

# Macroprudential Policy and Monetary Aggregates

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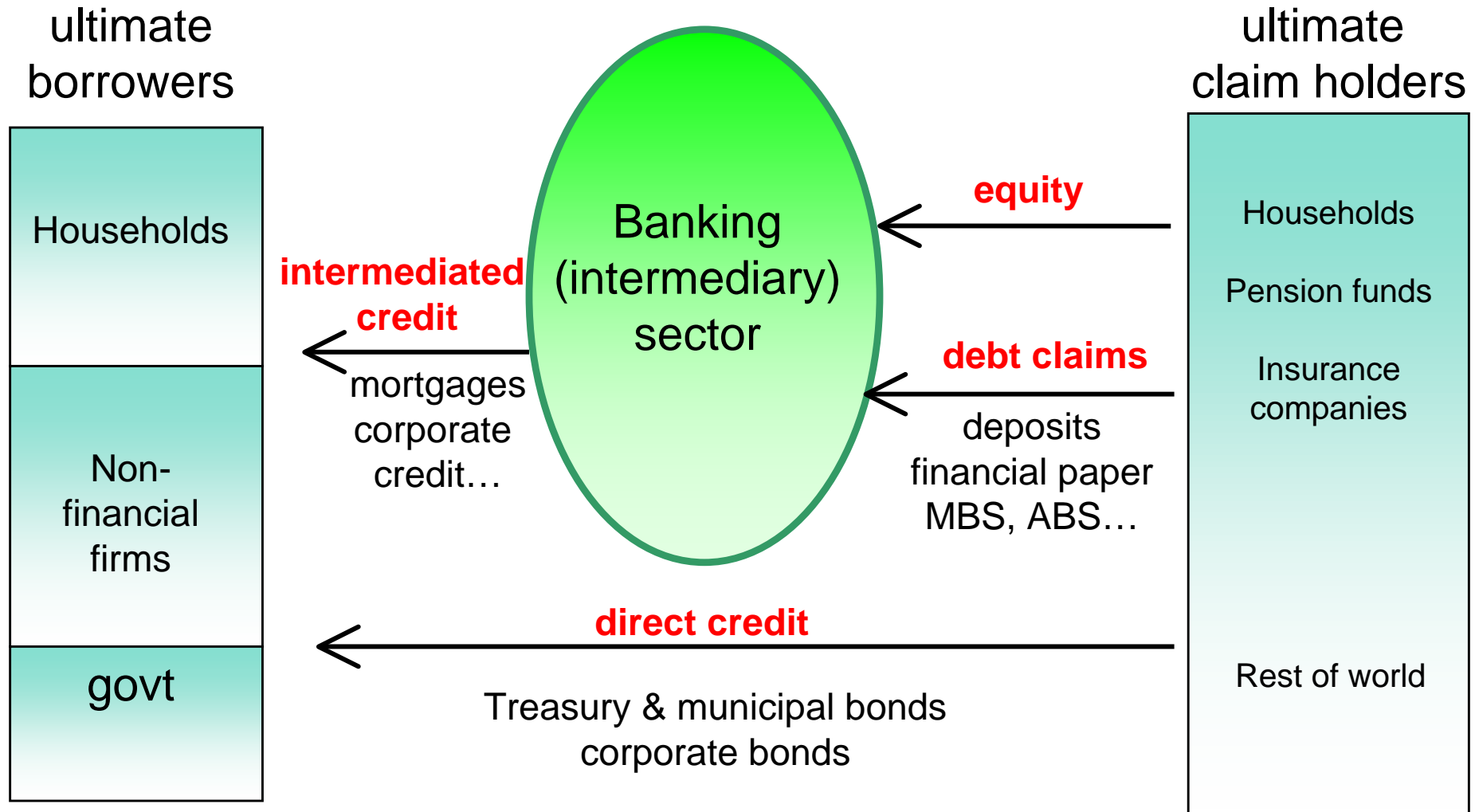
Bank of Korea 2010 International Conference

## **The Changing Role of Central Banks**

31 May – 1 June 2010

Seoul, Korea

# Stylized Financial System

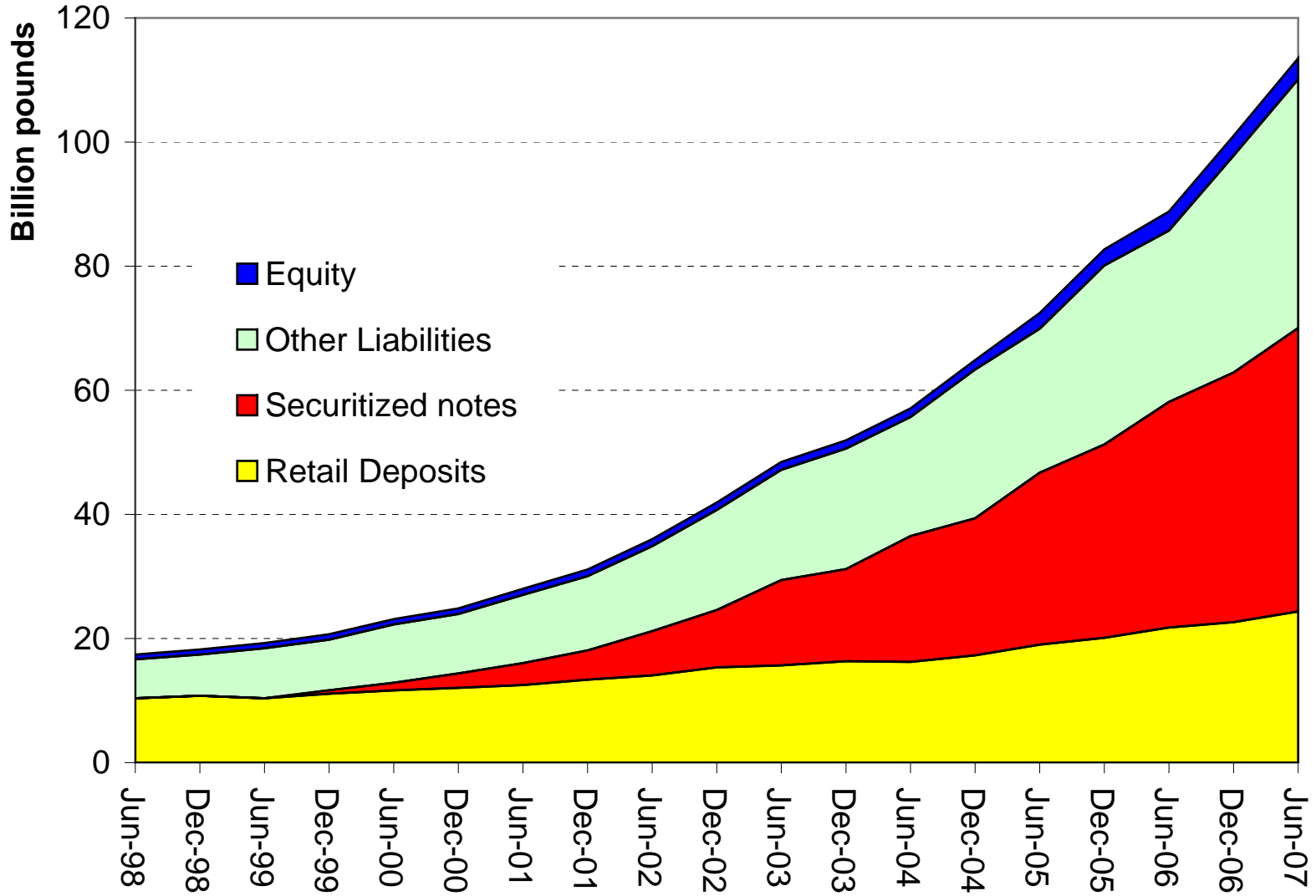


# Banking (Intermediary) Sector

- Not just a passive player
  - Instead, is the *engine* that drives the financial cycle
  - Balance sheet management drives the financial cycle
- Stage of the financial cycle shows up in the composition of liabilities...

# Composition of Northern Rock's Liabilities

(June 1998 - June 2007)



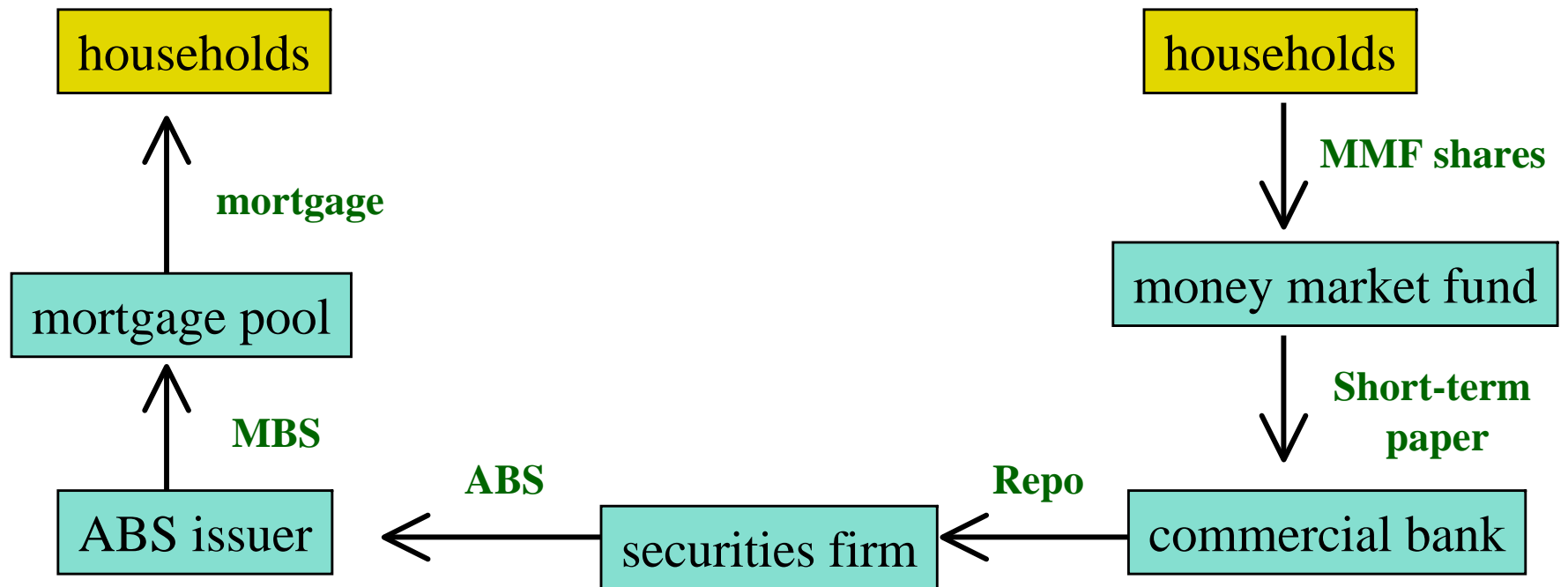
# Core versus Non-Core Liabilities

- Core liabilities: claim on ultimate domestic creditors on the intermediary sector
- Non-Core liabilities: claim on an intermediary by
  - Another intermediary
  - Or foreign creditor

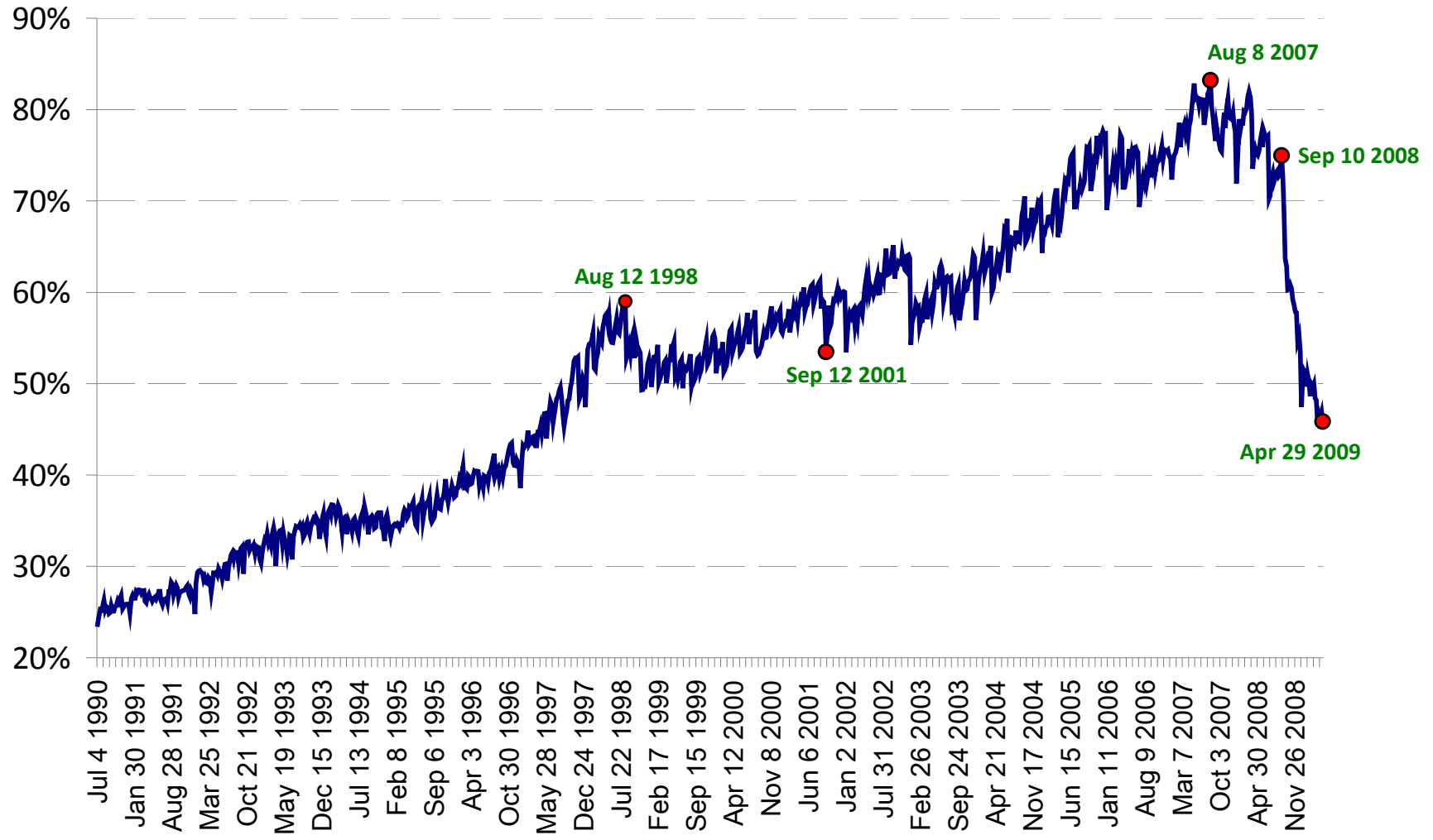
# Short Intermediation Chain



# Long Intermediation Chain



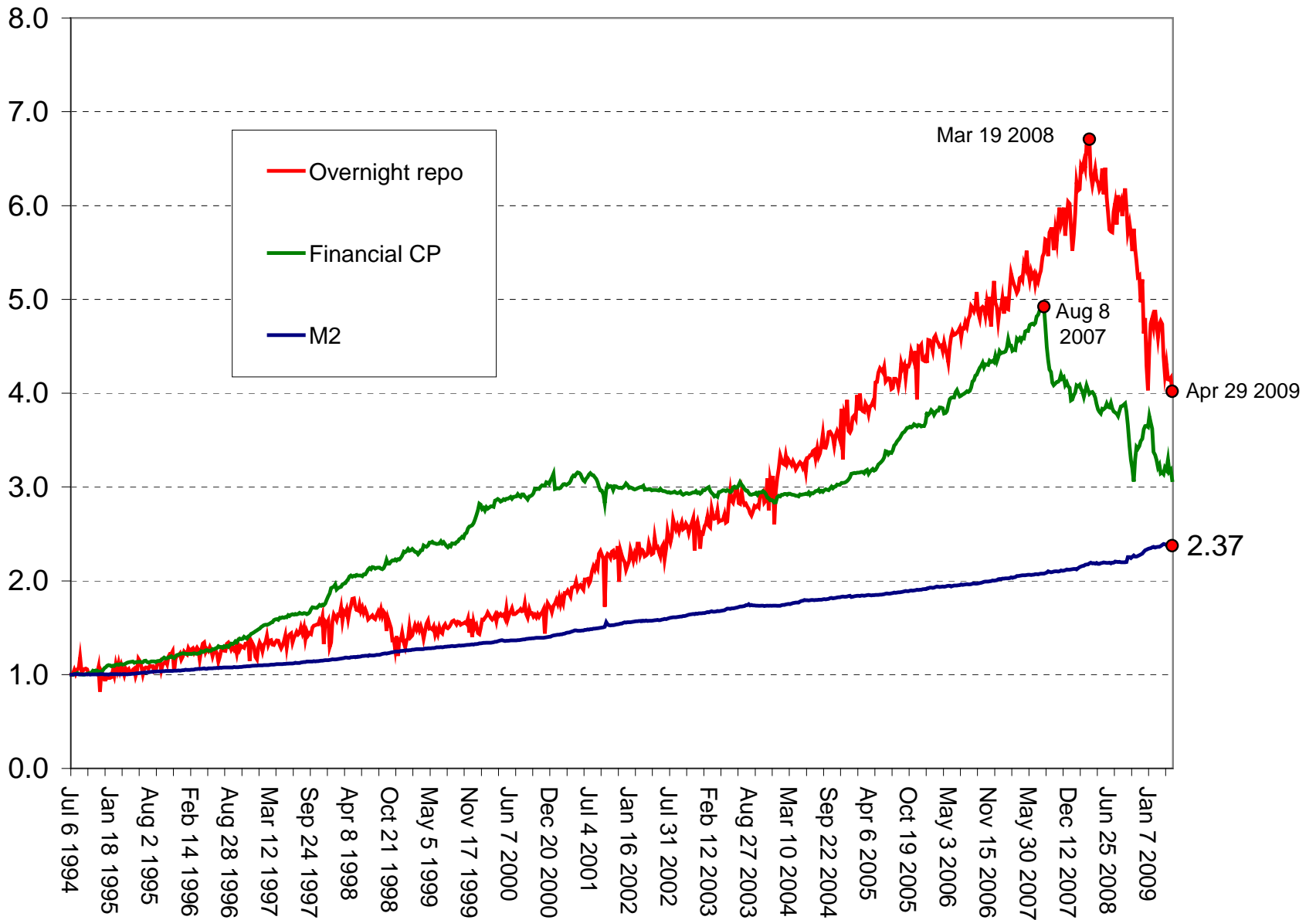
# Repos and Financial CP as Fraction of M2 (weekly)



Source: Adrian and Shin (2009)



# Overnight repos, Financial CP and M2 (weekly, July 6 1994 as base date)



# Monetary Aggregates and Non-Core Liabilities

- Traditional monetary aggregate hierarchy based on *transactions role* of money
  - How “cash-like” is the claim?
  - M0, M2, M2, M3 [Lf]...
- Core/non-core distinction focuses on *who holds the claim*
  - Ultimate domestic creditor vs. bank or foreign creditor

# Core- vs. Non-Core Liabilities

	Core liability	Intermediate	Non-core liability
Highly liquid	Cash Demand deposits (households)	Demand deposits (non-financial corporate)	Repos Call loans Short-term FX bank debt
Intermediate	Time deposit & CDs (households)	Time deposit & CDs (non-financial corporate)	Time deposit & CDs (banks & securities firms)
Illiquid	Trust accounts (households) Covered bonds (households)	Trust accounts (non-financial corporate)	Long-term bank debt securities (banks & securities firms) ABS & MBS


# Complexity and Non-Core Liabilities

- Systemic risks rise when non-core liabilities increase
  - Household deposits increase in line with household sector wealth
  - But suppose all banks' assets double
  - *Then, banks must borrow and lend more between each other, simply as an accounting identity*

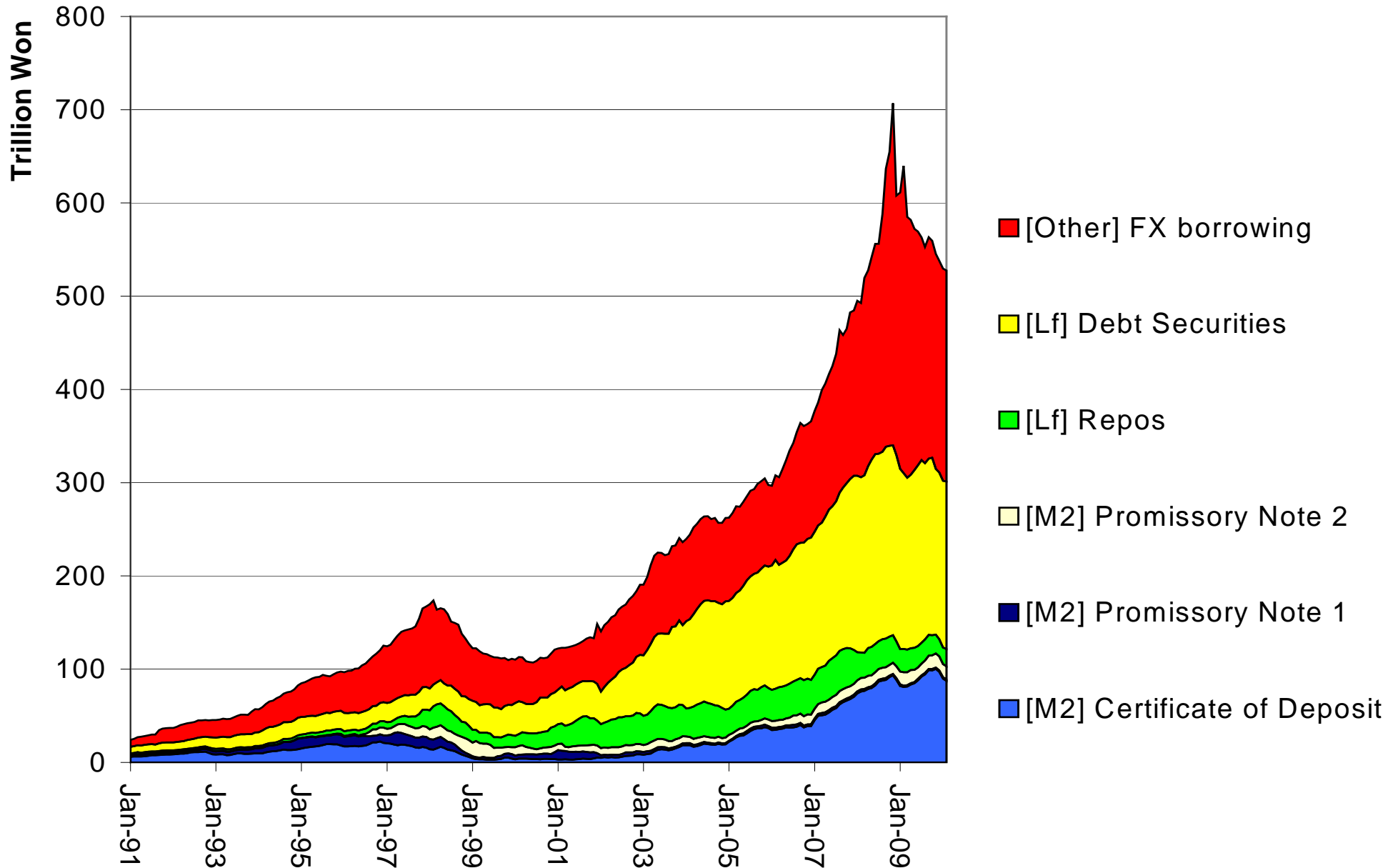
# Aggregate Accounting Identity

$$\begin{aligned} \text{Total Credit} &= \text{Total equity of banking sector} \\ &+ \text{Liabilities to non-bank domestic} \\ &\quad \text{creditors} \\ &+ \text{Liabilities to foreign creditors} \end{aligned}$$

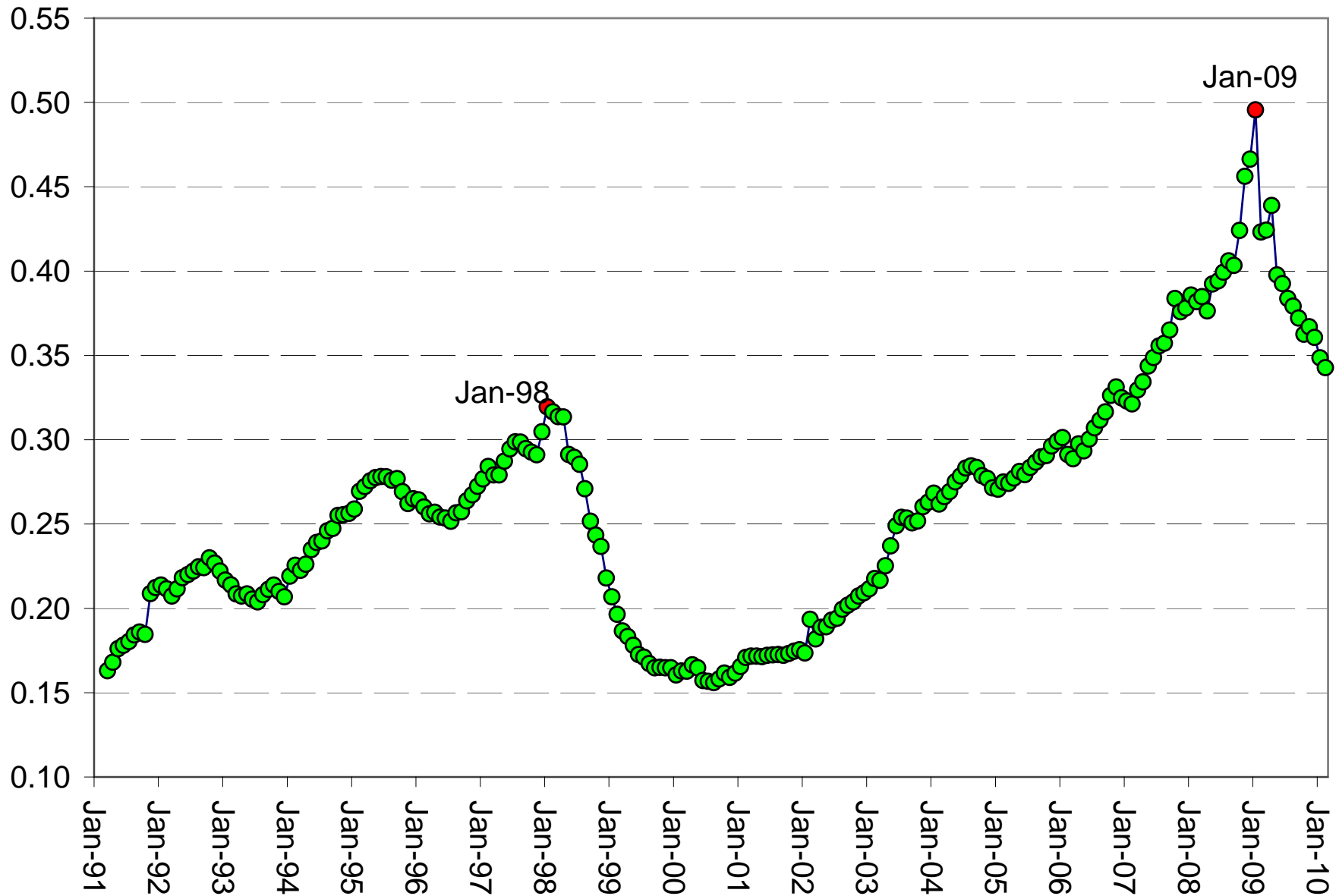
# Non-Core Liabilities in Open Emerging Economics

- Short intermediation chains
  - Open capital markets
-  Non-core liabilities manifest themselves as short-term FX bank liabilities

# Non-Core Liabilities for Korea



# Ratio of Non-Core to Core Liabilities in Korea

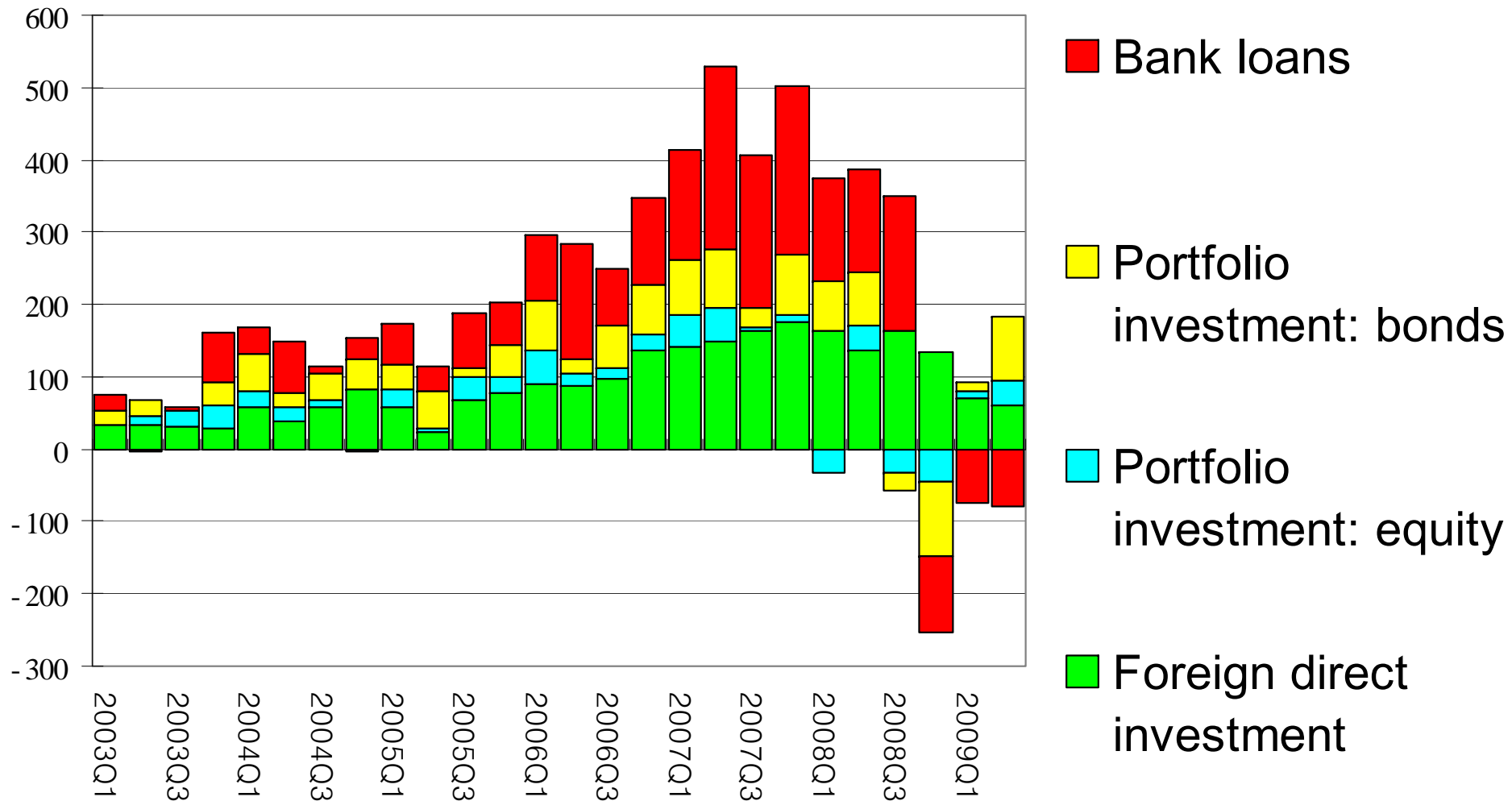




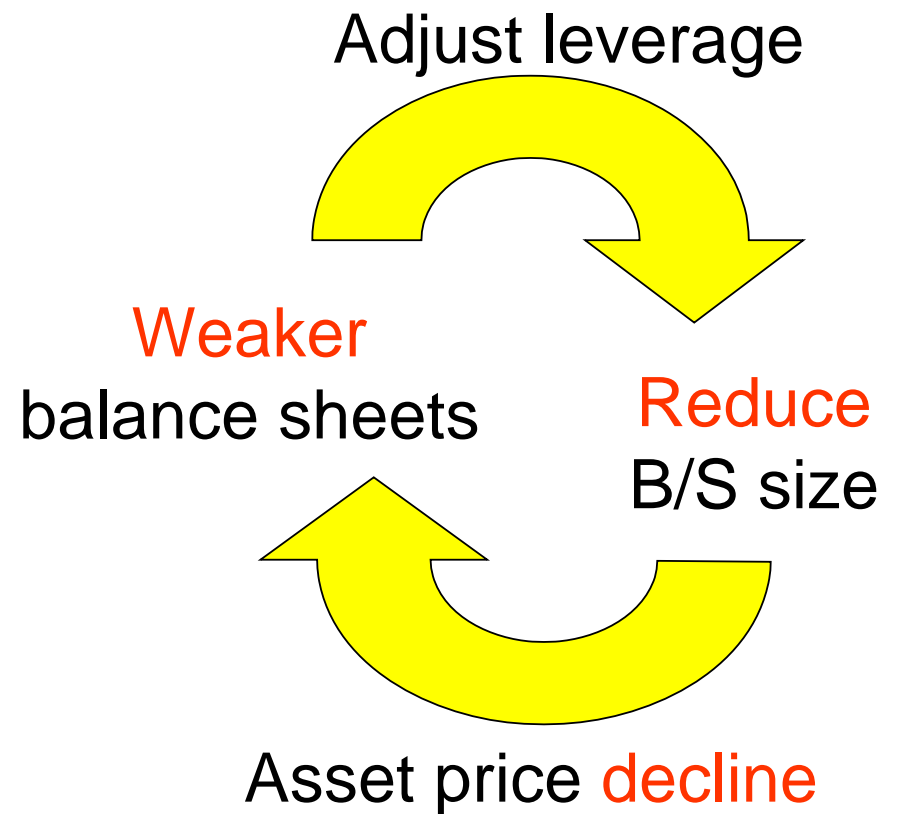
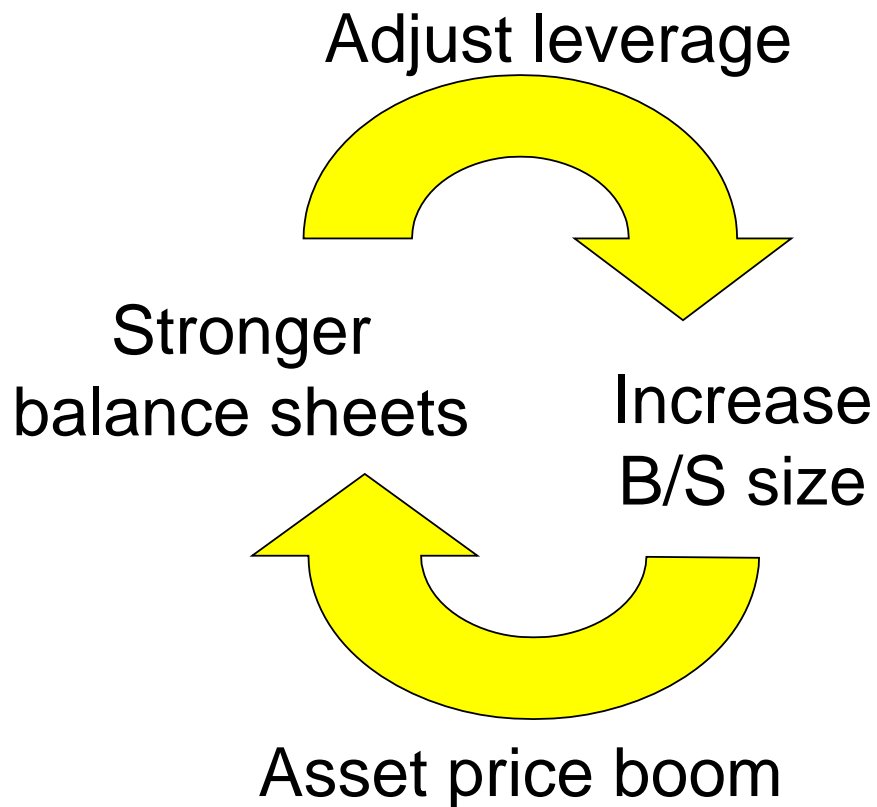
# Problem of Capital Inflows

- Excessive domestic liquidity
- Appreciating exchange rate
- Constraint on monetary policy
- Vulnerability to sudden reversals

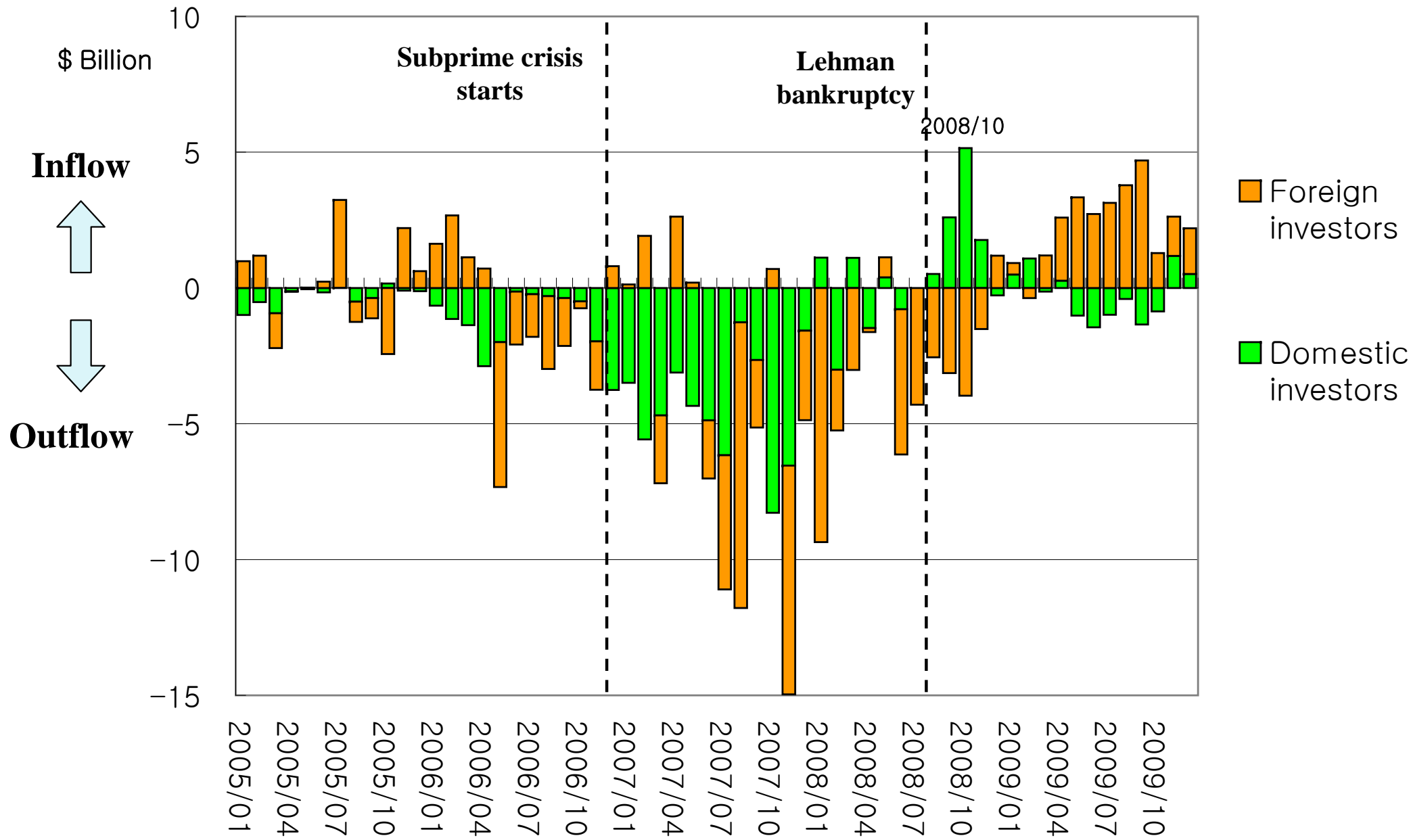
# Capital Flows to Emerging Economies



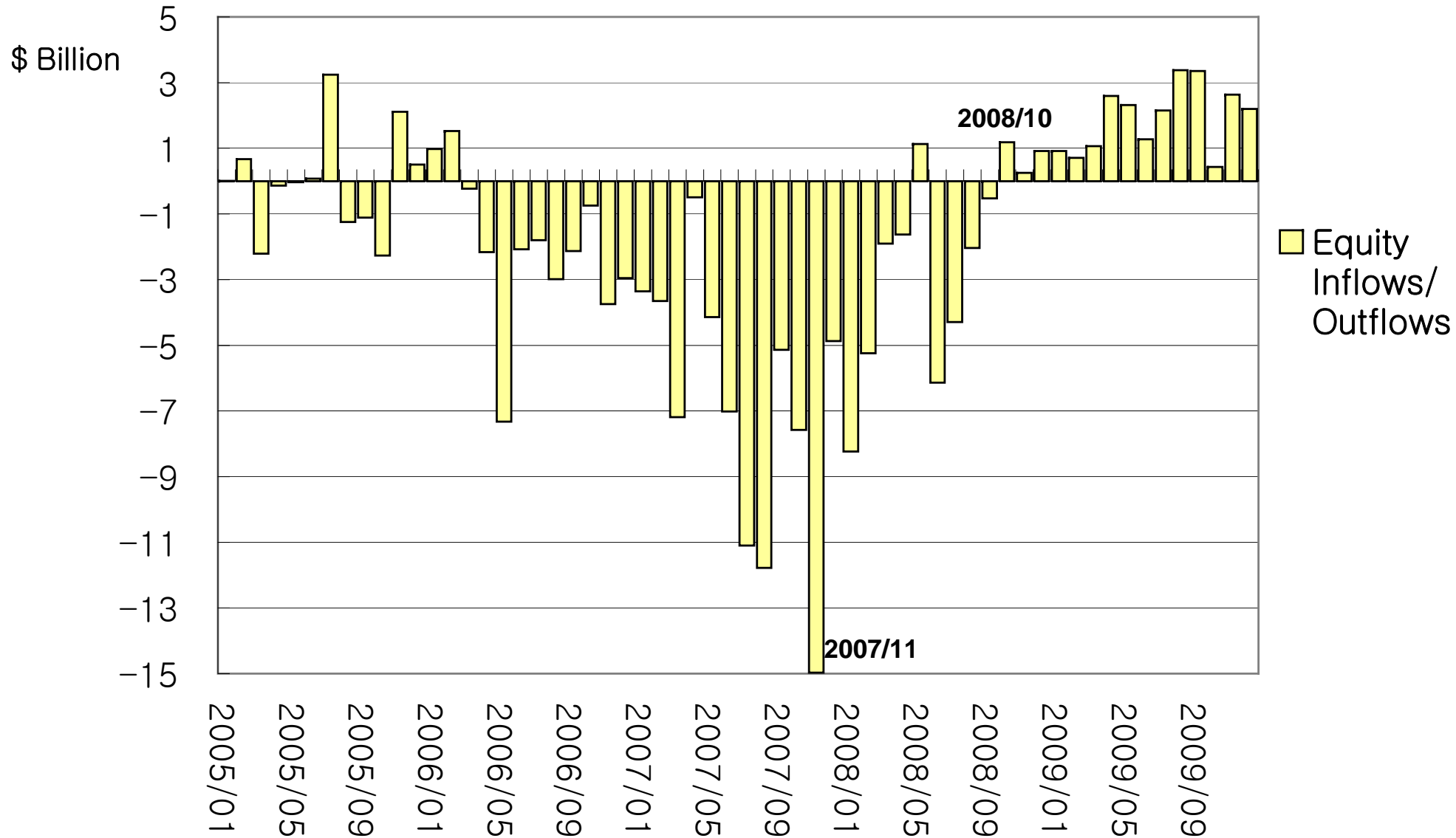
# Leveraging and Deleveraging



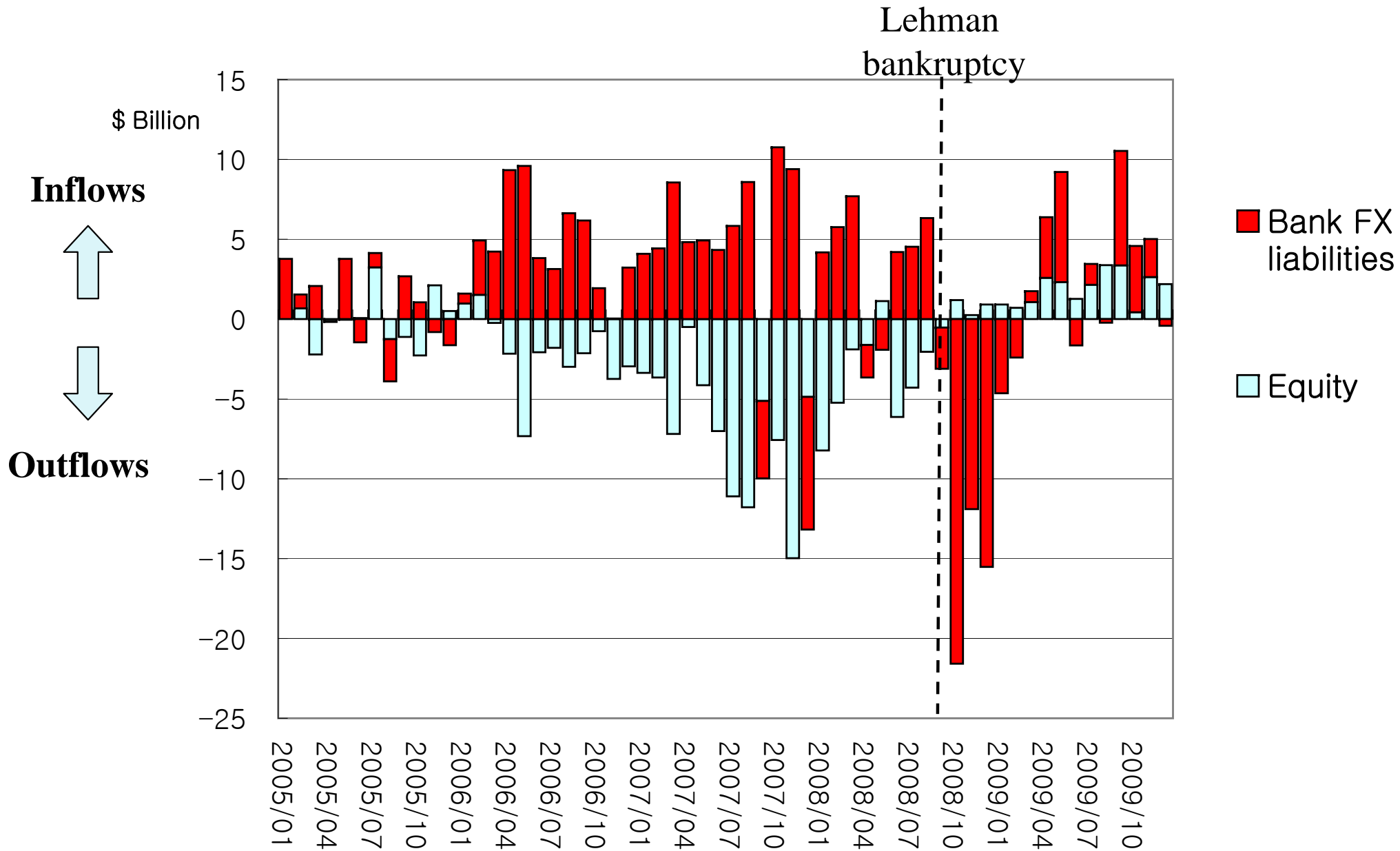
# Equity Inflows/Outflows (Korea)



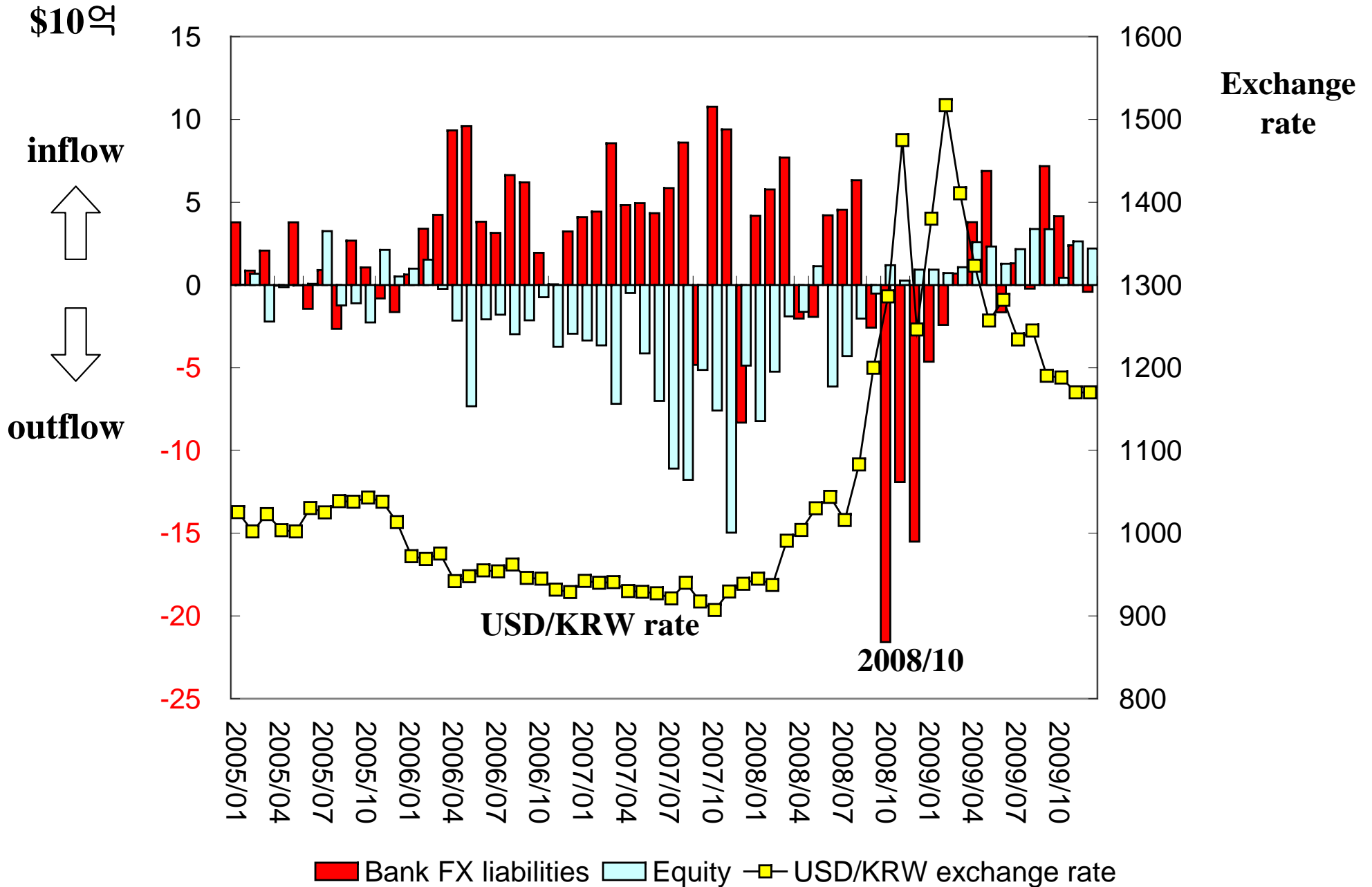
# Net Equity Inflows/Outflows (Korea)



# Equity and FX Bank Liability Flows (Korea)

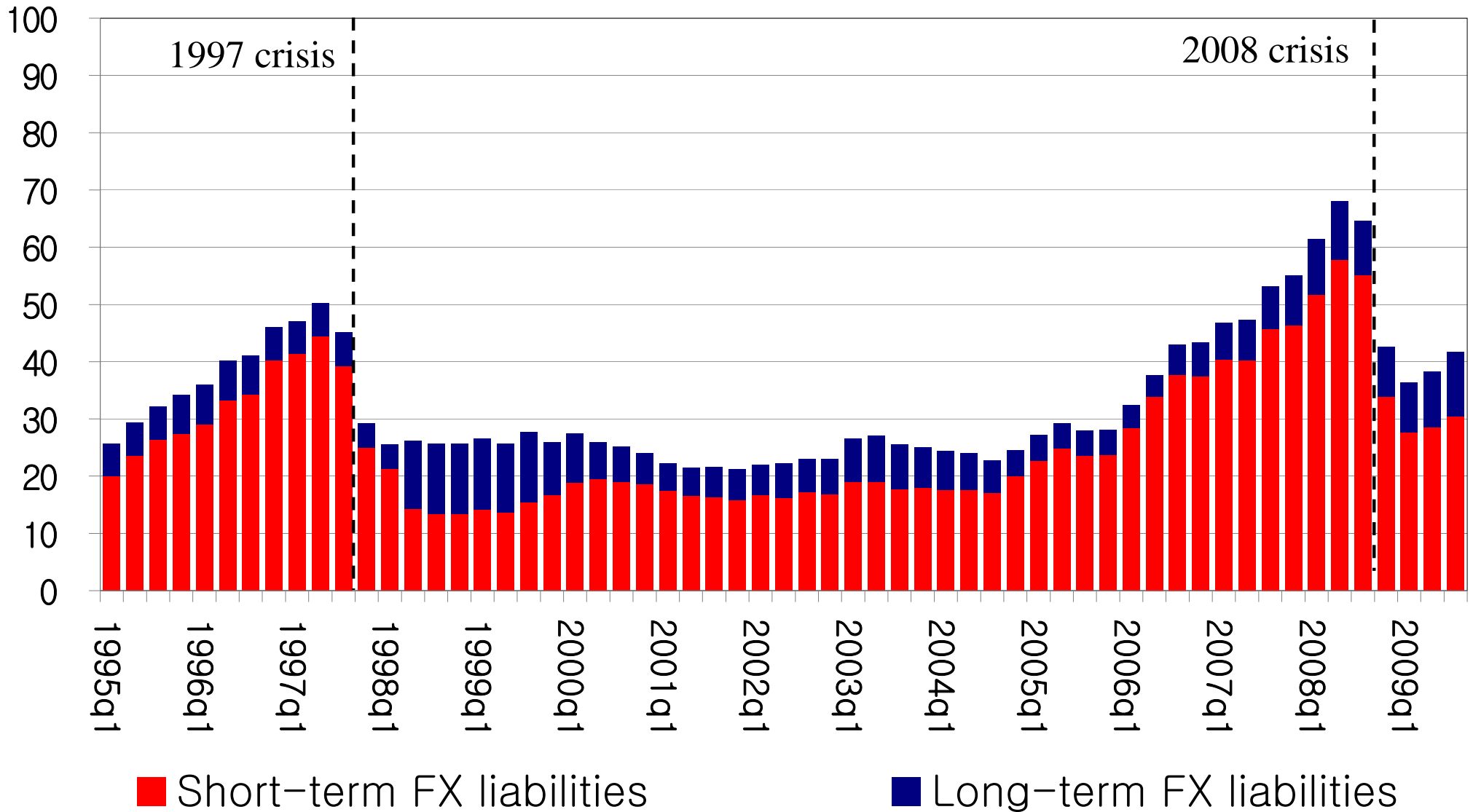


# Capital Flows and USD/KRW Rate



# FX Liabilities (Korean Commercial Banks)

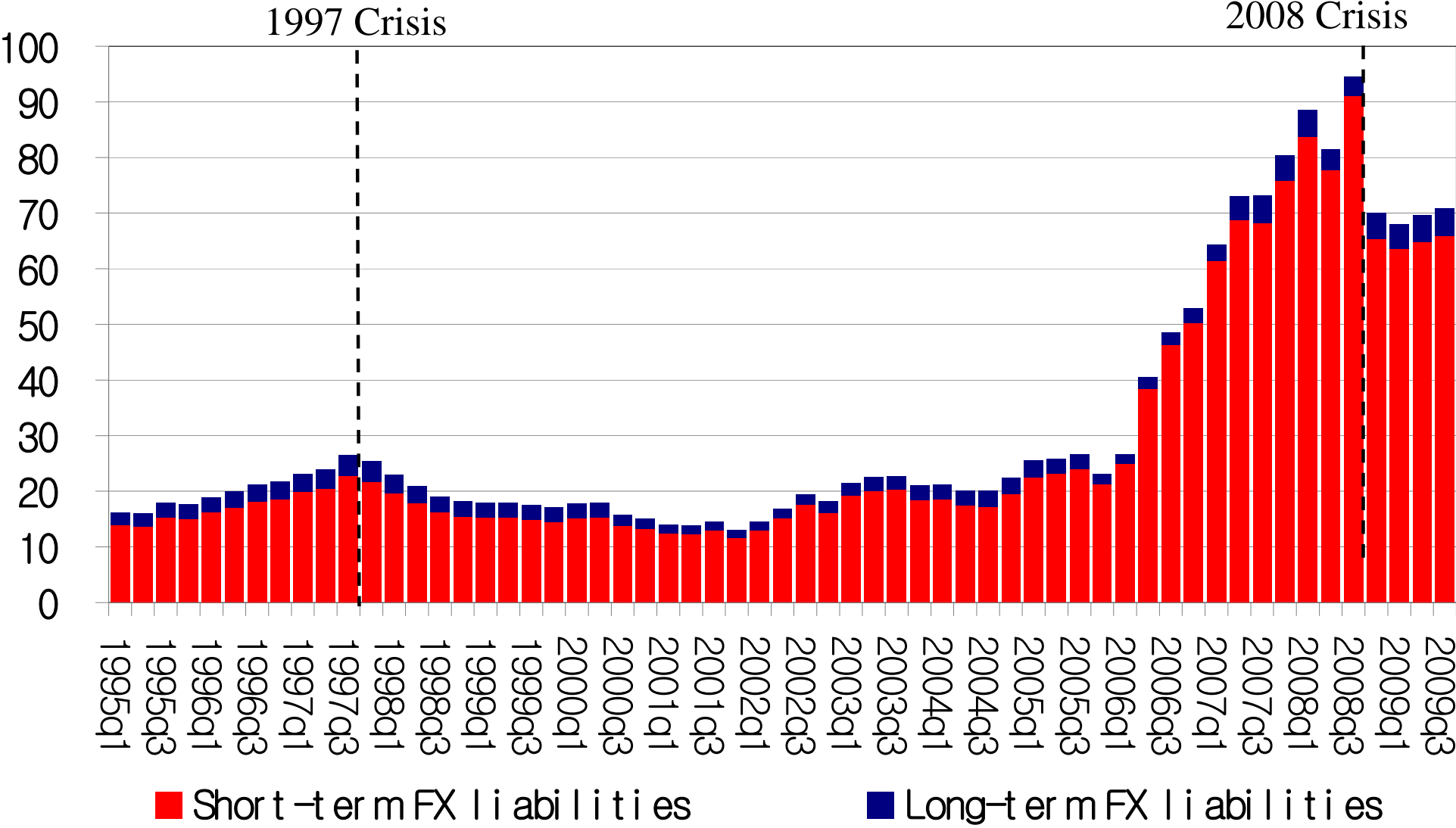
\$ Billion



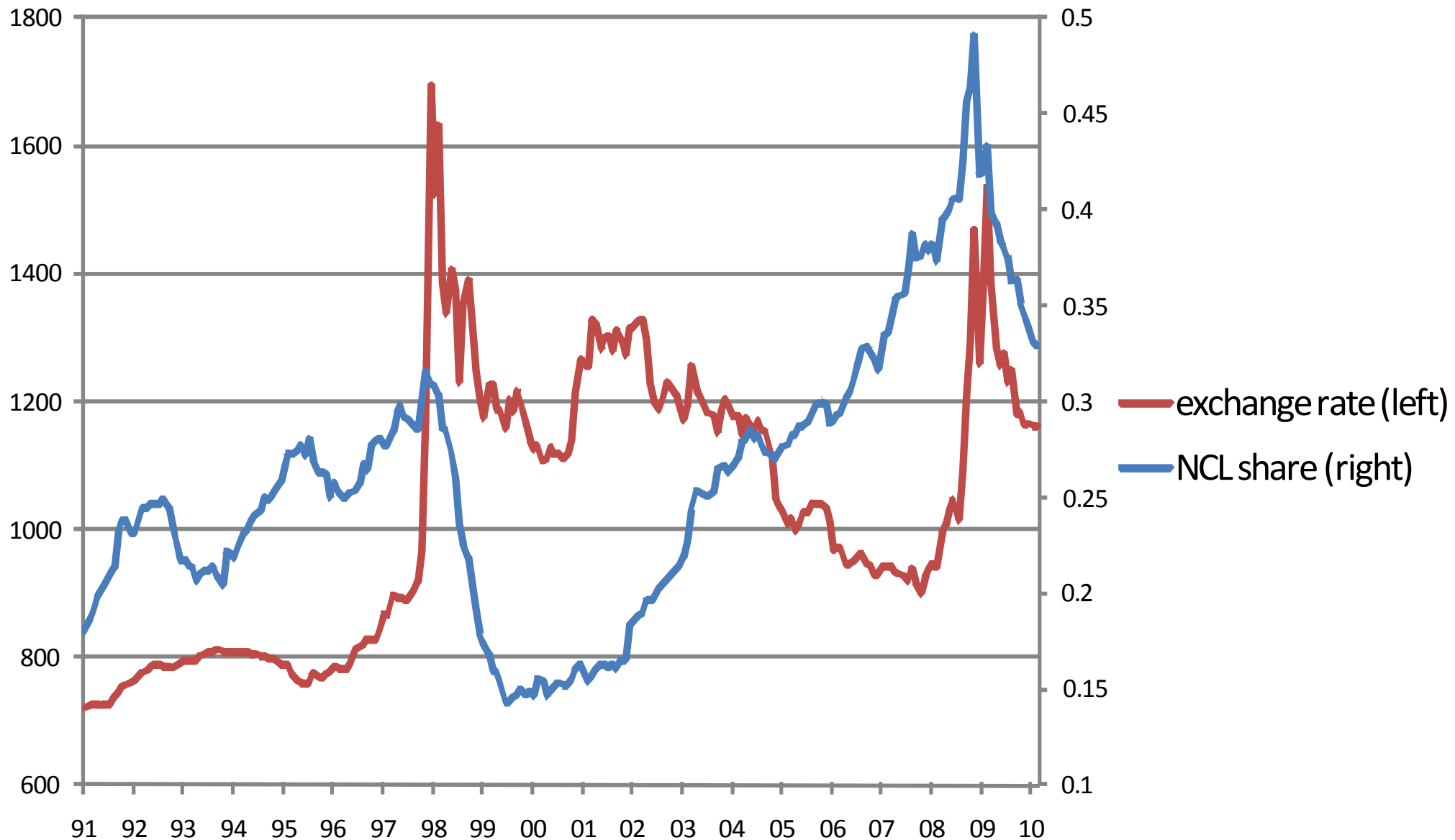


# FX Liabilities (Foreign Bank Branches in Korea)

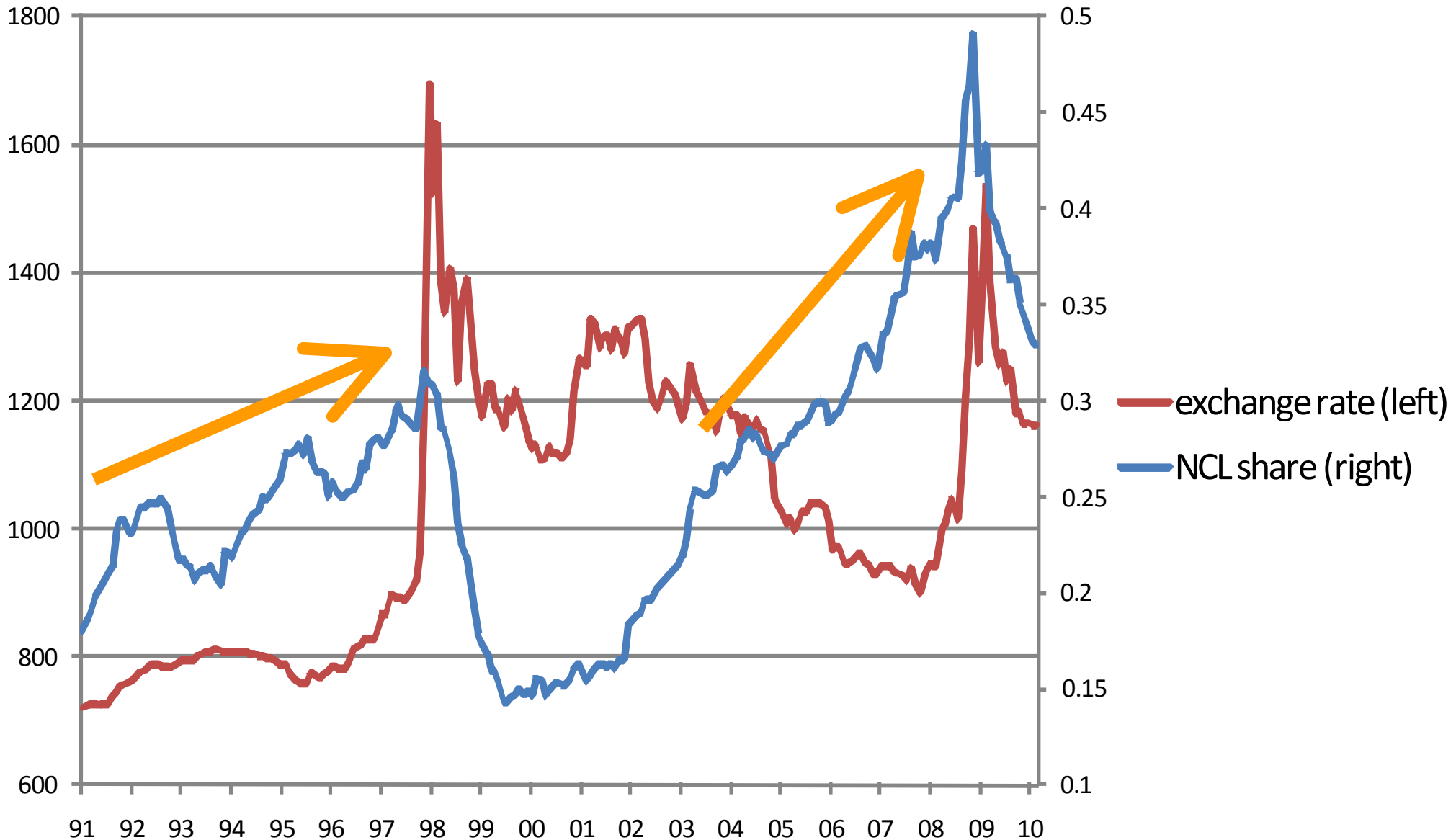
\$ Billion



# Non-Core Liabilities in Korea and USD/KRW Exchange Rate



# Increase in Non-Core Liabilities Signal Future Rapid Depreciation



# Adrian, Etula and Shin (2009)

- Growth of USD bank liabilities this period (repo, commercial paper) forecasts *appreciation of USD* next period
- “Risk Appetite Channel”
  - Increased non-core liabilities signal higher risk appetite & lower risk premium
  - *Depreciation* of inflow destination currencies

# Forecasting USD/KRW Exchange Rate

Dependent Variable: Monthly Exchange Rate Growth	[1]	[2]	[3]	[4]	[5]
Exchange rate Growth (-1)		0.007	-0.007	0.003	-0.038
		[0.071]	[0.081]	[0.080]	[0.084]
Non-core Liabilities Growth (-1)	0.213**	0.209**	0.260**	0.263**	0.241*
	[0.092]	[0.099]	[0.124]	[0.123]	[0.123]
Interest Rate Difference (-1)			0.003	-0.037	-0.05
			[0.090]	[0.090]	[0.090]
Industrial Production Growth (-1)				-0.340**	-0.324**
				[0.140]	[0.140]
Stock Index Growth (-1)					-0.069*
					[0.040]
Constant	-0.001	-0.001	-0.001	0.002	0.003
	[0.003]	[0.003]	[0.005]	[0.005]	[0.005]
Observations	229	229	182	182	182
Adjusted R-squared	0.019	0.014	0.011	0.037	0.048

# Forecasting Credit Spreads

Dependent Variable: Credit Spread	[1]	[2]	[3]	[4]	[5]
Credit Spread (-1)		0.948***	0.952***	0.956***	0.960***
		[0.036]	[0.038]	[0.039]	[0.040]
Non-core Liabilities Fraction (-1)	-0.003	0.029***	0.030***	0.029***	0.030***
	[0.013]	[0.005]	[0.005]	[0.005]	[0.006]
Interest Rate Difference (-1)			-0.004	-0.003	-0.003
			[0.011]	[0.011]	[0.011]
Industrial Production Growth (-1)				0.003	0.003
				[0.006]	[0.006]
Stock Index Growth (-1)					0.001
					[0.002]
Constant	0.006***	0	0	0	0
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Observations	130	129	129	129	129
Adjusted R-squared	0.0073	0.8444	0.8433	0.8423	0.8415

# G20 Reform Agenda for Bank Regulation

- Quality, quantity of bank capital
- Procyclical capital buffer
- SIFI surcharge (for **s**ystemically **i**important **f**inancial **i**nstitutions, or “too-big-to-fail”)
- **Leverage ratio cap**

Details being worked out by BCBS and FSB for agreement by end-2010

# Bank Levy as Prudential Tool

- IMF April 2010 bank levy proposal
- Levy on non-core bank liabilities
  - For open emerging markets, aimed at short term foreign currency liabilities
  - Curb excessive capital inflows
    - Aimed at excess liquidity and permissive global capital market conditions
    - Emerging country policy maker gains control of US dollar interest rate for bank funding costs



# Global Financial Safety Net

- Bilateral swaps
  - Very effective during 2008 crisis
  - But negotiations are prisoners are circumstances
- Global liquidity backstop
  - Formally on the G20 agenda
  - Many possible variations, details to be worked out