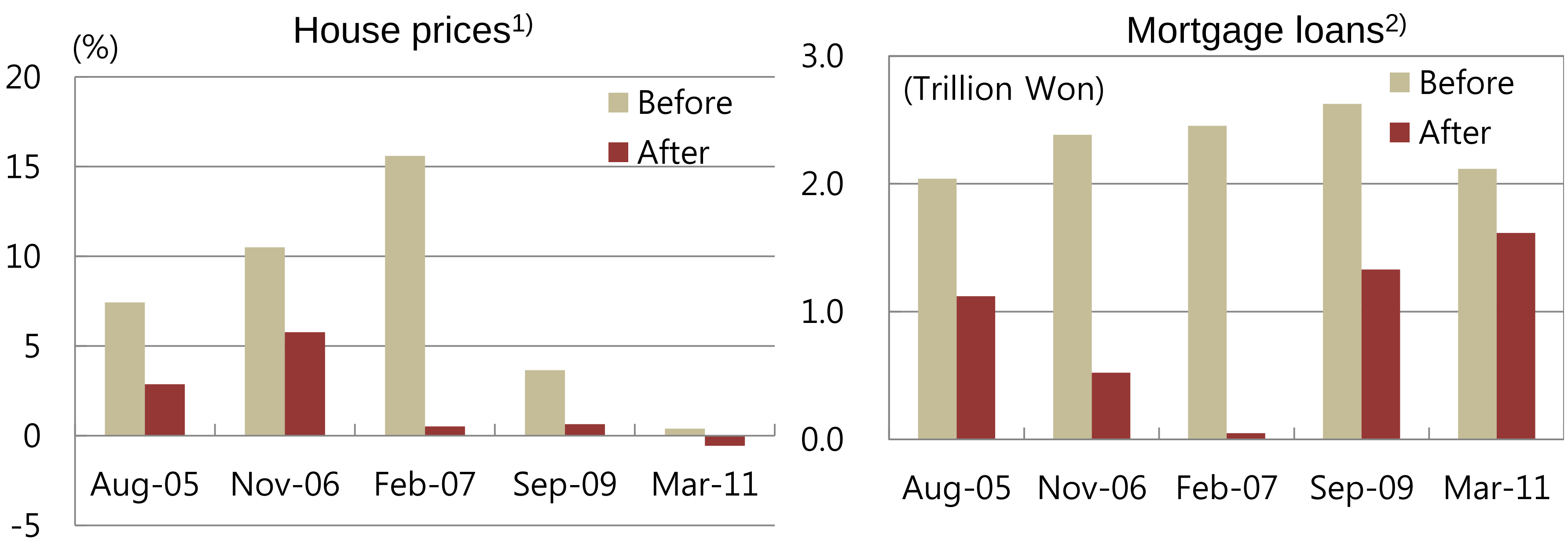
Limiting Overleveraging in the House Market (3/3)

- **Tightening of loan regulation was effective in limiting credit to housing markets and preventing house price bubbles**

  - Tightening of DTI: `05, `07, `09

  - Tightening of LTV: `05, `06, `09, `11

House Price and Mortgage Loans: Before and After Loan Regulation Tightening



Source: Bank of Korea

1) Housing inflation rates between six-month periods before and after strengthening of loan regulations

2) Net increases of mortgage loans between six-month periods before and after strengthening of loan regulations

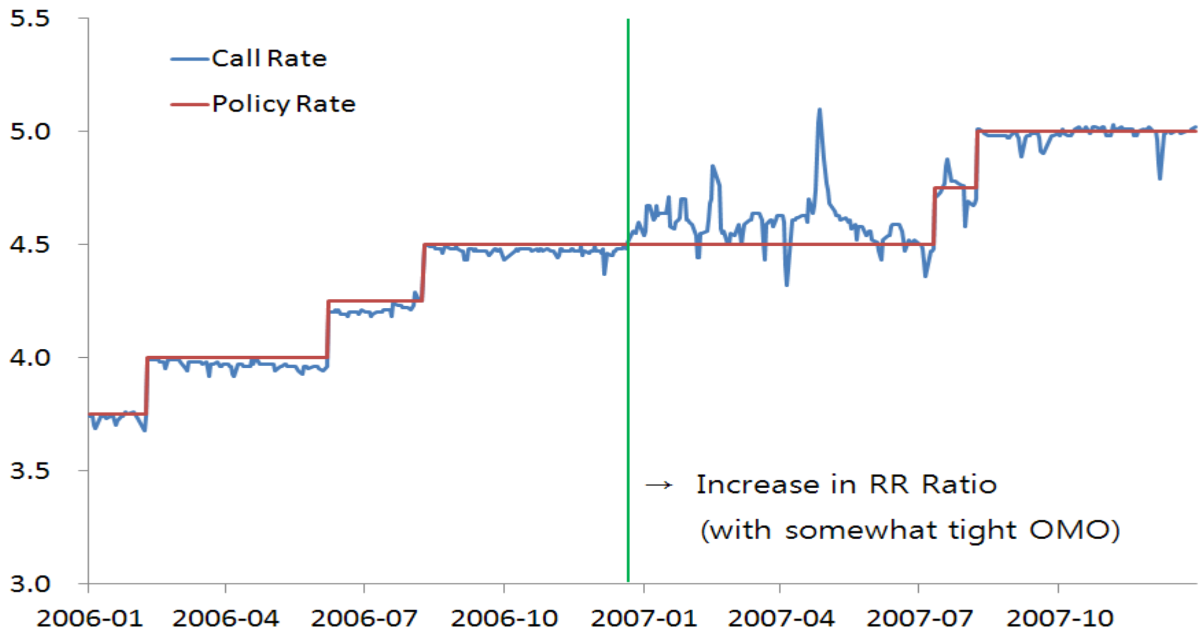
Ⅲ. Reserve Requirement on Deposit

Reserve Requirements: Recent Experience (1/2)

- BOK announced an increase in reserve requirement ratio (3.0%→3.8% of deposits on average) in Nov. 2006
  - Although there was a rapid increase in credit and monetary aggregates, the adjustment in RR ratio did not aim at curbing credit and monetary aggregate expansions
    - Through OMO, the BOK provided the deficiency of reserves into the reserve market to keep the short-term market rates closely aligned with the policy rate
  - Rather, one of the main purposes was to strengthen the B/S of banks in the face of influx of foreign funds

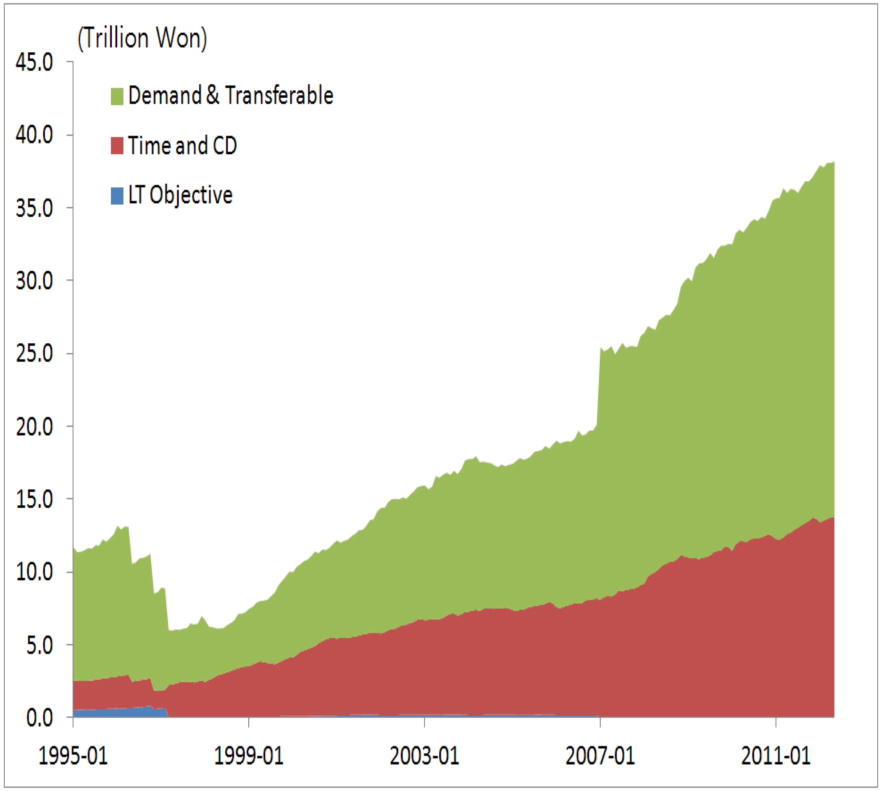
Policy Rate and Overnight Call Rate Surrounding the RRR Increase

- Indeed, there were some pressures from the OMO desk, which generated some spikes in the call rate
- But, the BOK provided the exact amount of deficiency through OMO
  - Deficiency = Deposit base (678 trn KRW) $\times$0.8% = 5 trn KRW
  - Filled by a decrease in Monetary Stability Bonds (MSB outstanding: 163 trn KRW, end-Nov → 158 trn KRW, end-Dec)

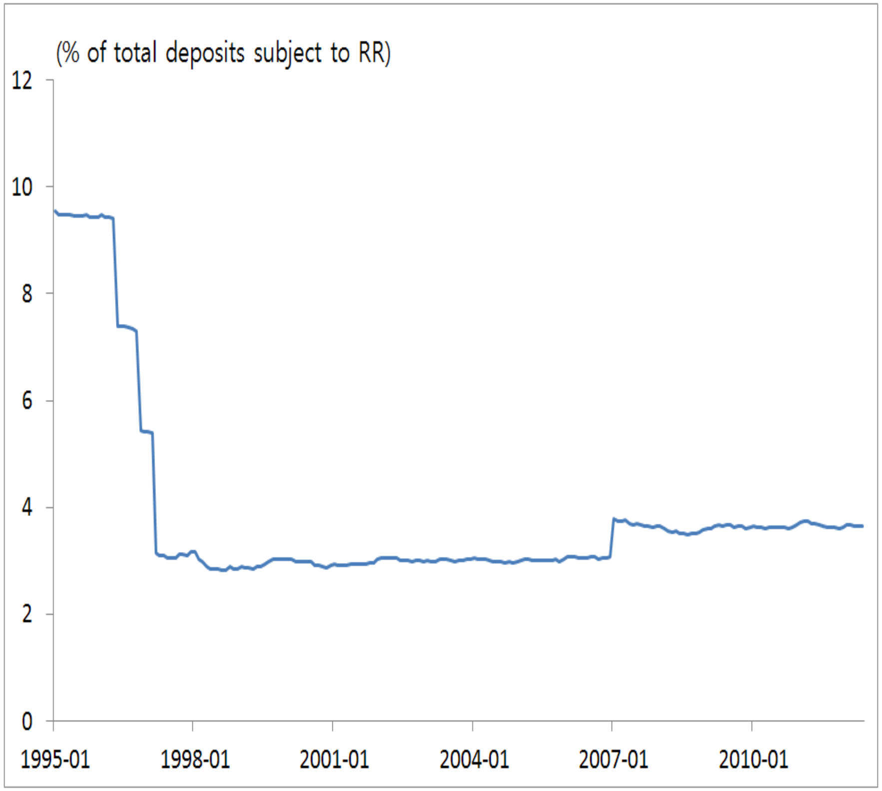


Required Reserves

By Deposit Class



Average RR Ratio



Source: Bank of Korea

Reserve Requirements: Recent Experience (2/2)

- (Remuneration) In December 2008, to help banks expand their credit supply capacity by raising capital adequacy ratios, the BOK paid banks <u>one-off</u> interest of 500 billion KRW (about 365 million USD) or 2.3% on their required reserve deposits
  - The advantage of paying interest on required reserve deposits (rather than simply lowering banks' reserve requirement ratios) was that it could immediately improve bank balance sheets

Reserve Requirements as a Macro-prudential Tool

- RR may be independently used as a macro-prudential tool, because the changes in RR ratio accompanied by OMO under the IT framework hardly affect the monetary aggregates or the credit
  - Raise the RR ratio in the financial upturn and lower it in the financial downturn
    - It will help strengthen the B/S of commercial banks in the downturn
    - If it is not remunerated, an RR ratio increase will raise the financial intermediation cost and thus exert downward pressure on bank loans (some decoupling between policy and lending rates?)

IV. Capital Flow-related Macro-prudential Measures

Structural Problem Before the GFC

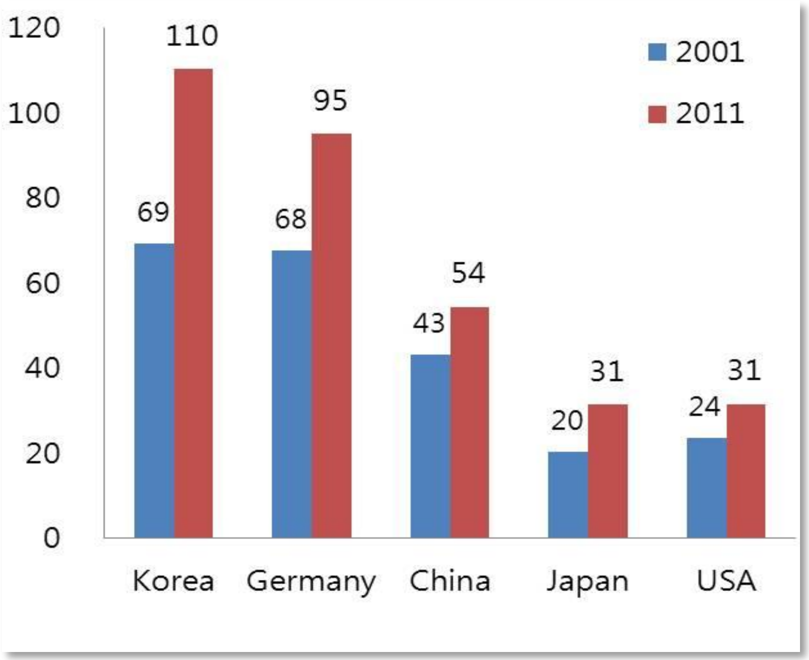
- Before the GFC, sharp increases in external debt, especially ST borrowing by banks increased financial vulnerability

Trade and Financial Openness

- Trade and financial market openness is high
  → High level of openness could be a source of vulnerability during financial turmoil

Trade openness

(Trade/GDP ratio %, IMF IFS)



Financial openness

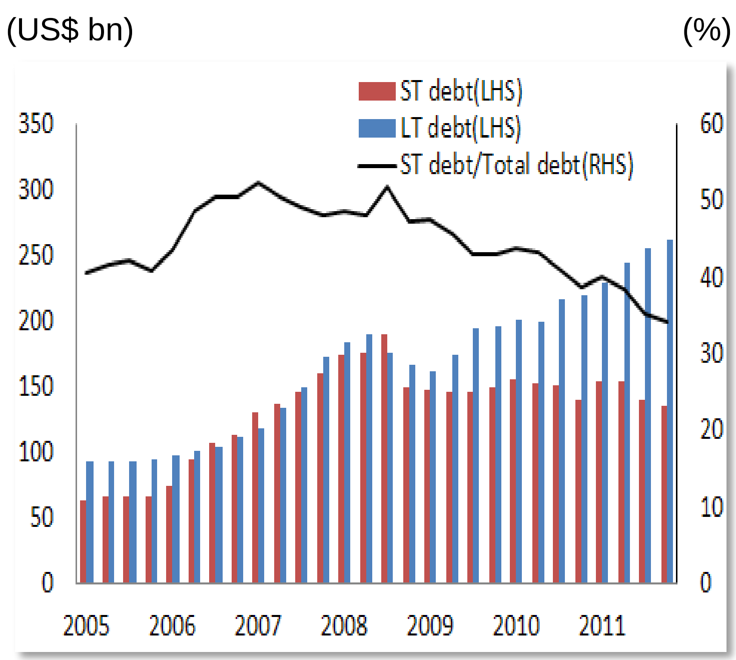
(Capital Access Index for 2009, Milken Institution)

	Country	Score (out of 10)
1	Canada	8.25
2	HK	7.99
3	UK	7.95
4	Singapore	7.92
5	US	7.88
12	Korea	7.39
16	France	6.99
20	Germany	6.84
23	Japan	6.72
26	Taiwan	6.54

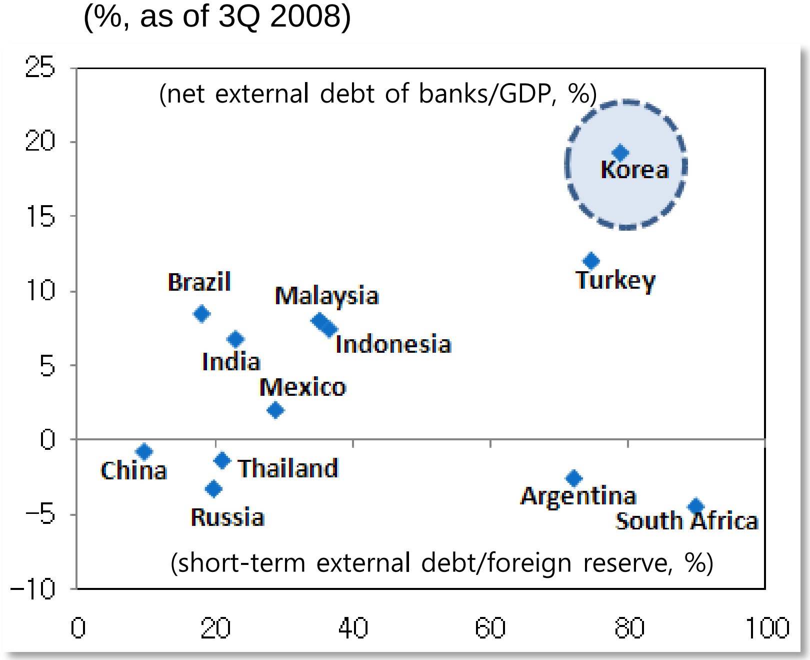
External Debt

- External debt, in particular ST debt, increased sharply in the periods before the GFC
  - The ST debt to foreign reserve ratio and banks' net external debt to GDP ratio were higher than other EMEs on the eve of GFC

External debt



Debt exposure & reserve coverage

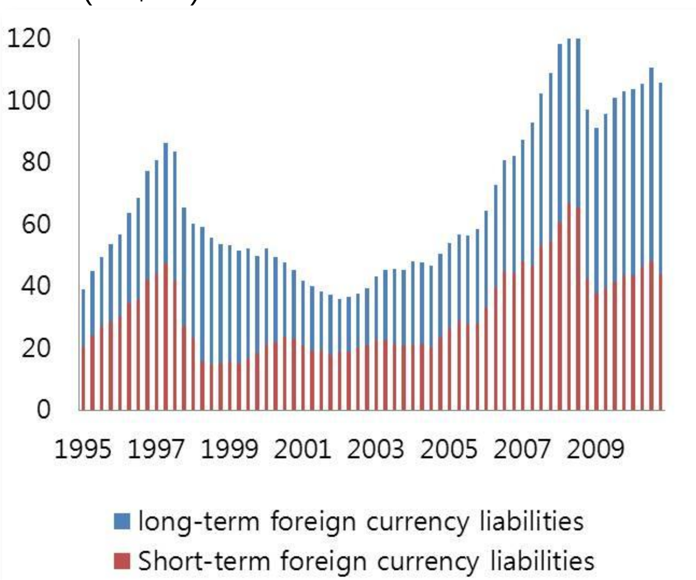


External Debt of Banks

- A steep rise in ST debt is mainly driven by banks, especially by foreign bank branches
  - During 1Q 2006 - 3Q 2008, ST debt by domestic banks doubled, and ST debt by foreign bank branches quadrupled

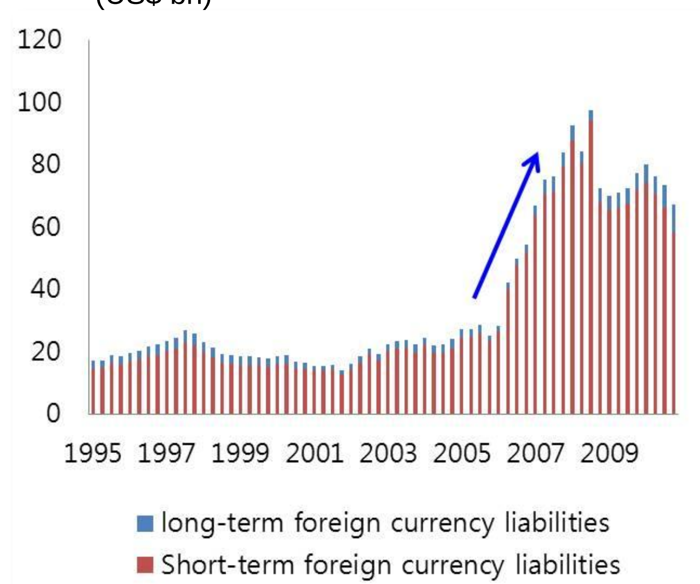
Korean domestic banks

(US$ bn)



Foreign bank branches

(US$ bn)

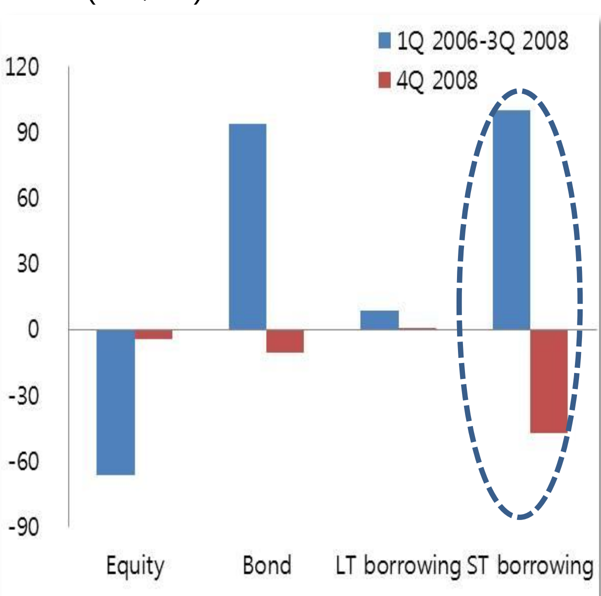


ST Debt and Volatility

- High volatility in financial market during the GFC tends to be associated with ST debt exposure

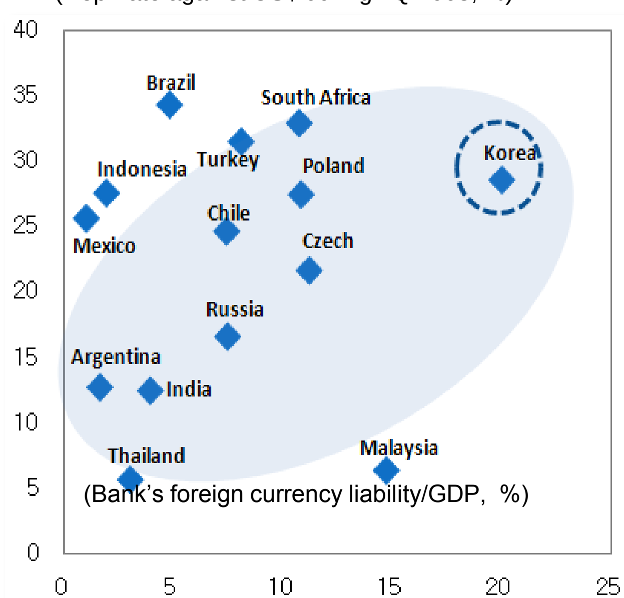
Capital flow by type

(US$ bn)

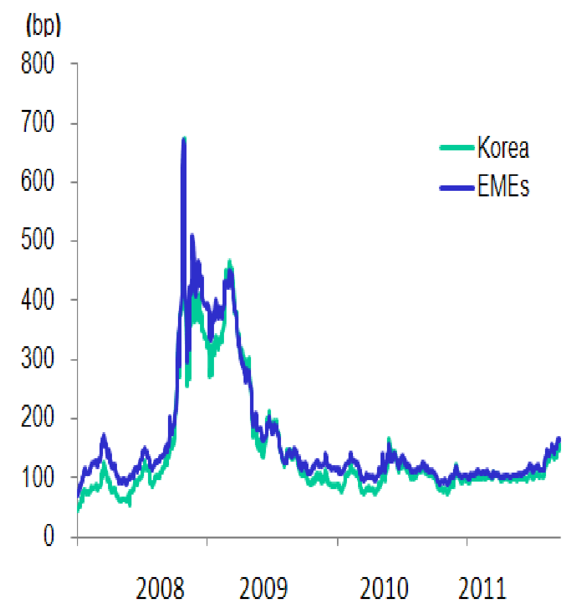


Exchange rate volatility

(Dep. rate against US$ during 4Q 2008, %)



CDS premium

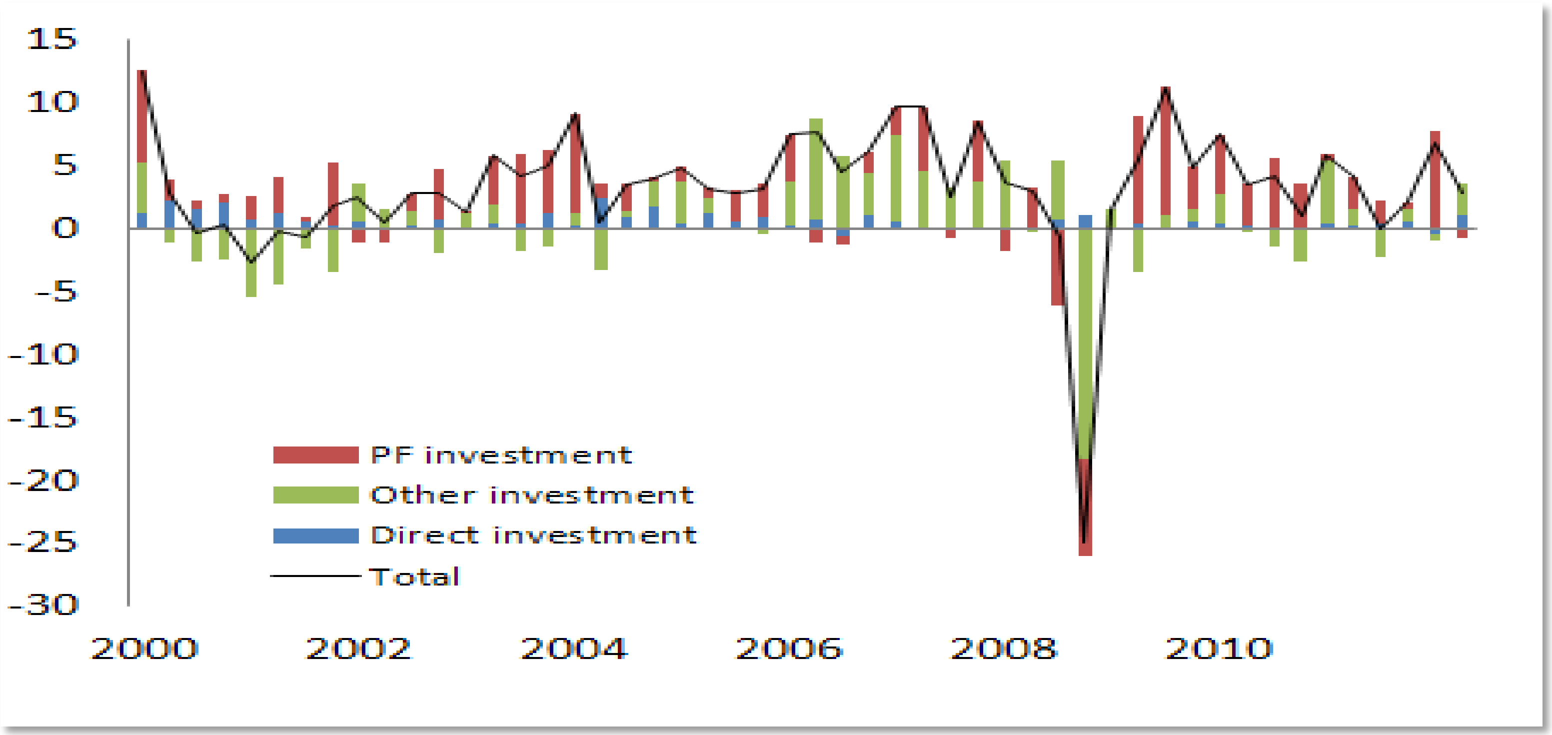


Post-Crisis Capital Flows

- Inflow surge resumed from 2Q 2009, driven mainly by portfolio investment
- Korea showed resilience during recent global financial market instability

Capital inflows to Korea

(Percent of GDP, %)



Macro-Prudential Measures

- Macro-prudential motivation
  - Aim to increase financial stability by correcting market failures
  - Distinct from capital control as it applies to residents and non-residents alike

- To mitigate associated systemic risks, Korea recently introduced three capital flow-related macro-prudential measures
  - Ceiling on banks' FX derivatives positions (Oct. 2010)
  - Bank levy (Aug. 2011)

    - Levy applies to 56 FIs, including 13 com. banks and 38 foreign bank branches, according to debt maturity considering potential contribution to systemic risks
  - Withholding tax on foreign investors' interest income from bond investment (Jan. 2011)

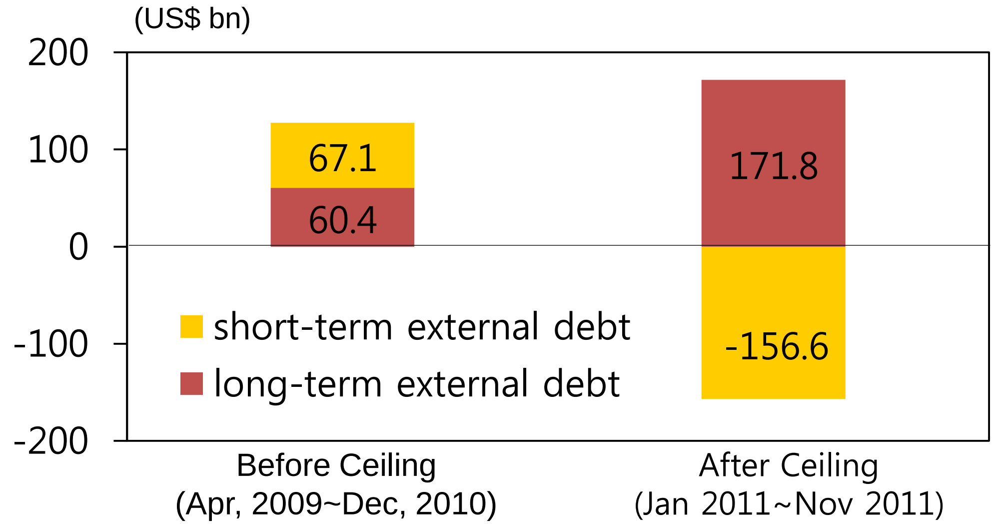
Ceiling on Banks' FX Derivatives Positions

- Aim: Reduce banks' ST debt by curbing their FX exposure
- Measure: Leverage cap on banks' FX derivatives positions

	Oct. 2010	Jul. 2011
Domestic banks	50% of capital	40%
Foreign bank branches	250% of capital	200%

- Effect: Lengthen the maturity structure of banks' external borrowing

Changes in external debt



Bank Levy

- Aim: Reduce banks' dependence on non-core foreign borrowing and encourage long-term foreign borrowing

- Measure: Impose levy on non-core foreign-currency liabilities (Aug. 2011)
  - 0.2% for maturity less 1yr; and lower rates for longer maturities

- One measure of net return associated with ST foreign borrowing by foreign bank branches:

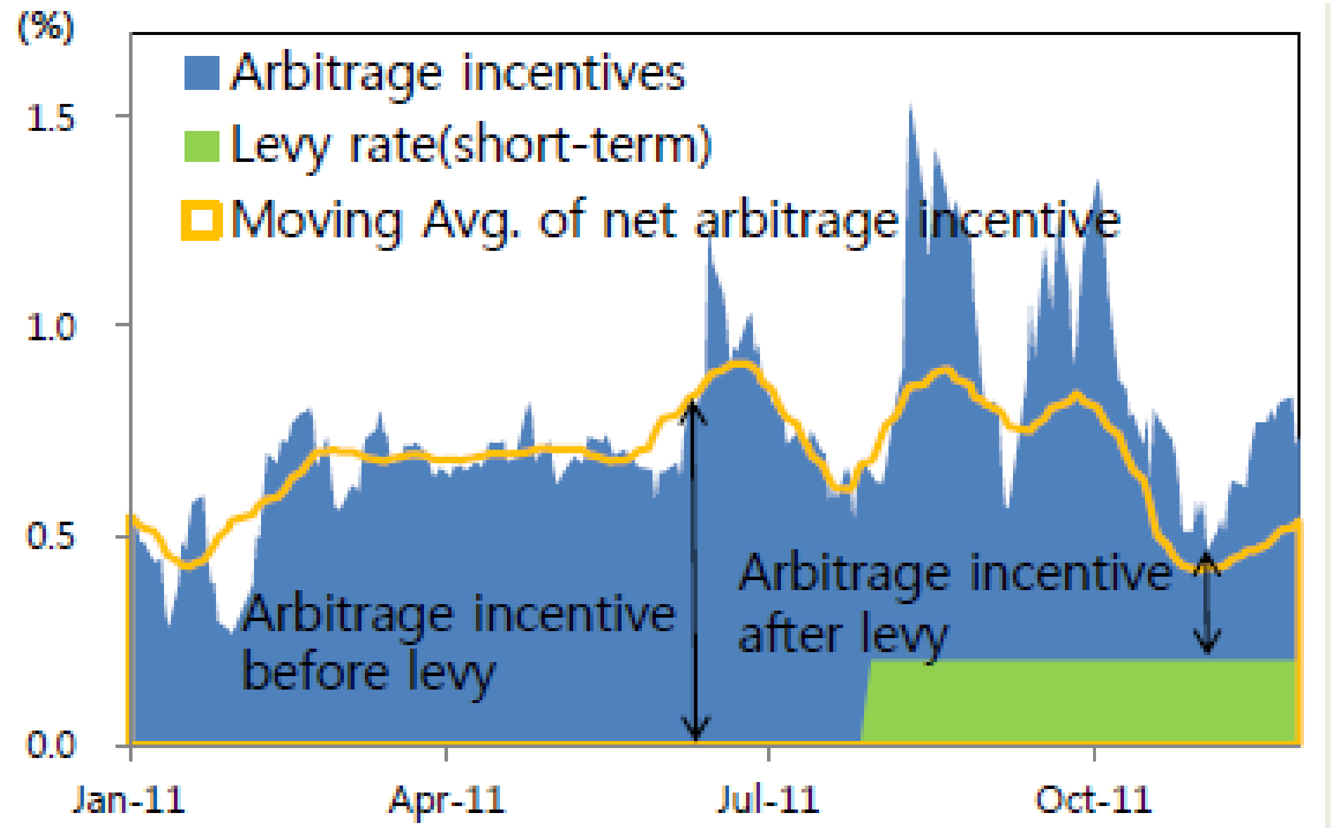
  Arbitrage incentives= 3M CD rate – 3M LIBOR rate – 3M swap rate

  - Riskless net return earned by foreign bank branches when
    they borrow US dollars in the 3-month LIBOR market,
    then swap US dollar into Korean won in the swap market,
    then invest the proceeds in CD in Korea

Bank Levy

- Effect: Reduce foreign bank branches' arbitrage incentive and lengthen the maturity structure of banks' external borrowing

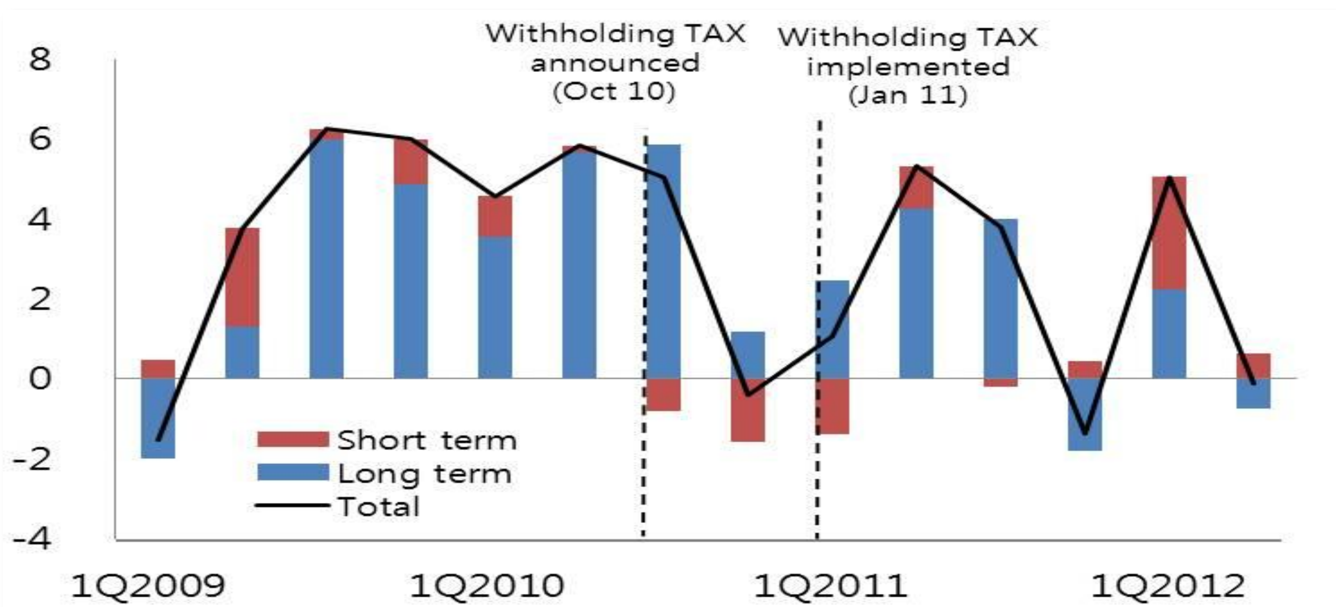
Foreign bank branches' arbitrage incentive



Restoring Tax on Foreigners' Bond Investment

- Aim: Check soaring foreigners' investment in Korea treasuries (after QE2)
- Measure: Withholding tax of 15.4% on foreign investors' interest income from bond investment (Jan. 2011)
  - Foreign investors had been exempted from withholding tax since May 2009
  - Recover equal treatment between residents and nonresidents
- Effect: Reduce foreigners' bond investment

Foreigner's bond investment



V. Concluding Remarks

- Institutional Reform
- Domestic Policy Coordination
- International Policy Coordination

Institutional Reform: Amendment of the BOK Act (2011)

Price Stability	**Financial Stability** (Introduced in Q4 2011)
Primary Objective	Financial Stability Mandate
Inflation Targeting	Enhanced Access to Data
Independence	Improving Emergency Liquidity Support Facilities
Accountability	Greater Scope and Accountability

Domestic Policy Coordination

- Need the clear formal mechanism of policy coordination among macro-prudential authorities

Ex-ante Prevention	Ex-post Resolution
Macroprudential Policy ➢ Financial Services Commission (FSC) ➢ Financial Supervisory Service (FSS) ➢ Bank of Korea	**Crisis Management** ➢ BOK: Lender of Last Resort ➢ Korea Deposit Insurance Corp. (KDIC): Deposit Insurance and Resolution of FIs ➢ Ministry of Strategy & Finance (MOSF): FX Policies and Bail-out
Microprudential Policy ➢ Financial Services Commission (FSC) ➢ Financial Supervisory Service (FSS)	

International Policy Coordination

- Strengthening Regional/Global Financial Safety Net will help prevent and manage a crisis
  - Regional financial cooperation
    - For ASEAN+3 countries,
      Chiang Mai Initiative Multilateralization (CMIM)
      Asia Bond Markets Initiative (ABMI)
  - Global policy coordination
    - To mitigate risks associated with global shocks
    - To address regional systemic effects

Thank you!