

**FOR
INFORMATION**

SM/20/143
Correction 1

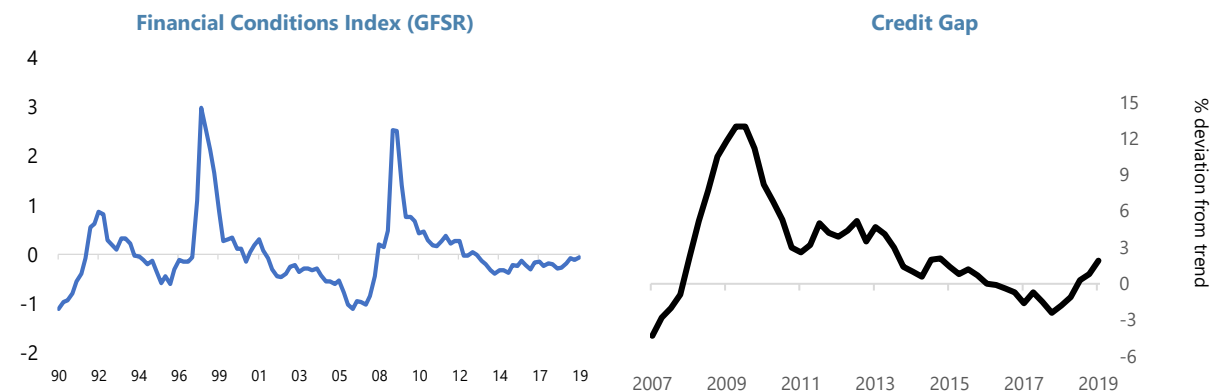
September 18, 2020

To: Members of the Executive Board

From: The Secretary

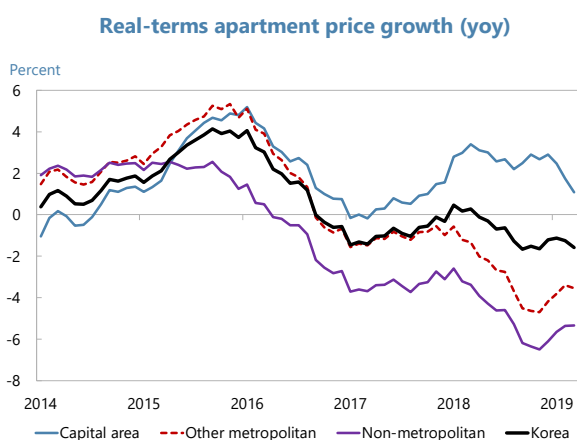
Subject: **Republic of Korea—Publication of Financial Sector Assessment Program
Documentation—Technical Note on Macprudential Policy Framework and
Tools Submission**

Board Action:	The attached corrections to SM/20/143 (9/10/20) have been provided by the staff:
Evident Ambiguity	Page 42
Factual Errors Not Affecting the Presentation of Staff's Analysis or Views	Pages 28, 34, 53
Questions:	Mr. Das, MCM (ext. 36330)

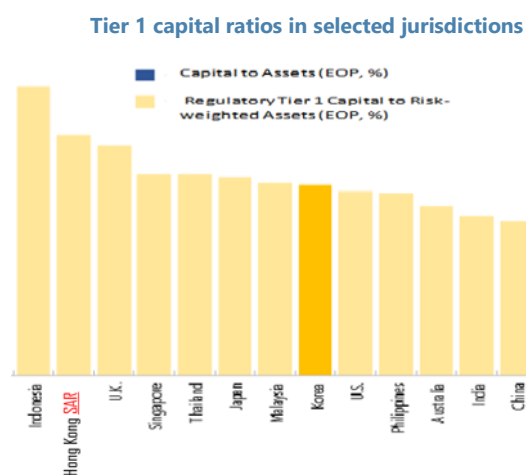
Figure 2. Korea: Broad Financial Indicators and Bank Capital Buffers

Source: IMF calculations.

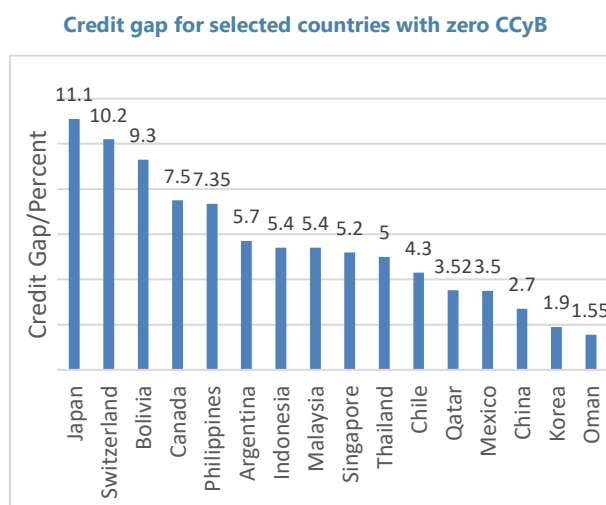
Note: Deviation of the ratio of private non-financial credit to GDP from its HP filtered trend. Source: Bank for International Settlements (Q:KR:P:A:C). Last observation is 2019Q1.



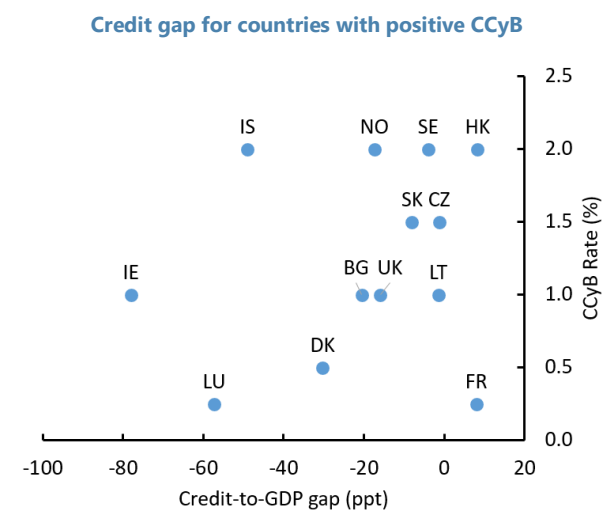
Source: IMF calculations.



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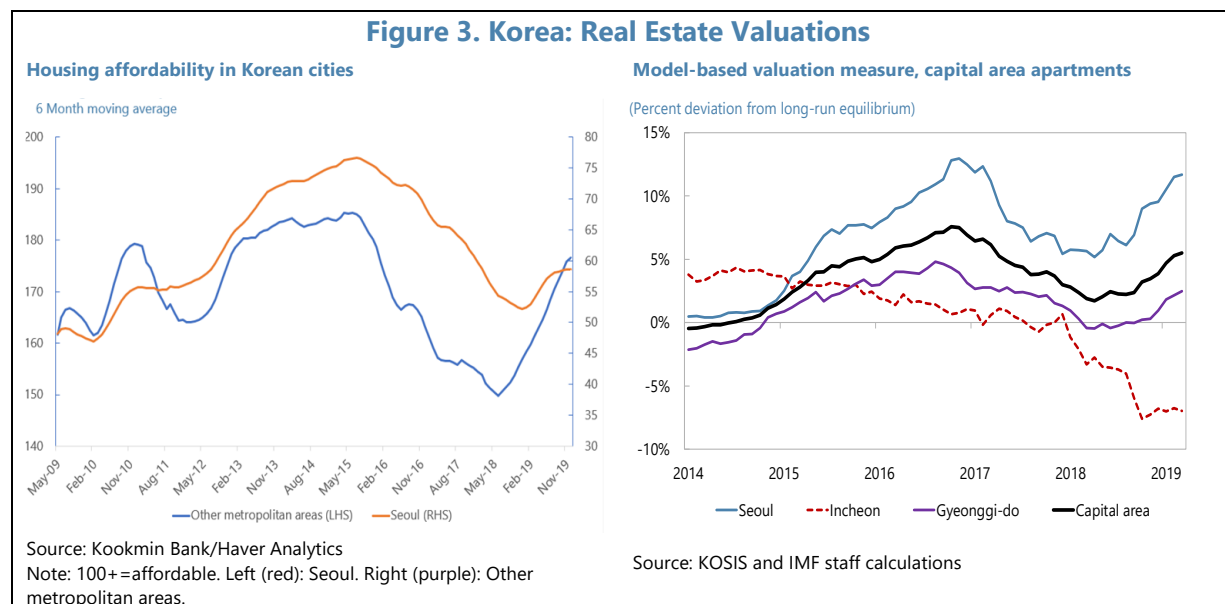


Source: IMF calculations.



Source: BIS, ESRB, IMF AREAER-Macprudential Survey, IMF calculations. ISO country codes used.

and *gu*). Although borrower-based measures have received most attention, tax measures and even price caps have also been deployed.⁷⁰ The strong incentives that appear drive households' acquisition of real estate assets in Korea are likely to mean that sustained policy action is likely to remain appropriate, if the pro-cyclical effects of excess household credit are to be avoided. However, the authorities should be mindful that further tightening of borrower-based measures may not be as effective as past actions, and that unintended side-effects may emerge (Alam and others, 2019). That suggests a need for careful monitoring of the net benefits of future policy actions in this domain.



62. Policy measures have been aimed principally at limiting the ability of borrowers to take on excess leverage. The Korean authorities introduced borrower-based measures in 2002, starting with a cap on the maximum loan-to-value (LTV) ratio. Limits on the maximum repayments-to-income ratio for mortgages (a DTI cap) followed.⁷¹ The limits that are currently in place are set conservatively—as low as 40 percent in speculation-prone metropolitan markets, with yet lower limits for owners of multiple homes. For comparison, LTV limits in Croatia (another early adopter of borrower-based measures) are 75 percent; in Finland above 90 percent; and in Indonesia 75 percent. Limits in Bulgaria, Hong Kong SAR, and Singapore are comparably tight.⁷²

⁷⁰ Caps on pre-sale prices of newly-built apartments in Seoul were instated in November 2019 (Korea Herald, “S. Korea adopts price ceiling on privately built flats”, 11/6/2019). Such measures were commonplace in the pre-deregulation era in the 1980s and 1990s.

⁷¹ The mortgage (principal and interest) repayment-to-income ratio mentioned in the text is referred to as a limit on the “Debt-to-Income” (DTI) ratio by the Korean authorities. Generally, DTI is taken to mean the ratio of the principal amount of debt outstanding to borrower income, and DSTI is taken to be the ratio of repayments to income. The alternative usage adopted in Korea should be kept in mind.

⁷² Based on data available with the paper of Alam and others (2019), see <https://www.imf.org/imapp>.

72. Risks to the core banking system from exposure to corporates appear to be contained under stress. The principal near-term risk to SMEs is posed by their direct exposure to export markets affected by the ongoing US-China trade ~~war~~ **tensions**; and indirect exposures to larger firms that are also being impacted. The results of the FSAP solvency stress tests show that across the banking system as a whole, SME exposures imply loss rates that exceed their portfolio shares, particularly for the regional banks. This indicates the heightened vulnerability of SMEs under the scenario considered. That said, losses are not sufficient to drive the system to insolvency. But that conclusion should be taken with caution to the extent that the exercise may not fully capture the knock-on effects of a large firm failing onto the SME sector. The health of the specialized lenders is also key to supporting SME credit, which amounted to a third of their loan books as of end-2018. The capitalization of specialized banks is therefore an important factor for maintaining the supply of credit to SMEs. In that context, it should be noted that the specialized banks' regulatory capital ratios are somewhat below those of nationwide banks, and that their capital depletion is more sizeable under the adverse scenario considered in the FSAP's solvency stress test than that of nationwide and regional banks. But overall, the combined effects of government's direct and indirect involvement in the SME sector, forward-looking provisioning, and the framework for recovering loans are together likely to help avoid excessive pro-cyclical contractions in credit if negative shocks occur.

73. Regulators have recently issued new rules on loan-to-deposit ratios designed to incentive corporate lending by banks. The authorities appear to wish banks to rebalance their loan portfolios away from households and towards corporate borrowers—the majority of which are SMEs as outlined above. To do this, they have announced that the flat 100 percent LTD ratio, which was applied across exposures, will be replaced by differential weights to household and corporate exposures. Specifically, starting in 2020 the LTD ratio will be calculated with a weight of 115 percent for household lending, versus 85 percent for corporates.⁸⁴ If banks start out with equal exposures to the two sectors, which is approximately the case at present, no immediate changes would be necessary. However, under some circumstances banks may have an incentive to issue more corporate loans than household loans. For example, if the aggregate demand for deposits is highly price inelastic, so that banks as a whole would struggle to increase their deposit funding, the tighter requirement could place a brake on household credit growth. For that to occur, the LTD requirement would have to be binding—which is not certain, given that banks are also subject to the NSFR.

74. The change in LTD rules is of dubious value and should be revisited. The purpose of macroprudential tools is to increase the resilience of borrowers and lenders to shocks, thereby mitigating procyclicality in the financial system. As a by-product, they may often cause private agents to alter their mix of exposures. However, if policymakers wish to achieve sectoral rebalancing of credit as an end in itself, independent of systemic risk concerns, macroprudential tools should not be used. Indeed, even capital-based prudential tools appear to have little impact on SME lending (FSB, 2019). In the present case, perceived risks in corporate lending could be dealt with by changing risk weights on SME lending—or more likely, through microprudential actions aimed at bolstering

⁸⁴ The weight on SOHO loans will remain at 100 percent.

Appendix I. Regional House Price Dynamics

1. This technical Annex gives background information on Korea's housing market. Some historical background and motivation for the analysis is discussed in Part A. Part B describes valuation trends; Part C describes the results of a modeling exercise geared towards determining equilibrium prices; Part D presents our results; and Part E gives details of data construction.

A. Background

2. South Korea has one of the highest population densities of any large country.¹ Notable constraints exist on the supply of land suitable for development, due to its rugged topography. Added to these physical constraints, government policies favoring industrial development led to under-investment in housing supply until at least the late 1980s (Kim, 2004). Housing finance was also heavily regulated, leading to widespread credit rationing. However, the past three decades have seen deregulation. As a result, the total number of dwelling units nearly doubled between 1985 and 2000, and has continued to expand to bring the number of dwellings per 1,000 people to 395 in 2017 from 214 in 1995.²

3. Housing finance was liberalized in the late 1990s. Before 1999, Korea had no mortgage 'market' to speak of, with loans provided primarily by public bodies (the National Housing Fund and the Korea Housing Bank). From 1999 on, a rapid expansion in the mortgage market has taken place, led by commercial banks. Loans secured by real estate total in excess of KRW700tn, amounting to roughly 43 percent of GDP, up from just 12 percent of GDP in 1997. For comparison, Korea's outstanding stock of government debt is a shade over 40 percent of GDP. Real estate assets now make up around two-thirds of household balance sheets—well in excess of the figures for comparable developed economies.³

4. Rapid appreciation in real estate prices is a perennial policy concern. The changes seen in the Korean real estate market have brought about major adjustments as market-determined prices have come to the fore. They have also made the market for real estate, and especially residential real estate, a subject of intense public interest, and continued policy focus. The Korean authorities have deployed a broad set of fiscal and macroprudential tools to prevent rapid growth in residential real estate prices. These measures were motivated by a number of underlying concerns, including affordability and access to housing, risks to the banking sector from over-exposure to real estate collateral, and risks to households themselves from over-stretched balance sheets. Even so,

¹ Korea's population density is 517 persons/sq. km (source: KOSIS). The only countries areas with a population over 10 million people and a higher population density are Bangladesh (1,164) and Taiwan Province of China (652).

² Ministry of Land, Infrastructure, and Transport: Number of houses per 1,000 people.

³ Total stock of mortgage credit at commercial and policy banks, other depository institutions, and Korea Housing Finance Corp.