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Financial Safety Net
Korean Experience and Implications

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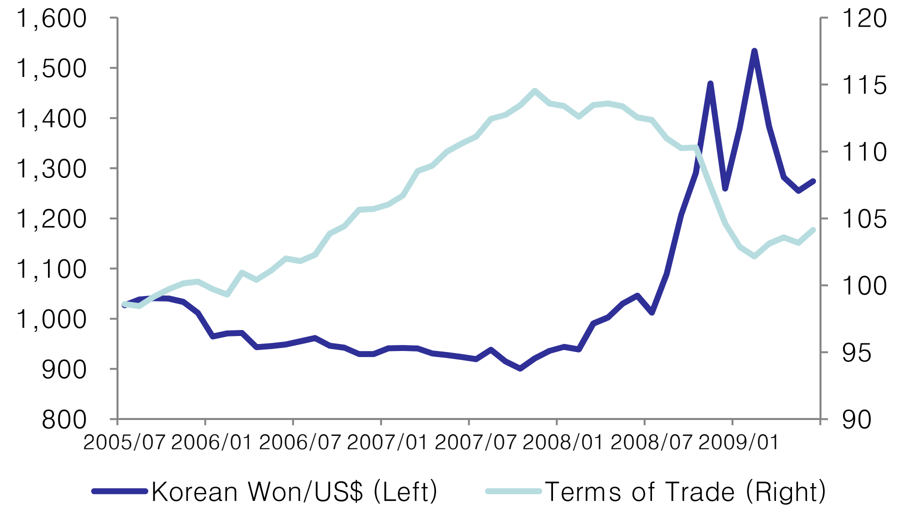
Korea Capital Market Institute
Inhyung Lee
Research Head
Capital Markets Division

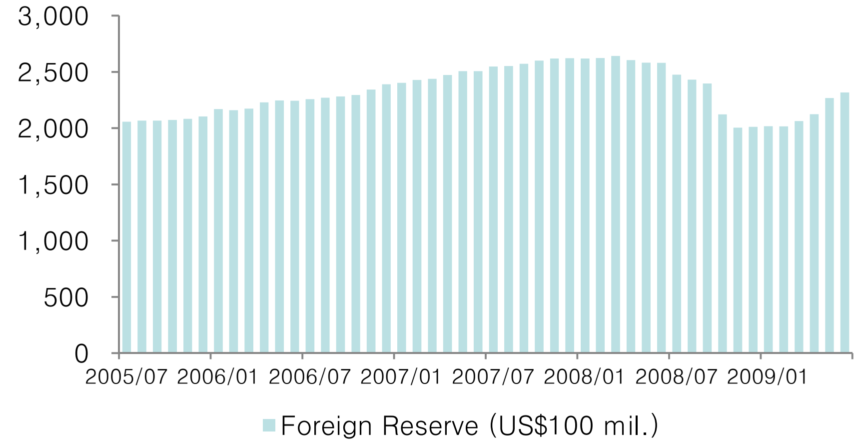
자본시장연구원
Korea Capital Market Institute

Contents

Exchange Rate Policy Broadly Consistent With ToT

- During 2005~2007, the Korean won appreciated 12.3%, which is broadly consistent with the 15.1% improvement in terms of trade
- Nonetheless, foreign reserves continued to increase during the same period
  - Reserves reached around 25% of GDP by the end of 2007
  - By end of February 2010, foreign reserve holdings was at US$271 billion, amounting to 33% of GDP
  - One of the highest rates for an independent floating regime, reflecting concerns for safety and export competiveness





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Reserves are Strongly Related to Capital Flows

- Behavioral demand function for foreign reserves were estimated using data for 2000~2008
  - Results indicate increase in short-term debt and portfolio investment both contribute positively towards reserve holdings
  - The opportunity cost, which is the difference between domestic interest rate and the US Treasury yield, negatively impacts the built up reserves
- Capital flow is one of the main determinants of reserve accumulation

Explanatory Variables	Estimated Coefficient	Significance
Import Propensity	-0.009	-0.789
Opportunity Cost	-0.017	-1.784*
Volatility of Foreign Reserve	1.448	2.554*
Short-term Debt	0.018	3.424***
Foreign Portfolio Investment	0.013	2.369**
Real GDP	1.042	0.798

*,**,*** represents significance level at 10%, 5%, 1% respectively

Policy Measures to Fend Off Appreciation Pressure

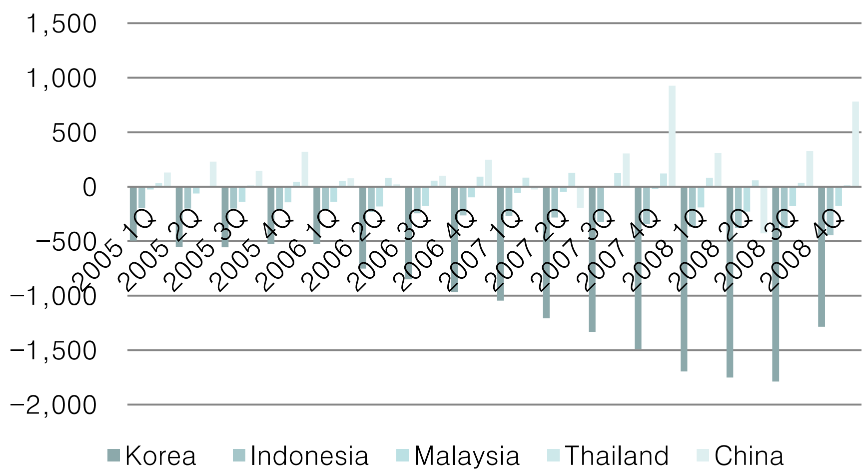
- Deregulation
  - Upper limits on financial companies foreign currency increased
  - Relaxation of repatriation requirements on proceeds abroad
  - Lifting of the ceiling on individual FDI and real estate purchases abroad

- Administrative Tuning
  - Limiting tax deductibility of interest paid on foreign loans
  - Limiting domestic banks’ NDF positions

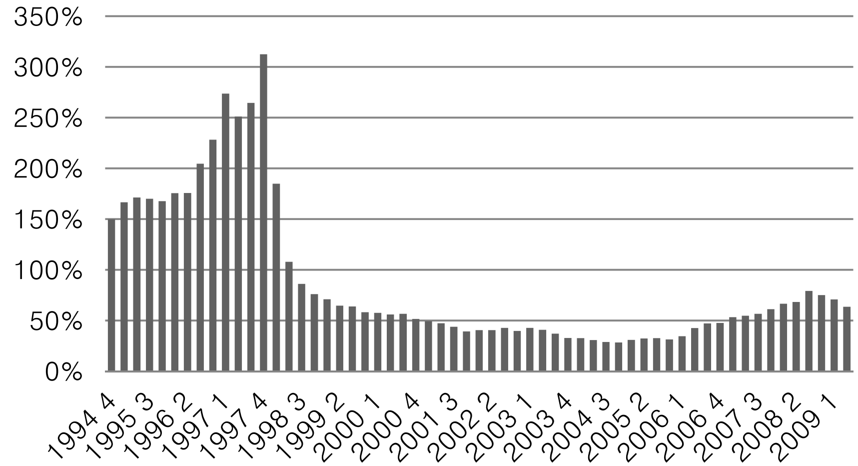
Increasing Dependence on Wholesale Funding

- Export industry, the shipbuilding sector especially, bent on selling forward future payments financed by short-term debt
  - Increase in short-term debt deteriorates indicators such as external coverage ratio
  - In essence, the FX risk of an industry is shifted to the sovereign side
  - To the foreign eye, Korea is exposed to funding risk and vulnerable to contagion risk
  - Explains why emphasis on good economic fundamentals becomes a futile exercise

Net Liability Position of BIS Reporting Banks

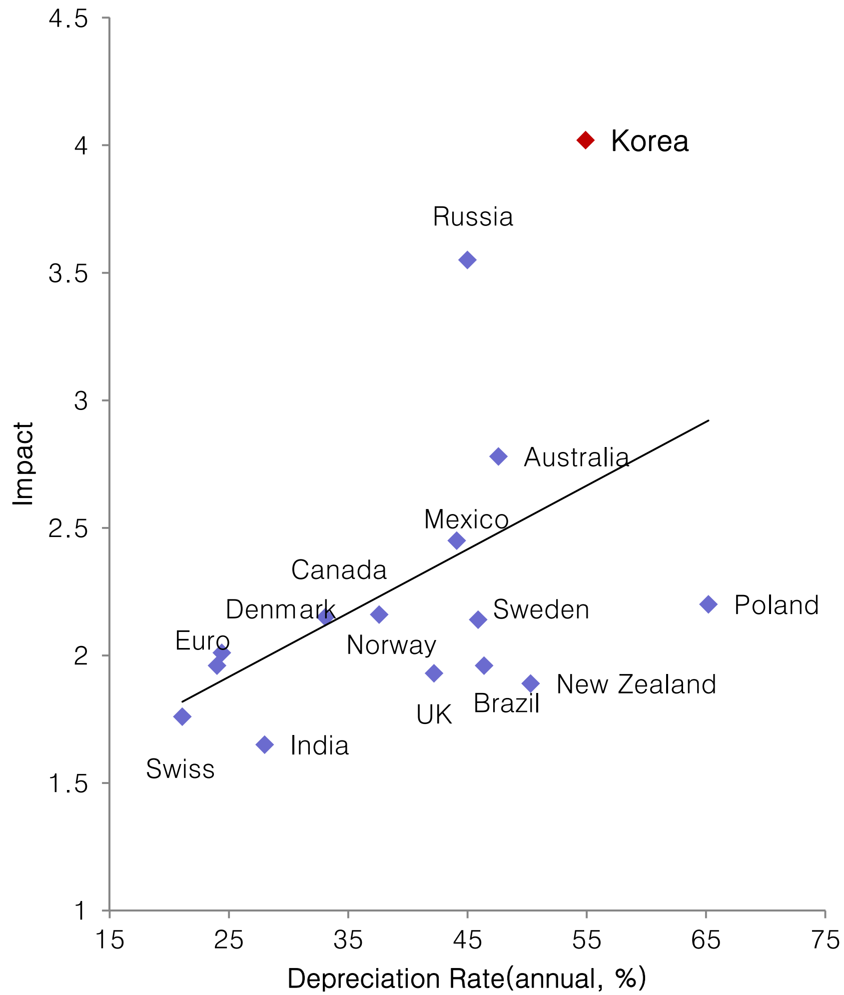


Short-term Debt/Foreign Reserve Ratio

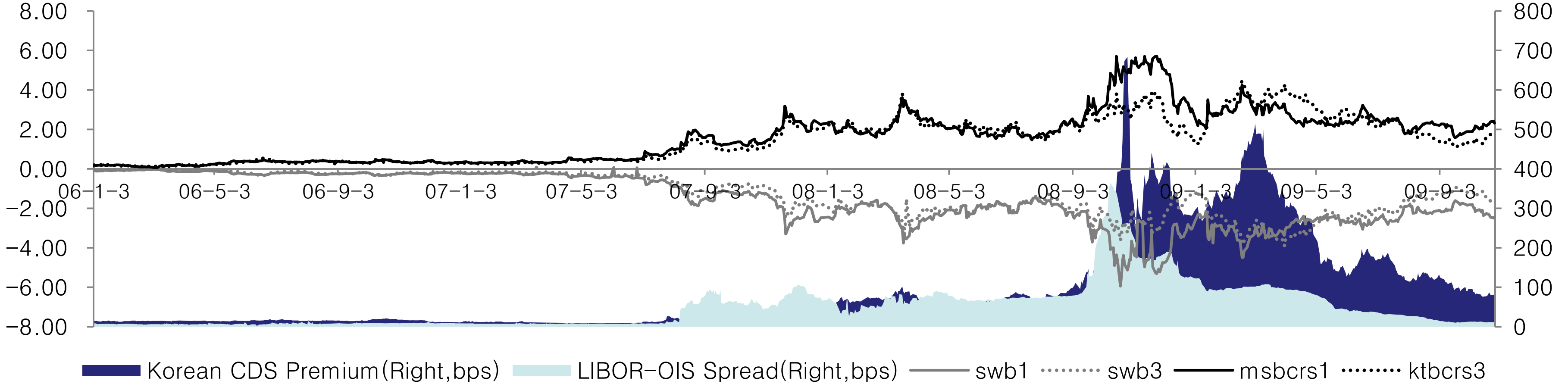


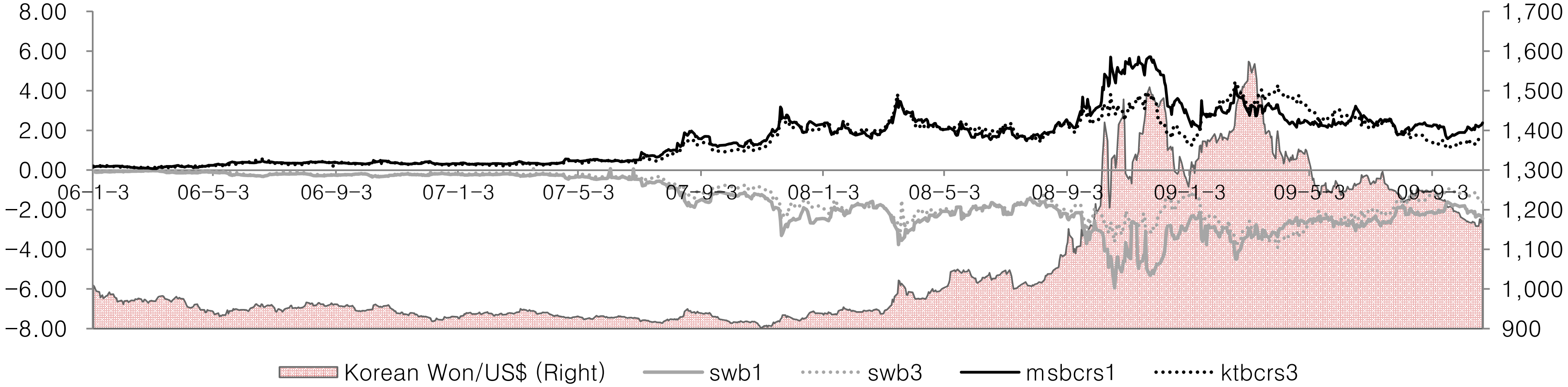
One of the Worst Hit Currencies

- Korean won was one of the hardest hit currencies in the world
  - Depreciation rate as measured by the compound rate of return between the maximum and minimum value vis-à-vis US dollar after August 2008
  - Impact as measured by the ratio of exchange rate volatility subsequent to August 2008 and prior volatility
- Liquidity stress in overseas markets is channeled to the domestic market via cross-currency swap markets



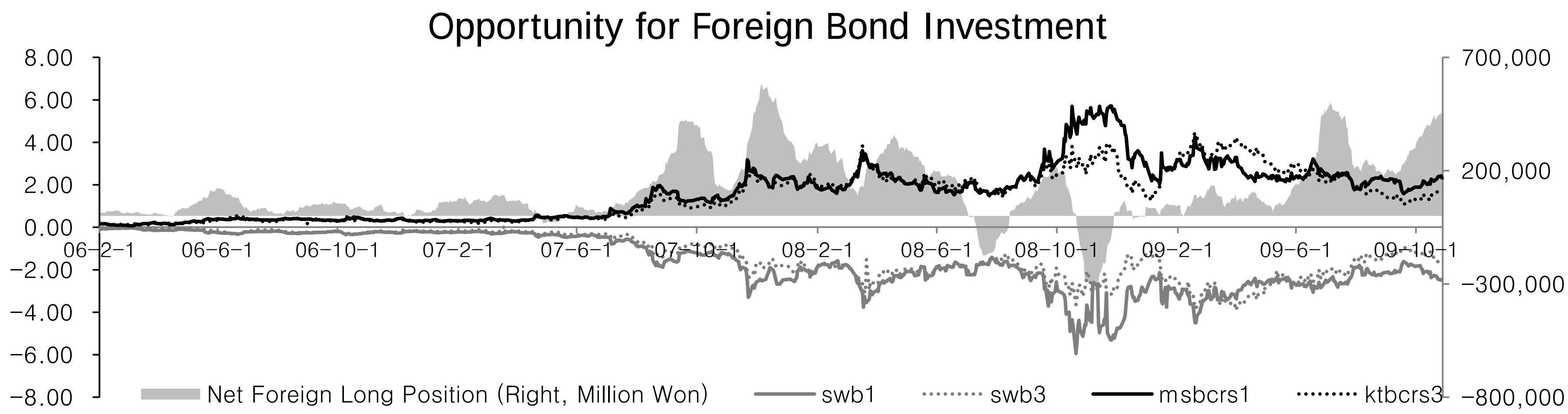
Contagion





swb1: 1yr swap basis, swb3: 3yr swap basis
msbcrs1: 1yr asset swap basis (1yr Monetary Stabilization Bond yield – 1yr CRS)
ktbcrs3: 3yr asset swap basis (3yr Korea Treasury Bond yield – 3yr CRS)

Opportunity for Foreign Bond Investment



- The disparity encourages covered trade into the domestic bond market by foreign investors
  - Playing the role of an investment vehicle accompanying swap transactions
  - Strong incentive for foreign banks to engage in covered trades via overseas funding, resulting in an increase in overall national short-term debt
    - During 2006~2007, national short-term debt increased by 39.4% to US$134 billion, 77.8% of which was due to funding by foreign bank branches in Korea

Infusing Confidence in the Market

- The immediate response to the funding shortage was for the central bank to step in and play the role of the lender of last resort
  - The foreign reserves which reached a peak of US$261 billion on April of 2008, was reduced to US$201 billion by the end of 2008
  - While it may offer a first line of defense, a prolonged use and drying up of reserves would render conditions more difficult
  - The marginal benefit of self-insurance decreases as external coverage rate decreases
- Simultaneously a swap agreement between the US Federal Reserve and the Bank of Korea, announced on October 30, 2008, was instrumental in shoring up confidence in the market

Sovereign Swap Agreement Proved to be Effective

- The funding pressure in the swap market can be explained by
  - LIBOR-OIS spread, indicating the channel through which the global liquidity crunch was delivered to the domestic market
  - Korean CDS premium, showing that perceived credit risk in the market is being priced through a swap basis
  - The US-Korea swap announcement it self was significant in reducing pressure in the swap market

Funding Pressure Explained by...

Variables	Coefficient
LIBOR-OIS Spread	2.002***
Korean CDS Premium	0.003***
US-Korea Swap Announcement	-0.003*

*,**,*** represents significance level at 10%, 5%, 1% respectively
The test date are for 2006.1.4~2009.6.9

Foreign Reserves Build-Up

- Should we continue building up foreign reserve holdings?
  - An expensive proposition
    - The interest rate payment for both the Foreign Exchange Stabilization Fund Bond and the Monetary Stabilization Bond averaged 7.8 trillion won during 2004~2008
  - Crowding out private investment
    - The portion of central bank foreign reserves out of total national foreign assets amounted to 54% (Japan 18%, New Zealand 14%, Swiss 3%) during 2000~2008
    - Inefficient resource allocation
  - Basically "leaning against the wind"
    - Can invite argument of currency manipulation by the central bank
    - Invite speculators to rake in the profits by betting against the central bank

Bank Tax

- Levy tax on liability side of both domestic and foreign banks
  - A higher tax rate on the short-term liability side can induce the maturity structure to become long-term
  - Tax revenues can reduce the quasi-fiscal burden of managing foreign reserves or used as a stabilization fund in case of a future crisis
  - However, as long as there is strong demand for wholesale funding, foreign banks will try to transfer the burden of taxation to domestic banks or the end users, thereby increasing the transaction costs of ordinary financial activities without necessarily decreasing the level of indebtness

International Coordination

- Sovereign swap agreement is a powerful tool
  - Except for countries with strong interest to the US, a swap arrangement between the Fed and BOK is likely to be a conditioned upon the situation at hand, ad hoc
    - Korean financial market is not systemically connected enough yet
    - Korean won is not a convertible hard currency
    - Have to rely on logic based on quid pro quo, meaning a guarantee of liquidity for emerging markets would reduce the need for self-insurance through reduction of reserves, thereby addressing the problem of global imbalance
- Regional arrangements
  - The Chiang Mai Initiative Multilateralization should be utilized giving members the right to draw in the event of rapid deterioration in global capital flows
    - IMF conditionality should be reconsidered in this case

5. Conclusion

- Contagion risk due to global depletion of liquidity is a palpable risk to Asian countries
- Shoring up foreign reserve can help but may not be enough, and carries a large fiscal burden along with the accusations of currency manipulation
- Bank tax can lengthen the maturity structure, but carries the risk of increasing the transaction cost of ordinary financial activities without effectively decreasing the level of the debt
- Swap arrangements are effective, but have to be institutionalized in order to reduce the need for self-insurance or capital control
- Asian regional arrangements can effectively pool part of the vast foreign reserves and utilized in case of contingencies