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FINANCIAL SECTOR ASSESSMENT

REPUBLIC OF KOREA

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FINANCIAL AND PRIVATE SECTOR DEVELOPMENT VICE PRESIDENCY
EAST ASIA AND PACIFIC REGION VICE PRESIDENCY

This report summarizes the findings of the Financial Sector Assessment Program (FSAP) Update for South Korea undertaken in 2013 by a joint IMF-World Bank team. [1]

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PREFACE

The initial assessment under the FSAP was undertaken in 2003. The first Update mission (April 2013) assessed the observance of selected international standards and codes, and initiated discussions on a broad range of financial sector stability issues. In the case of each of the sector assessments new methodologies adopted since the global financial crisis were employed. The second mission (July 2013) completed its review, documented its assessment in a draft Aide-Memoire, and reviewed with the authorities the Aide-Memoire as well as draft Technical Notes covering a range of topics.

The objectives of the FSAP were to review developments in the financial sector since the initial 2003 FSAP and in light of the lessons from the global financial crisis, assess and formulate recommendations related to financial stability and the financial sector oversight framework. This report presents main findings and recommendations.

The mission met with Chairman Shin Je-Yoon of the Financial Services Commission (FSC), Governor Choi Soohyun of the Financial Supervisory Service (FSS), and Governor Kim Choongsoo of the Bank of Korea (BOK). Extensive discussions were held with senior management and staff in those institutions, as well as at the Ministry of Strategy and Finance (MOSF), the Korea Exchange (KRX), the Korea Securities Depository (KSD) and the Korea Deposit Insurance Corporation (KDIC). The mission also met representatives of academia and the private sector. Findings and recommendations were discussed with the heads and senior staff of the FSC, the FSS, the BOK, the KRX, and the MOSF.

The team would like to express its gratitude to the Korean authorities for the excellent working relationship and their cooperation with the FSAP team, as well as for the generous hospitality. Special thanks go to the FSC, the FSS, the BOK, the KDIC and the MOSF for providing timely information and contributing to the work of the mission. Mission members also wish to express their appreciation to the staff of these institutions for a highly efficient organization and the overall support provided to the FSAP team.

FSAPs are designed to assess the stability of the financial system as a whole and not that of individual institutions. They have been developed to help countries identify and remedy weaknesses in their financial sector structure, thereby enhancing their resilience to macroeconomic shocks and cross-border contagion. FSAPs do not cover risks that are specific to individual institutions such as asset quality, operational or legal risks, or fraud.

OVERALL ASSESSMENT

The Korean economy is experiencing a modest recovery, helped by supportive monetary and fiscal policies and buoyant exports. GDP growth is expected to rebound to 2.8 percent in 2013 (from 2 percent in 2012), and strengthen further to 3.7 percent in 2014, in view of the projected global recovery and a gradual pickup in domestic demand. Inflation has fallen to 0.7 percent in October 2013 from 4.2 percent in 2011, well below the target band of 2½–3½ percent. With stronger exports and muted domestic demand, the current account surplus has widened and is expected to reach around 5.5 percent of GDP in 2013. The main near-term risks are external: sharply slower growth in Korea's main trading partners or severe global financial market stress.

Vulnerability of the Korean financial system has diminished considerably since the 2008 crisis, but risks remain. The capitalization of the banking sector has improved, foreign currency liquidity profiles have strengthened markedly, and the active disposal of bad assets has resulted in low levels of nonperforming loans. However, profitability has remained weak. While banks' vulnerabilities to corporate and household exposures appear contained in the near term, further economic weakness could impair the soundness of both sectors. The main near-term risks are external: sharply slower growth in Korea's main trading partners or severe global financial market stress.

The banking system appears resilient to extreme growth shocks or protracted sluggish movement of the economy, but nonbank depository institutions (NBDIs) are more vulnerable. Banking capital adequacy ratios remain at about or above 10 percent even under the most severe stress test scenario. The system would face a small but manageable foreign currency liquidity shortage only under a very severe scenario. While macroprudential policies slowed the growth of banks' lending to households, less regulated NBDIs have increased their exposure to this sector. Stress tests reveal that some NBDIs have thin buffers against credit risk. A regulatory framework consistent with those for banks should be applied to all NBDIs.

Korea has been effective in articulating and applying macroprudential policies, but would benefit from the establishment of a macroprudential council. A high degree of capital account openness, an increasing degree of financial integration, greater sophistication of the financial sector and the potential for regulatory arbitrage require an enhanced ability to detect systemic risks and initiate timely responses. This calls for establishing more formal and dedicated arrangements for macroprudential policy, with enhanced transparency, accountability, and greater independence from the political process, strengthening BOK's role in financial stability, and a separation of the macroprudential policy function from crisis management.

There would be merit also in establishing a dedicated apex committee for leading and coordinating crisis preparedness and crisis management. The authorities should undertake periodic crisis simulation exercises; strengthen the ability of the deposit insurance and resolution authority to play a more effective role, and bring the financial institutions resolution framework in line with international best practice, in particular regarding financial conglomerates and systemically important financial institutions (SIFIs).

Building upon the 2003 FSAP recommendations, the authorities have taken resolute steps to strengthen the regulation and supervision of the financial sector. The assessments of standards and codes identified gaps that need to be addressed, with issues related to governance, mandate, and risk-sensitive approaches, being overarching concerns that could undermine supervisory effectiveness. The legal framework provides solid foundation for financial sector oversight, but gaps need to be addressed.

The **regulatory architecture raises a number of concerns.** These pertain, in particular, to its independence from political influence or the perception of it, multiple objectives that dilute the focus on the core supervisory mandate, overlapping responsibilities and complex processes requiring intense inter-agency communication. There is a need to further strengthen the independence of the FSC and FSS from the political process, to facilitate greater focus on promoting the safety and soundness of the financial sector and the taking of sound supervisory and enforcement decisions.

While supervision of banks is structured around sound off-site techniques and intensive onsite inspections, there is scope to further develop the regulatory framework to facilitate greater compliance with international standards. The application of Basel II to Financial Holding Companies (FHCs) and the full implementation of Pillar 2 to commercial banks are areas for prioritization. Group supervision can be improved by consistently applying minimum requirements for capital, liquidity and risk management on a group-wide basis and by fully embedding it in the supervisory processes.

The Korean authorities have undertaken various initiatives with respect to AML/CFT. The key shortcomings to date are: (i) lack of a sound and effective risk-based approach to AML/CFT supervision; (ii) slow progress in amending the legal framework; and (iii) absence of supervision for a subset of deposit-taking institutions.

The BOK has significant capacity to respond to foreign and domestic currency liquidity pressures although tensions may arise in times of heightened stress. High levels of Korean Won (KRW) liquidity provide participants confidence to fund long term assets from short term markets. However, thin secondary markets for fixed-income securities are a weakness at times of stress, implying a prominent BOK role to backstop markets. The systemic liquidity framework can benefit from measures to support secondary markets development.

Korea has a well-developed payment, clearing and settlement infrastructure, but there's room to increase compliance with international standards. Enhanced powers and cooperation between the BOK and the FSC for the regulation, supervision and oversight of financial market infrastructures (FMIs) is desirable. The authorities should also develop a memorandum of understanding (MOU) to ensure effective coordination between the BOK and FSC at appropriate technical and management levels. They should also develop and test crisis management plan.

The high priority recommendations are shown in Table 1.

Table 1. Korea: Financial Sector Assessment Program Update—Main Recommendations[2]

Recommendations	Timing
Overall Financial Sector Oversight and Coordination	
Establish a dedicated and formal macroprudential council, with a stronger role for the BOK, the power to recommend regulatory action from other bodies, and transparency over policy deliberations.	Medium-term
Strengthen the independence of the FSC and FSS and increase transparency of the allocation of decision-making responsibilities among the two authorities.	Short to Medium-term
Enhance enforcement effectiveness by broadening the range of administrative and civil penalties and increasing the amount of administrative fines and civil penalties.	Medium-term
Financial Stability Analysis, Stress Tests, and Financial Supervision	
Enhance coordination among agencies involved in stress testing (including FSS and BOK).	Short-term
FSS should carry out a comprehensive validation of banks’ stress testing exercise	Short-term
Disclose to the public the results of the stress tests conducted by the authorities.	Short-term
Empower supervisors to set capital ratios above the Basel II minimum, implement all principles of Pillar-2 of Basel II, and extend calculation of Basel II capital to group holding companies.	Short-term
Apply a regulatory framework consistent with that for banks to all NBDIs, with larger entities also subjected to stricter supervision.	Short-term
Implement a risk-based approach to AML/CFT supervision, and expand supervisory activities to all deposit-taking institutions, and the designated non-financial businesses and professions.	Short-term
Ensure sufficiently comprehensive audit oversight and introduce minimum standards for appointing external auditors of banks over and above existing requirements, reflecting expectations of experience and expertise.	Medium-term
Enhance risk-sensitivity of supervision via more flexible and frequent examinations that provide sufficient coverage of the smaller supervised entities and enhancement to the judgmental component of the assessments.	Medium-term
Crisis Preparedness and Crisis Management Framework	
Establish a dedicated apex committee for leading and coordinating crisis preparedness and management work; undertake periodical crisis simulation exercises.	Short-term
Replenish the deficit in the deposit insurance fund, assure KDIC back-up funding	Short-term
Address potential moral hazard risks by enhancing banks’ risk management; and ensuring that government support is not open-ended..	Medium-term
Systemic Liquidity Management and Financial Market Infrastructures	
BOK to ensure that its crisis management contingency plan adequately covers ELA-related decisions.	Short-term
Put in place a Memorandum of Understanding to ensure effective coordination between BOK and FSC in FMI matters, and provide BOK with more enforcement tools.	Short-term
Reform the credit risk and management framework for the securities market, and increase the number of KRX staff managing companywide and CCP-related matters.	Short-term

[2] H/M: High or medium priority level. S/M: indicates the time span for implementation (short or medium-term).

I. INTRODUCTION AND BACKGROUND

A. Macro financial environment

1. **After significant slowdown in 2012, Korea's growth strengthened over the course of 2013 (Appendix Table 1),** with strong exports rebound and strengthening of private consumption and construction. Growth is projected to rise to 2.8 percent in 2013 and 3.7 percent in 2014. Inflation has been subdued, due to the absence of demand pressures and moderating commodity and food prices, falling from 4.2 percent in 2011 to 0.7 percent in October2013 (end of period), well below the target band of 2½–3½ percent. The key short-term risks to the outlook are a disorderly exit from quantitative easing in the US, a re-intensification of the euro area crisis, and a deeper-than-expected slowdown in emerging markets, particularly China.

B. Financial Crisis and Policy Response

2. **Korea was affected only mildly by the recent global market turmoil**. Prompt policy actions by the Korean authorities supported a relatively rapid recovery of the financial sector and the broader economy after the 2008 crisis. With the seizure of international money markets following the collapse of Lehman Brothers, Korean banks faced a sharp reduction in their credit lines and found it difficult to roll over their short-term external borrowings.[3] The shortage of dollar funding spilled over into domestic money markets, and increased the perceived default risk of Korean banks, due to their significant reliance on wholesale funding. However, despite a severe and sudden reversal of capital flows, prompt policy measures such as provision of generous liquidity support in both Won and US Dollar, government guarantee of banks' external debt, establishment of recapitalization and restructuring fund, ensuring SMEs' continual access to credit and active use of macroprudential policy measures to contain systemic liquidity risk in the banking sector, supported the stability of the financial sector and ensured that the flow of credit to the economy was not disrupted.

II. SOUNDNESS OF THE FINANCIAL SYSTEM AND POTENTIAL RISKS

A. Overview of the Financial System

3. **Korea's financial sector is large and diversified (Appendix Table 2).** The total assets of banks and nonbank financial institutions amounted to 312 percent of GDP at end-2012. The banking sector, comprising commercial and specialized banks, and two foreign banks, accounted for 48 percent of aggregate financial sector assets at end-2012, with lending constituting 73 percent of commercial banks' total assets (above the average for the advanced Asian countries). The nonbanking sector comprises a wide range of deposit-taking and non-deposit-taking institutions. The former includes credit cooperatives, accounting for about 11 percent of aggregate financial sector assets at end-2012. Non-deposit-taking institutions mainly comprise

[3] Net capital outflows amounted to 4½ percent of annualized GDP in the fourth quarter of 2008, compared to about 3¾ percent of annualized GDP in the fourth quarter of 1997 during the Asian financial crisis.

insurance companies, asset management companies, and securities companies, respectively accounting for 19 percent, 8 percent, and 7 percent of aggregate financial sector assets, respectively. The share of nonbank financial institutions in the aggregate assets of the financial sector has increased steadily from 41 percent at end-2000 to 52 percent at end-2012.

4. **The authorities have been fostering the development of financial holding companies (FHCs).** FHCs are seen to hold potential benefits, as they permit local financial institutions to pursue economies of scale and scope. The current regulatory stance seeks to minimize potential FHC-related vulnerabilities such as by prohibiting FHCs from controlling nonfinancial subsidiaries. As of end-2012, there were 12 FHCs in Korea: 10 bank and 2 nonbank holding companies.

5. **Korea has a sizeable local capital markets.** The bond market (outstanding securities accounted for 123 percent of GDP at end-2012) is among the largest in Asia. Growth in the market is driven by the corporate bond segment, which is one of the largest in the world.[4] The derivatives market is also large, with trading activity concentrated in exchange-traded derivatives. Daily turnover of equity-linked derivatives at the Korea Exchange was the second highest globally, only behind the CME. There is also active trading of FX and interest rate derivatives.

B. Financial System Vulnerabilities

6. **Financial sector vulnerabilities have diminished considerably since the 2008 crisis as a result of policy actions to strengthen banks' solvency and liquidity in the aftermath of the crisis.** Banks' liquidity profiles have improved markedly, reflecting lower foreign exchange (FX) liquidity mismatches and less reliance on wholesale funding. Banks' capitalization has been bolstered via a series of post-crisis measures, including: (i) preemptive capital injections via the Bank Recapitalization Fund; and (ii) supervisory guidance to limit dividend pay-outs.[5] As a result, banks' capital adequacy is sound, and the CAR of the banking system at end-2012 stood at 14.3 percent, up from 12.3 percent at end-2008.

7. **The exposure of the Korean financial system to intensification of risks in global financial markets has been muted, but remains largely untested.** In the aftermath of the 2008 crisis, banks decreased considerably their dependence on short-term wholesale funding in global markets. However, they are still exposed to the potential for some funding pressures if global financial risks increase sharply, for example via a re-intensification of stress in the euro area, where most foreign funding originates. Moreover, so far Korea has been largely unaffected by the capital outflows related to a potential UMP exit, but its status of safe haven is still untested.

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[4]In Korea, outstanding domestic debt securities amounted to 43 percent of GDP for corporate issuers and 32 percent of GDP for financial institutions at end-2012, placing Korea among the largest corporate bond market in percent of GDP. Consequently, intermediation by the domestic banking system in Korea is relatively less important compared to other Asian countries.

[5] The FSS used the higher of the two ratios in supervisory activity through end-2009.

A disorderly UMP exit and a sudden reversal of capital flows could impair the already weak business sentiment and investment. Finally, tighter financial conditions could put a brunt on domestic growth as funding costs of banks and corporates rise.

8. **Banks' profitability has been subject to downward pressures.** Since the onset of the crisis, the profitability of the banking sector has been impacted negatively by the low interest rate environment (compressing the net interest margins, NIMs), increased credit risk due to deteriorating macroeconomic conditions, and conservative regulatory provisioning standards (up to about 150 percent of expected losses).[6] The return on assets (ROA) of the commercial banks in 2012 was about 0.5 percent and is low relative to other countries. Importantly, the share of non-interest income has remained low.

9. **Vulnerabilities in the nonfinancial corporate sector have picked up over the past two years.** Korean firms entered the 2008 crisis with relatively solid balance sheets, following a decade-long corporate restructuring. Despite the sizeable decline of output during the crisis, the corporate sector remained profitable, and its aggregate balance sheet rapidly strengthened. However, corporate financial conditions deteriorated in 2011 due to the global slowdown, and have remained weak due to lower profitability. The aggregate debt-at-risk ratio is at a level comparable to that prevailing in the midst of the 2008 crisis. Corporate leverage has continued to decline after 2008, but Korean firms remain more leveraged than OECD peers, and their profitability tends to lag behind peers in major advanced and emerging economies.

10. **Vulnerabilities are more acute in sectors most affected by the post 2008 crisis economic slowdown, as well as across SMEs.** Balance sheet pressures and weak earnings are concentrated in sectors that face structural challenges, such as construction and real estate development, or sectors exposed to the global downturn such as shipbuilding and transportation. Overall, SMEs are more leveraged and less profitable compared to large corporates. At 2 percent, SMEs' return on assets in 2011 was about 0.5 percentage points below that of large corporations. SMEs' leverage ratio at end-2011 was also 35 percentage points higher than the 145 percent for large corporations. To some extent, the issue may be structural as extensive government support for SMEs likely provides a lifeline to potentially unproductive and financially weak SMEs.

11. **Korean financial institutions are highly exposed to the household sector, but in the absence of macroeconomic shocks, near-term risks should be manageable.**[7] Household leverage in Korea is high by international standards, with household debt accounting for 136 percent of disposable income at end-2012, and has been rising, although at a slower pace. In the near term, the banking sector vulnerabilities related to household lending are relatively limited

[6] However, the credit quality has remained stable, due to the sales and write-offs of non-performing loans, which averaged 1.2 percent per annum in 2008-2012.

[7] The share of household debt owed by borrowers with high DSR (>40 percent) and high LTI (>400 percent) was 35 percent in July 2010, up from 30 percent in July 2009. At end-2012, the share of debt owed by borrowers with high DSR (>40 percent) alone is estimated to be 33 percent.

due to conservative macroprudential limits, a robust process for collateral collection and high household net wealth. However, the macroprudential requirements on bank household exposures appear to have led to a shift in household exposures to NBDIs resulting in an increase in credit risk at some NBDIs. In recent years, lower-income and lower-rated households have increasingly securing credit via NBDIs, and the share of delinquent loans at some NBDIs is now relatively high.[8] The rising importance of NBDIs calls for a better alignment of the regulatory and supervisory rules applied to NBDIs with those applied to banks.[9]

12. **Further deterioration in the housing market could lead to an upsurge in household credit risks**. Sensitivity analysis[10] suggest that household debt-related vulnerabilities are tightly linked to housing prices, given the high share of real estate in households' wealth. Under the baseline scenario, the aggregate level of debt at risk not covered by *all* assets stands at only 0.7 percent against 21.9 percent if the absorptive capacity of financial assets only is taken into account suggesting that housing debt soundness is sensitive to a decline in housing-related wealth.

13. **The authorities need to support continual gradual household deleveraging to ensure adequate growth momentum without fueling financial stability concerns.** Apart from strong macroeconomic policies and structural policies to bolster the real economy and household disposable incomes, this process should include: (i) tighter regulation of NBDIs to curb further credit expansion via regulatory arbitrage; (ii) further transformation of the structure of household debt towards fixed rate, amortizing loans; and (iii) expanded availability of debt counseling services, providing budget and legal advice to households.

14. **Overall, banks' NPL levels are low, reflecting a practice of active disposals of bad assets, mostly via market mechanisms.** The NPLs of commercial banks accounted for 1.2 percent of total loans at end-2012, with an average of about 1 percent per year written off or sold to Asset Management Companies (AMCs). Most distressed assets are purchased by private entities, which fund purchases via the issuance of corporate bonds. The effectiveness of this process is supported by a robust collateral recovery process. Recovery rates are reportedly high, with lenders legally having senior claims up to 120 percent of loan values. The robustness of these mechanisms in a context of sharp decline in housing prices has not been tested.

15. **However, the financial sector is subject to distortions that need to be addressed.** It is important to ensure that banks have full operational autonomy to undertake risk-based allocation of credit, including developing risk pricing skills to provide non-guaranteed credit to a broader

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[8] Related vulnerabilities are difficult to quantify given the lack of detailed data on NBDIs' household lending patterns.

[9] NDFIs accounted for 20 percent of household credit at end-2012, while all NBFIs accounted for 45 percent.

[10] Sensitivity analysis carried out by the Korean Institute of Finance (KIF) was based on a framework provided by the FSAP team and jointly agreed parameters. The magnitude of the shocks is comparable to those in banking sector stress tests. However, only shocks with direct impact on household debt service were considered, with no feedback effects on house price, for example, given lack of adequate historical data on household debt distributions.

range of viable SMEs, supported by enhanced risk management. Curbing pressures on banks to cut interest rates and fees would be beneficial to avoid depressing bank profits and limit the availability of credit for higher risk borrowers.

C. Stress Tests of Banks and Nonbank Depository Institutions

Banking Sector

16. **The team's analysis suggests that the commercial banking system would remain sound even under extreme shocks to macroeconomic growth or protracted sluggish movement of the economy.** This reflects high initial capital buffers and conservative capital management. The system-wide capital ratios remain considerably above the Basel III requirement even under a very adverse macro scenario and all banks meet the Basel III capital requirements, with CARs remaining at about or above 10 percent.

17. **The impact of higher interest rates due to a potential disorderly exit from unconventional monetary policies (UMP) in the US would also be limited.** However, this should not lead to complacency given that the robustness of the results is subject to model limitations.

18. **Banks also remain solvent if potential second-round spillover effects are taken into consideration.**[11] The stress tests evaluated the potential amplification of the effect of macroeconomic shocks across the banking system due to the propagation through interbank and macro-financial linkages. While the level of bank capital deteriorates further, as expected, the effects tend to be limited and the aggregate CAR of the banking sector declines only marginally. By the end-2017, when the accumulated effect is the largest, the aggregate CAR under the severe scenario would decline to 12 percent taking into account contagion effects, against 13.6 percent without such effects. [12]

19. **Banks' market risks are muted, in part due to limited securities holdings.** Banks' market risk exposures at end-2012 were about eight times smaller than credit risk exposures, and were mostly in the form of debt securities holdings.

20. **FX liquidity stress tests suggest that in the event of unprecedented liquidity outflows the system-wide liquidity position would remain manageable.**

[11] This builds upon the results of the previously discussed stress tests.

[12] The macro model used does not explicitly capture some of the linkages, particularly, the link between higher interest rates and the DSRs. To correct for this, an exogenous consumption shock was applied based on a model linking consumption to DSR. Such an approach (the only feasible alternative, given modeling constraints) may have underestimated the potential impact.

Nonbank depository institutions

21. **The soundness of the NBDIs was assessed based on a reverse stress test, which show that some NBDIs have thin buffers against potential credit risk.[13]** The reverse stress test determined the size of NPL shocks that would account for a drop of capital adequacy below the minimum required levels. The stress tests assumed: pre-loss profitability at lowest levels historically; and more conservative provisioning than rules enforced by Korean supervisors. The results indicate that some NBDIs—including mutual savings banks and credit unions—could only handle up to a 6-8 percentage point increase in nonperforming loans before their capital drops below the minimum required threshold. However, even in the event of potential NBDI difficulties, spillovers to other parts of the financial sector are likely to be minimal, given that their funding is mostly in deposits.

III. Macroprudential Framework

A. Macroprudential Measures and their Effectiveness

22. **The Korean authorities have been actively using macroprudential policy tools with a view to contain the build-up of systemic vulnerabilities**. LTV ratios were introduced in 2002, in response to sharp increases in house-price growth, and were complemented by limits on DTI ratios in 2005. When the Lehman collapse exposed the volatile funding structure of the Korean banking system, the authorities introduced a range of measures in order to contain liquidity and FX vulnerabilities, including a ceiling on the loan-to-deposit ratio (2009), regulation on the ratio of FX derivatives position (2010) and a levy on non-deposit FX liabilities (2011).

23. **The LTV and DTI policies have been adjusted actively to changing conditions and seems to have contributed to the resilience of the Korean financial system.** The limits on LTV ratios apply nationwide, but are tighter in designated speculative zones, while the limits on DTI ratios apply only within the metropolitan area. Since their launch, both ratios were tightened and loosened several times, with the cumulative effect amounting to a considerable tightening relative to the levels at which the measures were introduced. The limits were also extended to nonbank providers of mortgage credit, even if with some delay.[14] The average *actual* LTV ratio in Korea is around 50 percent, which is low when compared to that in other countries (e.g., 74 percent in Germany, 75 percent in the United States and 80 percent in the United Kingdom),.[15]

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[13] Carrying out stress tests for NDFIs was deemed essential, given the collective importance of these institutions for the domestic financial stability (they account for 20 percent of domestic household credit).

[14] At present, limits on the LTV ratio range between 50 and 60 percent for banks and between 60 and 70 percent for nonbanks, while the DTI ratio limit is between 50 percent and 65 percent.

[15] See Kim Choongsoo, Governor of Bank of Korea, “Macroprudential Policies: Korea’s Experiences,” 2013. Since 2008, house prices have been falling in Seoul, but have continued to grow in other regions.

24. **Introduction of a ceiling on the ratio of loans to deposits has led to greater resilience to liquidity shocks.** The ratio of loans to Won deposits stood at around 120 percent for domestic banks when the authorities announced a ceiling of 100 percent on this ratio. Banks responded by reducing their reliance on funding through bonds, short term certificates of deposits and interbank loans, and increasing funding through core deposits. As a result of the measure, which has been enforced since June 2012, the loan-to-deposit ratio has come down substantially, to around 95 percent (as of April 2013) on average for commercial banks.[16]

25. **FX related measures were designed to contain systemic risk from short-term FX borrowing by foreign bank branches and domestic banks.** The regulation on the ratio of FX derivatives position was first introduced in October 2010 at 250 percent for foreign bank branches and 50 percent for domestic banks and was since tightened twice, in July 2011 and January 2013 to present levels of 150 percent and 30 percent for foreign bank branches and domestic banks respectively. This measure was designed to curb banks' building up of excessive FX derivatives positions which tended to be financed by short-term borrowing and as a result, tended to increase maturity mismatches and financial vulnerability in the banking system.

26. **A Macroprudential Stability Levy has complemented the regulation on the ratio of FX derivatives position since 2011.** The levy is 20 basis points of the dollar amount of short-term FX funding with a maturity of less than one year, with lower rates applying to longer maturities in a graduated manner, and applies uniformly to both foreign bank branches and domestic banks. The levy penalizes carry trades where banks borrow short term in FX, to swap this funding into Korean won and invest in local assets.

27. **The FX related measures appear to have had the desired effects.** The average ratio of FX derivatives position of foreign bank branches has fallen from over 260 percent at the time the regulation on the ratio of FX derivatives position was first announced to around 70 percent on average in March 2014, although this may have been in part due to reduced demand from exporters for forward contracts. The measures appear also to have contributed to a shift away from short-term FX funding, with its share in all FX funding falling from around 50 percent in 2008 to less than 30 percent in December 2013, mostly driven by shifts in the maturity structure of the external funding of foreign bank branches towards longer-term funding.

B. Institutional Arrangement and Recommendations

28. **Macroprudential policy in Korea has long been coordinated at various levels and through a range of interagency meetings**. Systemic risk assessments and policy measures were discussed in meetings of the informal "FX Market Stabilization Meeting" and the "Economic and Financial Market Monitoring Meeting", and joint press conferences and press releases used to announce macroprudential measures. These arrangements were replaced on July 20, 2012 by MEFM which is convened at least quarterly at the deputy level and comprises the BOK, the FSC,

[16] The loan-to-deposit ratio used here is based on a definition followed by the FSS and differs from that used in the Appendix Table 3.

the FSS and the MOSF, which chairs and prepares the agenda. The scope of the meeting is broad and in principle covers all aspects of macroeconomic and financial policy. The authorities strive for consensus but the decisions taken at the meeting are not binding, and each agency remains ultimately responsible for policy decisions in its domain. Interagency coordination is not confined to the MEFM and is strong at working level especially between the MOSF, the FSC and the FSS. To improve information exchange between the agencies, a revised Memorandum of Understanding was signed in 2009, and has led to improvements especially in the sharing of supervisory data.

29. **Korea has done well in applying macroprudential tools and should consider a further strengthening of the institutional framework for macroprudential policy**. In particular, arrangements should be based on a formal and well-focused institutional framework for macroprudential policy. They would benefit from enhanced transparency and accountability, a greater degree of independence from the political process, and a clarification and strengthening of the role of the BOK in financial stability.

30. **The arrangements for macroprudential policy should be separated from those for crisis management and preparedness.** Macroprudential policy and crisis management are separate policy functions that can each benefit from separate institutional frameworks, including from greater transparency as well as greater political independence. Separation would also facilitate the establishment of a stronger role for the BOK in macroprudential policy.

31. **The objectives, functions and powers of a dedicated macroprudential policy council should be articulated in primary legislation**. The council should have broad power to make recommendations to the regulatory agencies, coupled with a ‘comply or explain’ mechanism, as is increasingly standard practice. The law should require the BOK to provide regular assessments of systemic risk to the council and to formulate draft policy responses for consideration by the council. A record of the council’s deliberations should be made public and further accountability to parliament and the public should be ensured through periodic reports. The council could be chaired by the BOK or the MOSF and should also comprise the financial regulatory and supervisory agencies. The council should meet at least quarterly with all participating agencies represented at the top level.

32. **It will be important that the arrangements for macroprudential policy do not impinge on the continued independence of the BOK in conducting monetary policy.** Monetary policy should therefore be explicitly excluded from the scope of discussion of the council. Alternatively, the arrangements could assign the BOK a veto power over policy decisions by the council.

IV. Financial Sector Supervision: Legal Underpinning and Structure

33. **The legal framework for the financial sector has undergone improvement since the 2003 FSAP, but there are gaps**. Financial sector related laws and subsidiary legislation have been continuously updated, and efforts made by the authorities to benchmark them against international standards and to draw from legal traditions in multiple jurisdictions. Gaps in the legal framework relate in particular to the fact that the enforcement approach is predominantly prosecution centric and the range and level of administrative pecuniary sanctions are relatively small compared with other jurisdictions. The introduction of a regime for imposition of administrative penalties in Korea to a broader range of offences would enable the financial regulators to implement a more effective enforcement system.

34. **The institutional arrangements for financial sector supervision involve multiple agencies.** These agencies include: (i) the MOSF: responsible for FX policies and financial and economic coordination; (ii) the FSC: responsible for financial sector policy, prudential policy, supervision, enforcement, sanctions, and financial institution resolution; (iii) the Securities and Futures Commission (SFC), established within the FSC: responsible for monitoring, supervising and investigating capital markets activities; (iv) the FSS: responsible for conducting the inspection and supervision of financial institutions under the guidance and oversight of the FSC and SFC; (v) the KDIC: operating the deposit insurance function and performing the resolution functions under the guidance and oversight of the FSC; and (vi) the Korea Financial Intelligence Unit (KOFIU): established under the oversight of the FSC, performing the financial intelligence function.[17]

35. **Inter-agency mechanisms have been established to facilitate policy coordination and conflict resolution, and cross representation at key decision-making levels and multiple interlocking governance arrangements (Please see table below.)** The inter-agency mechanisms are: (i) The FSC, FSS, BOK, MOSF, and KDIC have signed a joint MOU that provides for sharing periodic and non-scheduled financial information submitted by financial institutions to the BOK, FSS, and KDIC; and (ii) the BOK and KDIC can request the FSS to undertake joint examinations of regulated entities and share examination reports. Following joint BOK/FSS examinations, the BOK may request the FSS to take any necessary corrective measures in areas under its mandate. The BOK’s Monetary Policy Committee (MPC) may also request that the FSC reconsider a decision it has taken if it has a direct bearing on monetary and credit policies.[18]

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[17] Joint examinations between the BOK and FSS are also possible.

[18] Article 89(2) of the BOK Act notes that the FSC, if requested by the BOK to review a decision, needs a two thirds majority to retain its original decision.

Table 2. Interconnectedness of Financial Sector Oversight Decision-making Bodies

Name	MOSF	BOK	FSC	FSS	FSC-SFC	KDIC	OTHERS
Macroeconomic Financial Meeting	**Chair:** Vice Minister	Senior Deputy Governor	Vice Chair	Senior Deputy Governor	-	Vice President	-
Bank of Korea (Monetary Policy Committee)	Vice Minister (non-voting member)	**Chair:** Governor and Sr. Deputy. Governor	Vice Chair (non-voting member)	-	-	-	Five other members (one member each recommended by BOK, MOSF, FSC, Korea Chamber of Commerce & Industry, and Korea Federation of Banks)
Financial Services Commission	Vice Minister	Senior Deputy Governor	**Chair:** FSC Chairman & FSC Vice Chair	Governor	-	President	Three external members including one recommended by Chamber of Commerce
FSC– SFC	-	-	-	-	**Chair:** FSC Vice Chairman	-	One standing commissioner and three non-standing commissioners
Deposit Insurance Committee	Vice Minister	Senior Deputy Governor	Vice Chair	-	-	**Chair:** President	Three external members
Financial Supervisory Services	-	-	-	**Chair**: Governor, Senior Deputy Governor	-	-	-

V. Sectoral Regulations and Supervision

36. **Detailed assessments of observance of the most relevant financial sector standards and codes were undertaken**:[19] Information was also obtained to update the November 2008 assessment of compliance with the Financial Action Task Force (FATF) 40+9 Recommendations on the Anti-Money Laundering and Combating the Financing of Terrorism (AML/CFT).

A. Banking

37. **The FSC-FSS has made considerable progress in addressing issues raised during the last FSAP and has achieved moderate compliance with the BCPs as revised in 2012.** Numerous structural changes and regulatory reforms have been implemented aimed at

[19] See the Reports on the Observance of Standards and Codes for summary assessments of Korea's observance of financial standards and codes.

strengthening the supervisory framework. This effort, along with a coordinated response by the public sector, has gone a long way in helping to improve the robustness of the banking sector which performed well during the 2008 crisis. Conservative requirements in respect of capital, liquidity and loan loss provisioning have also been important in this regard.

38. **Although banking supervision has been enhanced, further emphasis towards a more risk-sensitive approach would be beneficial.** The FSC-FSS operates with a detailed off-site supervisory process, supported by a broad range of data collected on a periodical basis. The on-site examination process would benefit from more flexible and frequent examinations, tailored to ensure strong surveillance of the most relevant risks. Enhancements to the judgmental component of the assessments and the appointment of a point of contact in charge of all aspects related to a particular bank/banking group is key in achieving a comprehensive view of risk. Supervision practices could be developed further to be more intrusive in assessing corporate governance particularly in assessing the Board's oversight of risk management.

39. **The Internal Capital Adequacy Assessment Process (ICAAP) will be an important stepping stone in achieving an integrated approach to capital planning and higher standards of risk management**. When fully implemented, it will provide a framework for a comprehensive assessment of risk and capital and will help in assigning individual bank capital requirements. Basel II applies to the commercial banks and FHCs are subject to Basel I. Current plans to apply Basel II to FHCs will improve the consistency and comparability of the capital base of Korean banks..

40. **The FSC-FSS have taken the first step in developing a framework for Group supervision of the large complex financial institutions by enacting the FHC Act**. Nonetheless, further effort is needed to achieve an effective approach to group supervision. The FSS-FSC is yet to consistently apply minimum requirements for capital, liquidity and risk management on a group-wide basis. Effective supervision of group structures should be seen as a priority to achieve a consolidated view of risk that takes into account linkages in organizational structure and inter-group transactions.

41. **Prudential regulations covering loan loss provisioning have been strengthened**. In transitioning to International Financial Reporting Standards (IFRS), a reserve for Credit Loss was introduced to prevent a decrease of banks' capacity to absorb losses. The non-performing ratios for the domestic banks remain low by international standards. However there are areas to improve provisioning practices, especially where loans return from default to performing status, which should be tightly controlled.

42. **Banks operate with strong liquidity ratios, especially foreign currency liquidity requirements, which are more conservative in their calibration than domestic liquidity**. Banks need to comply with a one-to-one loan to deposit ratio restricting leverage and while foreign currency denominated asset-liability regulatory requirements are tightly managed, there is scope to enhance liquidity risk management of Won denominated asset-liability. Transition to

the Basel III Liquidity Coverage Ratio (LCR) framework will be a useful step in this regard. Banks are currently required to report LCR ratios on a quarterly basis.

43. **Authorization processes are generally thorough but there is room to require formal approval for certain activities.** Major acquisitions and transfer of ownership rely on a process of notification as opposed to an explicit approval by the supervisor. The requirement to obtain an approval involves a higher standard of due diligence and enables the supervisory authorities to take action early in the process if deemed necessary.

44. **A regulatory and supervisory framework consistent with banks should be applied to the larger NBDIs (i.e., mutual savings banks) to strengthen their resilience to shocks.** The capital framework for NBDI is a net capital ratio of equity over the sum of total assets and loan loss provisions. For those NBDIs that are equivalent size to banks, the capital framework should be strengthened and calculated using the Basel computations and definitions.

B. Insurance

45. **The insurance supervisory system in Korea shows a high level of observance of the Insurance Core Principles (ICPs).** The supervisory and regulatory structure, although complex, is well developed. Compared to the previous FSAP, reforms have been made that are now proactive to achieve best practices rather than remedial in response to the financial crisis of the late 1990s. The authorities have implemented IFRS accounting standards, updated the capital regime, and many other regulatory requirements in a proactive and timely manner. Limited weaknesses in the regulatory structure are well understood by the authorities and proposals for reform have been developed. The authorities have developed a sound Risk Assessment Application System (RAAS), and their attention to insurance fraud is impressive.

46. **The insurance sector in Korea has long been one of the most significant in the world in terms of penetration.** Total premium stood at KRW 149.9 trillion (USD 134 billion) in 2011 ranking it the eighth largest in the world. Insurance penetration stood at 11.6 percent and was ranked 5th in the world and insurance density stood at USD 2,660 per person ranked 23rd in the world. Insurance market concentration indicates an open and competitive market. All of the large insurers are substantially domestic with both assets and premiums attributable to their domestic business well above 90 percent. They do not currently meet the expected criteria for either IAIS Global Systemic Insurers or ConFrame IAIG supervision.

47. **Negative interest rate spreads remain an issue but the challenges have been mitigated substantially by having recognized the issue well before many other jurisdictions**. The late 1990s financial crisis brought the issue to attention and led to timely corrective actions. An active program of stress testing and other methods, along with actions by insurers has greatly reduced negative spread risk. However, the risk remains albeit at reduced levels and needs to be monitored on an ongoing basis. Insurer profitability and capital are sound for both life and non-life insurance.

48. **Industry capacity for enhanced enterprise risk management will take time to mature.** Continuing the development of risk management capacity can be supported by current initiatives to enhance requirements. Observance will be improved further as ongoing initiatives progress. Enhanced risk management, and group supervision will become more important and can be enhanced progressively using existing platforms for cooperation. G-SIFI and ComFrame could be relevant for Korea at least as a host supervisor in the short term. Becoming a signatory to the IAIS Multilateral Memorandum of Understanding (MMoU) is in progress.

C. Securities

49. **Significant progress was made since the last FSAP in revising the securities regulatory framework, with the current framework achieving good overall compliance with the International Organization of Securities Commissions (IOSCO) Principles.** Importantly, the earlier legal impediments to international cooperation and exchange of information have been removed. Since 2011, Korea also applies the Korean International Financial Reporting Standards (K-IFRS) that follow the IFRS.

50. **Although the regulators' responsibilities are defined in legislation, the complexity of the structure obscures the transparency of the decision-making processes.** The responsibility for deciding on a particular supervisory or enforcement action can lie either at the FSC, SFC, or FSS, depending on the nature and gravity of action, but it is not always clear which one of them is ultimately in charge. The process is further complicated by the use of pre-deliberation committees at various levels. Self-regulatory organizations - the KRX, the Korea Financial Investment Association (KOFIA) and the Korean Institute of Certified Public Accountants (KICPA)—also play a role in the regulatory and supervisory processes. Publication of additional information on the decision-making structure and processes would be beneficial.

51. **The authorities have a broad set of powers, most of which are used effectively.** The on-site examination program could be expanded to ensure sufficient coverage of smaller entities, in particular asset management companies and auditors. Improved oversight of small auditors is important to address challenges in enforcing compliance with the auditor independence and quality control requirements. The on-site inspections should also increasingly focus on ensuring proper handling of customer securities and funds.

52. **Despite recent improvements announced or taken by the authorities, challenges remain in enforcing compliance with the unfair trading/market abuse provisions of the Financial Investment Services and Capital Markets Act (FISCMA).** This is primarily due to the lack of sufficiently dissuasive administrative sanctions and the length and less than optimal outcome of the criminal enforcement process. Jointly with the public prosecutor's office, the authorities should continue to seek ways to improve both the administrative and criminal enforcement powers and processes.

53. **Comprehensive disclosure requirements apply to both issuers and collective investment schemes (CIS).** Applicable rules prescribe the content of primary market, periodic

and ongoing disclosures. While their prescriptive nature ensures compliance with the IOSCO Principles, the authorities are encouraged to monitor whether the current ongoing disclosure requirements for issuers continues to best serve the interests of investors and market evolution while maintaining a manageable compliance burden. Given the risks arising to investors from any shortcomings in CIS custody and valuation, it is important to focus on monitoring compliance and require the use of market or fair value for all CIS.

54. **The current processes to monitor systemic risk do not appear to acknowledge the potential for systemic risk arising from the securities sector.** This combined with certain deficiencies in the regulators' arrangements to manage defaults could negatively impact their ability to deal with market disruptions and institutional failures.

D. Financial Markets Infrastructures

55. **Korea has a well-developed payment, clearing and settlement infrastructure.** BOK-WIRE+ is the real-time interbank gross payment and settlement system, and the backbone of the infrastructure where the final payments of various markets are settled.[20] The KRX is the main player in the securities and derivatives market, operating three exchanges and offering CCP settlement services for all securities and derivatives traded on the KRX.[21] While the authorities have decided to establish a CCP for over-the-counter (OTC) derivatives at a future date, discussions are ongoing on the desirability of transforming the current trade reporting systems into full-fledged trade repositories (TRs). The planned CCP for OTC derivatives should ensure full compliance with the PFMI before being launched, taking into account lessons learned from the assessment of the CCP for exchange-traded products.

56. **BOK-Wire+ is largely compliant with the international Principles for Financial Markets Infrastructures (PFMI).** It is subject to comprehensive and transparent risk management frameworks comprising clear policies and guidelines, governance arrangements, and operational systems including regularly tested default and business continuity procedures. All transactions once settled in BOK-Wire+ are deemed final and irrevocable, as well as bankruptcy remote.

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[20] The current BOK-Wire+ system in place since 2009 has a hybrid settlement function using continuous bilateral and multilateral offsetting mechanisms enabling participants to save on intraday liquidity. It is used for settlement of all short-term financial transactions, cash leg of DVP securities settlement, KRW leg of FX Contingent Liabilities (CLs) settlement and the net settlement of retail payment systems. BOK-Wire+ is also used for monetary policy operations and for the issuance and redemption of government and other public bonds.

[21] The KRX operates three exchanges: the Korea Composite Stock Index (KOSPI), Korean Securities Dealers Automated Quotations (KOSDAQ), and derivatives market (DM). It also has a majority stake in the KSD, which is a securities settlement system, central securities depository (CSD), and maintains the register for all securities traded on the KRX. In 2012, the KRX was the world's number one in stock index options, with a total volume of 1.6 billion traded contracts. It was number 5 measured in value of bond trading and number 8 in value of share trading. At the end of 2012, market capitalization reached USD 1,179 billion (mostly on account of domestic companies).

57. **Improvements are needed in certain areas to enhance the level of compliance with the PFMI.** It is recommended that the operator of BOK-Wire+ : (i) improves the collateral risk management framework by adopting regular testing of haircuts and putting in place an annual independent validation of the haircut procedures adopted; (ii) provides more clarity in the regulations on settlement finality and queue management, particularly with regard to revocation of queued transactions; (iii) fully implements the disclosure framework, including disclosure of relevant rules and regulations in English; and (iv) strengthens BOK's powers of oversight over linked payment FMIs and participants, particularly to obtain authentic information and enforce compliance by FMIs with its observations and findings.

58. **The central counterparty (CCP) of Korea Exchange, which broadly complies with the PFMIs, contributes to the safety and efficiency of the securities and derivatives market in Korea, but also concentrates systemic risk**. Important steps to improve its risk management systems have been initiated in the recent period such as the introduction of intraday margin calls, back testing and sensitivity analysis, which need to be further implemented. The sizes of the joint compensation fund and settlement reserves have been increased to strengthen KRX's financial protection against a potential default of its clearing members. The introduction of the operational risk management system in January 2013 enables the KRX to manage its companywide risks in a consistent and comprehensive manner.

59. **Additional steps to further compliance of the CCP with the PFMIs related to the management of credit risks are warranted.** KRX should reform the credit risk management framework for the securities market, by collecting risk-based collateral (margin) on a daily basis to cover KRX's exposures towards its clearing members between the transaction and settlement days. KRX may also reconsider the current design of its joint compensation funds, in particular by removing the fixed size requirement of the fund to better adapt to increased exposures. KRX's criteria for settlement banks and custodians should be increased. Finally, KRX's risk management framework, and in particular its margin model, should be reviewed and validated by an experienced and independent entity, such as an academic or a consultant.

60. **The independence of the KRX risk management committee should be improved and the size of staff responsible for the management of credit and liquidity risk should be increased.** The committee, although independent of the business departments, is chaired by an executive director who is also responsible for strategy and planning, and therefore not fully independent from business related matters. Staffing levels in the risk management team and the clearing and settlement department responsible for risk management is small compared to the scope of their responsibilities; it should be increased. More generally, the focus of KRX on the safety and efficiency of the CCP could be increased, for example by placing higher priority on the safety and efficiency of the CCP and on financial stability in the KRX's company objectives.

61. **Regarding the regulation, supervision and oversight of FMIs, the cooperation between the BOK and the FSC should be formalized**. This would involve: (i) developing an MOU having a sound legal basis to ensure effective coordination between the BOK and FSC

where their roles as regulators overlap. Such a formal arrangement should help enhance cooperation at the appropriate technical and management levels and should improve the efficiency and effectiveness of the regulation, supervision and oversight, in particular in relation to the KRX-CCP and the KSD; (ii) "speaking with one voice," to avoid any potential inefficiencies in the BOK and FSC communication with the KRX and KSD; (iii) agreeing on specific arrangements regarding the frequency of exchanges of information, and holding joint meetings with the FSS, KRX and KSD; and (iv) developing and testing a crisis management plan to enable timely and effective cooperation in times of crisis.

62. **To further improve the regulatory structure for FMIs the powers of the BOK and the resources of the FSC should be increased**. Existing legislation should be amended to provide the BOK with enforcement tools to effectively discharge its oversight responsibilities. In addition, an increase in human resources at the FSC is warranted to support a proactive policy approach and effective guidance by the FSC to the FSS.

E. Anti-Money Laundering and Combating the Financing of Terrorism[22]

63. **Korea has taken significant steps to enhance its AML/CFT framework**. In November 2008, Korea's AML/CFT framework was assessed by the FATF, the standard setter of which Korea is a member. At the time, Korea's AML/CFT framework suffered from a number of significant deficiencies. Since then, the authorities have made regular and steady progress in addressing the main shortcomings identified, notably by amending existing legislations.[23] Furthermore, additional resources have been allotted to both FSS and KoFIU to enhance the capacity of AML/CFT supervision and examination, and regular training has been provided to staff of law enforcement agencies to improve the effective implementation of sanctions for money laundering (ML).

64. **Additional measures are required to address remaining deficiencies.** Some of the main concerns relate to (i) the supervisory sanction regime, where primary targets are not financial institutions but rather their staff and which include mostly non-pecuniary sanctions; and (ii) the AML/CFT regulation and supervision of the designated nonfinancial businesses and professions which currently encompass only casinos. The FATF has tentatively scheduled Korea for an assessment against the revised AML/CFT standard in 2016.

[22] This section draws on Korea's 6th and 7th progress reports to the Financial Action Task Force (FATF).

[23] A bill amending the Financial Transaction Reports Act has been submitted to the National Assembly for approval. The amendment would abolish the threshold for reporting of suspicious transactions and require banks to ensure that full originator information travel with wire transfers. The authorities are also expecting to ratify the Palermo Convention by the end of this year after all relevant legislations have been amended to criminalize transnational organized crime.

F. Conclusions and recommendations

65. **The current supervisory structure seems to meet the operating needs but there are a number of concerns.** In particular, the current governance structures, decision making systems and accountability arrangements promote consensus building and provide a practical framework for coordination between different agencies, but there are nonetheless concerns that they compromise the independence of the supervisors. The presence of industry nominees on the governance structures of the supervisory authorities could also give rise to "regulatory capture". Finally, current responsibilities of the supervisory authorities include financial policies and market development, which give room for conflicts of interest and dilution of supervision.[24]

66. **Going forward, consideration should be given to streamlining the institutional arrangement for financial sector supervision and further strengthening supervisory independence,** in the light of the rapid evolution of the financial system in Korea, its expansion in the region, and the fast evolving global regulatory and supervisory environment. The reform efforts should in particular ensure that the new arrangement: (i) has well identified objectives and responsibilities that clearly and transparently define the responsibilities of the various authorities in prudential and conduct of business supervision and enforcement; (ii) Is free of political influence and interference, or the perception of it; (iii) is able to set and enforce a set of prudential requirements at system level as well as for individual institutions in accordance with their risk profile and systemic importance; (iv) has explicit powers to take timely supervisory response measures, including a range of sanctions, enforcement actions, and revocation of license; (v) is familiar with the market and market practices, but independent of market influences; and (vi) has efficient internal systems that eliminate administrative layers.

VI. Systemic Liquidity

67. **In normal times the markets work well underpinned by high domestic currency liquidity and a tighter control on FX funding risks.** The Korean financial system's structural liquidity is in excess of around KRW 230 trillion (about 20 percent of GDP) and means that, in normal times, the markets are well supported. Steps to more closely manage the funding risks associated with exporters' and multinationals' structural needs for medium to long term foreign currency have led to declining FX liquidity exposures since the 2008 crisis.

68. **The money market has underlying vulnerabilities in stress situations.** Much of the money market lacks active secondary markets with the most actively traded markets being the unsecured cash and repo markets of maturities of up to one week. The markets for longer term instruments are relatively shallow and dominated by buy and hold investors and there are no market makers.

[24] The stated objectives of the FSC are as follows: (i) to promote the advancement of the financial industry; (ii) to promote the stability of the financial markets; (iii) to establish sound credit activity and fair financial transaction practices; and (iv) to protect depositors, investors and other financial consumers.

69. **The absence of active secondary markets means the BOK plays a prominent role in backstopping the markets.** While banks maintain liquidity standards in line with current prudential requirements, they hold few assets that could be used to raise liquidity from secondary markets in a stress situation leaving the BOK a prominent role. The BOK's significant capacity to respond to liquidity pressures, including significant foreign reserves and swap lines along with wide ranging ELA powers that were broadened after the 2008 crisis are mitigating factors.

70. **Measures to boost secondary markets will help increase the degree of market self-reliance, and ensuring ELA procedures are well honed will ensure quick action is possible.** Boosting the liquidity of secondary markets would give market participants more self-reliance in a liquidity stress period reducing the need for reliance on the BOK. The authorities' plans to implement the Basel III LCR, as well as ongoing efforts to improve repo markets will be helpful in this regard. The BOK should ensure that their ELA plans are well developed and practiced, as well as understood and accepted by key stakeholders so as to smooth decision making in what may be fast moving and uncertain conditions, as well as guide expectations and accountability.

VII. CRISIS MANAGEMENT AND RESOLUTION FRAMEWORK

71. **Korea's experience in handling the 1997 crisis and the experience in handling the fallout from the GFC helped establishment of a broad crisis management framework in Korea**. The financial safety net comprising a deposit insurance scheme and the central bank ELA is well established and supported by a well-developed framework of financial sector supervision. Several well established and efficient options that are available for managing a financial crisis include: the ability to influence systemic liquidity in money and securities markets; provide broad deposit insurance and investor protection cover (including full guarantee): mobilization of public funds to support financial institutions and markets that may be under stress: and mechanisms to intervene and resolve troubled financial institutions.

72. **Improving and formalizing the framework for crisis management would help preserve and build upon institutional memory and existing framework**. The authorities can consider formally setting up a dedicated apex forum for leading the inter-agency cooperation and coordination work on crisis preparedness and crisis management, distinct from the council proposed for macroprudential policies. The authorities can also formally designate crisis management team(s) in each supervisory authority; develop a crisis management handbook; establish multi-agency institution-specific crisis management groups; and periodically conduct crisis simulation exercises to test and enhance contingency plans and crisis management arrangements.

73. **Recognizing the importance of the role of the KDIC, the authorities can make certain improvements to further promote its ability to intervene effectively during or leading up to a crisis without exposing itself to avoidable losses**. These include: (i) replenishing the deposit insurance fund which is currently in deficit; (ii) establishing an explicitly assured and irrevocable line of credit from the Government to provide back-up funding

to KDIC to improve its ability to make prompt depositor pay-outs and to provide financial assistance in times of crisis; (iii) discontinuing the current practice of allowing insolvent banks to continue to accept fresh deposits and repay existing deposits; and (iv) reviewing the processes involved to reduce the timelines allowed for making decisions on the repayment of depositors, providing financial assistance to and resolving troubled banks.

74. **Korea established several funds in the wake of the 2008 crisis to provide financial assistance to financial institutions either directly or indirectly**. Korea also established similar public fund during the crisis in the late 1990s. These funds can potentially distort the incentive framework for financial institutions, and their role should be reviewed carefully to fully address moral hazard issues.

75. **The resolution framework for financial institutions in Korea provides a comprehensive range of resolution options but can be improved in light of FSB and BCBS recommendations**. The legal framework establishes a special resolution regime for distressed financial institutions in Korea.[25] While the resolution authorities' powers are sufficiently comprehensive to address threats to financial stability, there is scope for improvement to assure certainty and avoid delays in resolution processes, particularly with reference to financial conglomerates and SIFIs, including cross-border operations.

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[25] The Act on Structural Improvement of the Financial Industry (ASIFI) provides the special resolution regime for financial sector entities, including banks (except the specialized banks), the Industrial Bank of Korea, investment traders, brokers, collective investment business entities, investment advisory business entities, discretionary investment business entities, insurance companies, mutual savings banks, trust business entities, merchant banks, and financial holding companies.

Appendix Table 1. Korea: Selected Economic Indicators (2008–2014)

Nominal GDP (2012): $1,130 billion
Main exports (percent of total, 2012): Petroleum products(13), Semi-conductor (12), Automobile (11), Machinery (10)
GDP per capita (2012): $22,589
Central government debt (2012): 33.4 percent of GDP

						Projections	
	2008	2009	2010	2011	2012	2013	2014
Real GDP (percent change)	2.3	0.3	6.3	3.7	2.0	2.8	3.9
Total domestic demand	1.4	-2.7	6.2	2.0	1.0	2.0	2.6
Final domestic demand	0.8	0.6	4.5	1.4	1.1	2.2	2.8
Consumption	2.0	1.2	4.1	2.3	2.2	1.7	2.6
Gross fixed investment	-1.9	-1.0	5.8	-1.0	-1.7	3.4	3.3
Net foreign balance 1/	1.1	2.8	0.1	1.9	1.1	1.2	1.6
Nominal GDP (in trillions of won)	1,026.5	1,065.0	1,173.3	1,235.2	1,272.5	1,327.5	1,404.6
Saving and investment (in percent of GDP)							
Gross national saving	31.6	30.2	32.4	31.8	31.4	30.4	30.0
Gross domestic investment	31.2	26.3	29.5	29.5	27.6	27.4	27.6
Current account balance	0.3	3.9	2.9	2.3	3.8	3.0	2.4
Prices (percent change)							
CPI inflation (end of period)	4.1	2.8	3.0	4.2	1.4	2.0	2.7
CPI inflation (average)	4.7	2.8	2.9	4.0	2.2	1.7	2.6
Core inflation (average)	4.3	3.6	1.8	3.2	1.7	2.0	2.6
Real effective exchange rate	-19.9	-12.4	11.4	0.6	1.1	...	...
Trade (percent change)							
Export volume	6.8	0.1	16.2	11.6	5.0	8.0	9.2
Import volume	0.9	-2.2	16.8	5.5	0.8	5.3	7.9
Consolidated central government (in percent of GDP)							
Revenue	24.0	23.0	22.7	23.3	23.3	23.2	23.3
Expenditure	22.4	23.0	21.0	21.4	21.4	21.8	21.6
Net lending (+) / borrowing (-)	1.6	0.0	1.7	1.8	1.9	1.4	1.7
Overall balance	1.5	-1.7	1.4	1.5	1.5	1.0	1.2
Excluding Social Security Funds	-1.1	-4.1	-1.1	-1.1	-1.4	-1.8	-1.4
Money and credit (end of period)							
Overnight call rate 2/	3.0	2.0	2.5	3.3	2.8	2.3	...
Three-year AA- corporate bond yield 2/	7.7	5.5	4.3	4.2	3.3	3.5	...
M3 growth 3/	9.1	9.4	5.9	6.6	7.8	7.1	...
Balance of payments (in billions of U.S. dollars)							
Exports, f.o.b.	434.7	358.2	461.4	551.8	552.6	589.7	632.9
Imports, f.o.b.	429.5	320.3	421.4	520.1	514.2	545.6	594.1
Current account balance	3.2	32.8	29.4	26.1	43.1	36.2	31.1
Gross international reserves (end of period)	201.1	269.9	291.5	304.2	323.2	331.6	341.7
In percent of short-term debt (residual maturity)	111.7	146.2	162.5	165.0	181.2	196.1	196.4
External debt (in billions of U.S. dollars)							
Total external debt (end of period)	317.4	345.7	359.8	398.7	413.6	428.4	454.0
Total external debt (in percent of GDP)	34.1	41.4	35.4	35.8	36.6	35.7	35.5
Debt service ratio 4/	7.9	7.8	6.8	6.4	7.5	7.7	8.0
Real effective exchange rate (level)	85.7	75.8	82.1	82.2	82.0	...	...

Sources: Korean authorities; and IMF staff estimates and projections.

Appendix Table 2. Korea: Financial System Structure

(2002–2012)

	Number of institutions	Total Assets					
		2002		2007		2012	
	2012	(In billion won)	(In percent)	(In billion won)	(In percent)	(In billion won)	(In percent)
Banks	57	974,875	63.8	1,558,381	63.2	1,954,283	48.2
Commercial banks	52	701,326	45.9	1,114,427	45.2	1,425,768	35.1
Nation-wide banks	7	582,337	38.1	872,655	35.4	1,086,084	26.8
Regional banks	6	54,208	3.5	93,195	3.8	135,550	3.3
Foreign bank branches	39	64,780	4.2	148,577	6.0	204,134	5.0
Specialized banks	5	273,549	17.9	443,954	18.0	528,515	13.0
Non-Bank Depository Institutions	...	181,170	11.9	291,084	11.8	581,234	14.3
Credit cooperatives	2,339	155,709	10.2	233,052	9.5	457,174	11.3
Credit unions	949	19,589	1.3	27,224	1.1	55,340	1.4
Community credit cooperatives	...	...	...	...	...	104,836	2.6
Mutual banking entities	1,390	136,120	8.9	205,828	8.3	296,998	7.3
Merchant banking corporations	1	...	...	...	...	14,468	0.4
Mutual savings banks	93	25,461	1.7	58,032	2.4	49,392	1.2
Postal savings	1	...	...	...	...	60,200	1.5
Other Financial Institutions	...	371,970	24.3	616,494	25.0	1,521,331	37.5
Credit-specialized companies	...	101,703	6.7	88,983	3.6	164,907	4.1
Credit card companies	...	68,123	4.5	39,216	1.6	82,393	2.0
Financing companies 2/	...	33,580	2.2	49,767	2.0	82,514	2.0
Financial investment entities	...	51,047	3.3	133,017	5.4	588,459	14.5
Investment traders and brokers 3/	...	51,047	3.3	133,017	5.4	271,186	6.7
Collective investment business entities 4/	...	...	...	...	...	317,273	7.8
Insurance companies	56	219,220	14.3	394,494	16.0	767,965	18.9
Life insurance companies	24	164,223	10.7	305,400	12.4	569,837	14.0
Non-life insurance companies	31	35,414	2.3	66,020	2.7	156,463	3.9
Postal insurance	1	19,583	1.3	23,074	0.9	41,665	1.0
Total - Financial Institutions		1,528,014	100.0	2,465,959	100.0	4,056,848	100.0
In percent of GDP		212		253		312	
Memorandum Item:							
GDP		720,539		975,013		1,302,128	

Sources: Korean authorities; and IMF staff calcualtions.

1/ Some data are missing as some institutions are not supervised by the Financial Supervisory Services.

2/ Including installment financing companies, leasing companies and venture capital companies.

3/ Including futures companies and securities companies.

4/ Based on investment trust accounts.

Appendix Table 3. Korea: Core Set of Financial Soundness Indicators, (2008–2012)

(In percent)

	2008	2009	2010	2011	2012	2013Q1	2013Q2	2013Q3
Banking sector								
Regulatory capital to risk-weighted assets	12.3	14.4	14.3	14.0	14.3	14.0	...	...
Tier-1 regulatory capital to risk-weighted assets	8.8	10.9	11.3	10.7	11.1	11.0	...	...
Nonperforming loans to total loans	0.6	0.6	0.6	0.5	0.6	0.7	...	...
Provisions to total loans	0.3	0.3	0.2	0.2	0.2	0.3	...	...
Return on assets	0.7	0.6	0.7	1.0	0.7	0.5	...	...
Return on equity	9.9	8.6	9.7	13.2	8.2	6.4	...	...
Liquid assets to total assets	35	38	35	35	36	38	...	...
Liquid assets to short-term liabilities	101	104	117	109	111	121	...	...
Loans to deposits	135	126	139	121	119	116	...	...
Capital to assets	6.3	7.3	7.6	8.1	8.2	8.1	...	...
Corporate sector								
Debt to GDP	159	159	151	154	156	158	158	157
Debt to equity	157	122	108	117	113	114	116	113
Return on assets	1.6	2.5	3.4	2.5	...	...	...	...
Current assets to current liabilities	121	130	130	130	...	...	...	...
Liquid assets to debt repayment	104	116	111	110	...	...	...	...
At risk of default: Earning below interest payment								
Share of companies at risk	30.4	25.6	24.7	26.8	27.7	...	...	...
Share of debt at risk	30.7	25.0	19.8	28.9	28.7	...	...	...
Number of bankrupcies (annualized)	191	226	254	311	424	488	...	...
Deliquency rate (all bank loans)	1.5	1.0	1.1	1.1	1.2	...	...	...
Household sector								
Debt to GDP	70	87	87	90	91	90	92	92
o/w: Credit from banks	38	38	37	37	37	36	36	36
o/w: Credit from other financial institutions	33	49	50	53	54	...	...	...
Debt to disposable income	118	122	123	127	136	...	...	...
Deliquency rate (all bank loans)								
Loans to households	0.7	0.7	0.6	0.7	0.9	1.0	1.0	...
Credit cards	1.7	2.2	1.6	1.9	2.2	2.3	2.3	...
Change in residential prices (y/y)	4.0	0.2	2.4	5.3	0.3	0.0	-0.2	-0.5

Sources: Bank of Korea; CEIC; IMF, *Financial Soundness Indicators*; Financial Supervisory Services; and IMF staff calculations.