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REPUBLIC OF KOREA

November 2023

2023 ARTICLE IV CONSULTATION—PRESS RELEASE; STAFF REPORT; AND STATEMENT BY THE EXECUTIVE DIRECTOR FOR THE REPUBLIC OF KOREA

Under Article IV of the IMF's Articles of Agreement, the IMF holds bilateral discussions with members, usually every year. In the context of the 2023 Article IV consultation with the Republic of Korea, the following documents have been released and are included in this package:

- A **Press Release** summarizing the views of the Executive Board as expressed during its November 13, 2023 consideration of the staff report that concluded the Article IV consultation with the Republic of Korea.
- The **Staff Report** prepared by a staff team of the IMF for the Executive Board's consideration on November 13, 2023, following discussions that ended on September 6, 2023, with the officials of the Republic of Korea on economic developments and policies. Based on information available at the time of these discussions, the staff report was completed on October 26, 2023.
- An **Informational Annex** prepared by the IMF staff.
- A **Statement by the Executive Director** for the Republic of Korea.

The IMF's transparency policy allows for the deletion of market-sensitive information and premature disclosure of the authorities' policy intentions in published staff reports and other documents.

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International Monetary Fund
Washington, D.C.

IMF Executive Board Concludes 2023 Article IV Consultation with Republic of Korea

FOR IMMEDIATE RELEASE

Washington, DC – **November 16, 2023:** The Executive Board of the International Monetary Fund (IMF) concluded the Article IV consultation[1] with the Republic of Korea.

Like many other advanced economies, Korea has faced challenges from inflation and a growth slowdown. Growth declined from mid-2022, as global demand for electronics waned and domestic demand weakened, but has started to recover in recent quarters. Headline inflation has declined significantly after peaking in mid-2022, though core inflation has remained stickier. Pockets of financial sector vulnerability have emerged amid higher interest rates and declining housing prices. Swift policy measures have helped to stabilize financial and housing markets, and financial risks, while having increased, appear to remain manageable.

The Korean economy is expected to strengthen amid a gradual recovery of global semiconductor demand, a strong domestic labor market, and ongoing stabilization of the housing market. Growth is projected to reach 1.4 percent for 2023 and 2.2 percent in 2024. The slowdown in growth of main trading partners and higher-for-longer global interest rates act as a drag on near-term growth, while stronger-than-previously-envisaged growth prospects of the Chinese economy are expected to help mitigate impacts on Korean exports. Despite a temporary rebound in recent months, inflation is projected to continue moderating and approach the authorities' 2 percent target by end-2024.

The economic outlook is subject to a high degree of uncertainty, with risks tilted to the downside. Near-term growth prospects critically depend on the strength of the rebound of the semiconductor cycle and China's demand for Korean exports of goods and services. Main risks also include weaker growth and tighter monetary policy in major economies, heightened commodity price volatility, resurgence of global banking turmoil, reduced trust in domestic non-bank financial institutions, and a renewed domestic real-estate sector downturn. Moreover, Korea is vulnerable to intensification of geo-economic fragmentation. Upside risks to growth include a stronger rebound in global semiconductor demand and a faster decline in global inflation.

Executive Board Assessment[2]

Executive Directors welcomed the Korean economy's resilience, supported by the authorities' effective policy response. Directors noted that growth is expected to gradually strengthen, supported by an improved economic outlook in key trading partners; inflation should continue

[1] Under Article IV of the IMF's Articles of Agreement, the IMF holds bilateral discussions with members, usually every year. A staff team visits the country, collects economic and financial information, and discusses with officials the country's economic developments and policies. On return to headquarters, the staff prepares a report, which forms the basis for discussion by the Executive Board.

[2] At the conclusion of the discussion, the Managing Director, as Chairman of the Board, summarizes the views of Executive Directors, and this summary is transmitted to the country's authorities. An explanation of any qualifiers used in summings up can be found here: http://www.IMF.org/external/np/sec/misc/qualifiers.htm.

to moderate; and financial risks remain manageable. Noting high uncertainty to the outlook, Directors agreed that the near-term policy mix should remain restrictive to limit the rise in public debt and support disinflation. They also called for structural reforms to reinvigorate long-term growth.

Directors agreed that monetary policy should remain restrictive for a considerable time and remain data dependent and be carefully communicated. They concurred that foreign exchange (FX) reserves remain adequate and emphasized that FX interventions should remain limited to preventing disorderly market conditions.

Directors called for continued fiscal policy normalization and welcomed the moderate consolidation and the focus on welfare spending envisaged in the 2024 budget. Given the revenue shortfall in 2023, they welcomed the continued execution of budgeted spending using government deposits and funds, which should limit the drag on growth. Directors suggested better aligning domestic energy prices with international prices to pass through price signals and safeguard the financial health of public utilities.

Directors welcomed the policy actions that helped stabilize housing and financial markets. They stressed that financial market support should remain temporary and targeted, while housing-related measures should strike a balance between preventing excessive price falls and allowing for orderly adjustment. Noting high and rising household debt, Directors welcomed the tightening of regulations of mortgage support programs.

Directors recommended enhancing financial resilience through stronger buffers, regulation, and supervision. They welcomed the plans to enhance banks' liquidity and loss absorption capacities and improve the regulatory and supervisory frameworks for credit cooperatives. Directors also welcomed the initiatives to buttress the soundness of non-bank financial institutions (NBFIs), including by narrowing regulatory gaps between NBFIs and banks.

Directors underscored the importance of structural reforms for boosting productivity growth in the face of demographic headwinds. They encouraged further efforts to spur innovation, increase labor market flexibility, and close gender gaps. A few Directors suggested increasing immigration to help boost potential growth. Directors called for pension reform to safeguard long-term fiscal sustainability and supported a rules-based fiscal framework to anchor public finances. They welcomed the release of the 1st National Framework Plan for Carbon Neutrality and Green Growth and recommended stronger policies to meet climate objectives. Directors stressed that trade and investment measures should remain narrowly targeted to specific objectives and consistent with WTO obligations. They welcomed the authorities' continued support for an open trade environment and diversification efforts.

Table 1. Korea: Selected Economic Indicators, 2021-24

			Projection	
	2021	**2022**	**2023**	**2024**
Real GDP (percent change)	4.3	2.6	1.4	2.2
Total domestic demand	3.7	2.7	1.9	1.9
Final domestic demand	3.8	2.6	1.5	1.9
Consumption	4.1	4.1	1.7	1.9
Gross fixed investment	3.2	-0.5	1.1	2.1
Stock building 1/	-0.1	0.2	-0.1	0.0
Net foreign balance 1/	0.6	0.2	-0.1	0.0
Nominal GDP (in trillions of won)	2,080	2,162	2,230	2,345
Saving and investment (in percent of GDP)				
Gross national saving	36.8	34.5	34.0	34.0
Gross domestic investment	32.3	33.2	32.7	31.4
Current account balance	4.7	1.8	1.3	2.6
Prices (percent change)				
CPI inflation (end of period)	3.7	5.0	3.2	2.0
CPI inflation (average)	2.5	5.1	3.6	2.4
Core inflation (average)	1.4	3.6	3.5	2.4
GDP deflator	2.8	1.3	1.7	2.9
Real effective exchange rate	0.1	-5.4	...	...
Trade (percent change)				
Export volume	10.7	3.6	2.5	3.5
Import volume	12.6	4.3	0.0	3.0
Terms of trade	-2.8	-7.4	-2.3	5.0
Consolidated central government (in percent of GDP)				
Revenue	25.7	27.1	23.9	23.9
Expenditure	25.7	28.7	24.9	24.6
Net lending (+) / borrowing (-)	0.0	-1.6	-1.0	-0.7
Overall balance	-1.5	-3.0	-1.8	-1.7
Excluding Social Security Funds	-4.4	-5.2	-3.9	-3.7
Central government debt	45.1	47.8	49.3	50.6
Money and credit (end of period)				
Overnight call rate	1.4	3.4	...	...
Three-year AA- corporate bond yield	2.4	5.2	...	...
M3 growth	11.3	6.9	...	...
Balance of payments (in billions of U.S. dollars)				
Exports, f.o.b.	649.5	690.5	643.3	704.4
Imports, f.o.b.	573.7	675.4	628.3	652.1
Current account balance	85.2	29.8	22.2	47.2
Gross international reserves (end of period) 2/	458.3	418.4	416.2	441.8
In percent of short-term debt (residual maturity)	209.8	190.4	189.5	202.5
External debt (in billions of U.S. dollars)				
Total external debt (in percent of GDP)	34.7	39.7	39.4	39.3

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

1/ Contribution to GDP growth.
2/ Excludes gold.

INTERNATIONAL MONETARY FUND

REPUBLIC OF KOREA

STAFF REPORT FOR THE 2023 ARTICLE IV CONSULTATION

October 26, 2023

KEY ISSUES

Korea faced challenges from inflation, growth slowdown, and financial stress in the wake of the pandemic. Growth started to slow in mid-2022 as global demand for electronics waned and domestic demand weakened but has begun to gradually recover in recent quarters. Headline inflation has declined from last year's peak, though core inflation has remained more persistent. Pockets of financial vulnerability have emerged, but swift policy measures have helped to stabilize financial and housing markets. Despite having increased, systemic financial risks appear to remain manageable.

Amid persistent core inflation, a strong labor market, and the need to continue unwinding pandemic-era fiscal stimulus, macro policies should remain restrictive. The monetary policy rate should remain above neutral and data dependent. With the fiscal balance still significantly lower than before the pandemic and the debt-to-GDP ratio still on an upward trajectory, fiscal policy should continue to normalize, also supporting monetary policy in containing inflation. That said, recent revenue shortfalls should be accommodated to limit the drag on growth. If significant downside risks to growth and inflation materialize, some monetary and fiscal accommodation would be appropriate.

Financial support measures should be kept temporary and targeted. Housing-related measures should strike a balance between preventing excessive price falls and allowing for orderly adjustment. Stronger buffers, combined with enhanced regulation, supervision, and risk management are vital in ensuring resilience of NBFIs. Plans to enhance the banking sector's liquidity and loss adsorption capacities are welcome. Comprehensive efforts are needed to address high levels of private debt.

Renewed structural reform momentum will be important in reinvigorating long-term growth and addressing challenges from population aging. Reforms are needed to spur more widespread innovation and promote productivity growth. Increasing labor market flexibility and closing gender gaps would help encourage female labor force participation and enhance labor productivity. Pension reform is needed to safeguard long-term fiscal sustainability and alleviate old-age poverty. A rules-based fiscal framework would help anchor public finances. A determined reform push is needed to put in place strong policies to meet Korea's climate mitigation objectives. The use of industrial policies should remain narrowly targeted to specific objectives and consistent with WTO obligations.

Approved By
Mr. Helbling (APD) and Ms. Zakharova (SPR)

Discussions took place in Seoul and Sejong during August 24–September 6, 2023. The staff team comprised Harald Finger (head), Hua Chai, Eonyoung Park, Xin Cindy Xu (all APD), Boele Bonthuis (FAD), and Jorge Mondragon (SPR). Hujin Kim (AED) and Jaewoo Oh (OED) joined the discussions. Stella Tam and Livia Tolentino (both APD) provided excellent support from HQ.

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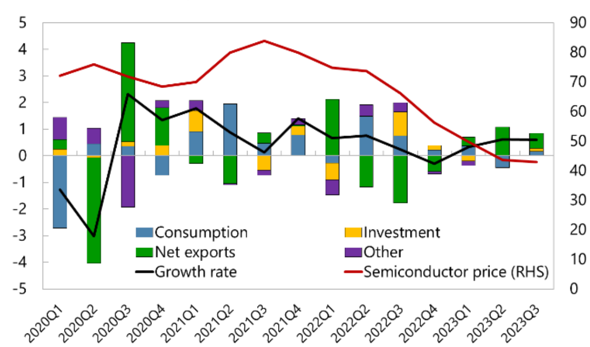
CONTEXT

1. **Like many other advanced economies, Korea faced inflation challenges and a sharp growth slowdown in the wake of the pandemic.** Growth started to slow in mid-2022 as global demand for electronics waned and domestic demand weakened amid normalization of fiscal policy and monetary tightening. Inflation has declined steadily after peaking in mid-2022, reflecting receding global commodity prices and policy tightening, though core inflation has remained relatively more persistent. Pockets of financial vulnerability have emerged amid the housing market downturn and rising interest rates. Systemic financial risks have increased but appear to remain manageable. The authorities' policies since the last Article IV consultation have been broadly consistent with staff's previous policy recommendations (Box I).

RECENT DEVELOPMENTS

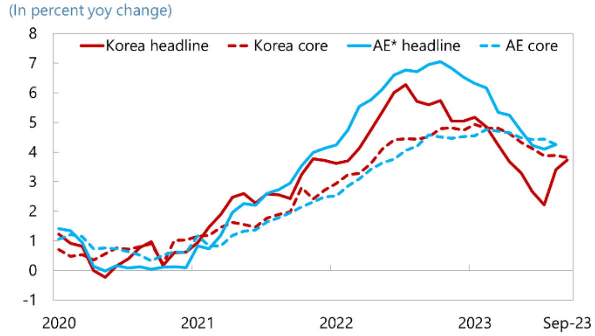
2. **Growth has begun to recover and inflation has remained above target.** Real GDP grew by 2.6 percent (y/y) in 2022, down from 4.3 percent in 2021 on weak exports amid the global semiconductor downcycle.[1] Sequential growth recovered to 0.6 percent (q/q) in 2023Q3 from a contraction in 2022Q4, supported by a recovery of exports, including semiconductors, and a moderate improvement in consumption and investment. Headline inflation has been declining from the July 2022 peak of 6.3 percent, though rebounded to 3.7 percent in September due to a renewed rise in global energy and food imports prices as well as adverse weather conditions affecting domestic agricultural output. Core inflation has declined more gradually, from 4.3 percent in November 2022 to 3.3 percent, as post-pandemic services inflation remained elevated.

Contribution to Growth (q/q)
(LHS: in q/q percent change; RHS: index)



Source: IMF staff calculations.

Headline and Core Inflation
(In percent yoy change)



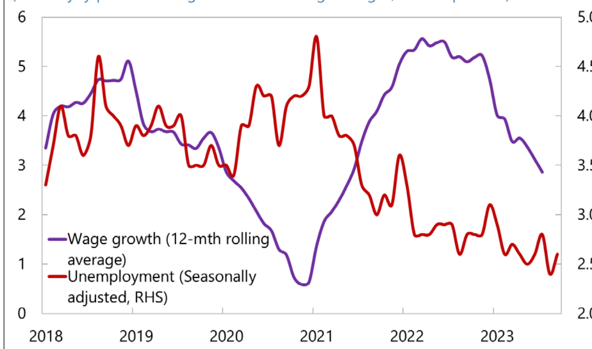
Sources: Haver Analytics and IMF staff calculations.
Note: AE stands for advanced economies and includes AUS, CAN, CHE, DEU, ESP, FRA, GBR, HKG, ITA, JPN, KOR, NZL, SGP, TWN, USA

[1] Global semiconductor demand surged during the pandemic in line with the temporary shift in consumer demand toward durable goods. Semiconductor demand and prices weakened considerably starting in late 2022 amid a rebalancing of global demand toward services.

3. Wage growth has moderated despite a still tight labor market. Despite a fast post-pandemic recovery of labor force participation, the unemployment rate dropped to 2.6 percent (s.a.) in September 2023, much lower than pre-pandemic levels of 3.5–3.8 percent. This reflects a recovery in labor demand back to pre-COVID levels, improvements in the functioning of the labor market (Annex I), and public employment programs for the elderly. Nevertheless, wage growth has moderated, particularly in manufacturing, where bonuses have shrunk reflecting weak profitability during the tech downcycle, alleviating inflationary pressures.

Wage Growth and Unemployment Rate

(LHS: in yoy percent change 12-month rolling averages; RHS: in percent)



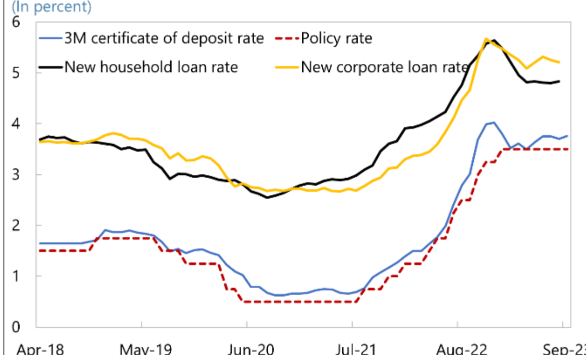
Sources: Haver Analytics and IMF staff calculations.

4. Fiscal policy has shifted from supporting economic recovery to normalization since 2022H2. Sizable fiscal support for small businesses introduced in 2022H1 was withdrawn in 2022H2. The central government fiscal deficit stood at 3 percent of GDP in 2022, below the budgeted deficit of 3.3 percent of GDP, as tax revenues overperformed on strong business profits. Fiscal normalization has continued this year as envisaged in the 2023 budget, with spending execution frontloaded in 2023H1 to cushion the impact of the economic slowdown.[2] That said, revenue shortfalls in 2023H1 amounted to 40 trillion won (1.8 percent of GDP), due to weak corporate income and property-related tax revenues. Central government debt increased to around 48 percent of GDP in 2022, remaining sustainable (Annex II) with substantial fiscal space, although population aging presents substantial long-term fiscal challenges that need to be addressed (Section C).

5. The Bank of Korea (BoK) has kept the policy rate unchanged since February 2023. Following cumulative hikes of 300 bps, the BoK has held the policy rate at 3.5 percent (above neutral), while keeping options open for further hikes if needed. The BoK's forward guidance points to maintaining a restrictive policy stance for a considerable time. Market expectations have recently moved close to the forward guidance.

Interest Rates

(In percent)



Source: Haver Analytics.

6. The authorities' swift policy response significantly eased liquidity stress in local corporate debt markets. Amid tightening monetary policy and surging financing needs, the default on an asset-backed commercial paper (ABCP) in October 2022, for which the guarantee by a provincial government was not initially honored, triggered a loss of confidence and spikes in spreads for commercial paper and corporate bonds last fall (Figure 4). Spreads eased significantly following

[2] The substantial drop in expenses in 2023 reflects the withdrawal of two supplementary budgets totaling 3.6 percent of GDP in 2022.

implementation of multiple market stabilization measures (Text Table 1). Equity, government bond, and FX markets remained resilient during this episode.

Text Table 1. Financial Market Stabilization Measures

(Announced since October 2022)

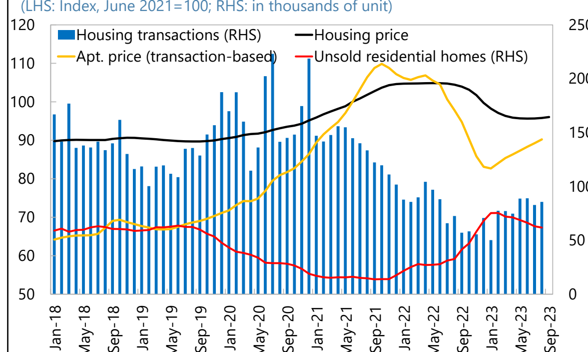
Institution	Measures	Policy Description
Government	Asset Purchases	Asset purchase programs were announced via (i) the Bond Market Stablization Fund; (ii) public financial institutions' corporate bond and commercial paper purchase programs; (iii) a securities company project financing (PF) asset backed commpercial paper (ABCP) purchase program; and (iv) a construction company PF-ABCP purchase program.
	Liquidity Provision	Liquidity support for securities companies by the Korea Securities Finance Corporation.
	Credit Guarantee	Real estate PF guarantees by the Housing and Urban Guarantee Co.
	Prudential Measures	Temporary delay of the restoration of the KRW Liquidity-Coverage-Ratio limit for banks (92.5 percent) to its pre-pandemic level (100 percent), partially unwound with the limit increased to 95 percent in July 2023.
		Temporary delay of the planned normalization of Loan-To-Deposit (LDR) ratio for banks (current cap at 105 percent) to 100 percent, which ended in June 2023. Temporary delay of the planned normalization of the LDR ratio for savings banks and the KRW-based liquidity ratio for specialized credit finance businesses until Dec-2023.
	Other Measures	Temporarily reduced bond issuance volume, redistributed the timing of bond issuance and converted SOEs bond issuance to bank loans. Re-affirmed all regional governments' willingness to fulfill financial
Bank of Korea	Liquidity Provision	Temporary broadening of the range of securities eligible for RP transactions under open market operations until end-July 2023.
		Temporary broadening of the range of eligible collateral securities for lending and net settlement. Announced in July 2023, this measure has been made permanent to strengthen its role as a liquidity backstop.
		Temporary delay of the plan to raise the collateral provision ratio for net settlement, which ended until end-July 2023.
		Operation of repurchase agreements with institutions including securities firms, securities finance corporations, etc. (program has ended).
		Operation of repurchase agreements with institutions contributing to the Bond Market Stablization Fund (program has ended).

Sources: The Korean authorities.

7. **With significant policy support, the housing market has stabilized, but household debt is rising again.** Following a pandemic-era surge, housing prices have declined by about 8 percent since end-2021, though remain above pre-pandemic levels (Figure 5). Throughout 2022, housing transactions plunged, inventories of unsold properties surged, and mortgage loan growth slowed amid rising mortgage rates. With the recent adjustment, signs of housing price overvaluation have diminished (Figure 5). That said, despite the price decline, housing affordability remains challenging, especially in Seoul. To prevent excessive price falls, the authorities eased restrictive regulations imposed during the prior housing boom, introduced targeted mortgage assistance, and reduced real estate-related taxes (Text Table 2). These measures have helped to enable the stabilization of nationwide housing prices, with a renewed rise of housing prices and transactions in certain regions, but also contributed to a renewed rise in already high household debt in 2023 (about 101.7 percent of GDP as of 2023Q2).

Housing Market Downturn

(LHS: Index, June 2021=100; RHS: in thousands of unit)



Sources: CEIC, Korea Real Estate Board.

More recently, the focus of prudential measures has shifted from supporting the housing market to containing the increase in household debt, with several measures announced to tighten lending regulations for mortgage loans.

Text Table 2. Key Housing Market Measures

Announced during October 2022-August 2023

Measures	Description
Easing of household mortgage loan regulations	In October 2022, Loan-to-Value (LTV) rules for expensive residential apartments (above KRW1.5bn) in regulation areas were unified at 50% for both non-homeowners and conditional one-homeowners disposing of their existing homes (from previously 20 to 50 percent LTV). In January 2023, the government removed most districts in Seoul and its adjacent metropolitan areas from the list of speculative areas , effectively raising the LTV ratio of Seoul apartments excluding remaining regulated areas from 50 to 70 percent. From March 2023, multiple-home owners can take mortgage loans up to 30 percent LTV in regulated areas and 60 percent LTV in non-regulated areas. Mortgage loans to multiple-home owners had been prohibited since September 2018. In March 2023, the government removed restrictions on HUG loan guarantees for intermediate payments for apartment presales. Such loan guarantees were previously prohibited for new homes with prices above KRW1.2bn.
Special household mortgage loans (Bogeumjari)	A special 'Bogeumjari' loan program (up to KRW39.6 trillion) was introduced for one year beginning January 2023. Eligible applicants (non-home owner and one-home owners for replacing existing loans or returning security deposits) can borrow up to KRW0.5bn in loans for houses worth up to KRW0.9bn, regardless of their incomes. No DSR rule is being applied, and only LTV (maximum 80% for first-home buyers and 70% for others) and DTI (Debt-To-Income, maximum 60%) are being applied. The lending rates for the special household mortgage loans stood at around 4.05~4.45 percent in July 2023, and the Korea Housing Finance Corporation decides whether to adjust the rates each month based on the cost of funds.
Lowering taxes	In December 2022, the government announced that the capital gains tax and the acquisition tax will be reduced to alleviate excessive tax burden. From July 2023, the fair market value ratio of the comprehensive real estate holding tax will be maintained at last year's level (60 percent) to relieve the tax burden.
Housing support for young and newlyweds	Announced in July 2023, the government will supply additional KRW 23trn in policy lending for mortgages and Jeonse loans, increase tax deductions for special savings for home purchases, provide subsidies for deposit guarantee fees to young people (up to KRW 300,000), and relax income requirements for home purchases for young and newlyweds.
Housing support for borrowers with newborn children	In August 2023, the government announced a low-rate mortgage support program (35.1 trillion won) for borrowers with new-born babies who do not own a house. The loan requirements are less strict than those of mortgage loans provided for newlyweds.
Reducing risks in Jeonse deposits	Starting from July 2023, lending regulations for landlords will be eased for one year for the purpose of Jeonse deposit returns: 1) Individual landlords: applying 60 percent DTI instead of the previous 40 percent DSR; 2) business landlords: 1x in Rent to Interest Ratio (RTI) from 1.25-1.5x in regulated areas.
Mitigating PF risks	The government announced in July 2023 that financial support for relatively sound PF projects will continue: 1) special fund by state-owned agency KAMCO (~KRW 1trn); 2) higher coverage in HUG's repayment guarantee to 90 percent of collective loans in pre-sold housing deposits (from 80 percent); 3) eased requirement for PF guarantees factoring in diverse self-rescue pledges. Moreover, ongoing support from a lenders' consortium by key creditors will help with maturity extension and timely funding.
Revitalizing housing reconstruction and redevelopment	In January 2023, the government revised standards on reconstruction to facilitate reconstruction of old apartment complexes. In February 2023, the government announced that it would relax zoning and reconstruction regulations for the first new town, which was built in the early 1990s.
Public housing scheme	The "New:Home" public housing program aims to provide 500,000 housing units by 2027, of which 76,000 units were supplied in 2023.
Lifting other regulations	Since April 2023, buyers of newly built apartments in Seoul Metropolitan Area are allowed to re-sell those properties after 3 years (previously: 10 years) and other areas after 1 year (previously 4 years). In January 2023, the government lifted the price ceiling imposed on the presale of private apartments, excluding in regulated areas.
	(Announced since Sep 2023)
Tightening eligibility for special Bogeumjari loans	Effective September 27, 2023, eligibility criteria were tightened to discontinue accepting applications from (a) those whose combined annual income (for married couples) is more than KRW100 million or those who are purchasing homes priced in excess of KRW600 million (from KRW900 million previously) and (b) current homeowners owning one home with plans to sell their current property within three years.
Introducing stress DSR for floating loans	In September 2023, the government introduced a stress DSR framework to more strictly apply DSR regulations for floating loans, effectively reducing the amount of floating loans available.
Tightening DSR for 50-year mortgage loans	Effective September 13, 2023, the DSR for 50-year mortgages will be based on a calculation of maturity up to 40-year if a borrower's repayment capability is difficult to be verified. 50-year mortgages have seen increasing popularity since their introduction in January 2023.

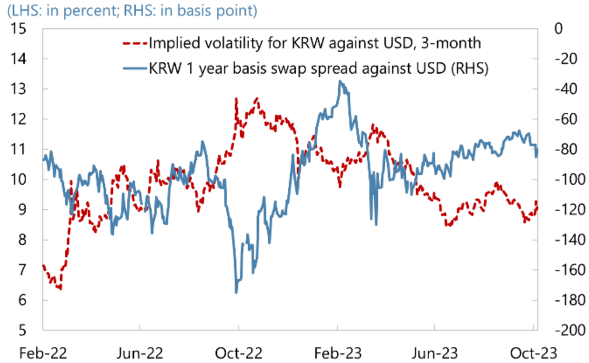
Sources: The Korean authorities, J.P.Morgan and Citi Bank reports.

8. Following policy announcements, liquidity stress at a major group of credit cooperatives has subsided. In July 2023, amid quickly rising non-performing loans (NPLs), MG Community Credit Cooperatives (MGCCCs) experienced deposit withdrawals and mergers of troubled branches.[3] MGCCCs' total assets amount to about 12 percent of GDP (May 2022), with the bulk in loans, while its liabilities are mainly deposits. To contain systemic spillovers, the government announced protection of all deposits in merged branches, provided tax and interest incentives for re-deposits, indicated the possibility of direct liquidity support if needed, and formed a joint taskforce to strengthen management and monitoring of MGCCCs. Private and policy banks provided joint liquidity support to MGCCCs. Deposit inflows have resumed since August , following policy announcements.

9. The external sector has been affected by slowing external demand and tightened global financial conditions. The current account surplus narrowed to 1.8 percent of GDP in 2022, from 4.7 percent of GDP in 2021, due to higher energy import prices and the global semiconductor downcycle. While exports have remained subdued, the current account balance was on a recovery trajectory in 2023H1, helped by lower energy prices and a boosted income balance. Portfolio inflows have recovered this year after declining significantly in 2022 due to the tightened global financial conditions. The exchange rate has moderately recovered this year, with the real effective exchange rate having appreciated by 1.8 percent through July 2023 after depreciating by 5 percent in 2022. Foreign exchange intervention (FXI) amounted to net sales of $46 billion in 2022, mostly in Q2 and Q3, when volatility in the currency market significantly increased and U.S. dollar funding conditions deteriorated. FXI significantly declined since 2022Q4, as the currency market stabilized, and recorded net sales of $8 billion in 2023H1. The external position in 2022 was broadly in line with the level implied by medium-term fundamentals and desirable policies (Annex III).

FX Market Volatility and USD Funding Condition

(LHS: in percent; RHS: in basis point)



Source: Bloomberg.

10. Foreign exchange reserves provide adequate buffers under plausible shocks (Annex IV)**.** Gross international reserves slightly decreased to $414 billion in August 2023 (from $418 billion as of end-2022), equivalent to 25 percent of GDP, 190 percent of short-term debt based on residual maturity (or 250 percent of short-term debt based on initial contractual maturity), 6.2 months of imports, or 14 percent of M2. Systemwide stress tests show that reserves provide sufficient FX liquidity buffers under a wide range of plausible shocks. Korea is dropped from the coverage of the IMF's metric for Assessing Reserve Adequacy for Emerging Markets from this year (Annex IV).

[3] MGCCCs is a major group of credit cooperatives in Korea, with nearly 1300 branches, supervised by the Ministry of the Interior and Safety.

OUTLOOK AND RISKS

11. Growth is expected to gradually improve in the near term. Gradual recovery of the semiconductor sector, the stabilization of domestic housing markets, and the resumption of group travel of Chinese tourists are expected to support demand in 2023Q4, with growth expected to reach 1.4 percent in 2023. A continuation of these trends is expected to drive a growth recovery to 2.2 percent in 2024, moderately lower than expected earlier (2.4 percent in the July WEO forecast), considering drags from a weakening recovery of the Chinese economy and higher-for-longer global interest rates.

12. Inflation is projected to continue to moderate toward the authorities' target. Headline inflation is projected to decline to 3 percent by end-2023 and approach the 2 percent target by end-2024. Core inflation is also expected to continue declining, albeit more gradually, helped by a small negative output gap, slowing wage growth amid rising labor supply, and restrictive monetary and fiscal policies. The inflation outlook is uncertain, as a sustained rise in energy and food import prices or higher wage inflation could delay the convergence of inflation to target.

13. The current account balance is expected to gradually strengthen following a dip this year. The current account surplus is projected to decline to 1.3 percent of GDP this year due to the semiconductor downcycle, subdued demand from Korea's trading partners, and a recovery of Koreans' travel abroad. That said, it is expected to gradually recover to 4 percent of GDP in the medium term on strengthening exports, as trading partner demand and the semiconductor sector recover, while energy prices gradually decline.

14. Risks to the economic outlook are tilted to the downside amid high uncertainty (Annex V). Near-term growth prospects critically depend on the strength of the rebound of the semiconductor cycle and China's demand for Korean exports of goods and services, including tourism. Main risks also include weaker growth and tighter monetary policy in major economies, heightened commodity price volatility, resurgence of global banking turmoil, reduced trust in domestic NBFIs, and a renewed domestic real-estate sector downturn. Moreover, Korea is vulnerable to intensification of geo-economic fragmentation (Box 2). In an adverse scenario of tighter international financial conditions and sharp USD appreciation, growth could decline by 0.4 percentage points relative to baseline projections, while inflation would slow faster than projected (Box 3). By contrast, growth could also turn out higher than expected under the baseline, particularly if global inflation declines faster than expected or there is a stronger rebound in global semiconductor demand.

Authorities' Views

15. The authorities' expectations for growth and inflation were broadly in line with staff's views. Like staff, the authorities expected gradual economic recovery in 2023H2 carrying into 2024. They pointed to the expected recovery in the global semiconductor cycle and increasing tourism demand, with group tourism from China resuming. They shared staff's views of uncertainty surrounding the baseline, especially with regard to the outlook for demand from China. While they deemed the materialization of adverse shocks of the magnitude implied by staff's adverse scenario as unlikely, they pointed to the likelihood of more moderate shocks, including from higher oil prices, that would affect growth while raising inflation, presenting potential policy challenges. They saw upward pressures on inflation from a resurgence of wage inflation as less likely given the recent moderation of wage growth.

16. The authorities broadly agreed with staff's external sector assessment. They projected a slight decline in the current account surplus this year, while expecting a gradual recovery from 2023H2 onward. They saw risks from geoeconomic fragmentation, which could have diverse short-term effects on the Korean economy, with uncertain long-term effects depending on policy reactions. Amid a tentative stabilization of the currency market this year, the authorities saw limited potential risks from tighter US monetary policy but some exposure to potential currency volatility of the Chinese renminbi and Japanese yen. Like staff, they judged international reserves to provide adequate buffers for potential shocks and assessed the external sector to be broadly in line with the level implied by medium-term fundamentals and desirable policies.

POLICY DISCUSSIONS

A. Maintaining Restrictive Fiscal and Monetary Policies

17. Near-term policies should remain restrictive to limit the rise in public debt while continuing to address inflation. The policy rate should stay above neutral and data dependent, as core inflation is still elevated. With significant fiscal expansion during the pandemic and the debt-to-GDP ratio still on an upward trajectory, fiscal policy should continue to normalize and expand available buffers given large long-term fiscal challenges related to rapid population aging. Continued fiscal policy normalization will also support monetary policy in containing inflation.

18. Staying the course on monetary policy is appropriate. With headline inflation remaining exposed to short-term fluctuations in energy prices and core inflation declining only modestly, it is important to maintain the policy focus on addressing inflation. Premature monetary easing should thus be avoided, consistent with the BoK's restrictive policy stance and forward guidance of maintaining the current stance for a considerable time, with any further hikes conditional on incoming data. Communications should continue to underscore that monetary policy will first and foremost focus on addressing inflation.

19. FX intervention should remain limited to preventing disorderly market movements. While the currency market has tentatively stabilized this year, risks of renewed bouts of volatility remain, partly linked to a possible further increase in the spread between the Korean and US policy rates. Exchange rate volatility generally does not pose significant economic challenges for Korea, given limited currency mismatches and manageable passthrough to consumer prices. FX market depth, while ranking higher than in most emerging markets, still lags advanced economy peers. In periods of high global financial market uncertainty, there could be herding behavior amid temporarily shallow markets, leading to sharp FX movements and impaired market functioning. FX intervention should thus remain limited to preventing disorderly market conditions.

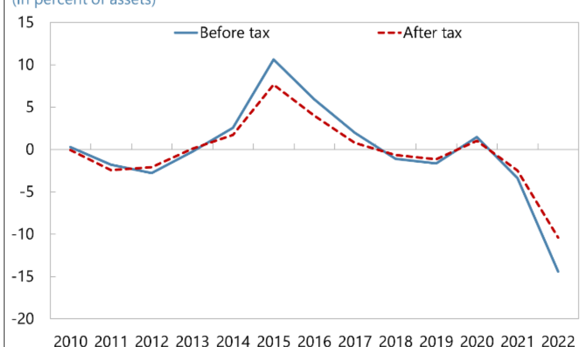
20. Fiscal policy should remain tight to slow the build-up in public debt and support disinflation. The revenue shortfall is widening in 2023H2, which should be accommodated by mobilizing additional financial resources. The authorities plan to secure funding for budgetary spending by withdrawing government deposits and funds, including from the FX stabilization fund, without additional deficit financing through bond issuance. The central government fiscal deficit, although projected to be substantially higher than envisioned in the 2023 budget, will nevertheless narrow to around 1.8 percent of GDP, from 3 percent in 2022, with the fiscal stance remaining contractionary (fiscal impulse of -0.8 percent of potential GDP). The 2024 budget proposal features a reduction of spending as a share of GDP. On staff's estimates, this implies a further decline of the fiscal deficit to 1.7 percent of GDP, despite subdued growth in tax revenue (especially corporate taxes). The implied fiscal stance is moderately contractionary (fiscal impulse of -0.4 percent of potential GDP), which is adequate to limit the further build-up in public debt while supporting monetary policy in containing inflation. The budget proposal features a significant increase in welfare spending, which is welcome in light of Korea's relatively weak social safety nets. Significant cuts in R&D spending in the budget proposal are intended to consolidate such spending into areas of highest expected returns but risk on aggregate having a negative impact on basic research and medium-term productivity growth. Fiscal policy should be anchored in a well-designed rules-based fiscal framework (Section C).

21. Some monetary and fiscal accommodation would be called for if downside risks materialize. In case of a faster deceleration of inflation and slower economic growth, such as under staff's adverse scenario (Box 3), gradual lowering of the policy rate can be considered. Automatic stabilizers should be allowed to operate, and additional targeted support should be provided to the vulnerable including through strengthened social safety nets. In such a scenario, growth-enhancing public investments, including in green public infrastructure, could also be scaled up.

22. Domestic energy prices should be better aligned with international commodity prices to enhance the financial health of public utilities. Higher energy costs due to the 2022 global commodity price surge were not sufficiently passed on to consumers, resulting in significant losses for state-owned utility companies, including KEPCO (electricity) and KOGAS (gas). More recently, KEPCO's profitability has improved due to receding global commodity prices and the moderate adjustments to electricity prices introduced so far this year. To further restore KEPCO's financial health and limit future losses, a pricing mechanism linking electricity prices with the cost of energy inputs for power generation should be considered. Fuel tax cuts introduced in 2021 in response to surging fuel prices should not be extended upon expiration in December

Profit of KEPCO

(In percent of assets)



Sources: KEPCO and IMF staff calculations.

2023, particularly as these prices have fallen substantially from the peak. In the meantime, targeted support, such as transfers through social safety nets, should be provided to the vulnerable to mitigate their higher living costs. Fiscal risks associated with state-owned utility companies are still limited as their financial outlook improves and they maintain stable market access.

23. Against the backdrop of a weakened multilateral trading system and rising trade tensions, Korea's industrial policies should remain narrowly targeted to specific objectives and aim to minimize trade and investment distortions. Following the introduction of similar measures by trade partners, Korea introduced the K-Chips Act, providing temporarily increased tax credits for domestic investment in key strategic areas, including semiconductors and batteries (large companies from 8 percent to 15 percent, SMEs from 16 percent to 25 percent). Industrial policy measures have recently become more frequent among AEs. They may create an incentive for firms to relocate production, risking to distort trade and investment decisions. They may also risk triggering retaliatory responses by trading partners, further fragmenting global supply chains. Trade and investment measures in Korea should hence remain narrowly targeted to specific objectives and consistent with WTO obligations, and the authorities should resist calls to use such tools to provide a competitive advantage to domestic industries. More broadly, improving resilience by diversifying trade partners and sourcing can be helpful in minimizing potential supply chain disruptions. Fostering innovation and structural reforms can enhance market competitiveness and flexibility, which will render businesses more resilient and adaptable to a changing environment. The stakes are potentially high for Korea, with simulations pointing to potential, permanent output losses of 2-4 percent or more in scenarios of severe worsening of geoeconomic fragmentation (Box 2).

Authorities' Views

24. The BoK concurred with the need to keep a restrictive monetary policy stance with a priority on price stability while thoroughly assessing potential policy challenges. The BoK expected to maintain the current restrictive policy rate for a significant period, including an option for further rate hikes as warranted. Future monetary policy decisions would continue to focus primarily on addressing inflation, while also taking into account developments in household debt and monetary policies of major advanced economies. In a plausible downside scenario, with a moderate growth slowdown combined with upside price shocks, the BoK saw a need to stay the course on restrictive monetary policy to rein in inflation. But in a severe adverse scenario with large adverse shocks to inflation and growth, the BoK acknowledged the case for loosening monetary policy.

25. The authorities reaffirmed their intention to limit FXI to addressing phases of abnormal currency volatility. FXI was significantly reduced in 2023H1 compared to last year, reflecting a stabilizing currency market. The authorities stressed that FXI is conducted only for smoothing currency market operations in response to high volatility stemming from herding behavior and is not intended to target any particular exchange rate level.

26. The authorities reaffirmed their commitment to fiscal soundness. They were resolved to see through most budgetary spending in 2023 despite the revenue shortfall, with additional financing provided from government deposits and funds, thereby preventing a request for parliamentary authorization for additional debt financing. The authorities pointed to plans for continued gradual fiscal consolidation in line with the proposed 2024 budget and the 2023–2027 National Fiscal Management Plan, which seek to contain expenditure growth and maintain central government debt within the mid-50 percent range. The authorities maintained that the planned rationalization in R&D spending in 2024 was intended to reduce wasteful spending, while concentrating fiscal resources on the most impactful projects. They maintained their commitment to fiscal soundness also under unfavorable conditions such as staff's adverse scenario.

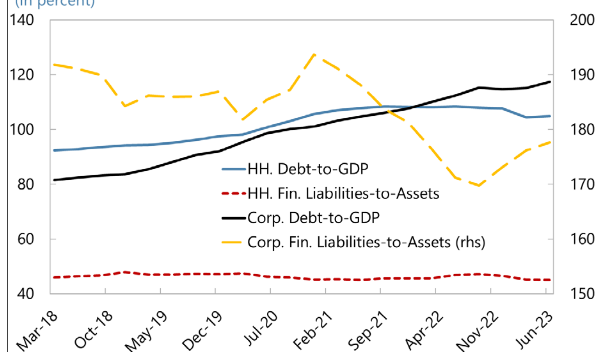
27. Amid a complex global trade and investment environment, the authorities reaffirmed their commitment to non-distortionary, open trade and the WTO process. They pointed to their commitment to trade integration, including through the WTO and regional and bilateral trade agreements, aiming for deeper integration and a resilient trade network. Resolved to abide by the free trade order and multilateralism, they intended to seek continued international dialogue to mitigate negative impacts of foreign industrial policy initiatives on Korea.

B. Maintaining Resilience in a Challenging Macro-Financial Environment

28. Financial sector-related risks have risen, but systemic risks appear manageable thanks to sizable financial buffers, adequately tight macroprudential requirements, and swift policy responses. While debt of households and corporates remains high, ample financial assets provide significant cushions to adverse shocks. Financial stability risks have also been mitigated by tight borrower-based prudential measures (50 percent LTV limit for new mortgages and 40 percent debt-service-ratio ceiling for individuals' borrowing from banks), which have been largely maintained during the recent housing downcycle. The authorities' preemptive policy responses to emerging financial stability risks have also supported market confidence.

Household and Corporate Debt and Financial Assets

(In percent)



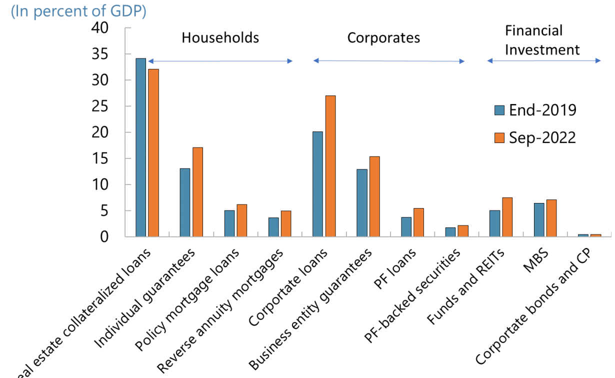
Sources: CEIC and IMF staff calculations.

29. Korean banks have been resilient to recent global stress, but scope exists to enhance their liquidity and loss absorption capacities. Conservative prudential requirements and significant capital buffers can help banks weather adverse shocks. However, banks' liquidity, capital, and provision ratios, while exceeding regulatory requirements, still fall behind some peers (Figure 6). Systemwide loan delinquency rates, while remaining at very low levels, have inched up recently. Rapid financial digitization has also increased the likelihood of faster deposit withdrawals than in the past in case an institution comes under financial stress. Staff supports plans by financial regulators to increase the countercyclical capital buffer (CCyB, currently at zero) to 1 percent starting from May 2024, active consideration of a stress-buffer capital system, and additional provisioning requirements.

30. Pockets of financial vulnerability have emerged among NBFIs and corporates. Some NBFIs have experienced a significant increase in NPLs, much more than those of banks, reflecting NBFIs' riskier exposures to real estate and corporate lending. NBFIs' real-estate related exposure significantly expanded during the pandemic, driven by rising corporate loans and project financing (PF) to developers and construction firms. PF is the riskiest segment due to a fragile funding structure. While overall liquidity conditions have improved following the authorities' market stabilization measures (see ¶16), credit risk remains elevated for lower-quality PF securities. Vulnerabilities related to the NBFI–real estate–corporate nexus warrant continued vigilance (Annex VI). Corporate debt has increased, and interest coverage ratios (ICRs) have weakened. Corporate credit growth has decelerated but remains high. Substantial vulnerabilities to rising interest costs appear in certain sectors (property, energy and utilities), although sizable cash buffers provide some cushions (Annex VII).

Real Estate Financial Exposure by Types

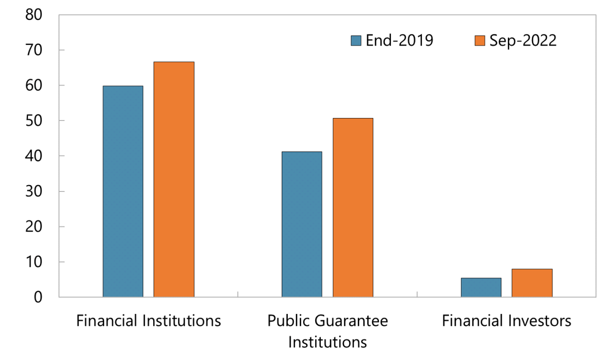
(In percent of GDP)



Source: Bank of Korea.

Real Estate Financial Exposure by Risk-Bearing Entities

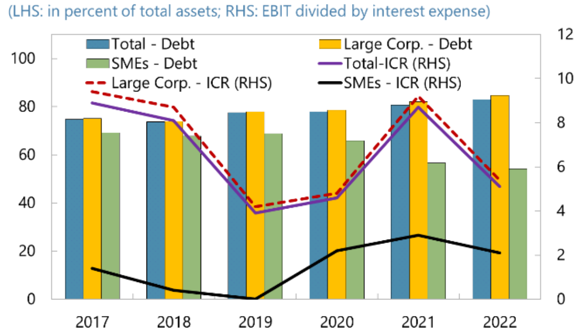
(In percent of GDP)



Source: Bank of Korea.

Corporate Debt and Interest Coverage Ratios

(LHS: in percent of total assets; RHS: EBIT divided by interest expense)

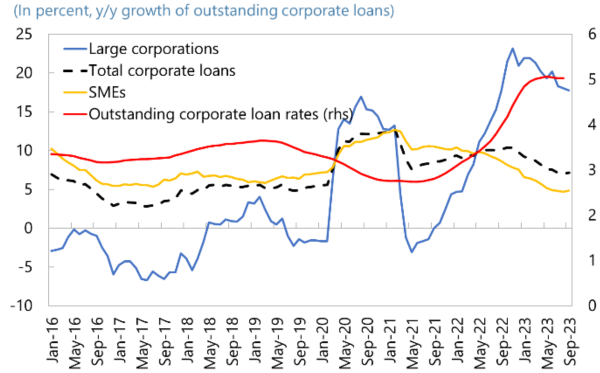


Sources: KIS-Value, and the BoK financial stability report.

Note: ICR stands for interest coverage ratios; EBIT stands for corporate earnings before interest expense and taxes.

Corporate Loan Growth

(In percent, y/y growth of outstanding corporate loans)

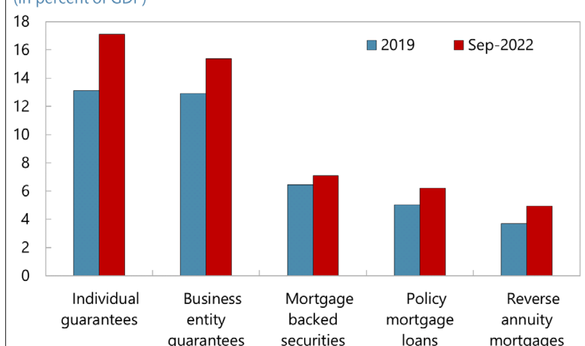


Sources: Haver Analytics; IMF staff calculations.

31. With high and rising household debt, financial challenges could emerge for some vulnerable households and Jeonse deposit borrowers.[4] Following some moderate deleveraging in 2022, household debt, among the highest in the OECD, has increased again since 2023Q2. Repayment risk is mitigated by sizable financial assets, solid income growth, and a low share of vulnerable borrowers (Figure 7). Nonetheless, increased interest rates and the high share of floating-rate debt could pose challenges to some households. Delinquency rates of household loans have been rising gradually, albeit from a low base. The fall in housing prices has increased credit risks associated with Jeonse deposit payback, though a significant share of deposits is protected by guarantees. Reportedly, Jeonse deposit default rates increased considerably in 2023H1 and are expected to further rise in 2023H2 (Annex VIII). In response, the government has temporarily eased lending-related regulations for Jeonse landlords (Text Table 2), which together with the recent housing market stabilization would help mitigate repayment risks. Overall, BOK stress tests indicate that systemic risks from households and Jeonse debt remain contained. That said, high and rising household debt could adversely affect growth and increase inequality over the longer term. Hence, gradual deleveraging would be desirable.

32. Sizable real estate guarantees pose financial risks to housing guarantee companies. These guarantees have significantly expanded, while corresponding capital buffers of housing guarantee companies are limited. The rise of default claims on Jeonse deposits in 2023H1 due to the decline in housing prices has eroded profits for some companies that provide Jeonse-related guarantees. Stress testing suggests additional losses and capital pressures under adverse housing price shocks (Annex VIII). The implied fiscal contingent liabilities related to publicly owned guarantee companies are limited though (about ¼ percent of GDP under severe stress scenarios). Nonetheless, the loss absorption capacity of some stressed companies needs to be strengthened.

Real Estate Exposures by Public Guarantee Companies
(In percent of GDP)



Source: The BoK financial stability report, Dec 2022.

Policy Recommendations

33. Keeping financial support measures temporary and targeted could help mitigate moral hazard concerns. Timely and forceful policy actions in Korea have been essential in restoring market confidence during periods of market stress. Potential moral hazard issues can be addressed by keeping policies temporary, targeted, and supported by strengthened regulation, supervision, and risk monitoring.

[4] In the Korean leasehold deposit market (Jeonse), Jeonse renters transfer a large interest-free deposit (often around 50-70 percent of the house value) to the landlord in lieu of monthly rent.

- **Project financing.** The authorities' swift policy reactions last fall were instrumental in stabilizing financial markets and easing liquidity stresses. With market conditions normalizing, measures are rightly being phased out. In this regard, the normalization of the required loan-to-deposit rate in July 2023 and the end of the BoK's temporary liquidity injections through repurchase agreements are welcome. The adjusted pace of increasing the required liquidity coverage ratio back to 100 percent will help ensure a smooth transition back to normal. Remaining measures should be phased out as market conditions further normalize.
- **MGCCCs.** Given the systemic importance of MGCCCs as an aggregate, measures announced in July in the context of MGCCCs' deposit withdrawals are welcome, preempting risks of broader confidence losses. Moral hazard concerns are being addressed through enhanced supervision of individual problematic MGCCCs and plans to tighten regulatory requirements to gradually align MGCCCs with those of other non-bank depository institutions. As conditions normalize and weaknesses in individual MGCCCs are addressed, consideration should also be given to strengthening the regulatory and supervisory framework for MGCCCs over the medium term.

34. Housing-related measures should strike a balance between preventing excessive price falls and allowing for orderly adjustment. The recent measures, aimed at supporting housing demand and facilitating transactions, have helped to stabilize housing markets but have also contributed to the recent rise in household debt. Consistent with staff recommendations, the authorities have tightened regulations for 50-year mortgage loans, introduced a stress DSR framework including an interest serviceability buffer for floating-rate loans, and tightened eligibility criteria for subsidized mortgage lending under special Bogeumjari loans (Text Table 2). The authorities' relaxation of Jeonse-related lending regulations is welcome in light of the high prevalence of outstanding Jeonse deposits that exceed current Jeonse prices, but this relaxation should be kept temporary and targeted.

35. Stronger buffers, regulation, supervision, and risk management are essential in enhancing the resilience of NBFIs. Emergency liquidity support to selected NBFIs should be kept temporary and targeted, provided at a penal rate and fully collateralized, and accompanied by more supervisory oversight to mitigate moral hazard concerns. Efforts are needed to encourage depository NBFIs to build additional buffers. In light of the deteriorating asset quality (Annex VI), there is a need to strengthen liquidity, capital, and loss provisions of NBFIs, while their regulatory standards should be revisited. In this regard, staff welcomes the authorities' recent reform initiatives, including (i) higher provisions for real estate exposures in mutual savings banks and mutual credit cooperatives and for borrowers with multiple credit lines in credit specialized institutions, (ii) higher liquidity ratio requirements for securities firms, and (iii) ongoing efforts in building a real-time deposit monitoring system for depository NBFIs. Remaining gaps in lending-related regulation between banks and NBFIs (such as DSR ceilings) could also be reviewed. Recent efforts to enhance the NBFI crisis management framework are welcome, notably the BoK's recent announcement to enable timely access to liquidity support for depository NBFIs under emergency circumstances.

36. Recent initiatives to enhance the banking sector's emergency liquidity lines and loss absorption capacities are welcome. Given heightened downside risks, financial regulators should review banks' liquidity and credit risk assessments and encourage strengthening liquidity and loss absorption capacities. In this regard, plans to activate the CCyB, consideration of a stress-based capital system, and reviews of methodologies for calculating provisions are welcome. In addition, the BoK's recent announcement to reform the standard lending facility for banks, notably the expansion of eligible collateral and the adjustment of lending rates, could help enhance emergency liquidity support to banks. Safeguards have also been introduced, including mark-to-market valuations with haircuts for collateral, mitigating potential financial risks for the BoK. Progress has been made in enhancing stress testing practices and adopting new resolution and recovery plans for domestic systemic financial institutions.

37. Comprehensive efforts are needed to address risks from high levels of private debt. These include maintaining adequate prudential norms to contain debt in vulnerable segments (notably real estate), considering cost-effective debt-restructuring programs for vulnerable borrowers, and enhancing restructuring and insolvency mechanisms (in line with FSAP recommendations). Financial support to households and companies (notably forbearance programs) should be time-bound and targeted. Recent initiatives to facilitate debt restructuring, including via the PF inter-creditor group, are welcome. In line with FSAP recommendations, a sectoral CCyB for household exposures could also be considered to contain the increase in household debt.

38. Progress has been made in implementing FSAP recommendations. Steps have been taken to assess the potential rollover risks of Jeonse debt, strengthen prudential requirements of state-controlled banks, enhance stress testing practices, increase supervision of insurers, and improve the resolution framework of financial conglomerates (Annex IX). The authorities have also made progress in impact assessment of prepaid electronic payment and enhancing crypto-related regulations (Box 4). In other areas, reform efforts could be enhanced through further widening the definition of financial holding companies and strengthening the insolvency and creditor rights regime.

Authorities' Views

39. The authorities' assessment of financial vulnerabilities was broadly in line with staff's views, and they are taking preemptive actions to enhance financial resilience. With the housing market stabilizing, their concerns about near-term financial sector stress, including from project financing and Jeonse deposit defaults, have somewhat eased. Although not viewed as systemic, the authorities closely monitor possible latent vulnerabilities among some small-sized mutual savings banks, credit cooperatives and securities companies. They have adopted measures to improve NBFIs' loss-absorption capacity and enhance supervision as a preemptive response to latent vulnerability. They recognized some regulatory gaps between depository NBFIs and banks, notably the difference in the required capital ratio and portfolio DSR regulations, which are intended to improve financial access in local communities. Acknowledging the need to strengthen financial soundness of public housing guarantee companies, the authorities indicated plans to improve their loss-absorption capacity while tightening requirements for new issuance of Jeonse-related guarantees.

40. The authorities are prioritizing policies to address risks associated with high household debt. They have switched the prudential policy focus from ensuring a soft landing of the housing market to containing the increase in household debt. While they have announced plans to tighten some mortgage support programs, they indicated their intention to maintain the normalization of previously very restrictive housing regulations and tax measures introduced during the earlier housing boom. They also indicated that a further sustained rise in household debt could imply a need to keep policy rates higher for longer. They noted that they were reviewing the necessity of a sectoral CCyB for household lending, with most technical preparations completed, while prioritizing at this juncture the implementation of the planned increase in the general CCyB. They saw limited systemic concerns from corporate debt, pointing to the fact that corporate delinquency rates and debt-to-equity ratios are stable and in line with historical averages. Nevertheless, they took note of potential risks in some, mostly small, firms, which are under close monitoring.

41. The authorities are adopting measures to mitigate moral hazard concerns. They concurred with staff regarding the existence of potential moral hazard concerns and pointed to the need to keep financial support measures temporary and targeted. They have withdrawn the bulk of market stabilization measures for PF-related risks and developed exit plans for remaining ones. They have enhanced supervision of project financing sites and initiated a joint PF creditor-group to facilitate PF debt restructuring, while requesting property developers to devise self-resolution plans before receiving any public support. Regarding the MGCCCs, they highlighted their priority focus on resolving issues with vulnerable cooperatives and noted that, as the situation stabilizes, they planned to enhance regulatory and supervisory requirements for MGCCCs while taking into account their business operations and social needs.

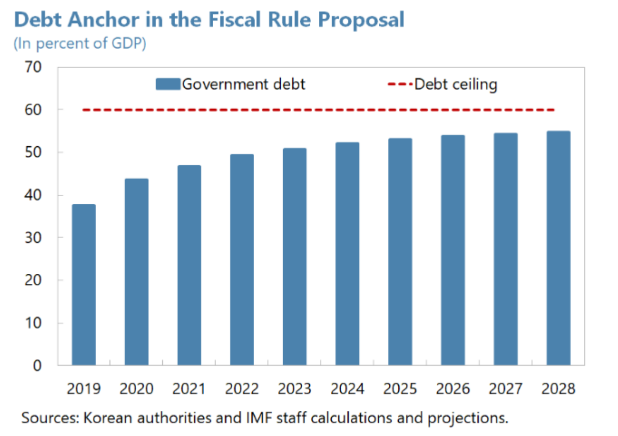
C. Advancing Structural Reforms to Address Long-Term Challenges

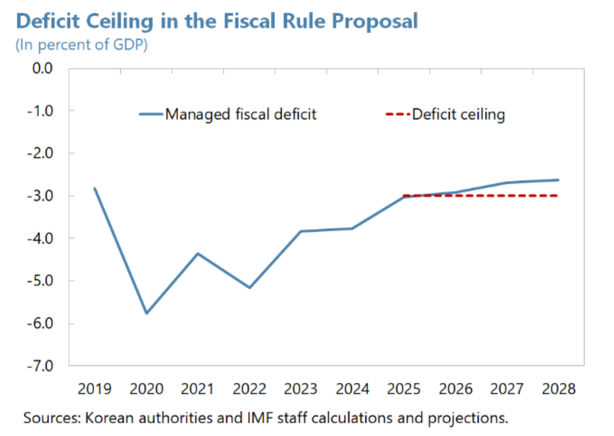
Fiscal Reforms

42. A rules-based fiscal framework would help anchor public finances amid long-term challenges from rapid population aging (Section A and Annex X). The authorities' proposed fiscal rule, under discussion in parliament, features a government debt ceiling of 60 percent of GDP[5] and a managed fiscal deficit ceiling (fiscal balance excluding social security funds) of 3 percent of GDP, tightening to 2 percent in case debt exceeds 60 percent of GDP. The rule would feature an escape clause for severe adverse shocks and would be reviewed every five years. If passed, the rule will take effect in 2025. Staff welcomes the proposal and assesses the parametric targets as broadly prudent. However, space for counter-cyclical fiscal policy should be preserved, as the authorities' projected deficits under the 2023-27 National Fiscal Management Plan are close to 3 percent of GDP, leaving very limited space. A transition phase could be considered during which a somewhat higher deficit ceiling would be set such that sufficient scope for counter-cyclical policy remains. Oversight with

[5] This includes central and local government debt.

regard to the escape clause and monitoring and review of the fiscal rule should be strengthened and administered by an independent entity (for example, the National Assembly Budget Office).





43. Pension reform is needed to safeguard long-term fiscal sustainability and alleviate old-age poverty. Pension spending has increased from 1.8 percent to 4.0 percent of GDP between 2009 and 2022 and, because of rapid aging, is projected to rise significantly further in coming years[6]. The main pension scheme, the National Pension Service (NPS), is expected to go into deficit in 2041 and deplete its assets by 2055, despite legislated reductions of replacement rates and increases in the retirement age. Raising contribution rates significantly and increasing the retirement age further will be necessary to ensure the fiscal sustainability of the pension system (Annex X). Further reducing already low replacement rates would likely increase Korea's high incidence of old-age poverty and would thus likely require raising the non-contributory basic pension benefit to mitigate the social impact.

44. Revenue mobilization and spending rationalization could also help address the long-term fiscal challenge from population aging. Options could include (i) reducing income tax deductions, (ii) streamlining tax expenditures on industry and SMEs, (iii) rationalizing VAT exemptions, (iv) raising the VAT rate (10 percent), and (v) improving spending efficiency and reducing wasteful spending, including subsidies.

Labor Market and Gender Reforms

45. Reforms should be advanced to tackle high labor market rigidity (Annex XI). The authorities' plans include more flexible working hours, switching to a performance-based pay system, and tackling labor market duality. Reform plans should be implemented with credible measures under conducive economic conditions. More balanced working-time arrangements could help improve work-life balance and encourage female labor participation, while meeting fast-evolving industrial demands. As growth recovers, deregulation to reduce employment protection for regular workers could be considered. These reforms should be pursued in conjunction with further strengthening of social safety nets, including expanding unemployment insurance to more non-regular workers and the self-employed, and enhancing access and generosity of social assistance programs.

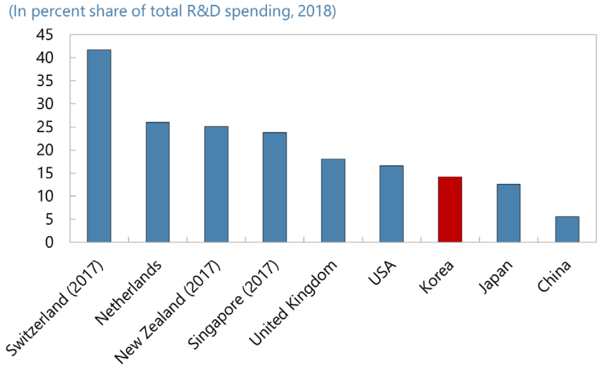
[6] Includes: NPS, special regimes and the Basic Pension.

46. Comprehensive efforts are needed to narrow large and sustained gender gaps. Significant efforts have already been made in improving the work environment for women, facilitating a marked rise in female labor force participation (FLFP). Nonetheless, gender gaps in the labor market remain large compared to OECD peers. Social norms push heavier household chores and childcare burdens on women, while limiting women's employment in high-wage positions and sectors. In conjunction with high labor market rigidities, this discourages FLFP and is mirrored in still wide gender gaps. Increasing labor market flexibility by reducing labor market duality, coupled with further incentives for parental leave and enhanced childcare options, can increase FLFP, raise labor productivity and growth, and reduce income inequality. Retraining programs to reenter the labor market after a family care pause can help increase female participation in manufacturing and technology industries, facilitating a reduction in gender gaps (Annex XII).

Enabling Innovation

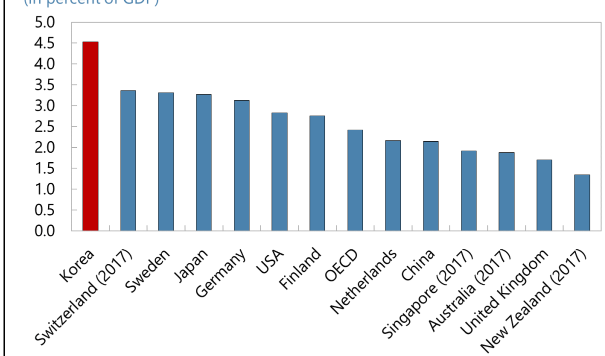
47. Reforms should aim at fostering innovation and raising productivity beyond manufacturing. Innovation is concentrated in big manufacturing firms, while the service sector, dominated by small businesses, has lagged in innovation and productivity growth. To spur innovation and productivity growth, particularly in the service sector, the authorities should establish a level playing field between services and manufacturing in terms of tax rates and public utility charges, lower legal barriers to entry and startup costs, simplify licensing and permit requirements, and facilitate firm exit. Support to basic research should also be strengthened to enable innovation (October 2021 World Economic Outlook).

Basic Research Spending
(In percent share of total R&D spending, 2018)



Source: UNESCO.

R&D spending
(In percent of GDP)



Source: UNESCO.

Climate Change Mitigation

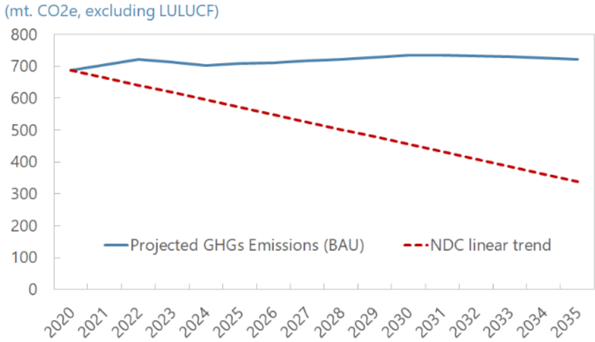
48. Achieving Korea's climate goals will require stronger policies. Korea has committed to reducing emissions by 40 percent from 2018 levels by 2030, a stronger-than-average commitment among global top 20 emitters (close to the average of G20 AEs), and to reaching carbon neutrality by 2050. The main policy tool is the Emission Trading Scheme (ETS), but prices have remained too low at under \$20/MTCO_2e. Other climate policies include regulation mandating power generators to increase the share of renewables, tightened vehicle emission standards, and a heavy excise on the use of fossil fuels, especially coal. However, achieving Korea's mitigation goals will require further strengthening of its policies, for example, by aligning ETS emissions caps with the NDC target, underpinning the ETS with a robust and rising price floor, and transitioning to fully auctioned allowances.[7] Other options include:

- Reinforcing carbon pricing with feebates in emissions-intensive sectors to strengthen decarbonization incentives without imposing fiscal costs or heavier tax burdens on consumers or firms.
- Increasing and expanding the coal tax, which is only applied to coal in power generation. Full coal phaseout will require additional policies such as feed-in tariffs and complementary public investments.

49. Economic costs of recommended climate policies are manageable. Higher carbon prices in line with climate targets could reduce annual average growth by 0.2 percentage points through 2030. The costs can be mitigated if additional ETS revenues are used for growth-enhancing investments. The contraction of employment and value-added of emission-intensive sectors will be partially offset by increasing employment and value-added in green sectors.

NDC and Projected BAU Emissions[1]

(mt. CO2e, excluding LULUCF)

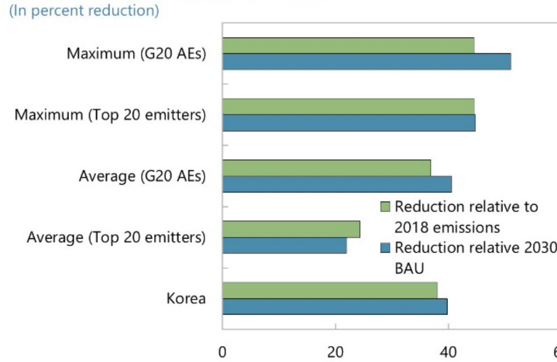


Source: IMF staff calculations.

1/ The BAU is a scenario assuming no additional or strengthening of existing price- based mitigation policies. The base year for projection is 2019.

Korea's NDC Compared to Peers

(In percent reduction)



Source: IMF staff calculations.

Authorities' Views

50. The authorities, like staff, saw a need for fiscal reforms to address medium-to-long term fiscal challenges. They expressed a strong commitment to keep fiscal deficits below the proposed ceiling of the fiscal rule and maintained the view that sufficient fiscal policy flexibility is preserved by the escape clause without the need for a transition phase. They agreed with the need for pension reform to ensure the long-term sustainability of the pension system and stressed the importance of consensus building to ensure sufficient support from the various stakeholders. They further stressed the need for a more comprehensive assessment of the economic consequences of aging, including for the labor market and healthcare.

[7] For more detailed discussions on policy options for climate mitigation in Korea, see Republic of Korea-Staff Report for the 2022 Article IV Consultation (SM/22/51) and Republic of Korea-Selected Issues (SM/21/22).

51. The authorities' labor market reforms aim to improve flexibility and protect vulnerable groups. The authorities stressed that successful labor market reform was critical for underpinning Korea's competitiveness. They highlighted their intentions to modernize labor regulations by removing outdated and overly restrictive regulations, including through the planned working hours reform. They noted that they were revising proposals for changes to working-hour regulations to incorporate public opinions from a recent survey with a view to subsequently releasing concrete plans. The authorities have also formed a committee to design reform plans to reduce labor market duality. They are in a close dialogue with firms to develop a roadmap for wage system reform.

52. The authorities reaffirmed continued efforts to reduce gender gaps. The authorities pointed out that societal norms, an inflexible working environment with a seniority-based wage system, and labor market duality led to unfavorable outcomes for female workers, posing significant challenges to address gender gaps. They noted that a variety of programs are in place to help address gender gaps, including generous childcare support, retraining and reeducation programs for women reentering the labor market after childcare-related breaks, retention programs to prevent such career breaks, and education programs for women to enter high-wage sectors that tend to be dominated by men. While noting the importance of programs that mitigate family-borne costs of raising children and allow women to stay in, or return to, employment, they stressed that efforts to increase female labor force participation and reduce gender gaps should not come at the cost of further reduction in Korea's very low fertility rate.

53. The authorities have recently released the 1st National Framework Plan for Carbon Neutrality and Green Growth and are in preparatory stages for rolling out new detailed climate policy measures accordingly. The Framework Plan provides high-level strategic guidance and policy directions and includes adjustments to existing sectoral mitigation targets. Highlighting their resolve to respond to the need to address the climate mitigation challenge, the authorities also stressed the need for sectoral targets to be set in a feasible way and with the acceptance of the private sector. As detailed implementation plans in accordance with the Framework Plan are being developed, they noted that a range of potential policy options are being considered, including those recommended by staff such as gradually increasing the share of auctioned allowances under the ETS, while they did not deem an expansion of the coal tax as appropriate in the near term.

STAFF APPRAISAL

54. In the wake of a growth slowdown and inflation challenges, Korea's economy is expected to gradually strengthen. Gradual recovery of global semiconductor demand, a strong domestic labor market, and stabilization of Korea's housing market are expected to support demand for Korean goods and services. Having come down significantly from its mid-2022 peak, inflation is expected to gradually decline further toward the BoK's target. Pockets of financial sector vulnerability emerged amid the housing market downturn and rising interest rates, and systemic financial risks have increased but appear to remain manageable. The external position in 2022 was broadly in line with the level implied by medium-term fundamentals and desirable policies.

55. Monetary policy should stay the course to address inflation. Consistent with the BoK's forward guidance, the current restrictive stance should be maintained for a considerable time, with any further hikes conditional on incoming data. Communications should continue to underscore that monetary policy will first and foremost focus on addressing inflation. Premature rate cuts should be avoided. Foreign exchange intervention should remain limited to preventing disorderly market conditions in cases where herding behavior could lead to shallow FX markets.

56. Fiscal normalization should continue, helping to slow the build-up in public debt and supporting disinflation. The 2023 revenue shortfall should be accommodated by mobilizing additional financial resources to finance budgeted spending. Even so, the fiscal stance is estimated to remain contractionary this year. The 2024 budget proposal targets moderate further consolidation. The fiscal stance is adequate to continue normalizing fiscal policy in the aftermath of pandemic-era support, limit the projected build-up in public debt, and support monetary policy in containing inflation.

57. While systemic risks appear to remain manageable, financial resilience could be strengthened through stronger buffers, regulation, and supervision. Adequately tight macroprudential requirements and swift policy responses have kept financial stability risks in check. Nonetheless, pockets of vulnerability have emerged in some vulnerable households, corporates and NBFIs. The authorities' plans to enhance financial institutions' liquidity and loss absorption capacities are thus welcome. Further efforts are needed to narrow regulatory gaps between NBFIs and banks.

58. Financial support measures should remain temporary and targeted. Timely and decisive policy action was essential for preventing broader losses of confidence during stress episodes related to capital markets last fall and MG Community Credit Cooperatives (MGCCCs) this summer. As stress eases, market stabilization measures are rightly being phased out. Moral hazard concerns are also being addressed through enhanced supervision of MGCCCs and plans to gradually tighten their regulatory requirements. Once weaknesses are resolved, consideration should be given to strengthen the regulatory and supervisory framework for MGCCCs over the medium term.

59. Sustained efforts are needed to help contain risks from elevated private debt. Recent initiatives to tighten regulations for mortgage support programs are welcome, as these have contributed to the recent increase in household debt. A sectoral countercyclical capital buffer for household lending exposures could also be considered. Pandemic-era lending support to corporates should exit as planned, while recent efforts to facilitate corporate debt restructuring are welcome. Prudential norms should be maintained to contain debt in vulnerable segments (notably real estate), while cost-effective debt-restructuring programs could be considered for vulnerable borrowers. Restructuring and insolvency mechanisms should be enhanced.

60. A rules-based fiscal framework would help anchor public finances amid rapid population aging. The proposed fiscal rule features broadly prudent parametric targets. However, space for counter-cyclical fiscal policy should be preserved, for example through a transition phase, as the authorities' projected medium-term deficits are close to the target.

61. Pension reform is needed to safeguard long-term fiscal sustainability and alleviate old-age poverty. Despite legislated reductions of replacement rates and increases in the retirement age, Korea's main pension scheme remains unsustainable in the long term. Raising contribution rates significantly and increasing the retirement age further will be necessary to ensure the scheme's sustainability. An additional reduction of already low replacement rates would be problematic in light of high old-age poverty and would likely require raising the non-contributory basic pension benefit to mitigate the social impact.

62. Stronger policies are needed to achieve Korea's climate objectives. Achieving Korea's ambitious climate mitigation goals will require a significant strengthening of its climate policies, for example, by aligning the ETS emissions caps with the NDC target, underpinning the ETS with a robust and rising price floor, and transitioning to fully auctioned allowances. Other options include feebates in emissions-intensive sectors and increasing and expanding the coal tax.

63. Reforms should aim at fostering innovation and raising service sector productivity. The authorities should establish a level playing field between services and manufacturing, lower legal barriers to entry and startup costs, simplify licensing and permit requirements, and facilitate firm exit. The use of industrial policies should remain narrowly targeted to specific objectives and consistent with WTO obligations, and the authorities should resist calls to use such tools to provide a competitive advantage to domestic industries. Support to basic research should be strengthened to enable innovation.

64. Structural reforms are needed to tackle labor market rigidities and reduce gender gaps. The authorities' intended labor market reforms focus on key bottleneck areas. Concrete reform proposals should be implemented under conducive economic and policy conditions. To continue narrowing Korea's wide gender gaps, it will be essential to lower the family care burden on women through further incentives for parental leave and enhanced childcare options. Retraining and reeducation programs for women reentering the labor market after a family care pause are welcome, while efforts to reduce labor market duality would also be helpful to address gender gaps.

65. It is recommended that the next Article IV consultation be held on the standard 12-month cycle.

Box 1. Previous IMF Policy Recommendations

	Fund Recommendations	Policy Actions
Monetary Policy	Calibrate the pace of monetary policy normalization to ensure that inflation stabilizes at its target and expectations remain well anchored.	The BoK has appropriately tightened monetary policy to address inflation, raising the policy rate by 300 bps cumulatively.
Fiscal Policy	Take a broadly neutral fiscal stance for 2022, and provide stimulus if downside risks materialize, including resurgence of new COVID variants.	Two supplementary budgets totaling 3.5 percent of GDP were introduced, mainly to support small businesses affected by the pandemic and the vulnerable population.
Housing and Financial	• Calibrate the withdrawal of lending support policies to reduce risks of sudden tightening of credit conditions. • Tighten macroprudential measures to contain risks from housing and household debt. • Further housing supply and demand policies to address housing affordability concerns.	• Pandemic-related financial forbearance is scheduled to expire by end-March 2024. Financial institutions have been working with companies to contain potential risks. • The focus of prudential policy has shifted from ensuring stabilization of the housing market to containing household debt. • Targeted mortgage assistance programs have been introduced while steps have been taken to increase supply of public housing and facilitate reconstruction and redevelopment.
Structural	• Broaden the safety net and increase flexibility of regular employment contracts. • Improve work-life balance and facilitate the re-entry of women to the job market. • Introduce a rules-based fiscal framework to anchor medium-to-long term public finances. Strengthen automatic stabilizers. • Pursue fiscal consolidation over the medium term by mobilizing tax revenue and containing expenditure. • Reform the pension system to safeguard fiscal sustainability and reduce old-age poverty. • Boost innovation and productivity growth through regulatory reforms. • Strengthen climate policies by reforming the KETS, introducing sectoral feebates, and increasing and expanding coal taxes.	• The authorities have announced plans to improve the flexibility of working hours, switching to a performance-based pay system, and tackling labor market duality. • The authorities are providing training programs for women reentering the labor market and consulting for female employee retention. • The authorities proposed a fiscal rule in 2022, pending parliamentary approval. • The authorities' proposed National Fiscal Management Plan envisages continued fiscal consolidation over the medium term, mainly through containing expenditure growth. • The authorities are considering pension reform options and are preparing to lay out new climate mitigation policies. • Some regulations have been removed or adjusted to improve the ease of doing business.

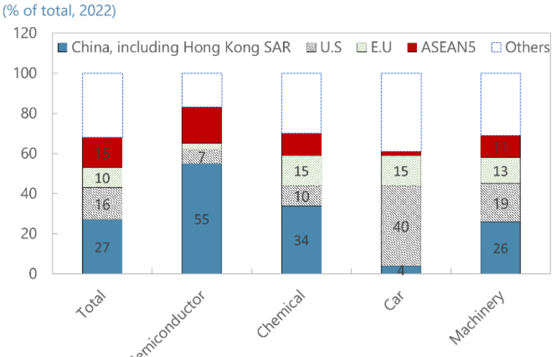
Box 2. Geoeconomic Fragmentation

Geoeconomic fragmentation could have marked effects on global trade, investment, capital flows, and migration, risking sizable losses to global output. Estimates of permanent global output losses vary widely depending on the severity of the assumptions, ranging from 0.2 percent of GDP in a limited fragmentation scenario to 7 percent of GDP in a severe scenario.[1] Fragmentation through the FDI channel alone could lead to global output losses of up to 2 percent,[2] while financial fragmentation including sudden reversals of portfolio capital flows could raise global financial stability risks.[3] In a scenario, in which the world divides into two blocs, with trade in the high-tech and energy sectors cut off from one another, global output losses are estimated at 1.2 percent of GDP, with larger losses in Asia-Pacific at 1.5 percent of GDP.[4]

Korea is among the potentially more strongly affected countries from rising tensions between the US and China, due to its high level of involvement in strategic high-tech sectors with both countries. China is Korea's largest export destination, followed by the United States. Korea exports large amounts of semiconductors to China, often for use in products that China then exports to the world, while Korea's car exports are disproportionately destined for the United States. A significant share of Korea's intermediate goods for manufacturing are sourced from China. Korean companies also maintain sizable manufacturing facilities in the United States and China, as Korea's FDI linkages with China and the United States are large.[5] Hence, a reduction in trade and investment as result of geoeconomic fragmentation would impact Korea's leading industries, leading to lower output and employment, and higher import costs transmitted through inflation. In a downside scenario in which the world is divided into two blocs, estimates based on a sectoral, computable, general equilibrium model (October 2022 REO) suggest that permanent output losses for regional, trade-intensive countries like Korea could amount to about 2-4 percent of GDP, and even more if large non-tariff trade barriers are added. In particular, under a severe re-shoring scenario where China and OECD countries fully reverse the increases in their reliance on foreign sourcing experienced over the past two decades, output losses for Korea could be larger in the longer term.[6] That said, there could also be mitigating effects of fragmentation for Korea if inward FDI and exports in some sectors benefit from other countries' supply chain de-risking efforts.

Export by Economy

(% of total, 2022)

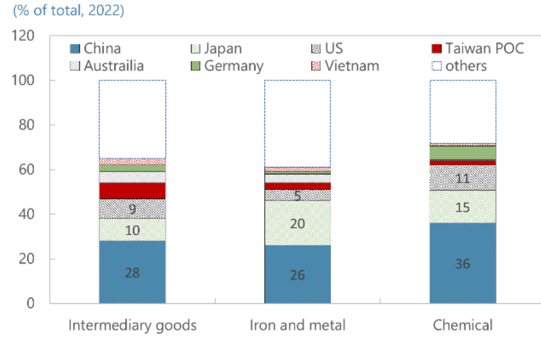


Sources: Korea customs service, BoK issue note(Feb 2023), and staff calculation

Note: Hong Kong SAR stands for Hong Kong Special Administrative Region.

Intermediary Goods Import

(% of total, 2022)



Sources: Korea Customs Service, Korea International Trade Association, and staff calculation

Note: Taiwan POC stands for Taiwan Province of China.

1/ "Geoeconomic Fragmentation and the Future of Multilateralism," IMF Staff Discussion Note, January 2023.

2/ World Economic Outlook, IMF, April 2023.

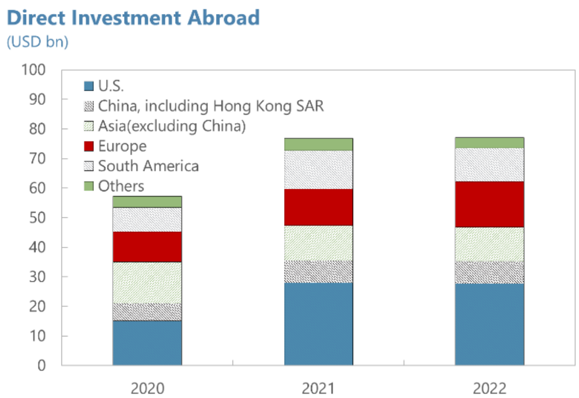
3/ Global Financial Stability Report, IMF, April 2023.

4/ Regional Economic Outlook for Asia and Pacific, IMF, October 2022.

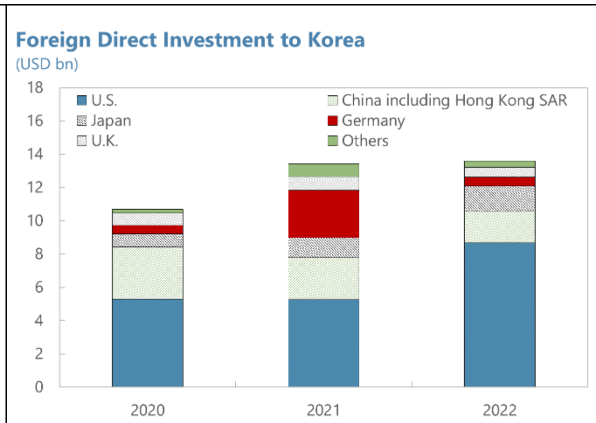
5/ In 2021, Samsung Electronics announced a $200 billion investment plan in the United States over the next 20 years, and SK Hynix announced a $22 billion investment for building memory chip packaging plant.

6/ Regional Economic Outlook for Asia and Pacific, IMF, October 2023.

Box 2. Geoeconomic Fragmentation (Concluded)



Source: Export-Import bank of Korea



Source: Ministry of Trade, Industry and Energy

An adaptation strategy can help cushion the potential, negative impacts from geoeconomic fragmentation. Diversifying trading partners by expanding trade relationships with a wider range of countries can help to maintain a more resilient trade network. Further lowering trade barriers by upgrading trade agreements would increase the space for the private sector to diversify supply chains and make them more resilient, minimizing potential disruptions. Building adequate external and financial buffers can mitigate possible risks from capital flow reversals. More broadly, fostering innovation and structural reforms can enhance market competitiveness and flexibility, which will render businesses more resilient and adaptable to a changing environment. Support for the domestic economy should be provided in a way that is not distortionary or discriminatory, while trade and investment measures should remain narrowly targeted to specific objectives and consistent with WTO obligations.

Box 3. An Adverse Scenario

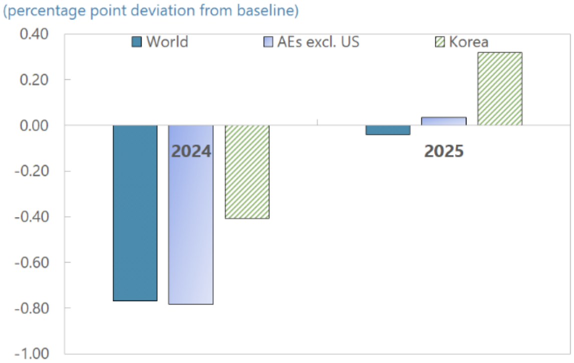
Greater-than-expected fragility in parts of the global banking system could lead to tighter global financial conditions, impacting growth in Korea. The IMF's G20 Model is used to quantify an adverse scenario in which tighter financial conditions affect output and inflation, both globally and in Korea.[1] Key assumptions include:

- **Lower global credit supply.** Due to the stress on some banks' balance sheets, bank lending in the United States decreases by 4 percent in 2024 relative to current baseline projections, equivalent to about one-fifth of the contraction in credit experienced during the global financial crisis (relative to the precrisis trend). US corporate spreads increase by 250 basis points in 2024. Other countries also experience a shock to the supply of credit. For euro area countries and Japan, the impact is similar in magnitude to that for the United States; for other countries, the size of the shock varies depending on how their financial conditions correlate with those in the United States. The assumed impact on China's domestic financial conditions is small. For Korea, real corporate interest rates are assumed to rise by 35 bps. The tightening in financial conditions is persistent and extends into 2025 and (to a lesser extent) beyond.

- **Flight to safety and dollar appreciation.** In emerging markets excluding Asia, sovereign premiums increase considerably and the US dollar appreciates by close to 10 percent. The shock for emerging market economies in Asia is about half as large, and China is not directly affected. Sovereign spreads in some euro area countries increase by a modest amount.

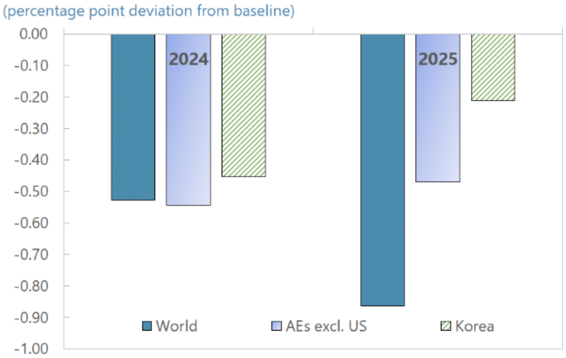
The impact on growth and inflation in Korea is sizable but more moderate than in other AEs. Real GDP growth in Korea is reduced by 0.4 percentage point in 2024 relative to the baseline projection, less than the average of the world economy and of advanced economies. Korea's rebound in growth in 2025 is also stronger than average. Inflation declines as the disinflationary effect of lower aggregate demand outweighs the effect of higher import prices from currency depreciation. The impact on inflation in Korea is also more moderate than in its peers due to the shock's smaller impact on the real economy in Korea.

Downside Scenario - Impact on Real GDP Growth
(percentage point deviation from baseline)



Source: IMF staff calculation.

Downside Scenario - Impact on Headline Inflation
(percentage point deviation from baseline)



Source: IMF staff calculation.

1/ The results are based on the April 2023 WEO downside scenarios, but with the shocks delayed by one year as these shocks did not materialize so far in 2023 and could instead materialize in 2024.

Box 3. An Adverse Scenario (Concluded)

Given significant policy space, policy support can be provided to respond to the adverse shocks captured in the downside scenario. Monetary policy is assumed to respond endogenously to the resulting decrease in activity and inflationary pressures. The policy rate in Korea is lowered by about 50 bps in 2024 and 2025 respectively. In terms of fiscal policy, it is assumed that automatic stabilizers operate in advanced economies, including Korea. Given the substantial fiscal space in Korea, additional fiscal support can be provided. Balance sheet policies, temporary and targeted financial sector support and prudential measures by central banks and regulators to preserve the stability of the financial system are not explicitly modeled but could also lend additional help.

Downside Scenario: Other Variables

	2024	2025
Policy interest rate (%pt deviation)	-0.46	-0.49
Core CPI inflation (%pt deviation)	-0.19	-0.21
Real corporate interest rate (%pt deviation)	0.31	0.07
Unemployment rate (%pt deviation)	0.09	0.05
Risk premium (%pt deviation)	0.79	0.50

Box 4. Financial Digitization in Korea

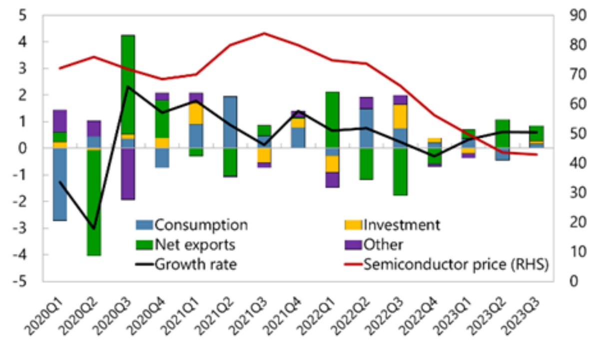
Rapid digital evolutions, while improving the efficiency of financial services, have also created new challenges. Following the introduction of the "open banking system", Fintech and Big Tech payments have further increased during the pandemic. As highlighted by the 2020 FSAP, the rapid rise of Fintech activities could pose potential new risks on market concentration, consumer protection, liquidity, and operational fronts. Recent incidents including the FTX bankruptcy and the collapse of Terra-Luna also raised concerns about investor protection in the crypto market. The volatility associated with the crypto market, and growing interactions with the traditional financial system could also pose potential stability risks in the future. In addition, the BoK has advanced its research into CBDCs and has launched a project with the FSC and FSS, in cooperation with the BIS. The project aims to present a prototype of the future monetary system, including wholesale CBDCs and tokenized deposits, and lay a foundation for implementing various innovative use cases of digital currencies. In addition to technical experiments in virtual environments, real-world experiments will also be conducted, albeit on a limited scale. The testing stage involving the general public is expected to commence around the fourth quarter of 2024, following technical preparations.

Financial regulations should be upgraded to prepare against emerging risks from digitization. Recognizing potential risks, the BoK has initiated regular impact assessments of the open banking system and recommended improvements for the system. In line with the BoK's recommendations, measures to strengthen safety and security of the open banking system were conducted, including enhancing consumer protection rules, upgrading IT infrastructure, and fortifying user eligibility criteria. Financial regulators have also made progress in improving regulation on crypto assets to ensure financial stability, maintain financial integrity, and protect investors. In this regard, the authorities amended the anti-money laundering law in March 2021, imposing regulations on virtual asset service providers (VASPs). This revision means that obligations like customer due diligence and reporting of suspicious transactions, which are mandatory for financial institutions, now also apply to VASPs. Furthermore, in March 2022, a "travel rule" was introduced. This rule mandates VASPs transferring any crypto assets exceeding KRW 1 million to provide transfer-related information to the recipient VASP, bolstering measures against criminal misuse. In May 2023, the National Assembly passed a bill that obligates lawmakers and high-ranking public officials to report on their crypto assets. In July 2023, the National Assembly passed a new legislation on crypto assets, focusing on consumer protection and unfair competition, which will become effective in July 2024. The next phase of crypto regulations is now under preparation, which will focus on issuance and market regulations.

Figure 1. Real Sector Developments

Growth has begun to recover following a slowdown in late 2022.

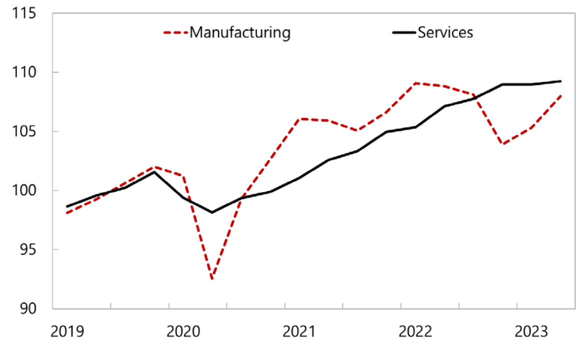
Contribution to Growth (q/q)
(LHS: in q/q percent change; RHS: index)



Source: IMF staff calculations.

Manufacturing has begun a tentative recovery while services may be plateauing.

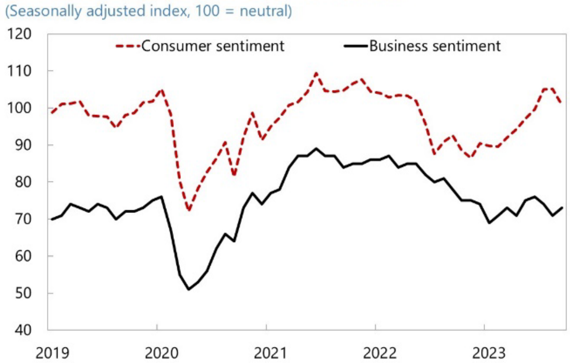
GDP by Industry
(Index, 2019 Average=100)



Sources: Haver Analytics; and IMF staff calculations.

Consumer sentiment has recovered while business sentiment remains subdued.

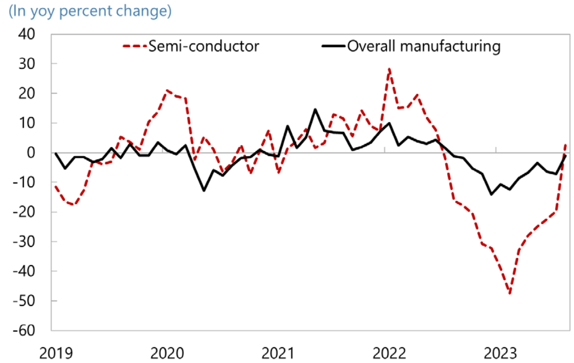
Consumer and Business Sentiment Index
(Seasonally adjusted index, 100 = neutral)



Sources: Haver Analytics and IMF staff calculations.

Capacity utilization in manufacturing remains low.

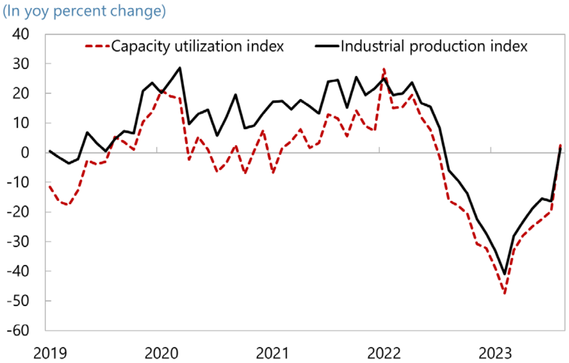
Manufacturing Capacity Utilization
(In yoy percent change)



Sources: Haver Analytics and IMF staff calculations.

Semiconductor production bottomed out in 2023H1 but is still contracting on yoy basis…

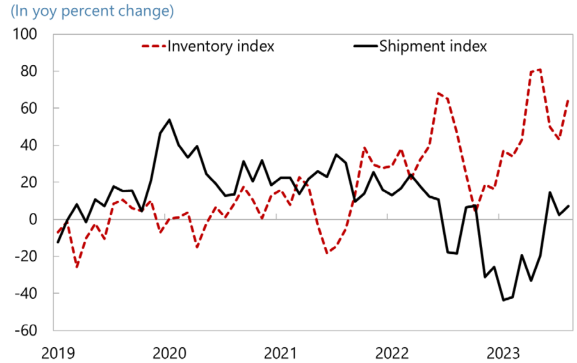
Semi-conductor Production and Capacity Utilization
(In yoy percent change)



Sources: Haver Analytics and IMF staff calculations.

…with inventories continuing to accumulate.

Semi-conductor Inventory and Shipment Index
(In yoy percent change)



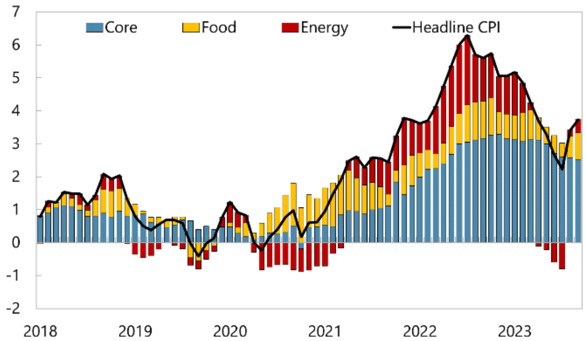
Sources: Haver Analytics and IMF staff calculations.

Figure 2. Inflation Developments

Headline inflation has declined substantially from the peak driven by lower energy and food prices

Contribution to Inflation

(In y/y percent change and contributions in percentage points)

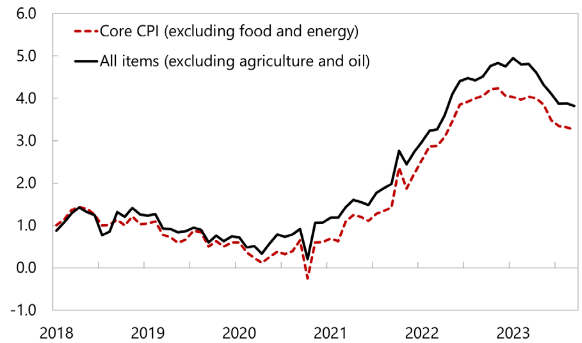


Sources: Haver Analytics; and IMF staff calculations.

Core inflation has edged down more gradually…

Measures of Core Inflation

(In y/y percent change)

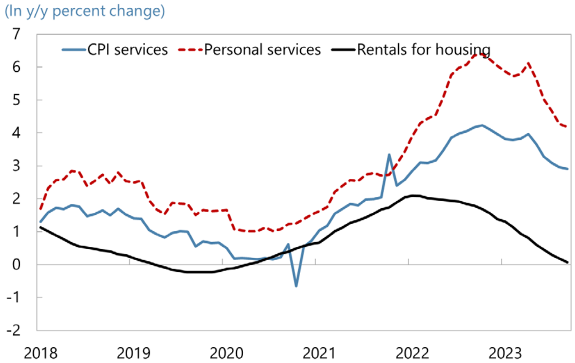


Sources: Haver Analytics; and IMF staff calculations

…as personal services inflation has come down only recently and remains elevated…

Prices of Services

(In y/y percent change)

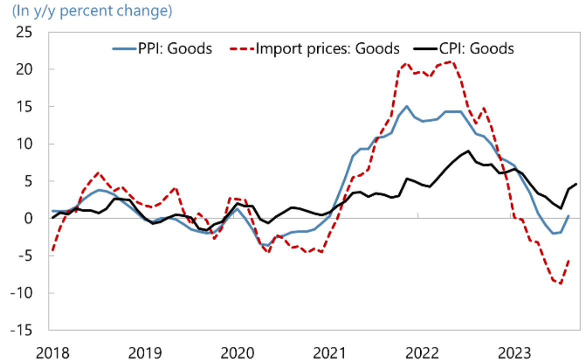


Sources: Statistics Korea; and Haver Analytics

…while goods inflation has decreased steadily.

Prices of Goods

(In y/y percent change)

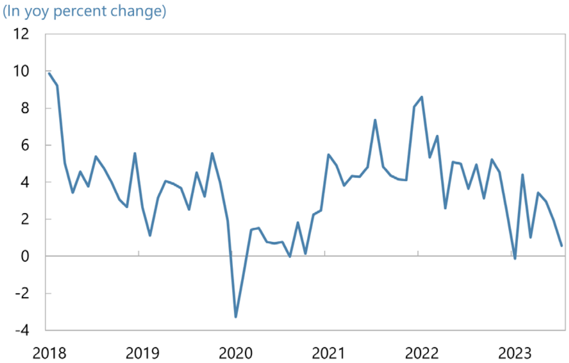


Sources: Haver Analytics; and IMF staff calculations

Wage growth has slowed down since early 2022, alleviating inflationary pressures from the labor market.

Average Monthly Wage Growth

(In yoy percent change)

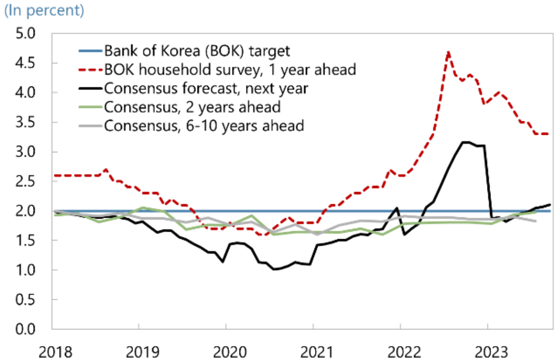


Sources: Haver Analytics and IMF staff calculations.

Near-term inflation expectations have decreased, and medium-term expectations remain well-anchored around the target.

Inflation Expectations

(In percent)

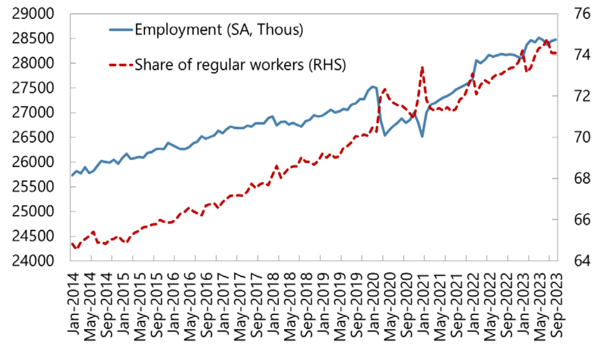


Sources: Consensus Forecasts, Haver Analytics and IMF staff calculations.

Figure 3. Labor Market Developments

Employment has returned to pre-COVID trend with a rising share of regular workers…

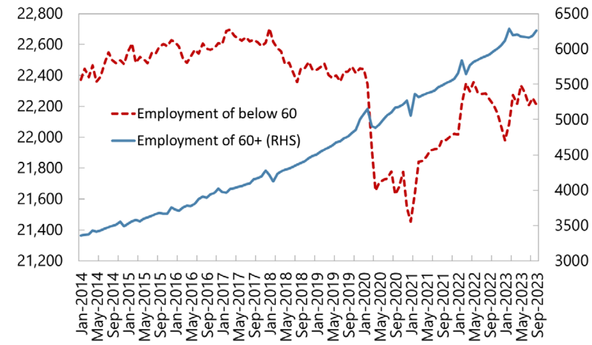
Employment
(LHS: in thousands; RHS: in percent)



Sources: Haver Analytics and IMF staff calculations.

…led by steadily rising employment in the 60+ age group, reflecting shifting demographics.

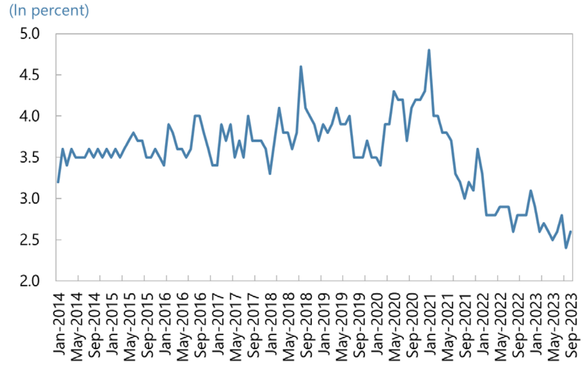
Employment by Age Groups
(In thousands of persons, Jan-2014 to June-2023)



Sources: Haver analytics and IMF staff calculations.

As a result, unemployment remains historically low…

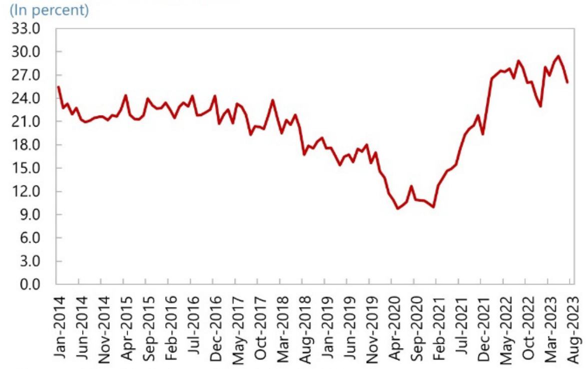
Unemployment Rate
(In percent)



Sources: Haver Analytics and IMF staff calculation.

…and the labor market remains tight by historical standards, as measured by the vacancies-to-unemployment ratio.

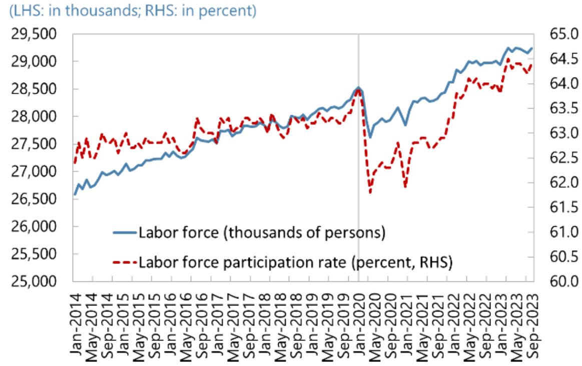
Labor Market Tightness
(In percent)



Sources: Haver Analytics and IMF staff calculation.

Labor force participation has returned to pre-COVID rising trend.

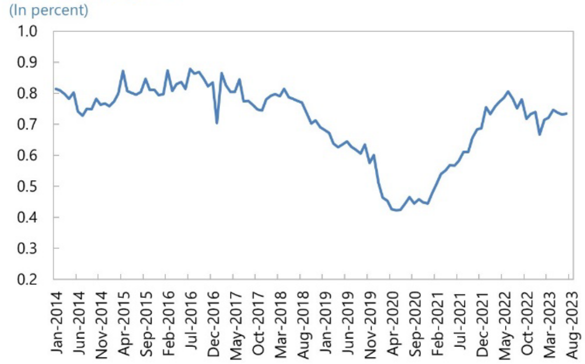
Labor Force and Labor Force Participation Rate
(LHS: in thousands; RHS: in percent)



Sources: Haver analytics and IMF staff calculations.

Labor demand recovered to pre-COVID levels by mid-2022 and then weakened as the economy has slowed.

Job Opening Rate
(In percent)



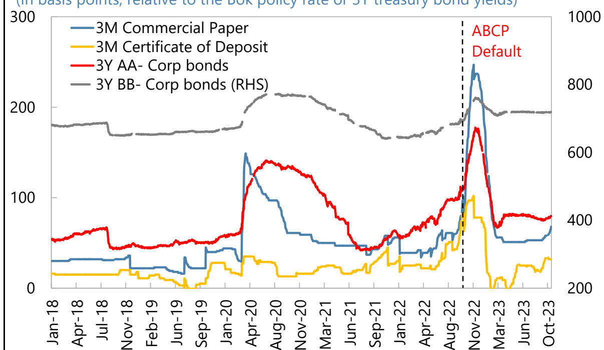
Sources: Haver Analytics and IMF staff calculations.

Figure 4. Financial Market Developments

Money market and corporate bond spreads have eased in the wake of the shock last October.

Money Market and Corporate Bond Spreads

(In basis points, relative to the Bok policy rate or 3Y treasury bond yields)

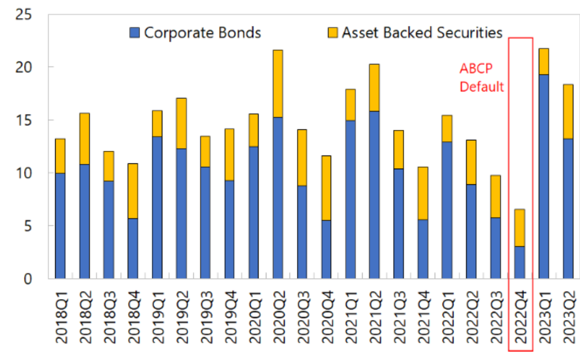


Sources: Haver and IMF staff calculations.

New issuances of corporate debt securities have also recovered.

Corporate Debt Securities Issuance

(In trillion won)

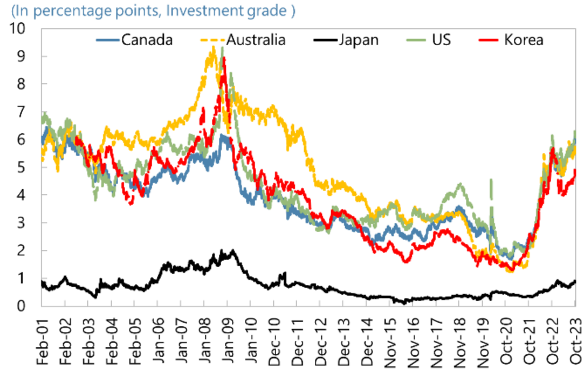


Source: Haver.

In 2023, corporate bond yields have dropped more than in some advanced economy peers.

Corporate Bond Yields

(In percentage points, Investment grade)

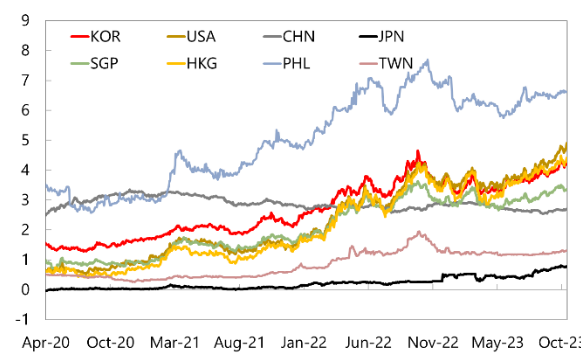


Sources: Haver; BoAML ICE indices.

Government bond yields have moved in line with regional peers.

10-year Bond Yields

(In percentage points)



Source: Haver Analytics.

Stock market performance has gradually improved since last fall amid high volatility.

Stock Index

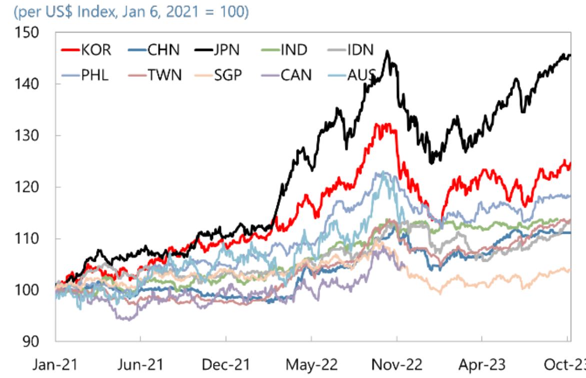
(Index, Jan 6, 2020 = 1)

Source: Haver Analytics.

The won-dollar exchange rate has partially recovered following last year's depreciation.

Exchange Rate

(per US$ Index, Jan 6, 2021 = 100)

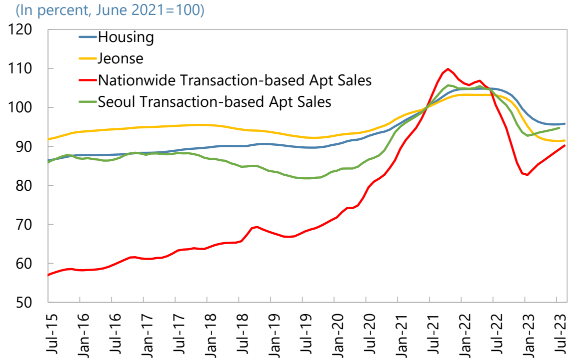


Source: Haver Analytics.

Figure 5. Real Estate Market Developments

Following a sharp correction, housing prices have begun to stabilize.

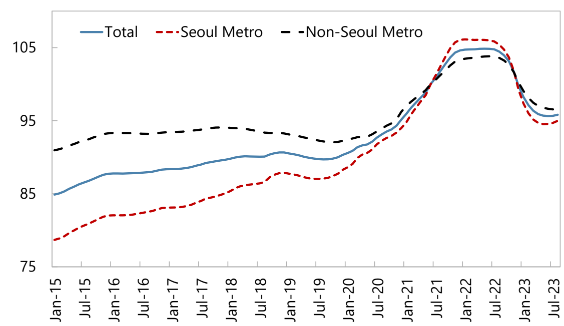
Housing Price Index
(In percent, June 2021=100)



Sources: CEIC, Korea Real Estate Board.

The housing price cycle has been especially pronounced in Seoul.

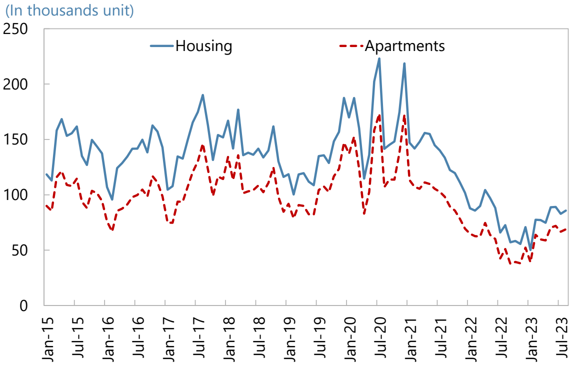
Housing Price Index
(In percent, June 2021=100)



Sources: CEIC, Korea Real Estate Board.

Transactions have shown a recovery in 2023, after the plunge during 2021-2022.

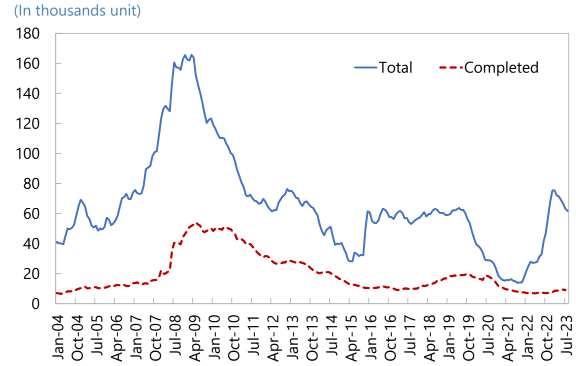
Housing Transactions
(In thousands unit)



Sources: CEIC, Korea Real Estate Board.

Unsold residential properties, while still elevated, have also begun to decline.

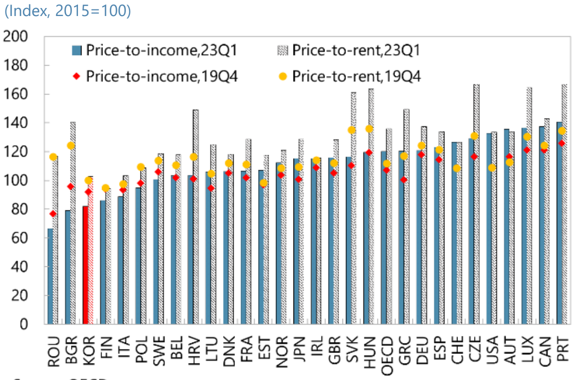
Unsold Residential Properties
(In thousands unit)



Sources: CEIC, Korea Real Estate Board.

Price-income and price-rent ratios have declined to pre-pandemic levels.

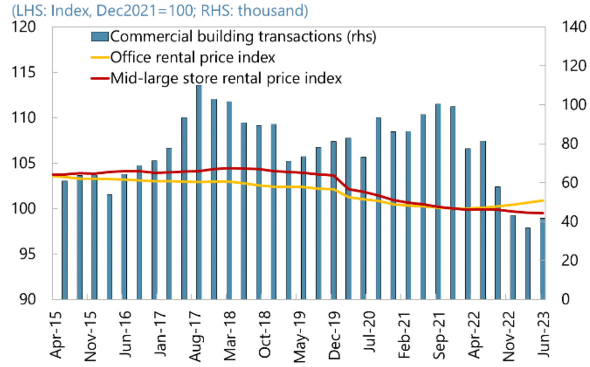
Housing Price-to-Income and Price-to-Rent Ratio
(Index, 2015=100)



Source: OECD.

Commercial real estate rents have adjusted modestly, while transactions have dropped sharply.

Commercial Real Estate Rental Prices and Transactions
(LHS: Index, Dec2021=100; RHS: thousand)



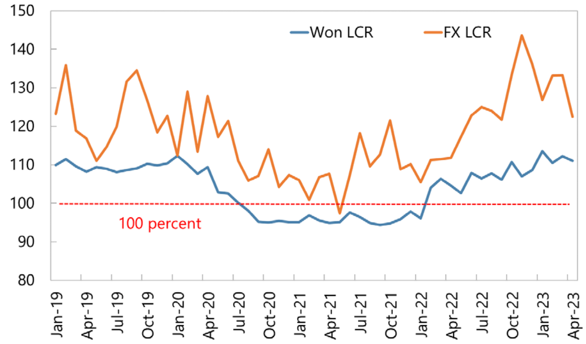
Sources: CEIC, Korea Real Estate Board.

Figure 6. Banking Sector Soundness

Liquidity coverage ratios have improved,...

Commercial Banks Liquidity Coverage Ratio

(In percent)

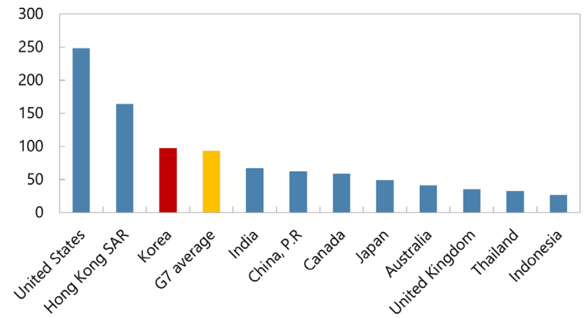


Source: The Bank of Korea.

...close to the average of AEs but lower than some strong performers.

Liquid Assets to Short-Term Liabilities Ratio

(In percent, 2022Q4)

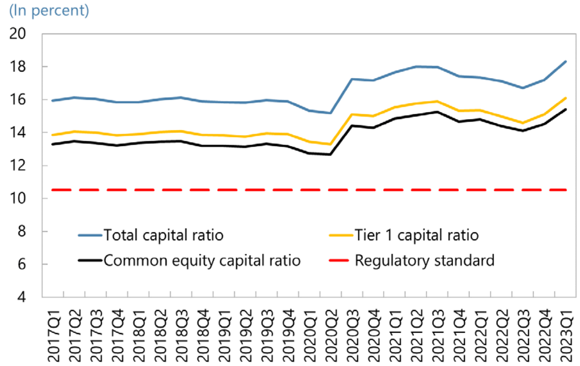


Source: IMF Financial Soundness Indicator Database.
Note: 2022Q3 data was used for China and Japan. Data coverage includes all depository institutions that report data to the IMF FSI database.

Capital ratios have risen to well above the regulatory standard...

Commercial Banks Capital Ratios

(In percent)

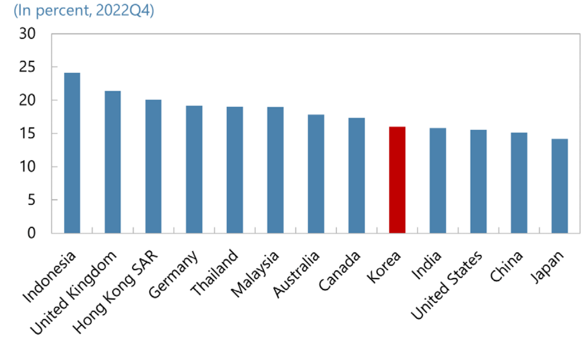


Source: The Bank of Korea.

...but still rank relatively low internationally.

Regulatory Capital to Risk-Weighted Assets Ratio

(In percent, 2022Q4)

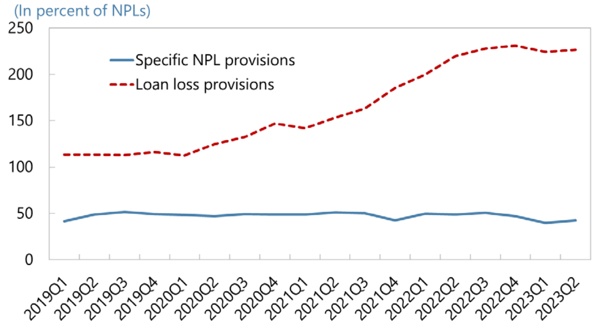


Source: IMF Financial Soundness Indicator Database.
Note: 2022Q3 data was used for China and Japan. Data coverage includes all depository institutions that report data to the IMF FSI database.

Loan loss provisions have improved over time,...

Loan Loss Provisions in Korea

(In percent of NPLs)

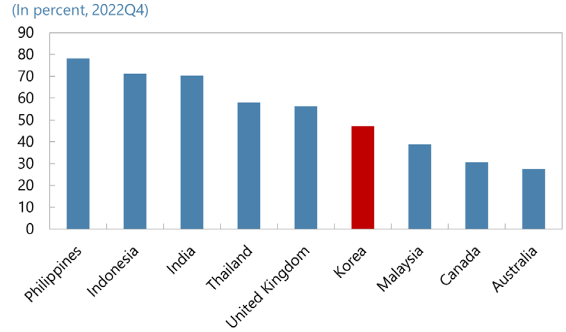


Sources: Bank of Korea; and IMF Financial Soundness Indicator Database.
Note: Specific NPL provisions refer to provisions only related to NPLs, while loan loss provisions are provisions related to all types of loans.

...though specific NPL provisions are relatively low among peers.

Specific NPL Provisions in Korea and Peers

(In percent, 2022Q4)



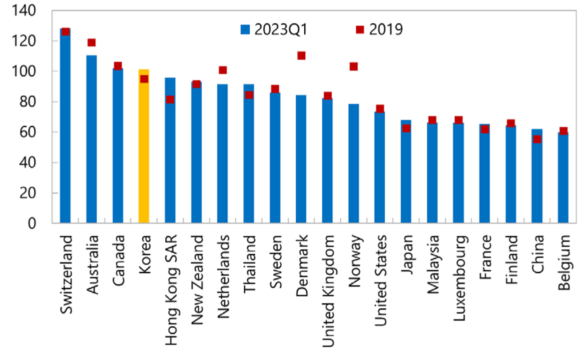
Source: IMF Financial Soundness Indicator Database.
Note: Data coverage includes all depository institutions that report data to the IMF FSI database.

Figure 7. Household Financial Soundness

Household debt is among the highest in the OECD.

Household Debt

(In percent of GDP)

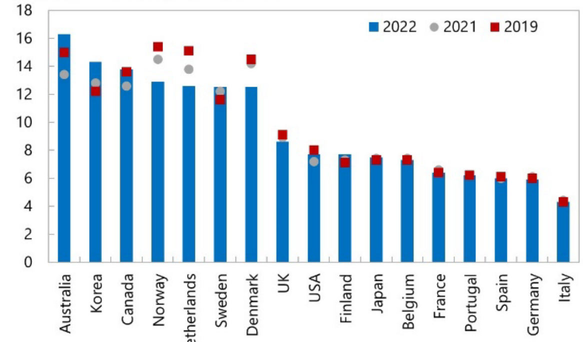


Source: Bank of International Settlements.

The debt service burden has increased.

Debt Service Ratio of Households

(In percent of total disposable income)

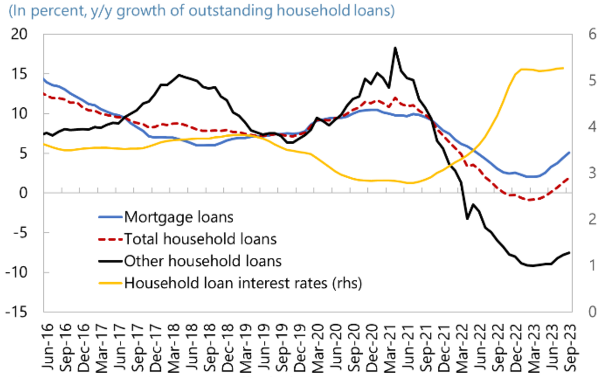


Source: Bank for International Settlements.

Following a deceleration in 2022, household loan growth has rebounded since May 2023.

Household Loan Growth

(In percent, y/y growth of outstanding household loans)

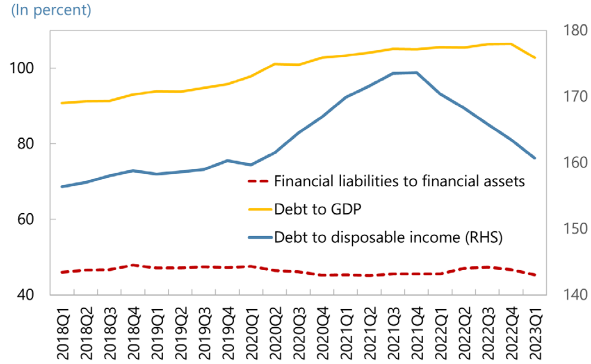


Sources: Haver Analytics; IMF staff calculations.

Sizable financial assets and solid income growth provide buffers to debt repayment.

Household Debt

(In percent)

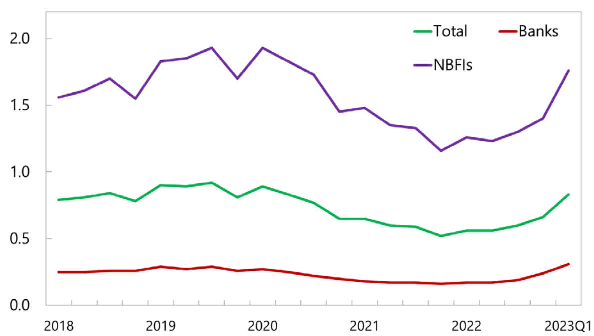


Source: The Bank of Korea.

Delinquency rates are low, albeit rising recently.

Household Loan Delinquency Rates

(In percent)

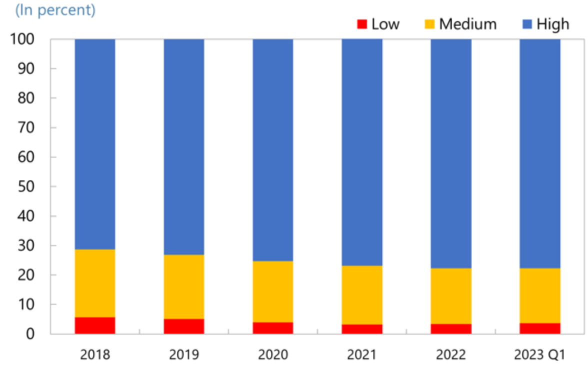


Source: Bank of Korea.

Loans are dominated by high-credit-score borrowers.

Household Loan by Credit Score

(In percent)



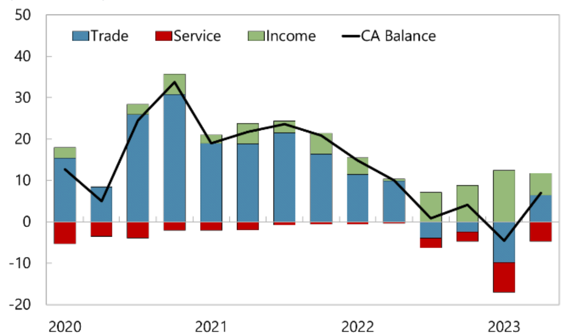
Source: Bank of Korea.

Figure 8. External Sector Developments

The current account improved after a dip in 2023 Q1, as the trade balance turned to recover...

Current Account Balance

(In US$ Billion)

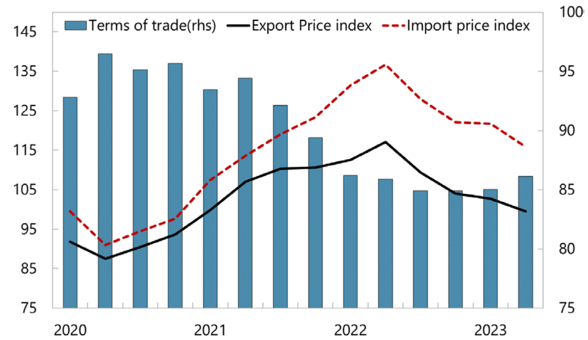


Sources: Haver analytics; IMF staff calculations.

...with the terms of trade strengthening on declined oil prices.

Terms of Trade

(Index 2015=100, USD basis)

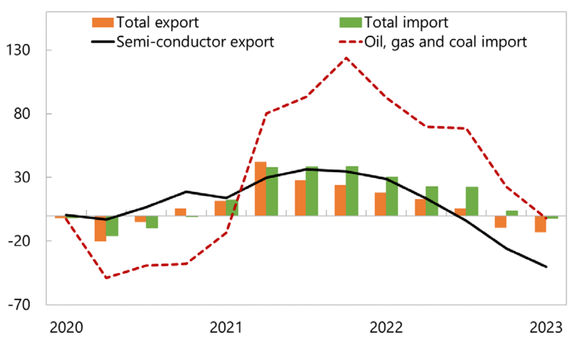


Sources: Haver analytics; IMF staff calculations.

Exports have remained subdued given lackluster global demand and the semiconductor downcycle, with declining imports supporting the trade balance.

Goods Export and Import

(In percent yoy)

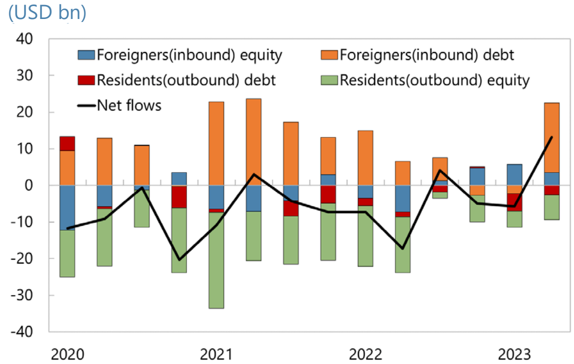


Sources: Haver Analytics, IMF staff calculations.

Net portfolio inflows have strengthened given the resumption of non-resident debt inflows.

Porfolio Capital Flows

(USD bn)

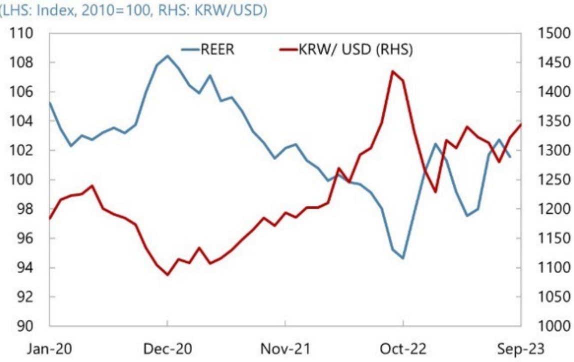


Sources: Haver analytics; and IMF staff calculations.

The REER has mildly appreciated this year following last year's depreciation.

Exchange Rate

(LHS: Index, 2010=100, RHS: KRW/USD)

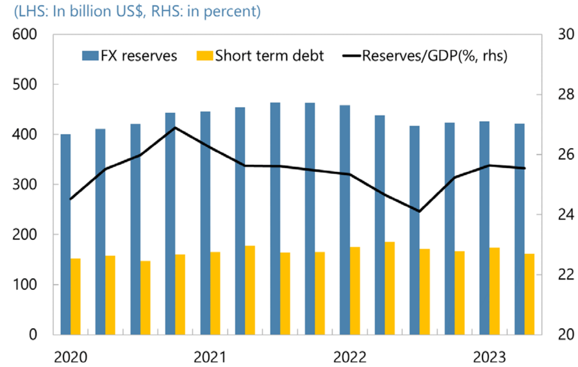


Sources: Haver Analytics; and IMF staff calculations.

Despite declining in 2022, FX reserves remain adequate.

Foreign Reserves

(LHS: In billion US$, RHS: in percent)



Sources: Haver analytics; and IMF staff calculations.

Table 1. Korea: Selected Economic Indicators, 2020-28

	2020	2021	2022	2023	2024	2025	2026	2027	2028
				Projection					
Real GDP (percent change)	-0.7	4.3	2.6	1.4	2.2	2.3	2.2	2.2	2.1
Total domestic demand	-1.3	3.7	2.7	1.9	1.9	2.1	2.2	2.1	2.1
Final domestic demand	-0.5	3.8	2.6	1.5	1.9	2.1	2.2	2.1	2.1
Consumption	-2.2	4.1	4.1	1.7	1.9	2.2	2.2	2.1	2.1
Gross fixed investment	3.5	3.2	-0.5	1.1	2.1	2.0	2.1	2.0	2.0
Stock building 1/	-0.8	-0.1	0.2	-0.1	0.0	0.0	0.0	0.0	0.0
Net foreign balance 1/	0.4	0.6	0.2	-0.1	0.0	0.3	0.2	0.2	0.2
Potential output	1.3	1.9	2.0	2.1	2.2	2.2	2.1	2.1	2.1
Output gap (percent of potential GDP)	-2.6	-0.4	0.3	-0.3	-0.3	-0.3	-0.1	0.0	0.0
Saving and investment (in percent of GDP)									
Gross national saving	36.3	36.8	34.5	34.0	34.0	34.2	34.1	34.3	34.4
Gross domestic investment	31.9	32.3	33.2	32.7	31.4	31.1	30.8	30.7	30.4
Current account balance	4.6	4.7	1.8	1.3	2.6	3.1	3.3	3.7	4.0
Prices (percent change)									
CPI inflation (end of period)	0.6	3.7	5.0	3.2	2.0	2.0	2.0	2.0	2.0
CPI inflation (average)	0.5	2.5	5.1	3.6	2.4	2.0	2.0	2.0	2.0
Core inflation (average)	0.4	1.4	3.6	3.5	2.4	2.0	2.0	2.0	2.0
GDP deflator	1.6	2.8	1.3	1.7	2.9	2.1	2.1	2.2	2.1
Real effective exchange rate	-2.0	0.1	-5.4	…	…	…	…	…	…
Central government (in percent of GDP)									
Revenue	22.9	25.7	27.1	23.9	23.9	24.5	24.5	24.4	24.4
Expenditure	25.1	25.7	28.7	24.9	24.6	24.5	24.4	24.2	24.2
Net lending (+) / borrowing (-)	-2.2	0.0	-1.6	-1.0	-0.7	0.0	0.0	0.2	0.2
Overall balance	-3.7	-1.5	-3.0	-1.8	-1.7	-1.1	-1.0	-0.8	-0.9
Excluding Social Security Funds	-5.8	-4.4	-5.2	-3.9	-3.7	-3.0	-2.9	-2.7	-2.6
Cyclically-adjusted primary balance	-2.0	-0.3	-1.9	-1.1	-0.7	0.0	0.1	0.3	0.3
Central government debt	42.2	45.1	47.8	49.3	50.6	51.5	52.3	52.7	53.2
Money and credit (end of period)									
Overnight call rate	0.6	1.4	3.4	…	…	…	…	…	…
Three-year AA- corporate bond yield	2.2	2.4	5.2	…	…	…	…	…	…
Credit growth	9.0	10.8	7.5	5.5	6.1	5.3	4.8	4.6	4.4
M3 growth	8.3	9.9	4.1	…	…	…	…	…	…
Balance of payments and external balance sheet (in billions of U.S. dollars)									
Exports, f.o.b.	517.9	649.5	690.5	643.3	704.4	740.2	773.0	807.9	848.2
Imports, f.o.b.	437.3	573.7	675.4	628.3	652.1	676.8	700.7	726.3	756.8
Current account balance	75.9	85.2	29.8	22.2	47.2	59.0	65.5	75.0	85.4
Export volumes (percent change)	-0.2	10.7	3.6	2.5	3.5	3.5	3.4	3.3	3.0
Import volumes (percent change)	0.3	12.6	4.3	0.0	3.0	3.4	3.4	3.2	3.1
Gross international reserves 3/									
Level, end of period	438.3	458.3	418.4	416.2	441.8	475.6	501.8	525.5	553.7
In percent of short-term debt (residual maturity)	190.3	209.8	190.4	189.5	202.5	216.7	227.3	237.5	248.3
Total external debt (in percent of GDP)	33.5	34.7	39.7	39.4	39.3	39.3	39.4	39.4	39.5
Memorandum items									
Nominal GDP (trillion won)	1,940.7	2,080.2	2,161.8	2,230.0	2,345.1	2,448.6	2,555.1	2,667.3	2,781.0
Unemployment rate (percent)	3.9	3.7	2.9	2.7	3.2	3.3	3.2	3.2	3.2
General government debt (percent of GDP)	48.7	51.3	53.8	55.3	56.6	57.5	58.3	58.7	59.2

Sources: National sources; and IMF staff estimates and projections.

1/ Contribution to GDP growth.

2/ General government debt includes debt of the central government and local governments.

3/ Excludes gold. Includes 2021 general SDR allocation.

Table 2. Korea: Balance of Payments, 2020-28

(In billions of U.S. Dollars, unless otherwise indicated, BPM6 sign)

				Projections					
	2020	2021	2022	2023	2024	2025	2026	2027	2028
Current account balance	75.9	85.2	29.8	22.2	47.2	59.0	65.5	75.0	85.4
Goods balance	80.6	75.7	15.1	14.9	52.3	63.4	72.3	81.5	91.4
Exports	517.9	649.5	690.5	643.3	704.4	740.2	773.0	807.9	848.2
Imports	437.3	573.7	675.4	628.3	652.1	676.8	700.7	726.3	756.8
Services balance	-14.7	-5.3	-5.5	-23.6	-27.9	-29.6	-31.1	-32.9	-35.0
Primary income	13.5	19.4	22.9	33.6	25.8	28.5	27.7	29.9	32.5
Secondary income	-3.5	-4.7	-2.6	-2.8	-3.1	-3.3	-3.4	-3.5	-3.6
Capital account balance	-0.4	-0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Financial account balance 1/	64.0	63.6	66.7	23.6	30.1	36.5	48.0	59.3	66.5
Portfolio investment	41.7	19.4	25.4	-0.7	7.0	13.2	21.6	29.2	32.6
Direct investment	26.1	43.9	48.4	21.3	29.2	29.7	30.6	33.6	36.0
Financial derivatives	4.9	-0.1	7.6	-2.2	-2.0	-1.1	-1.0	-1.1	-1.9
Other investment	-8.7	0.4	-14.7	5.2	-4.1	-5.4	-3.2	-2.5	-0.1
Net errors and omissions	5.9	-6.6	9.0	0.0	0.0	0.0	0.0	0.0	0.0
Reserves and related items	17.4	14.8	-27.9	-1.5	17.1	22.5	17.5	15.8	18.8
				(In percent of GDP)					
Current account balance	4.6	4.7	1.8	1.3	2.6	3.1	3.3	3.7	4.0
Goods balance	4.9	4.2	0.9	0.9	2.9	3.4	3.7	4.0	4.3
Services balance	-0.9	-0.3	-0.3	-1.4	-1.6	-1.6	-1.6	-1.6	-1.6
Primary income	0.8	1.1	1.4	2.0	1.4	1.5	1.4	1.5	1.5
Secondary income	-0.2	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2
Capital account balance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Financial account balance 1/	3.9	3.5	4.0	1.4	1.7	1.9	2.4	2.9	3.1
Portfolio investment	2.5	1.1	1.5	0.0	0.4	0.7	1.1	1.4	1.5
Direct investment	1.6	2.4	2.9	1.2	1.6	1.6	1.6	1.6	1.7
Financial derivatives	0.3	0.0	0.5	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Other investment	-0.5	0.0	-0.9	0.3	-0.2	-0.3	-0.2	-0.1	0.0
Net errors and omissions	0.4	-0.4	0.5	0.0	0.0	0.0	0.0	0.0	0.0
Reserves and related items	1.1	0.8	-1.7	-0.1	1.0	1.2	0.9	0.8	0.9
Memorandum items:									
Gross reserves 2/	438.3	458.3	418.4	416.2	441.8	475.6	501.8	525.5	553.7
(in months of imports of goods and services)	9.7	7.9	6.2	6.4	6.5	6.7	6.8	6.8	6.9
External debt	550.6	630.7	665.2	674.4	703.8	738.9	772.7	806.0	844.0
(in percent of GDP)	33.5	34.7	39.7	39.4	39.3	39.3	39.4	39.4	39.5
Short-term external debt (inc. trade credits)	160.1	165.1	166.5	166.3	164.9	166.1	167.5	168.0	169.7

Sources: National sources; and IMF staff estimates and projections.

1/ Excludes reserves and related items.

2/ Excludes gold. Includes 2021 general SDR allocation.

Table 3. Korea: Statement of Central Government Operations, 2020–28

	2020	2021	2022	2023	2024	2025	2026	2027	2028
				Projections					
				(In trillions of won)					
Revenue	443.7	535.0	585.3	533.0	560.5	599.0	624.9	652.0	679.7
Tax revenue	285.5	344.1	395.9	341.6	359.3	384.9	401.4	418.7	436.5
Social contributions	80.8	89.8	93.3	95.3	100.2	104.6	109.2	113.9	118.8
Of which: Social security contributions	74.6	78.1	83.4	85.2	89.6	93.5	97.6	101.9	106.2
Other revenue	77.4	101.1	96.1	96.1	101.1	109.5	114.3	119.3	124.4
Expenditure	487.0	535.4	620.0	555.7	576.4	599.1	624.0	646.6	674.2
Expense	476.9	524.7	585.9	525.2	544.7	566.1	589.7	611.1	637.1
Net acquisition of nonfinancial assets	10.1	10.7	34.1	30.5	31.7	32.9	34.3	35.5	37.0
Net lending (+) / borrowing (-)	-43.3	-0.4	-34.7	-22.7	-15.9	0.0	0.9	5.4	5.5
Policy lending	27.8	30.1	29.9	17.1	25.0	26.0	27.1	28.0	29.2
Overall balance 1/	-71.2	-30.5	-64.6	-39.8	-40.9	-26.1	-26.1	-22.6	-23.7
Less: Social Security Fund (SSF) balance	40.8	60.1	47.2	47.0	46.9	47.4	47.9	48.3	48.8
Managed balance									
(overall balance excl. SSF)	-112.0	-90.6	-111.8	-86.8	-87.8	-73.5	-74.0	-71.0	-72.5
				(In percent of GDP)					
Revenue	22.9	25.7	27.1	23.9	23.9	24.5	24.5	24.4	24.4
Tax revenue	14.7	16.5	18.3	15.3	15.3	15.7	15.7	15.7	15.7
Social contributions	4.2	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
Of which: Social security contributions	3.8	3.8	3.9	3.8	3.8	3.8	3.8	3.8	3.8
Other revenue	4.0	4.9	4.4	4.3	4.3	4.5	4.5	4.5	4.5
Expenditure	25.1	25.7	28.7	24.9	24.6	24.5	24.4	24.2	24.2
Expense	24.6	25.2	27.1	23.6	23.2	23.1	23.1	22.9	22.9
Net acquisition of nonfinancial assets	0.5	0.5	1.6	1.4	1.4	1.3	1.3	1.3	1.3
Net lending (+) / borrowing (-)	-2.2	0.0	-1.6	-1.0	-0.7	0.0	0.0	0.2	0.2
Policy lending	1.4	1.4	1.4	0.8	1.1	1.1	1.1	1.1	1.1
Overall balance	-3.7	-1.5	-3.0	-1.8	-1.7	-1.1	-1.0	-0.8	-0.9
Less: Social Security Fund balance	2.1	2.9	2.2	2.1	2.0	1.9	1.9	1.8	1.8
Managed balance									
(overall balance excl. SSF)	-5.8	-4.4	-5.2	-3.9	-3.7	-3.0	-2.9	-2.7	-2.6
				(In percent of GDP)					
Memorandum items:									
Primary balance (excluding policy lending)	-2.7	-0.4	-1.9	-1.2	-0.8	0.0	0.1	0.3	0.3
Cyclically-adjusted primary balance	-2.0	-0.3	-1.9	-1.1	-0.7	0.0	0.1	0.3	0.3
Central government debt	42.2	45.1	47.8	49.3	50.6	51.5	52.3	52.7	53.2
General government debt	48.7	51.3	53.8	55.3	56.6	57.5	58.3	58.7	59.2

Sources: Ministry of Economy and Finance; and IMF staff estimates and projections.

1/ Overall balance is equal to net lending/borrowing minus policy lending.

Table 4. Korea: Financial Soundness Indicators

	2017	2018	2019	2020	2021	2022	2023Q1	2023Q2
Core FSIs for Deposit takers 1/			(In percent)					
Regulatory Capital to Risk-Weighted Assets	15.2	15.4	15.3	16.5	16.5	16.0	16.7	16.7
Regulatory Tier 1 Capital to Risk-Weighted Assets	13.8	14.0	14.0	15.1	15.3	14.1	14.8	14.8
Non-performing Loans Net of Provisions to Capital	1.5	1.2	1.1	1.1	1.2	1.2	1.4	1.3
Non-performing Loans to Total Gross Loans	0.4	0.3	0.3	0.2	0.2	0.2	0.3	0.3
Return on Assets	0.7	0.8	0.7	0.6	0.7	0.7	0.9	0.9
Return on Equity	6.6	7.2	6.8	6.5	6.7	7.2	9.1	9.8
Interest Margin to Gross Income	58.7	65.1	62.4	60.4	70.1	85.0	76.1	76.5
Non-interest Expenses to Gross Income	65.6	63.2	65.4	63.4	58.4	65.4	52.5	49.8
Liquid Assets to Total Assets (Liquid Asset Ratio)	29.7	31.0	32.1	30.4	30.6	31.2	32.4	31.4
Liquid Assets to Short Term Liabilities	101.2	114.5	110.0	102.2	106.9	97.5	101.0	101.1
Net Open Position in Foreign Exchange to Capital	-1.0	0.0	0.1	0.0	1.5	3.8	3.3	3.9

Sources: National sources; IMF FSI database; and Haver Analytics.

1/ Covers 20 entities that report FSI data, accounting for about ¾ of total assets of all deposit takers.

Table 5. Korea: Monetary Statistics 2017-22

(In trillions of won, unless otherwise indicated, end of period)

	2017	2018	2019	2020	2021	2022
Monetary Authority						
Net foreign assets	360	395	408	418	453	431
Foreign assets	408	442	449	455	516	488
Foreign liabilities	48	47	41	37	62	57
Net domestic assets	-345	-380	-390	-396	-429	-409
Depository Corporations						
Net foreign assets	547	576	612	628	705	676
Domestic claims on the private sector	2,937	3,171	3,456	3,770	4,198	4,488
Claims on non-financial corporations	1,477	1,588	1,773	1,964	2,241	2,480
Claims on households	1,036	1,097	1,146	1,234	1,327	1,318
Claims on other financial corpoprations	425	486	537	572	630	689
Monetary Aggregates						
Monetary base	156	172	192	222	249	276
M1	850	866	953	1,198	1,372	1,237
M2	2,530	2,700	2,914	3,200	3,614	3,758
Liquidity aggregate	4,551	4,850	5,227	5,679	6,277	6,588
			(In percent, Y/Y growth)			
Monetary base	8.7	10.6	11.3	15.5	12.3	10.9
M2	5.1	6.7	7.9	9.8	12.9	4.0
Claims on the private sector from depository corporations	6.3	7.9	9.0	9.1	11.3	6.9
Claims on non-financial corporations from depository corporations	6.4	7.6	11.6	10.8	14.1	10.7
Claims on households from depository corporations	6.9	5.9	4.5	7.6	7.5	-0.6

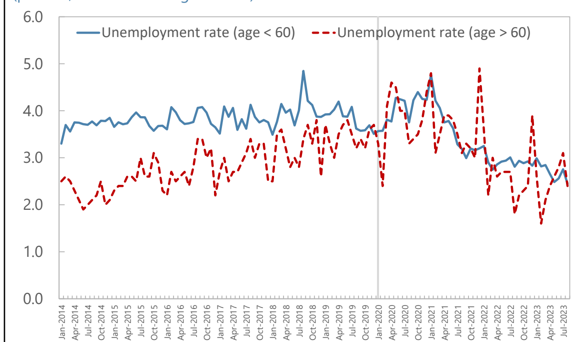
Sources: Bank of Korea; and Haver Analytics.

Annex I. Understanding Low Unemployment in Korea[1]

1. **Korea's unemployment rate has fallen to historically low levels.** Unemployment rose in the early stages of the COVID-19 pandemic before starting to decline in 2021. The unemployment rate has mostly stayed below 3 percent since the beginning of 2022, substantially lower than pre-COVID levels. While unemployment among the elderly (age above 60) is low (2.4 percent in August 2023), partly due to the government's elderly public employment program, unemployment for all age groups stands significantly below pre-COVID levels, suggesting that the low unemployment is a broad labor market phenomenon across all age groups. This annex attempts to understand the unusually low unemployment rate by examining movements in labor supply, labor demand, and labor market efficiency, and distinguishing between structural and cyclical factors.

Unemployment Rate by Age Group

(percent, Jan-2014 to August-2023)



Sources: Haver Analytics and IMF staff calculation.

2. **Labor supply has gradually returned to the pre-COVID rising trend after an initial decline upon the COVID shock.** The Korean labor force contracted significantly at the onset of the pandemic as rising COVID cases and public health interventions discouraged labor force participation. It has since recovered, most notably between late-2021 to mid-2022, and conformed to the pre-COVID trend. The rising trend of labor force participation is mainly accounted for by increasing female and elderly labor force participation. The strong growth in the labor force in 2021-22 was thus largely cyclical since it primarily reflected post-pandemic normalization, and modest structural gains in the labor force can be expected over the medium term reflecting continued increases in female and elderly labor force participation.

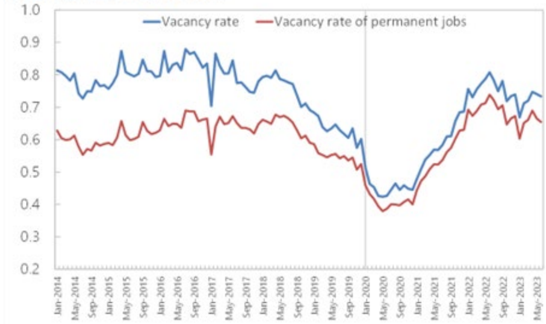
3. **Labor demand has also recovered to pre-COVID levels.** Strong economic recovery since 2021 fueled a rebound of labor demand from the initial COVID shock. The job vacancy rate (the ratio of job vacancies to the labor force) peaked in the first half of 2022, before it edged down again reflecting weakening growth momentum from 2022H2 onwards. Nevertheless, the job vacancy rate is now around the average level in 2018-2019. There is a strong correlation between labor demand and overall macroeconomic conditions. The contribution of labor demand growth to post-COVID unemployment was thus predominantly cyclical.

[1] Prepared by Hua Chai (APD)

Labor force and labor force participation rate
(Jan-2014 to July-2023)

Sources: Haver Analytics.

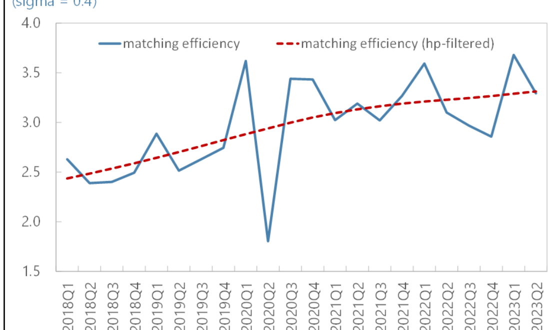
Vacancy rate
(percent, Jan-2014 to June-2023)



Sources: Haver Analytics and IMF staff calculations.

4. **Labor market matching efficiency has been improving steadily despite pandemic-induced disruptions.** We use a simple analytical framework of labor flows in and out of employment to estimate labor market matching efficiency. A standard Cobb-Douglas labor market matching function, together with data on vacancies and unemployment, is used to estimate unobserved labor market matching efficiency. Quarterly estimates show a clear improving trend since at least 2018, disturbed only briefly by the pandemic, suggesting that it is largely driven by structural factors that have contributed to more efficient functioning of the labor market. This stands in sharp contrast with the U.S. labor market, where labor market matching efficiency has displayed a marked deterioration during the pandemic. The expansion of service sector jobs as COVID restrictions were lifted, together with the increase in labor force participation of females and the elderly, who are disproportionately likely to seek jobs in the service sector, might also have contributed to improved labor market matching efficiency more recently. This is because the matching efficiency is likely to be higher in the service sector relative to manufacturing, as required skills of job seekers are more homogeneous, which facilitates the matching process. In this sense, some of the more recent improvement in the labor market matching efficiency could be cyclical.

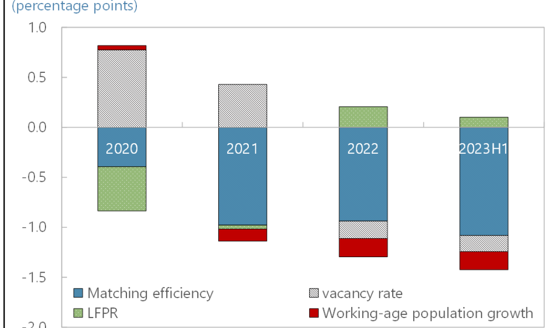
Labor market matching efficiency
(sigma = 0.4)



Sources: IMF staff calculation.

5. **Improved labor market matching efficiency has contributed the most to low unemployment since COVID.** We use the same framework of labor market flows to decompose contributions of labor supply, labor demand, and labor market matching efficiency to the reduction of the unemployment rate relative to pre-COVID levels. The steady improvement in labor market matching efficiency has contributed significantly

Impact on the unemployment rate
(percentage points)



Sources: IMF staff calculation.

to lower unemployment, particularly since 2021, averaging about 1 percentage point each year. The declines in job vacancies in the early phases of the pandemic increased unemployment in 2020 and 2021, while the normalization of vacancies had the opposite—albeit less pronounced—effect since 2022. Declining labor force participation early in the pandemic exerted a dampening effect on unemployment, while the recovery softened the decline in unemployment since 2022. The gradual slowdown in working-age population growth due to population aging has also moderately contributed to lower unemployment. Over the medium term, the unemployment rate is likely to remain lower than pre-COVID levels if the improvement in labor market matching efficiency proves to be largely structural and is sustained.

A Simple Model of Labor Market Flows

- Flows into and out of employment

$$E_{t+1} = E_t + H_t - s_t E_t$$

E = Employment

s = job separation rate

H = New hires

- New employment relationships form through labor market search and match

$$H_t = \mu_t V_t^{\sigma} U_t^{1-\sigma}$$

μ = matching efficiency (unobservable)

V = vacancies

U = unemployment

σ = matching function parameter

Annex II. Sovereign Risk and Debt Sustainability Assessment

1. Background. Growth has slowed since mid-2022 but inflation has remained above target. Fiscal policy has shifted from supporting economic recovery to normalization since 2022H2. The fiscal deficit of the central government stood at 3 percent of GDP in 2022, below the budgeted deficit of 3.3 percent of GDP, as tax revenues overperformed on strong business profits. Despite a recent uptick, headline inflation has declined significantly from its peak at 6.3 percent last July and, despite a recent uptick, is expected to continue moderating toward the target of 2 percent. The Bank of Korea has held policy rate steady at 3.5 percent (above neutral) since February 2023 following cumulative hikes of 300bps since 2021. Treasury bond yields have come down significantly from the peak in October 2022.

Baseline Scenario

2. Macroeconomic assumptions. Real GDP growth is expected to decline from 2.6 percent in 2022 to 1.4 percent in 2023, before rebounding to 2.2 percent in 2024 and converging to the estimated potential growth rate of around 2.1 percent over the medium term. Inflation is expected to hover around 3 percent through 2023 and approach the target of 2 percent by end-2024. The 10-year Treasury bond yield edged up recently to 3.9 percent in June following a steady decline from the peak of 4.2 percent in October 2022.

3. Debt trajectory. The central government's primary deficit in 2023 is projected to narrow to 1.2 percent of GDP from 1.9 percent of GDP in 2022 because of fiscal normalization following pandemic-related stimulus in early 2022. The primary deficit is expected to narrow further to near zero in the medium term, reflecting the slowdown in expenditure growth envisioned in the authorities' medium-term fiscal plan. The interest-growth differential is also projected to be favorable. However, fiscal deficits excluding the Social Security Fund will only gradually decrease to below 3 percent of GDP over the medium term, and policy lending continues to create debt financing needs. As a result, central government debt is projected to increase gradually from 48 percent of GDP in 2022 to 53 percent of GDP by 2028, and to 54 percent of GDP by 2032.

4. Realism. Baseline economic forecasts are generally within the error band observed for all countries. Projected fiscal adjustments are realistic compared with historical and cross-country experiences. Baseline growth forecasts are broadly consistent with reasonable ranges for the fiscal multiplier considering that external conditions and monetary policy are expected to become more favorable to growth starting from 2024. Real GDP growth over the medium term is below the 10-year historical average, reflecting the slowdown in productivity growth.

5. Vulnerabilities. Long-term risks are significant as aging-related expenditures on health and social security are projected to rise substantially driven by rapid population aging, resulting in increasing debt levels and gross financing needs under the baseline. Strong measures including pension reform, revenue mobilization, and reforms to increase spending efficiency are needed to address the long-term fiscal challenges.

Figure 1. Risk of Sovereign Stress

Horizon	Mechanical signal	Final assessment	Comments
Overall	…	Low	The overall risk of sovereign stress is low, reflecting relatively low levels of vulnerability in both the near term and the medium term.
Near term 1/			
Medium term	Low	Low	Medium-term risks are assessed as low reflecting the low debt trajectory and gross financing needs, as indicated by the Fanchart and GFN modules.
Fanchart	Low	…	
GFN	Low	…	
Stress test	...	…	
Long term	…	High	Long-term risks are high as aging-related expenditures on health and social security feed into debt dynamics, resulting in increasing debt level and gross financing needs, indicated in the long-term module.
Sustainability assessment 2/	Not required for surveillance countries	Sustainable	
Debt stabilization in the baseline			No

DSA Summary Assessment

Commentary: Korea is at a low overall risk of sovereign stress and debt is sustainable. The debt level remains low by advanced economy standards, and the composition of debt is favorable. However, debt is expected to continue to rise. Medium-term liquidity risks as analyzed by the GFN Financeability Module are low. Over the longer run, Korea should continue with reforms to tackle risks to fiscal sustainability arising from population aging .

Source: Fund staff.

Note: The risk of sovereign stress is a broader concept than debt sustainability. Unsustainable debt can only be resolved through exceptional measures (such as debt restructuring). In contrast, a sovereign can face stress without its debt necessarily being unsustainable, and there can be various measures—that do not involve a debt restructuring—to remedy such a situation, such as fiscal adjustment and new financing.

1/ The near-term assessment is not applicable in cases where there is a disbursing IMF arrangement. In surveillance-only cases or in cases with precautionary IMF arrangements, the near-term assessment is performed but not published.

2/ A debt sustainability assessment is optional for surveillance-only cases and mandatory in cases where there is a Fund arrangement. The mechanical signal of the debt sustainability assessment is deleted before publication. In surveillance-only cases or cases with IMF arrangements with normal access, the qualifier indicating probability of sustainable debt ("with high probability" or "but not with high probability") is deleted before publication.

Figure 2. Debt Coverage and Disclosures

	CG	GG	NFPS	CPS	Other	Comments
1. Debt coverage in the DSA: 1/	CG	GG	NFPS	CPS	Other	
1a. If central government, are non-central government entities insignificant?					No	

2. Subsectors included in the chosen coverage in (1) above:

CPS	NFPS	GG: expected	CG		Subsectors captured in the baseline	Inclusion	Comments
CPS	NFPS	GG: expected	CG	1	Budgetary central government	Yes	Yes
CPS	NFPS	GG: expected	CG	2	Extra budgetary funds (EBFs)	No	No
CPS	NFPS	GG: expected	CG	3	Social security funds (SSFs)	Yes	Yes
CPS	NFPS	GG: expected		4	State governments	No	No
CPS	NFPS	GG: expected		5	Local governments	No	No
CPS	NFPS			6	Public nonfinancial corporations	No	No
CPS				7	Central bank	No	No
CPS				8	Other public financial corporations	No	No

3. Instrument coverage:	Currency & deposits	Loans	Debt securities	Oth acct. payable 2/	IPSGSs 3/

4. Accounting principles:	Basis of recording		Valuation of debt stock		
	Non-cash basis 4/	Cash basis	Nominal value 5/	Face value 6/	Market value 7/

5. Debt consolidation across sectors:	Consolidated	Non-consolidated

Color code: chosen coverage; Missing from recommended coverage; Not applicable

(In the figure: chosen coverage — CG; Yes for Budgetary central government and Social security funds; Currency & deposits, Loans, Debt securities; Cash basis; Nominal value 5/; Consolidated. Missing from recommended coverage — No for 1a; No for Extra budgetary funds, State governments, Local governments; Oth acct. payable 2/; IPSGSs 3/. Not applicable — No for Public nonfinancial corporations, Central bank, Other public financial corporations.)

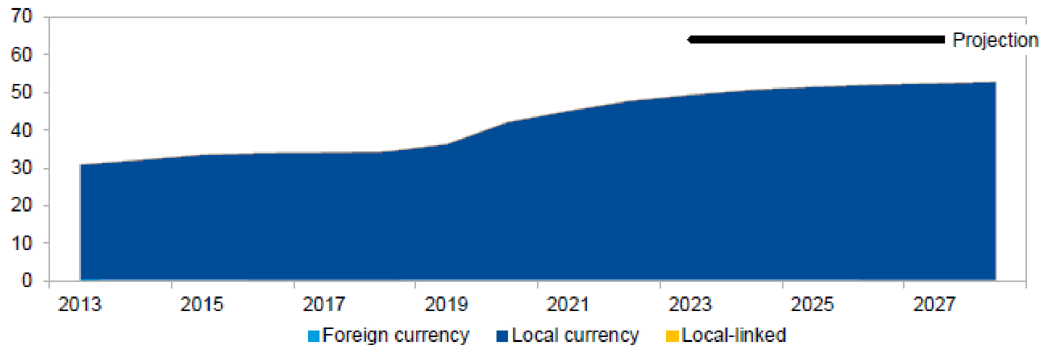
Reporting on Intra-Government Debt Holdings

					Issuer \ Holder	Budget. central govt	Extra-budget. funds	Social security funds	State govt.	Local govt.	Nonfin. pub. corp.	Central bank	Oth. pub. fin corp	Total
CPS	NFPS	GG: expected	CG	1	Budget. central govt									0
CPS	NFPS	GG: expected	CG	2	Extra-budget. funds									0
CPS	NFPS	GG: expected	CG	3	Social security funds									0
CPS	NFPS	GG: expected		4	State govt.									0
CPS	NFPS	GG: expected		5	Local govt.									0
CPS	NFPS			6	Nonfin pub. corp.									0
CPS				7	Central bank									0
CPS				8	Oth. pub. fin. corp									0
					Total	0	0	0	0	0	0	0	0	0

1/ CG=Central government; GG=General government; NFPS=Nonfinancial public sector; PS=Public sector.
2/ Stock of arrears could be used as a proxy in the absence of accrual data on other accounts payable.
3/ Insurance, Pension, and Standardized Guarantee Schemes, typically including government employee pension liabilities.
4/ Includes accrual recording, commitment basis, due for payment, etc.
5/ Nominal value at any moment in time is the amount the debtor owes to the creditor. It reflects the value of the instrument at creation and subsequent economic flows (such as transactions, exchange rate, and other valuation changes other than market price changes, and other volume changes).
6/ The face value of a debt instrument is the undiscounted amount of principal to be paid at (or before) maturity.
7/ Market value of debt instruments is the value as if they were acquired in market transactions on the balance sheet reporting date (reference date). Only traded debt securities have observed market values.

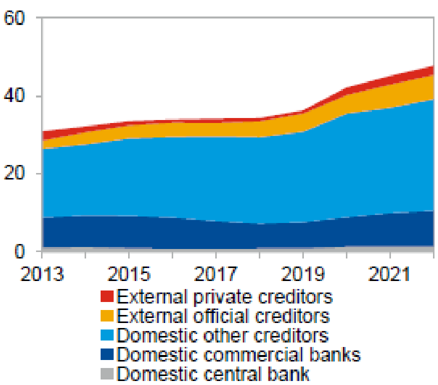
Figure 3. Public Debt Structure Indicators

Debt by Currency (Percent of GDP)



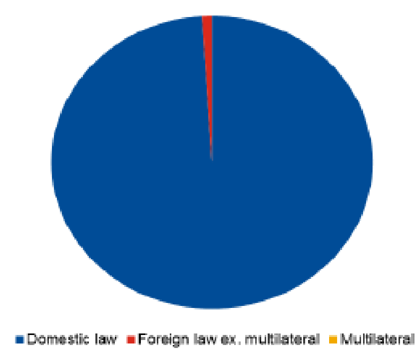
Note: The perimeter shown is central government.

Public Debt by Holder (Percent of GDP)



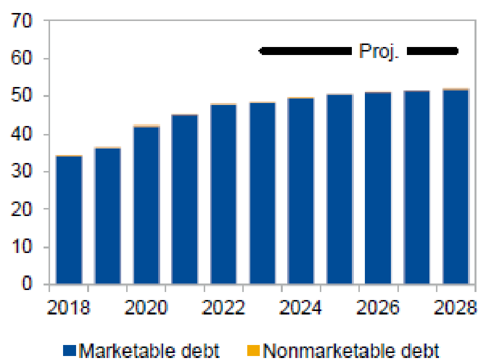
Note: The perimeter shown is central government.

Public Debt by Governing Law, 2022 (Percent)



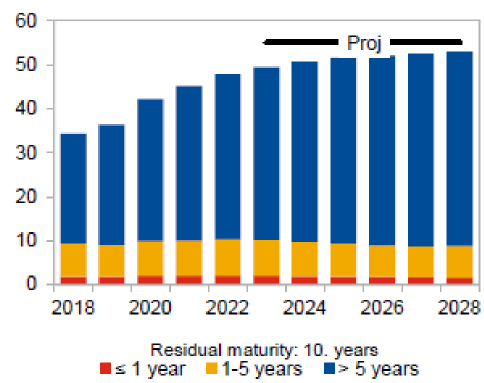
Note: The perimeter shown is central government.

Debt by Instruments (Percent of GDP)



Note: The perimeter shown is central government.

Public Debt by Maturity (Percent of GDP)



Note: The perimeter shown is central government.

Figure 4. Baseline Scenario

(Percent of GDP unless Indicated Otherwise)

	Actual	Medium-term projection						Extended projection			
	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Public debt	47.8	49.3	50.6	51.6	52.3	52.8	53.2	53.6	53.9	54.2	54.4
Change in public debt	2.7	1.5	1.2	1.0	0.7	0.5	0.5	0.4	0.3	0.2	0.2
Contribution of identified flows	3.5	2.4	1.3	0.9	0.8	0.5	0.5	0.4	0.3	0.3	0.2
Primary deficit	1.9	1.2	0.8	0.1	-0.1	-0.3	-0.3	-0.3	-0.3	-0.3	-0.4
Noninterest revenues	26.0	22.8	22.9	23.5	23.5	23.5	23.6	23.6	23.6	23.6	23.6
Noninterest expenditures	27.8	24.0	23.6	23.6	23.4	23.2	23.2	23.2	23.2	23.2	23.2
Automatic debt dynamics	-0.8	-0.5	-1.5	-1.2	-1.2	-1.2	-1.1	-1.1	-1.2	-1.2	-1.2
Real interest rate and relative inflation	0.3	0.1	-0.4	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.0
Real interest rate	0.3	0.1	-0.4	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.0
Relative inflation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Real growth rate	-1.1	-0.7	-1.1	-1.1	-1.1	-1.1	-1.1 .	-1.1	-1.1	-1.1	-1.1
Real exchange rate	0.1	…	…	…	…	…	… .	…	…	…	…
Other identified flows	2.5	1.8	2.0	2.0	2.0	1.9	1.9	1.9	1.8	1.8	1.7
Contingent liabilities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other transactions	2.5	1.8	2.0	2.0	2.0	1.9	1.9	1.9	1.8	1.8	1.7
Contribution of residual	-0.9	-0.9	-0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gross financing needs	3.5	3.0	2.6	2.2	2.2	2.2	2.4	2.6	2.7	2.9	3.0
of which: debt service	2.8	2.9	2.9	3.1	3.3	3.4	3.6	3.8	3.9	4.1	4.2
Local currency	2.7	2.9	2.8	3.0	3.2	3.4	3.6	3.7	3.9	4.0	4.1
Foreign currency	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Memo:											
Real GDP growth (percent)	2.6	1.4	2.2	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.1
Inflation (GDP deflator; percent)	1.3	1.7	2.9	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1
Nominal GDP growth (percent)	3.9	3.2	5.2	4.4	4.4	4.4	4.3	4.3	4.3	4.3	4.3
Effective interest rate (percent)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0

Contribution to Change in Public Debt

(Percent of GDP)

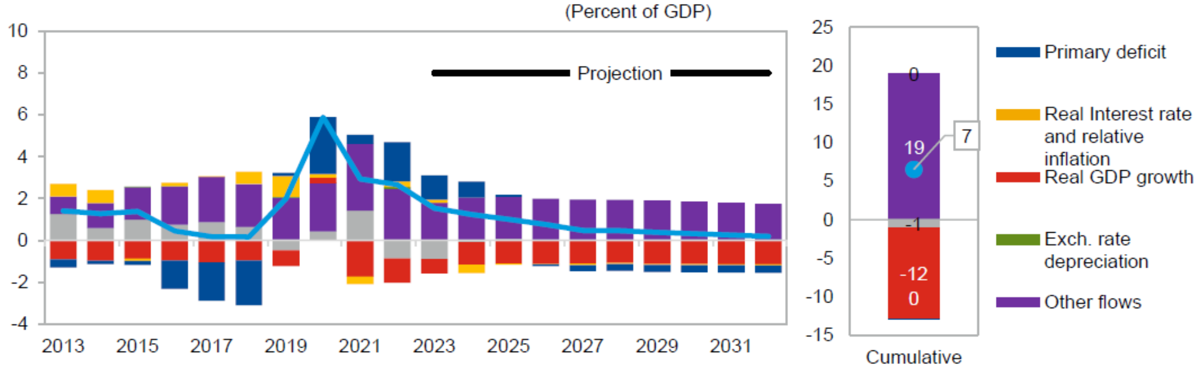
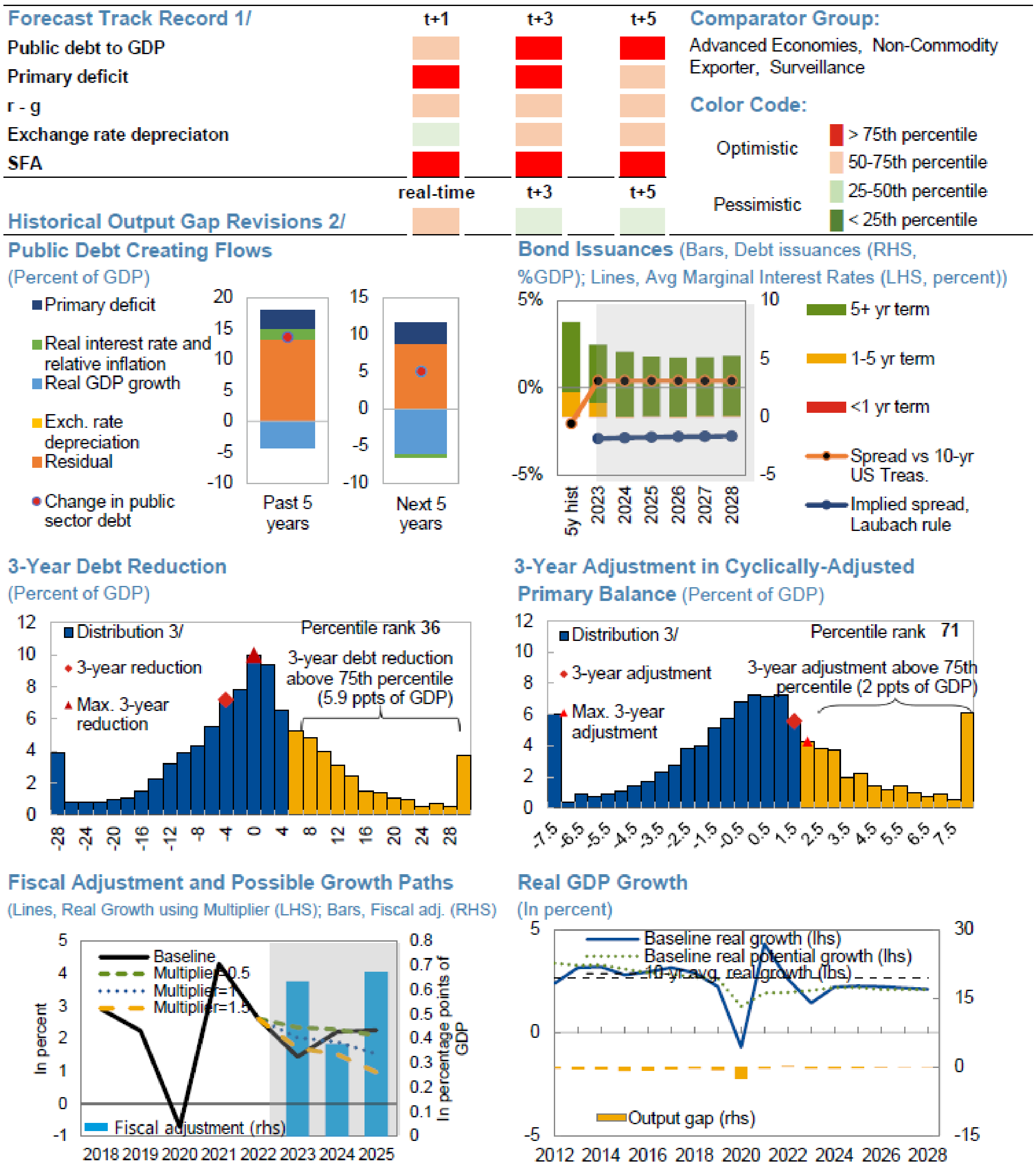


Figure 5. Realism of Baseline Assumptions



Source : IMF Staff.

1/ Projections made in the October and April WEO vintage.

2/ Data cover annual observations from 1990 to 2019 for MAC advanced and emerging economies. Percent of sample on vertical axis.

3/ Starting point reflects the team’s assessment of the initial overvaluation from EBA (or EBA-Lite).

Figure 6. Medium-Term Risk Analysis

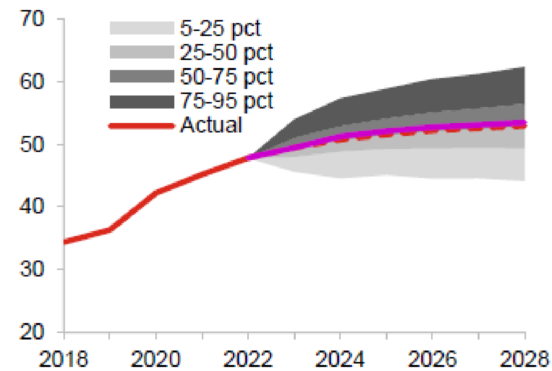
Debt Fanchart and GFN Financeability Indexes

(percent of GDP unless otherwise indicated)

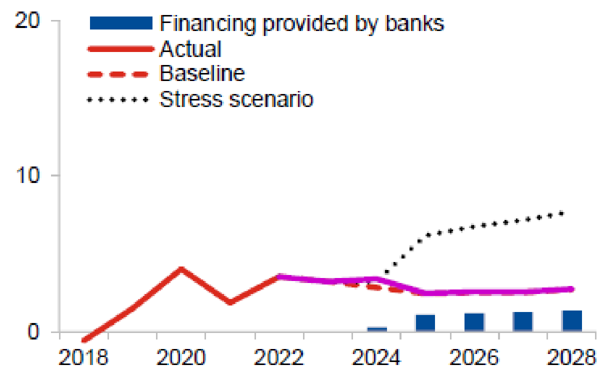
Module	Indicator	Value	Risk index	Risk signal	Adv. Econ., Non-Com. Exp, Program (0 / 25 / 50 / 75 / 100)
Debt fanchart module	Fanchart width	18.2	0.3	…	
	Probability of debt not stabilizing (pct)	0.1	0.0	…	
	Terminal debt level x institutions index	13.9	0.3	…	
	Debt fanchart index	**…**	**0.6**	Low	
GFN finance-ability module	Average GFN in baseline	2.7	0.9	…	
	Bank claims on government (pct bank assets)	3.0	1.0	…	
	Chg. in claims on govt. in stress (pct bank assets)	0.3	0.1	…	
	GFN financeability index	**…**	**2.0**	Low	

Legend: Interquartile range; Korea

Final Fanchart (pct of GDP)



Gross Financing Needs (pct of GDP)

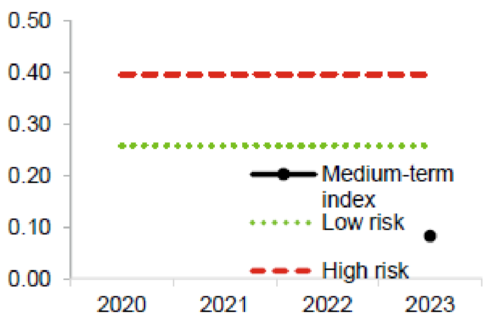


Triggered stress tests (stress tests not activated in gray)

Banking crisis | Commodity prices | Exchange rate | Contingent liab. | Natural disaster

Medium-Term Index

(index number)



Medium-Term Risk Analysis

	Low risk threshold	High risk threhsold	Weight in MTI	Normalized level
Debt fanchart index	1.1	2.1	0.5	0.1
GFN finaceability index	7.6	17.9	0.5	0.0
Medium-term index (MTI)	0.3	0.4	…	0.1, Low

Prob. of missed crisis, 2023-2028 (if stress not predicted): 0.0 pct.

Prob. of false alarm, 2023-2028 (if stress predicted): 93.2 pct.

Annex III. External Sector Assessment

Overall Assessment: *The external position in 2022 was broadly in line with the level implied by medium-term fundamentals and desirable policies.* The CA surplus narrowed in 2022, primarily due to cyclical factors, including relatively weak external demand in light of slowing growth of key trading partners, a global semiconductor down cycle, and high commodity prices. The surplus is projected to be weaker in 2023, due to delayed normalization of the semiconductor cycle and subdued demand from Korea's trading partners. In 2024 and the medium term, the surplus is projected to gradually increase, as commodity prices stabilize and cyclical factors recede. Risks to this outlook relate to trading partner demand, commodity prices, and geoeconomic fragmentation.

Potential Policy Responses: Continued fiscal consolidation and the tightening of monetary policy since mid-2021 are expected to contain domestic demand and import growth, supporting Korea's external position in the near term. Over the medium term, an increase in precautionary savings related to the fast aging of society, orderly deleveraging of household debt, and strong policies to mitigate risks arising from geopolitical tensions would help to maintain a sound external position. The exchange rate should remain market determined, with intervention limited to preventing disorderly market conditions.

Foreign Asset and Liability Position and Trajectory

Background. The NIIP has been positive since 2014 and stood at 46 percent of GDP in 2022, with gross liabilities at 83.5 percent of GDP, of which about 48 percent was gross external debt. The 2022 NIIP level marked an increase by about 8 percent of GDP compared with 2021, largely reflecting an increase of residents' outbound direct investment and a decrease in foreigners' portfolio investment. The NIIP is projected to rise further, to about 55 percent of GDP, in the medium term on the back of CA surpluses.

Assessment. The positive NIIP is an important factor supporting external resilience. Foreign asset holdings are diversified, with about 35 percent in equity or debt securities. About 60 percent of foreign assets are denominated in dollars, implying that depreciation of the won can have large positive valuation effects in aggregate. The structure of liabilities further limits vulnerabilities, with direct investment and long-term loans together accounting for 55 percent of liabilities and 70 percent of liabilities denominated in Korean won.

2022 (% GDP)	NIIP: 46.0	Gross Assets: 129.6	Debt Assets: 61.0	Gross Liab.: 83.5	Debt Liab.: 39.7

Current Account

Background. The CA surplus was 1.8 percent of GDP in 2022, compared with 4.7 percent of GDP in 2021, relatively weak external demand from key trading partners, the semiconductor down cycle, and high commodity import prices. The CA surplus has been trending down from the peak of 7.2 percent of GDP in 2015, reflecting a fall in savings, particularly for the household sector, and an increase in the investment-to-GDP ratio. The CA surplus is projected to narrow to 1.3 percent of GDP in 2023 and increase gradually to about 4 percent of GDP over the medium term, supported by an expected gradual normalization in the semiconductor cycle, economic recovery of key trading partners, and stabilizing commodity import prices. Risks related to geopolitical tensions, if materialized, could impede trade and investment.

Assessment. The EBA model estimates the cyclically adjusted CA at 4.2 percent of GDP. The CA norm is estimated at 4.8 percent of GDP, with a standard error of 0.9 percent of GDP. After accounting for transitory factors arising from the COVID-19 shock, in transportation (–0.3 percent of GDP) and travel services (–0.1 percent of GDP), the IMF staff estimates the 2022 CA gap midpoint at –1.0 percent of GDP, with a range of –1.9 to –0.1 percent of GDP. The contribution of the relative policy gap is –0.6 percent of GDP, reflecting the positive domestic credit gap, partly offset by a less expansionary fiscal stance compared to the rest of the world.

2022 (% GDP)	CA: 1.8	Cycl. Adj. CA: 4.2	EBA Norm: 4.8	EBA Gap: –0.6	COVID-19 Adj.: –0.4	Other Adj.: 0.0	Staff Gap: –1.0

Real Exchange Rate

Background. The REER has been depreciating since 2019, reversing the sustained appreciation during 2013–18. In 2022, a marked depreciation through October was partly reversed by the end of the year, with an average depreciation of 5.4 percent from 2021. As of July 2023, the REER was 1.8 percent above the 2022 average.

Assessment. The IMF staff CA gap implies a REER overvaluation of 2.9 percent (with an estimated elasticity of 0.34 applied). The EBA REER index model estimates a 1.9 percent undervaluation, while the EBA level model estimates a 3.4 percent overvaluation. Consistent with the staff CA gap, the staff assesses the REER gap to be in the range of 0.2 to 5.6 percent, with a midpoint of 2.9 percent.

Capital and Financial Accounts: Flows and Policy Measures

Background. Net capital outflows increased to 4.0 percent of GDP in 2022 from 3.5 percent of GDP in 2021, while they had been trending down from the peak at 6.2 percent of GDP in 2016. Net FDI and portfolio outflows made up the bulk of the 2022 financial account (2.9 percent and 1.5 percent of GDP, respectively), whereas other investment recorded net inflows (0.9 percent of GDP). Net FDI outflows were driven by rising outbound direct investment, while net portfolio outflows, were mainly driven by foreigners' continued equity sales and sharply decreased debt security purchases amid tightened global financial conditions. During the first half of 2023, net capital outflows significantly declined given decreased outbound direct investment and the resumption of nonresident debt purchases,

Assessment. The present configuration of net and gross capital flows appears sustainable over the medium term: while capital outflows were mainly driven by residents' outbound direct and portfolio investment, reflecting the CA surplus and rising NIIP, inbound portfolio investment remained positive and turned to rebound. In recent years, including in the context of Russia's invasion of Ukraine and the Federal Reserve's interest rate hike cycle, Korea has demonstrated ample capacity to absorb short-term capital flow volatility.

FX Intervention and Reserves Level

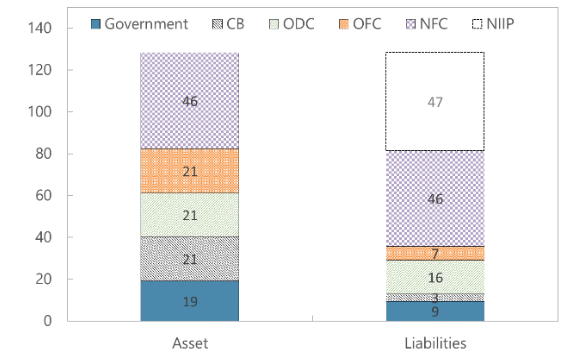
Background. Korea has a floating exchange rate. Based on IMF staff estimates and published data, FX intervention since 2015 is estimated to have been two-sided. FX intervention data released by the Bank of Korea show net sales of $45.9 billion (2.8 percent of GDP) in 2022, mostly conducted in the second and third quarters of the year during periods of heightened exchange rate volatility. FXI decreased to net sales of $8 billion (0.5 percent of GDP) in the first half of 2023. As of the end of August 2023, reserves stood at $413 billion, slightly decreased from $418 billion as of end 2022.

Assessment. Intervention has been limited to preventing disorderly market conditions. As of the end of 2022, FX reserves were about 25 percent of GDP, 1.9 times short-term debt, 6.2 months of imports, or 14 percent of M2. Systemwide stress tests also show that reserves provide sufficient FX liquidity buffers under a wide range of plausible shocks.

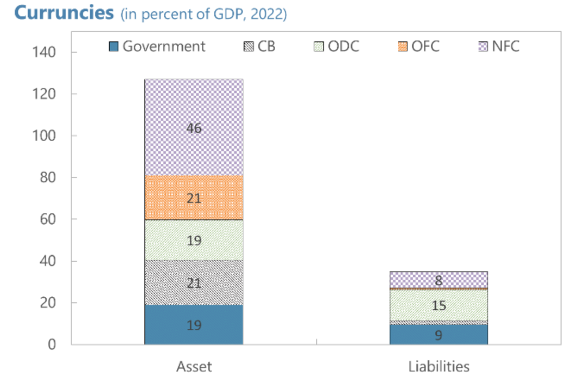
Annex IV. Reserve Adequacy Stress Tests[1]

1. International Investment Position (IIP) data indicate that Korea has a substantial amount of external assets compared to liabilities. As of 2022, Korea's net international investment position amounted to net foreign assets of 47 percent of GDP. Notably, FX assets were four times higher than FX liabilities, as most of Korea's foreign assets are denominated in foreign currencies, while only 40 percent of liabilities are in foreign currencies. FX liabilities are primarily held by Other Depository Corporations (ODCs, mostly banks) and Government, whereas FX assets are largely held by the Non-Financial Corporations (NFCs), Central Bank (CB) and Other Financial Corporations (OFCs), including the National Pension Service.

International Investment Position by Sector, in all Currencies (In percent of GDP, 2022)



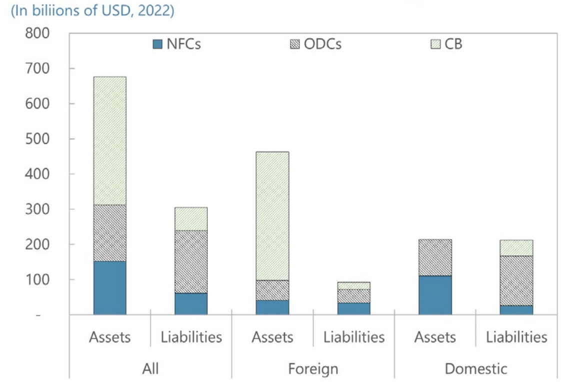
International Investment Position by Sector in Foreign Currncies (in percent of GDP, 2022)



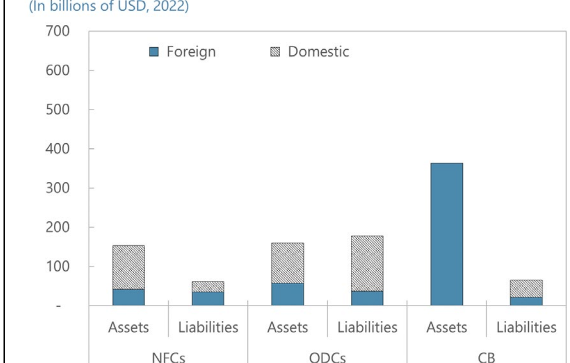
Source: IMF BSA tool, BOK National Balance Sheet, International Investment Position, and staff Calculation.
- CB: Central Bank, ODC: Other Depository Corporation, OFC: Other Financial Corporation, NFC: Non-Financial Corporation.

2. The sectoral aggregate balance sheet data also indicates that overall liquid FX assets in the financial system are sufficient to cover liquid FX liabilities. Total liquid FX assets are about 2.5 times as large as liquid FX liabilities, with the BoK's international reserves accounting for more than half of total liquid FX assets. While banks and NFCs hold more liquid FX assets than liabilities, they rely on domestic FX financing rather than on external sources.

FX Liquidity and Liabilities : Distribution by Sector (In biliions of USD, 2022)



FX Liquidity and Liabilities : Distribution by Sources (In billions of USD, 2022)



Sources: IMF BSA tool, BoK national balance sheet, international investment position and staff calculations.
- FX liquid assets: For NFCs and ODCs: Cash, deposits, reserves, securities (sovereign 100%, others 80% or 20% haircut), and equities (50% haircut) with securities and equities no more than 40% of high-quality assets. For CB: FX reserves.
- FX liquid liabilities: For NFCs and ODCs: Loans and debt securities (30% matures a year), and deposits / For CB: External borrowings and deposits from banks and government.

[1] Prepared by Eonyoung Park (APD).

3. Stress testing can be a useful input for the analysis of reserve adequacy in Korea. The assessment of precautionary reserve adequacy is based on tools appropriate to country characteristics and institutions. The choice of tools depends on various factors such as the nature of external vulnerabilities, depth of financial markets, reliance of capital controls, and other structural characteristics. The Assessing Reserve Adequacy for Emerging Markets Metric (ARA EM metric), which is mainly applied in assessing reserve needs in emerging and deepening financial market economies, represents only one of such tools. Given Korea's economic characteristics, we consider that analytical tools based on traditional ratio-based indicators including percent of short-term debt or broad money, supplemented by stress tests to evaluate the potential claim on international reserves under different adverse scenarios, would be useful tools for Korea.[2] Accordingly, Korea has been dropped from the coverage of the ARA EM metric from this year.

4. The Systemwide Liquidity Stress Testing Tool provides a framework for assessing potential FX funding needs and buffers in the financial system based on the balance sheet approach.[3] Balance of payments shocks affect each sector's liquid FX assets, and sectors interact with one another when they deplete their liquid FX buffers, ultimately transmitting shocks into claims on international reserves.

5. The assumptions for external shocks are calibrated on historical data and include: (i) sudden stops of external debt, (ii) capital flight, and (iii) shocks to the trade balance. External debt rollover is assumed at 90 percent, 50 percent, and 30 percent, respectively, in the stress tests, considering that the rollover rate dropped to around 30 percent during the Asian financial crisis in 1997 and to around 40 percent during Global Financial Crisis in 2008. Capital flight is measured by (i) foreign investors repatriating their portfolio investments, and (ii) residents converting their local currency to foreign currency. Balance of payments data indicate that during the Asian Financial Crisis in 1997, 57 percent of foreign investors' equity investment flowed out, while during the GFC in 2008, foreign investors' portfolio outflows were 6 percent of their total holdings. For the stress tests, up to 50 percent outflow is assumed to test the claim on reserves under severely stressed conditions. Residents' conversion of local currency deposits to foreign currency is set at a maximum of 3 percent of total, which would be a similar level to historical stress episodes. The worst-case scenario for the trade balance is set at -4 percent of GDP, considering the historically largest trade deficit was 4 percent of GDP (1996).

6. Other underlying assumptions include the rate of currency depreciation, FX reserve requirements for FX deposits, and behavioral characteristics. The depreciation rate for the Korean won is assumed at 30 percent, and FX deposit and debt securities interest rate at 5 percent. The assessment does not consider any new external FX financing to gauge the capacity of existing FX reserves. Banks FX reserve requirements at the central bank are assumed to be 5 percent of FX deposits, with the actual requirement ranging from 1 to 7 percent depending on the type and maturity. In times of FX liquidity needs, banks are assumed to utilize other liquid assets first, followed by central bank deposits, but maintaining a minimum required FX Liquidity Coverage Ratio of

[2] For details, see: "Guidance Note on the Assessment of Reserve Adequacy and Related Considerations" (IMF, 2016).

[3] For details, see: "Systemwide Liquidity Stress Testing Tool" (Oura, 2022).

80 percent, while other sectors primarily rely on local FX deposits before turning to other liquid assets. The test horizon is set at one year, thus allowing for consideration of prolonged external shocks. Reducing the test horizon to one quarter or one month would correspondingly decrease the impact on reserve losses.

7. The stress test results indicate that international reserves provide an adequate buffer for plausible shocks and would only be exhausted under very large shocks. For example, in a scenario, in which 30 percent of foreign portfolio investment flows out, and 2 percent of residents' won deposits are converted to FX, Gross International Reserves (GIR) decrease by 52~62 percent (Table 1). In even more extreme scenarios, in which foreign investors repatriate 50 percent of their portfolio assets and residents convert 3 percent of their won deposits to FX, GIR would be exhausted by up to 94 percent. By contrast, the impact of reduced external debt rollover or a deteriorating trade balance would be, ceteris paribus, manageable, as NFCs and banks have sufficient liquid FX assets to cover most of the impact, thereby not affecting GIR as much (Figure 2).[4] The results do not factor in potential policy responses to the shocks other than FXI, such as tighter monetary policy, which implies that the actual impact on reserves would likely be smaller than this analysis suggests.

Table 1. Korea: GIR Liquidation Ratio under Different Scenarios (percent)

		Foreign Investor Repatriation of Portfolio Investment									
LC Deposit Conversion (% of total)	Trade Balance (% of GDP)	0%	10%			30%			50%		
			Debt Roll-Over Rate			Debt Roll-Over Rate			Debt Roll-Over Rate		
		100	90	50	30	90	50	30	90	50	30
0%	0%	0	10	12	16	40	44	46	66	70	72
1%	-1%	2	16	20	22	46	50	51	72	76	78
	-2%	2	17	21	23	47	51	53	73	77	80
	-4%	4	18	27	29	49	53	56	75	80	82
2%	-1%	8	22	26	28	52	56	58	78	82	84
	-2%	8	23	27	33	53	57	59	79	83	86
	-4%	10	29	33	35	55	59	62	81	86	88
3%	-1%	14	28	36	38	58	62	64	84	88	90
	-2%	14	29	37	39	59	63	65	85	89	92
	-4%	16	35	39	41	61	65	68	87	92	94

[4] Throughout the stress tests, banks are maintaining a minimum of 80 percent FX LCR.

8. Although GIR are sufficient to address most potential shocks, enhancing FX liquidity in the system and strictly limiting FXI can help reduce the reliance on GIR. Maintaining tight FX liquidity regulations on both bank and non-bank financial institutions (NBFIs) and regular monitoring by stress tests would contribute to mitigating FX liquidity risks within the financial system.[5] Strictly limiting FXI to preventing disorderly market conditions also reduces the potential claim on GIR.[6]

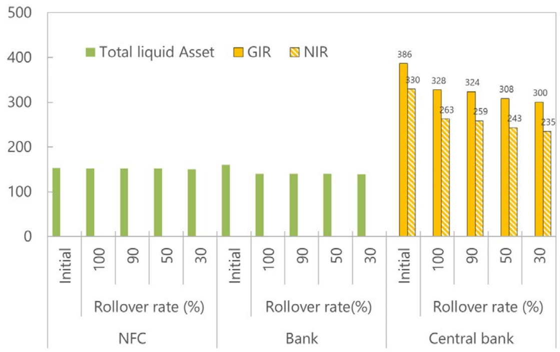
[5] The Korean government strengthened FX macroprudential measures, including liquidity regulation, in 2021 by expanding application of FX LCR ratio and stress tests to NBFIs, and introducing new indicators of FX needs and funding capability, FX asset-liability gap and maturity mismatch.

[6] The analysis in this annex does not fully incorporate OFCs' FX liquidity due to lack of available balance sheet data. However, it is important to consider that OFCs' FX liquidity buffers might be limited compared to their significant amounts of FX assets, considering substantial investment of pension funds and securities firms in illiquid, long-term assets, as well as episodes during the pandemic in 2020 where margin calls on overseas derivative investments exerted FX demand pressures.

Figure 1. Stress Test Results

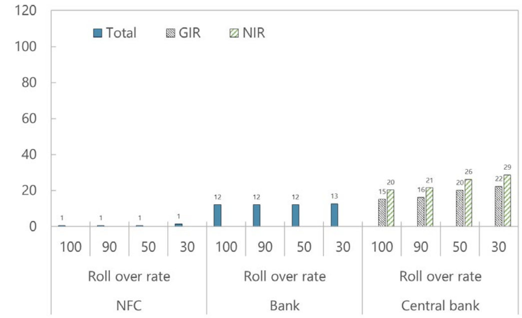
Mild shock: 10 percent repatriation, 1 percent LC deposit conversion, and trade balance at -1 percent of GDP…

Mild Shock : FX Liquid Asset Balance
(In billions of USD)



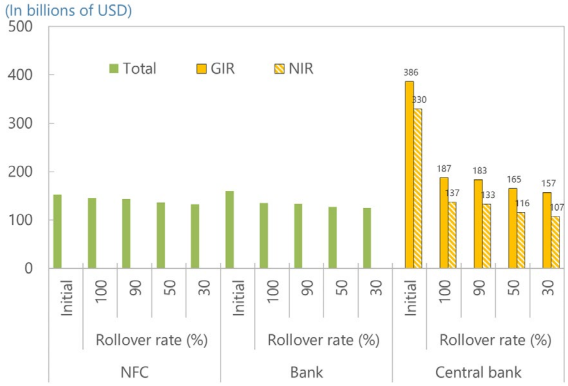
…shows 22 percent of GIR reduction when private sector external debt rollover declines to 30 percent.

Mild Shock : Liquidation Rate
(%)



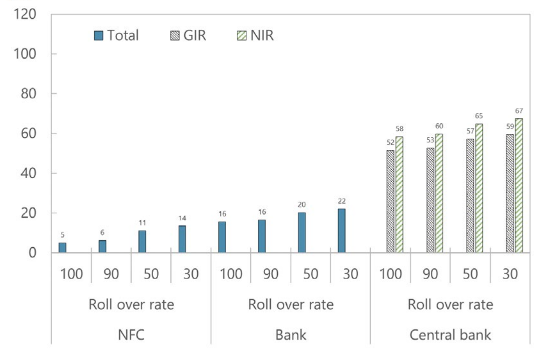
Intermediate shock: 30 percent repatriation with 2 percent LC deposit conversion, and trade balance at -2 percent of GDP…

Intermediate Shock : FX Liquid Asset Balance
(In billions of USD)



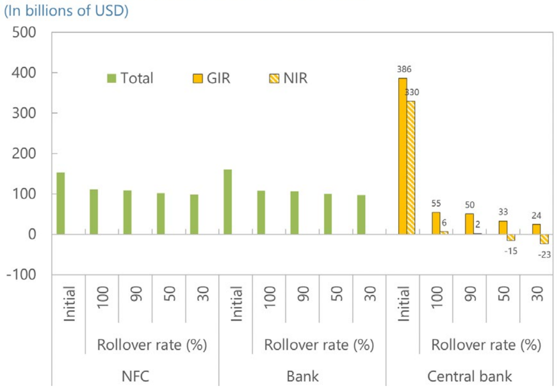
…shows 59 percent of GIR reduction when private sector external debt rollover declines to 30 percent.

Intermediate Shock : Liquidation Rate
(%)



Severe shock: 50 percent repatriation, 3 percent LC deposit conversion, and trade balance -4 percent of GDP…

Severe Shock : Liquid FX Asset Balance
(In billions of USD)



…shows 94 percent of GIR reduction when private sector external debt rollover declines to 30 percent.

Severe Shock : Liquidation Rate
(%)

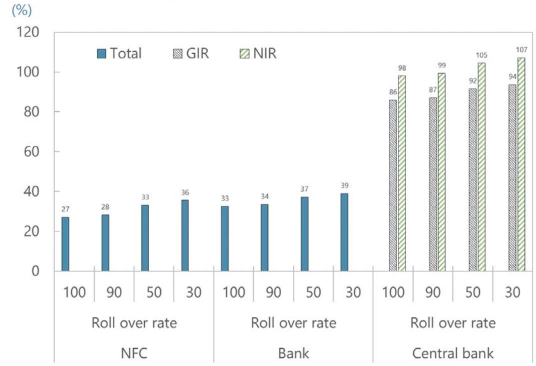
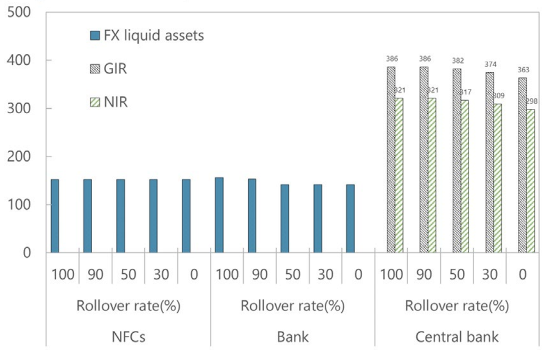


Figure 2. Sensitivity Analysis

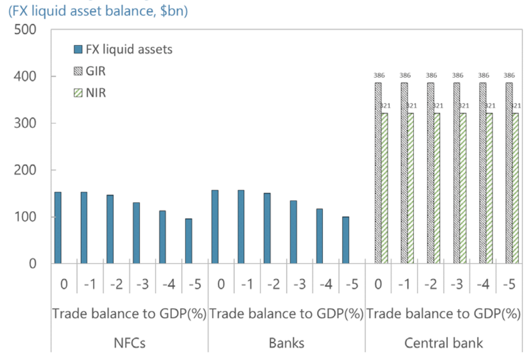
The external debt rollover rate affects banks' liquid FX asset, but it does not affect GIR much.

Sensitivity Analysis : External Debt Rollover
(FX liquid asset balance, $bn)



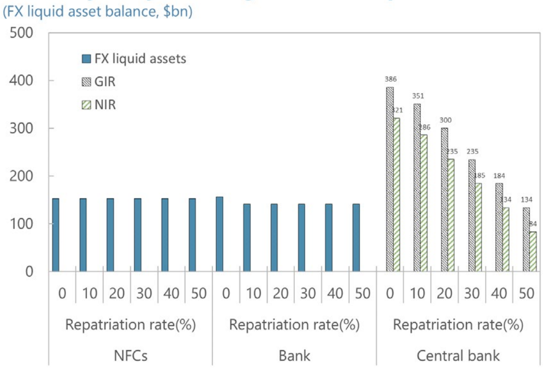
A trade balance decline to -5 percent of GDP can be absorbed in NFCs' and banks' liquid FX assets and does not affect GIR.

Sensitivity Analysis : Trade Balance
(FX liquid asset balance, $bn)



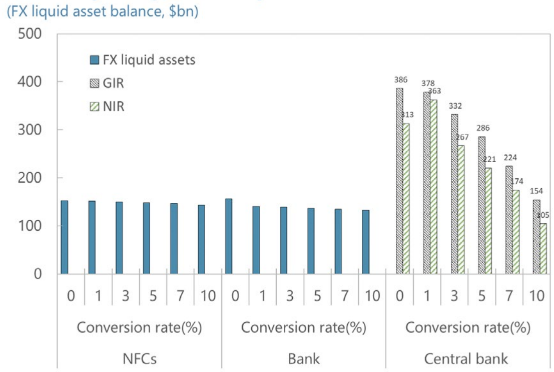
Foreign investors' repatriation of portfolio investment depletes banks' FX liquid assets fast, and a 50 percent outflow depletes 65 percent of GIR.

Sensitivity Analysis : Foreign Investors Repatriation
(FX liquid asset balance, $bn)



LC deposit conversion to FX also depletes banks' liquid FX assets rapidly, and 10 percent of resident's LC deposit conversion reduces GIR by 60 percent.

Sensitivity Analysis : LC Deposit Conversion to FX
(FX liquid asset balance, $bn)



Annex V. Risk Assessment Matrix

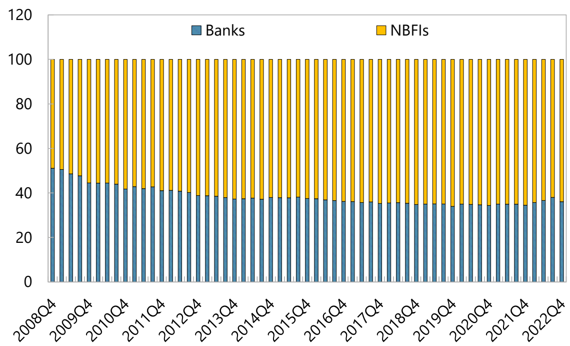
Source of Risk	**Likelihood**	**Impact of Risk**	**Policy Response**
Global Risks			
Intensification of regional conflict(s). Escalation of Russia's war in Ukraine or other regional conflicts and resulting economic sanctions disrupt trade (e.g., energy, food, tourism, and/or critical supply chain components), remittances, FDI and financial flows, and payment systems, and lead to refugee flows.	**High**	**Medium:** Conflict-related trade disruptions and growth slowdown in key trading partners would affect Korea's exports, damage business confidence, and increase financial market volatility.	Provide targeted fiscal support to vulnerable workers and businesses. In the event of disorderly financial market conditions, apply temporary and targeted asset purchase and liquidity support, with safeguards to mitigate moral hazard.
Abrupt global slowdown or recession. Global and idiosyncratic risk factors combine to cause a synchronized sharp growth downturn, with recessions in some countries, adverse spillovers through trade and financial channels, and market fragmentation causing sudden stops in EMDEs. • **U.S.:** Amid tight labor markets and/or commodity price shocks, inflation remains elevated, prompting the Fed to keep rates higher for longer and resulting in more abrupt financial, housing and commercial real estate market correction, and "hard landing". • **Europe:** Intensifying fallout from the war in Ukraine, recurrent energy crisis and supply disruptions, and monetary tightening exacerbate economic downturns, and housing and commercial real estate market corrections. • **China:** Sharper-than-expected slowdown in the property sector, unexpected fiscal tightening due to local government financing stress and decline in investment, and/or rising geopolitical tensions disrupt economic activity.	**Medium**	**High:** Higher for longer interest rates and abrupt market corrections in the U.S. could increase Won depreciation pressures, cause capital outflows, and exacerbate financial vulnerabilities in Korea. A slowdown in China, US, and Europe, Korea's largest trading partners, would affect Korea's exports and damage business confidence.	Provide targeted fiscal support to the vulnerable population and businesses, including transfers through strengthened social safety nets. Scale up growth-enhancing public investment including in green infrastructure. In the event of disorderly financial market conditions, apply temporary and targeted stabilization measures, including asset purchase and liquidity support, with safeguards to mitigate moral hazard.
Commodity price volatility. A succession of supply disruptions (e.g., due to conflicts, uncertainty, and export restrictions) and demand fluctuations causes recurrent commodity price volatility, external and fiscal pressures in EMDEs, contagion effects, and social and economic instability.	**High**	**Medium:** A sizable negative terms of trade shock for Korea as a commodity importer would slow growth and increase inflationary pressures.	Allow public utility companies to pass through international energy prices while providing targeted support to vulnerable groups. Maintain a disinflationary monetary policy stance to rein in second-round effects on inflation.
Systemic financial instability. Sharp swings in real interest rates, risk premia, and asset repricing amid economic slowdowns and policy shifts trigger insolvencies in countries with weak banks or non-bank financial institutions, causing market dislocations and adverse cross-border spillovers.	**Medium**	**High:** Given close linkages to international financial markets, global financial instability could cause disorderly domestic market conditions and exacerbate vulnerabilities in weak NBFIs.	Provide temporary and targeted asset purchase and liquidity support to affected financial institutions, with safeguards to mitigate moral hazard. Prompt resolutions of problematic NBFIs.

Longer and deeper than expected semiconductor downcycle. The timing and speed of expected recovery in global semiconductor demand could be slower than expected.	Medium	**Medium:** Weaker recovery of the Korean semiconductor industry could affect industrial production, exports, business confidence, and manufacturing employment.	Allow automatic stabilizers to operate. In case of a larger shock, reduce the pace of fiscal normalization and consider more accommodative monetary policy.
Deepening geo-economic fragmentation. Broader and deeper conflict(s) and weakened international cooperation result in a more rapid reconfiguration of trade and FDI, supply disruptions, protectionism, technological and payments systems fragmentation, rising input costs, financial instability, a fracturing of international monetary and financial systems, and lower potential growth.	High	**High:** As a highly open economy with close trade and financial linkages to the rest of world, Korea is particularly vulnerable to geoeconomic fragmentation. Reshoring and less trade would reduce potential growth.	Diversify trade markets and supply chains. Advance structural reforms to boost productivity growth.
Cyberthreats. Cyberattacks on physical or digital infrastructure (including digital currency and crypto assets ecosystems) or misuse of AI technologies trigger financial and economic instability.	Medium	**Low:** Cyberattacks on critical infrastructure and institutions could lead to concerns about protection of critical data and may result in loss of confidence.	Assess the adequacy of IT risk management and prepare a contingency plan. In case disruptions cause financial and economic instability, provide temporary and targeted support.
Extreme climate events. Extreme climate events driven by rising temperatures cause loss of human lives, severe damage to infrastructure, supply disruptions, lower growth, and financial instability.	High	**Medium:** Extreme climate events, notably from typhoons, flooding, droughts, heat and cold waves could disrupt economic activity and affect human livelihoods in Korea.	Enhance climate change adaptation and mitigation strategies. Provide targeted fiscal support to affected individuals and businesses.
Disorderly energy transition. Disorderly shift to net-zero emissions and climate policy uncertainty cause supply disruptions, stranded assets, market volatility, and subdued investment and growth.	Medium	**Medium:** Disorderly energy transition and climate policy uncertainty could disrupt economic activity and hurt investment and growth.	Clarify and enhance climate policies. Provide targeted fiscal support to affected individuals and businesses.
Domestic Risks			
A worse-than-expected real estate market downturn. A renewed episode of marked housing price declines could trigger an increase in defaults of developers, construction firms, and NBFIs, impairing confidence and tightening financial conditions.	Medium	**High:** Given the large real estate finance exposure, stronger-than-expected housing price falls, associated financial distress and abrupt tightening of financial conditions would have a significant adverse impact on the real economy.	Relax macroprudential measures and apply temporary and targeted asset purchase and liquidity support. Use regulatory actions to facilitate the absorption of changes in asset quality and encourage private debt resolution. Loosen monetary policy and provide targeted fiscal support as needed. These measures should aim at preventing excessive price drops without triggering significant further build-up in household debt.

Annex VI. The NBFI–Real Estate–Corporate Nexus[1]

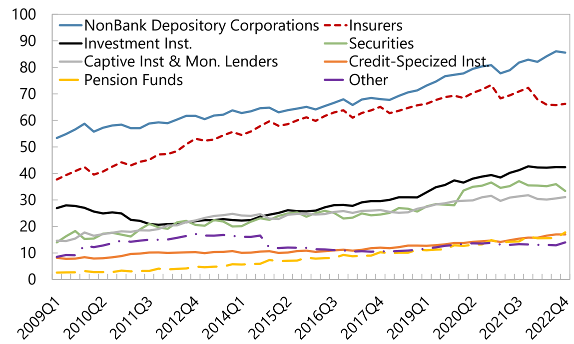
1. NBFIs are systemically important in Korea. NBFIs have proliferated after the global financial crisis, with asset holdings reaching over 60 percent of total assets in the financial system in 2022. The increase is broad-based across different types of institutions, and most notably led by nonbank depository corporations, insurers, investment and securities firms, and other specialized financial institutions.

Share of Total Assets by Financial Institutions
(Percent of total)



Source: Haver.

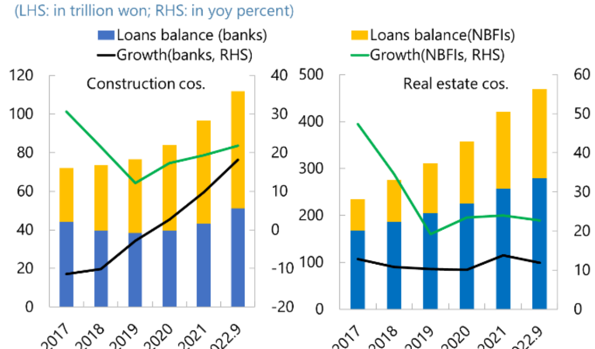
Non-Bank Financial Institutions' Assets
(Percent of GDP)



Source: Haver.

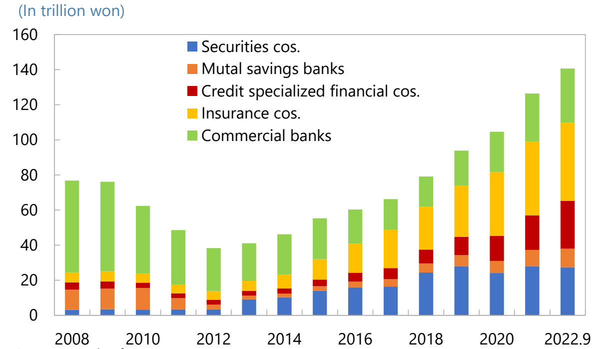
2. NBFIs have significantly expanded their real estate exposure, led by corporate finance. Corporate loans by NBFIs to developers and construction firms have grown much faster than those provided by banks, though banks are still the dominant source of financing in the real estate industry. In project financing, NBFIs have already taken over banks as the major funding source in the recent decade. This seems to be driven by NBFIs' efforts to search for yield.

Loans to Construction and Real Estate Companies
(LHS: in trillion won; RHS: in yoy percent)



Source: Bank of Korea.
Note: The balance is based on the end of the year

Real Estate PF Loans by Financial Sector
(In trillion won)



Source: Bank of Korea.
Note: Securities companies and credit-specialized financial companies include debt guarantees for PF-backed securities

3. The weakest spot is related to project financing (PF), which has a fragile funding structure. Project financing is not secured, highly leveraged, and involves asset securitization with

[1] Prepared by Xin Cindy Xu (APD)

significant maturity mismatch risks. NBFIs are involved in different types of PF exposures, including direct investments in bridge and project loans and asset-backed securities, as well as indirect exposures through providing credit guarantees (notably by securities firms). The underlying vulnerabilities of PF have been further exacerbated by financial tightening in Korea and elsewhere, and concomitant softening in the housing market, as revealed by the corporate debt market strains last fall. While the overall delinquency rate for PF loans is still low (at about 1.2 percent in end-2022 compared to a peak at about 8.2 percent in 2013), it could rise in tandem with further corrections in the housing market.

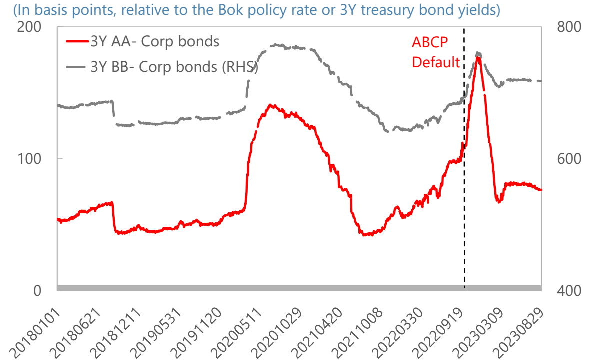
Types of Real Estate Project PF Exposures

Bridge loans	Project loans	PF-backed securities	Debt guarantees
• For buying land, securing permit	• For construction and apartment sale	• For risk diversification, liquidity management	• For credit enhancement of securitization
• Unsecured loans, rates >10%, ST maturity < 1Y	• Unsecured loans, rates<10%, maturity 3-5 years	• PF loans backed ABS, ABCP and ABSTB, maturity <1Y	• Securities companies, construction firms, and local gov. guarantees to PF-loans and securities
• NBFIs finance only	• Both NBFIs and banks finance	• Both NBFIs and banks finance	• ~ 3 percent of GDP (o.w. 1.1 by securities)
• 0.5-1 percent of GDP	• ~ 5 percent of GDP	• ~ 2.2 percent of GDP	

4. **While overall liquidity conditions have normalized, underlying credit risk remains high for some low-quality segments.** Vulnerability is particularly high for bridge loans, which are short-term debt with high interest rates and significant rollover risk. Market spreads are differentiated by credit quality, with spreads of non-investment grade securities not yet returning to levels before the October 2022 default on a developer's guaranteed debt. Among NBFIs, the substandard PF loan ratio of securities firms has continued to rise and now stands at a double-digit level, much higher than other institutions.

Money Market and Corporate Bond Spreads

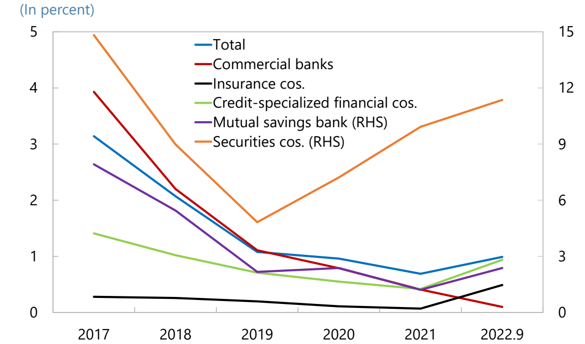
(In basis points, relative to the Bok policy rate or 3Y treasury bond yields)



Sources: Haver and IMF staff calculations.

PF Loans: Substandard-or-Below Loan Ratio

(In percent)

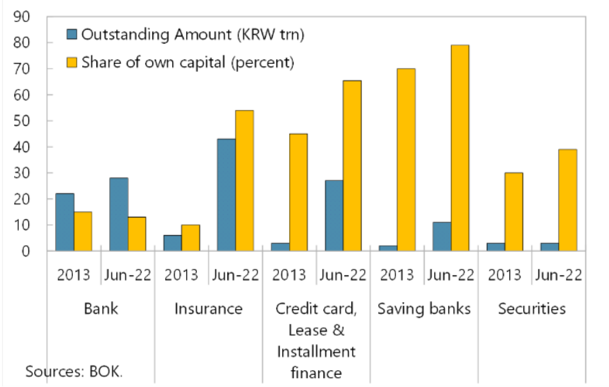


Source: Bank of Korea.

5. **Some NBFIs are more vulnerable, notably mutual savings banks, securities companies, and credit specialized institutions.** Mutual savings banks and credit specialized financial

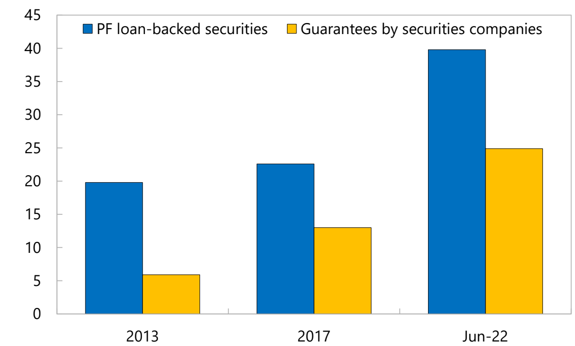
institutions hold a significant amount of project loans relative to their own capital, while securities firms provide sizable guarantees to PF loan-backed securities. These institutions also hold a large share of commercial real estate projects – for which returns have declined amid significant drops in transactions, and non-investment grade project loans – which face high credit risks.

Real Estate Project Financing Loan Exposures
(In KRW trillion or percent)



Sources: BOK.

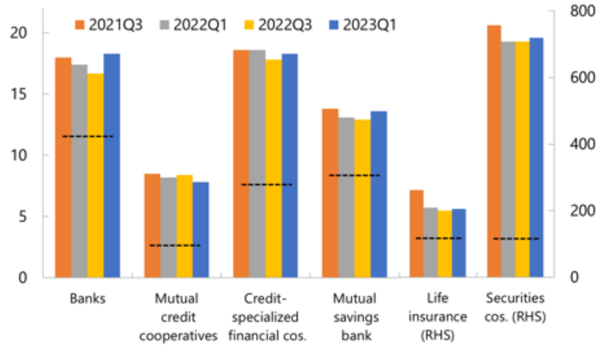
Real Estate PF Loan-Backed Securities and Guarantees
(In KRW trillion)



Source: BoK.

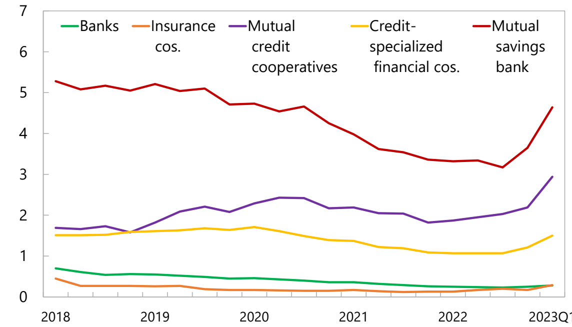
6. **Ample capital buffers and still relatively sound asset quality of NBFIs provide cushions.** Capital buffers are much higher than regulatory requirements across different types of NBFIs. Overall NPL rates are still low, albeit rising rapidly among mutual savings banks and mutual credit cooperatives. Among NBFIs, savings banks and mutual credit cooperatives appear to have less capital buffers and higher NPLs. Profitability remains generally solid, albeit declining more recently, especially among mutual credit cooperatives and savings banks. The loan loss provision coverage ratios (loan loss provisions to substandard-or-below loans) of mutual credit cooperatives and mutual savings banks have dropped significantly, to below 100 percent as of 2023Q1. Mutual credit cooperatives are preparing to raise buffers under regulation for enhancing loss absorption capacity by raising the loan loss provision ratio for real estate and construction from 100 to 130 percent.

Financial Institution Capital Adequecy Ratio
(In percent)



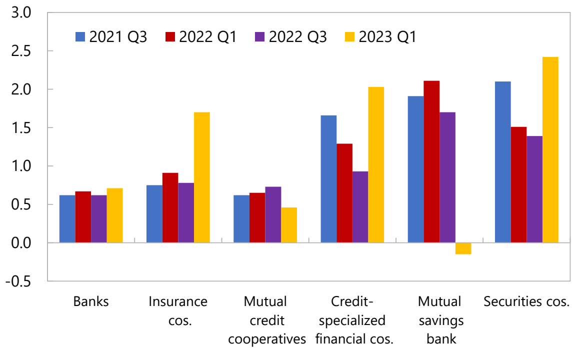
Source: Bank of Korea.

NPL by Financial Sector
(In percent)



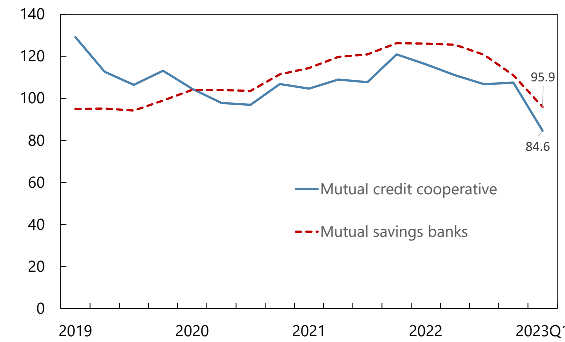
Source: Bank of Korea.

Return on Asset by Financial Sector
(In percent)



Source: Bank of Korea.

Loan Loss Provision Coverage
(In percent, loan loss provisions/substandard-or-below loans)



Source: Bank of Korea.

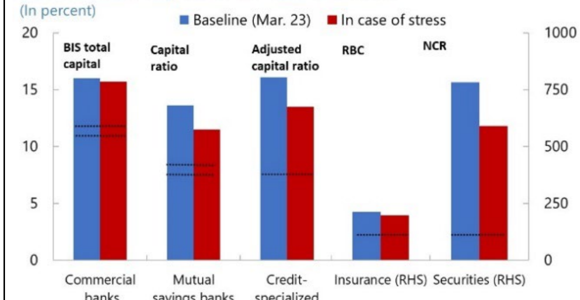
7. **Systemic risks from real estate PF loan defaults appear to be contained.** According to BoK stress tests in June 2023, in a stress scenario of rising real estate PF loan defaults associated with a further 10 percent housing price decline (relative to the baseline level of March 2023) over two years, the capital ratio of the financial system would decline slightly but remain above regulatory levels in all sectors. With the recent housing market stabilization and enhanced management of asset soundness by supervisory authorities and financial institutions, systemic risks related to real estate PF loan defaults thus appear to remain contained.

Stress Test Scenario Design

Housing price declines[1/]	-10%
Period of contraction	Over two years

1/ Based on actual transaction price of nationwide apartments as of March 2023.

Stress Tests: Impact of PF Loan Defaults
(In percent)



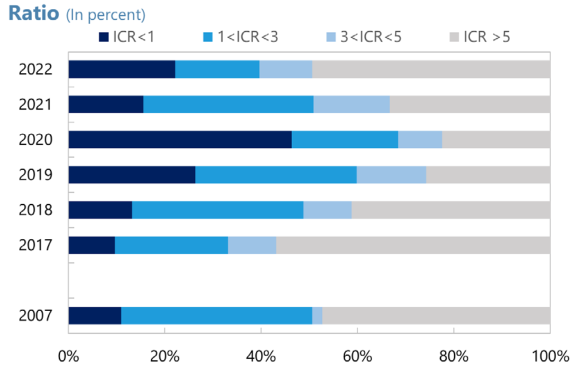
Source: Bank of Korea financial stability report, June 2023.
Note: 1) Based on financial institutions with real estate PF loans. 2) For insurance companies, based on figures before the introduction of K-ICS. 3) The dotted line refers to the regulatory standard capital ratio for each finacial sector.

Annex VII. Corporate Sector Vulnerabilities[1]

A high share of debt in firms at risk of insolvency leaves the corporate sector in Korea vulnerable to tightening domestic and global financial conditions. Vulnerabilities are concentrated in a few sectors which bear close monitoring going forward.

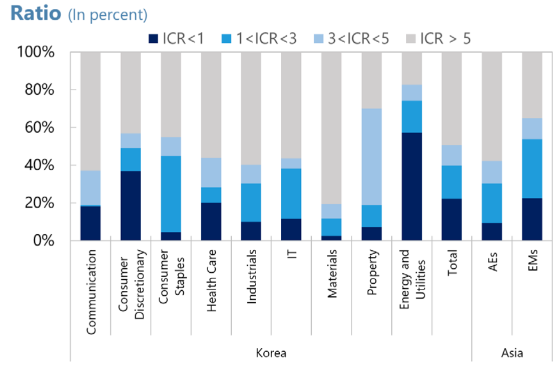
1. **The corporate sector in Korea entered the global tightening cycle with elevated vulnerabilities.** The share of corporate debt held by firms with low interest coverage ratios (ICRs) peaked during the pandemic, but has been recovering since.[2] However, the share of debt in firms with ICRs below one, and thus at risk of insolvency, in 2022 was higher than pre-pandemic averages, and well above pre-GFC levels. The concentration of debt in firms with low ICRs was higher in Korea than in other Asian advanced economies, and was especially elevated in the energy and utilities, and consumer discretionary sectors.[3] As interest costs increase following the tightening of monetary policy and global financial conditions, firms with already-low ICRs are especially exposed.

Distribution of Corporate Debt by Firm Interest Coverage Ratio (In percent)



Sources: Capital IQ; and IMF staff calculations.

Distribution of Corporate Debt by Firm Interest Coverage Ratio (In percent)



Sources: Capital IQ; and IMF staff calculations.

2. **The reliance on short-term debt may exacerbate vulnerabilities, but sizable cash holdings provide cushions.** Reliance on short term debt (maturing within one year) is higher in Korea than in peers, suggesting higher susceptibility to rising interest costs. Meanwhile, cash liquidity ratios are high – though below other advanced economies in Asia – suggesting sufficient systemic liquidity to fully cover short-term debt and interest costs in case of a credit crunch.[4] Nonetheless, in the property and consumer staples sectors, low cash liquidity ratios and high reliance on short-term debt imply elevated vulnerabilities.

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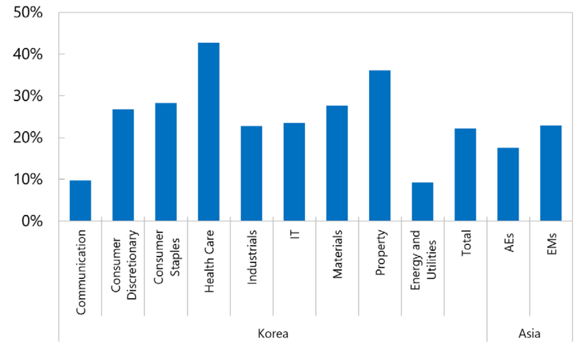
[1] Prepared by Monica Petrescu (APD).

[2] Analysis in this Annex is based on firm balance sheet data from Capital IQ through 2022 Q2. The database covers only publicly listed firms, and as such this analysis is not representative of small and medium size enterprises.

[3] If excluding KEPCO, a public energy company, the share of debt in firms with ICRs below 1 will drop significantly in the energy and utilities sector in Korea. KEPCO recorded operating losses in 2021-2022, absorbing the shock of a rapid rise in energy prices.

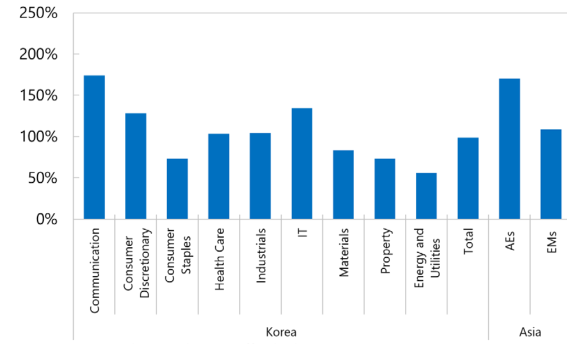
[4] The cash liquidity ratio is defined as the ratio of cash and cash equivalents to annual interest costs plus short-term debt. A range of 0.5-1 is generally considered adequate.

Short-term Debt
(In percent of total debt in 2022Q2)



Sources: Capital IQ; and IMF staff calculations.

Cash Liquidity Ratio
(In percent; cash as percent of interest plus short-term debt in 2022Q2)



Sources: Capital IQ; and IMF staff calculations.

3. **To assess the resilience of the corporate sector, we consider how firms' ICRs and liquidity ratios would evolve under downside scenarios.** The scenarios are applied on top of a baseline where earnings and interest costs move in line with nominal growth and policy rates in Korea, respectively.[5] As outlined in the April 2023 World Economic Outlook, the *plausible alternative scenario* includes moderate further tightening in corporate credit spreads (150 bps) and minimal impact on earnings; the *severe downside scenario* (a global credit crunch) envisions a substantial increase in corporate spreads and sovereign premia (around 450 bps), and a stronger hit on corporate earnings[6]. In either scenario, the impact of higher interest costs varies with the maturity structure of debt, assuming all short-term debt and a fifth of long-term debt are affected. For firms where interest costs rise above earnings, cash holdings decline accordingly.

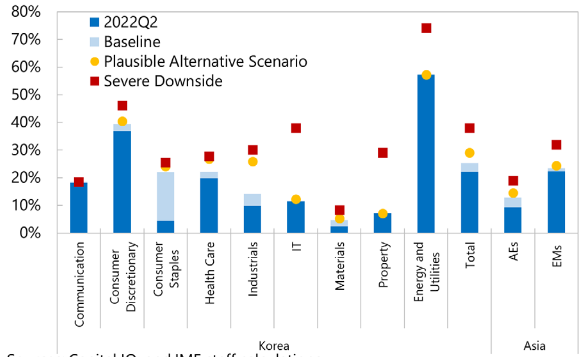
4. **Stress tests reveal pockets of vulnerability that warrant close monitoring.** Under both the baseline and plausible alternative scenarios, the share of debt in firms with ICRs below one remains contained, except in the consumer staples and industrial sectors. However, under a severe downside scenario, the share of debt in firms with low ICRs spikes in both the IT and the property sectors. The share of debt concentrated in firms with *both* liquidity and solvency risks – firms with ICRs below one and cash liquidity ratios below 0.5 –is well above that of advanced Asia, and particularly high in the energy and utilities sector.

[5] Given corporate balance sheet data covers through 2022Q2, baseline earnings and interest costs are projected based on the evolution of nominal growth and policy rates since 2022Q2 and 2022Q1 respectively.

[6] See Asia and Pacific Regional Economic Outlook April 2023 Box 2 for further details on calibration. Corporate earnings are assumed to evolve in line with nominal growth in the plausible alternative scenario (~0.5 percent below the baseline forecast), and slower than nominal growth in the severe downside scenario, in line with previous recessions.

Debt in Firms with ICR <1

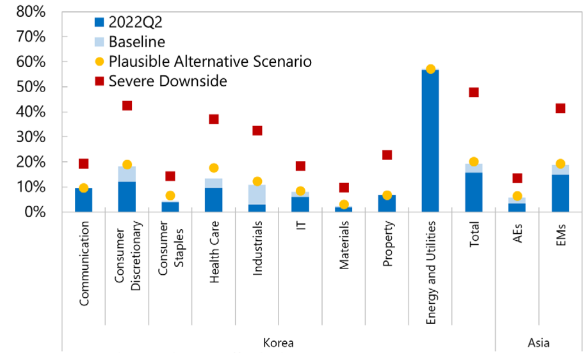
(In percent of corporate debt)



Sources: Capital IQ; and IMF staff calculations.

Debt in Firms with ICR <0.5

(In percent of corporate debt)

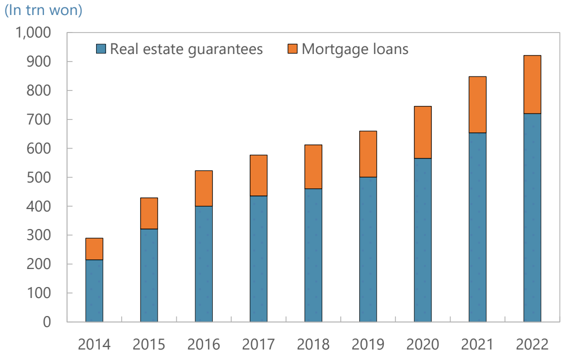


Sources: Capital IQ; and IMF staff calculations.

Annex VIII. Stress Testing Housing Guarantee Companies in Korea[1]

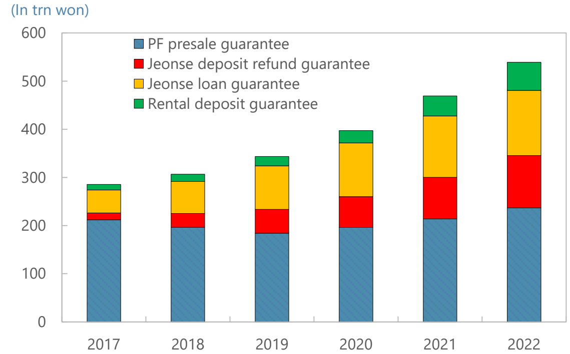
1. **Real estate exposures of public guarantee companies have significantly increased.** As of end-2022, total real estate-related public guarantees recorded over 700 trillion won, while policy mortgage loans reached over 200 trillion won, together accounting for about 45 percent of GDP. The recent increase is primarily driven by Jeonse-related guarantees, mainly reflecting the pandemic-era housing price surge. However, the housing market turned in mid-2022, with sharp drops in prices and transactions in 2022H2, before stabilizing more recently.

Real Estate Exposures of Public Guarantee Companies
(In trn won)



Source: BoK Financial Stability Report, June 2023.

Real Estate-Related Public Guarantees by Types
(In trn won)



Source: BoK Financial Stability Report, June 2023.

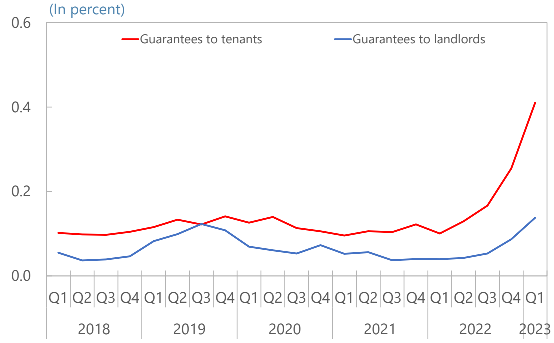
2. **Following the housing price adjustment, credit risk of real estate exposures is rising, although the recent market stabilization may alleviate default concerns.** Equity capital of the guarantee companies is equivalent to only a small share of outstanding real estate exposures, limiting their loss absorption capacities. Jeonse-related guarantee default claims have increased, albeit from a low base.[2] Default risks are expected to further increase in the near term as those Jeonse contracts that were signed at the housing price peak (2021H2) are ending in 2023H2. With Jeonse prices now significantly below peak levels, landlords may need to return a significantly higher deposit to the departing tenant than the deposit they can receive from the incoming tenant. According to BoK estimates (as of June 2023), the resulting Jeonse deposit gap during 2023-2024 amounts to about 44 trillion won (2 percent of GDP).[3] In addition, risks related to project financing (PF) remain significant, given large inventories of unsold housing and increased delinquency rate. Meanwhile, the delinquency rate of mortgage loans has also inched up, although from a very low level.

[1] Prepared by Thierry Tressel (MCM) and Xin Cindy Xu (APD).

[2] A significant share of Jeonse deposits is secured with guarantees from public companies. Partial or complete defaults of landlords on Jeonse deposits trigger the guarantee and can generate a loss for guarantee companies.

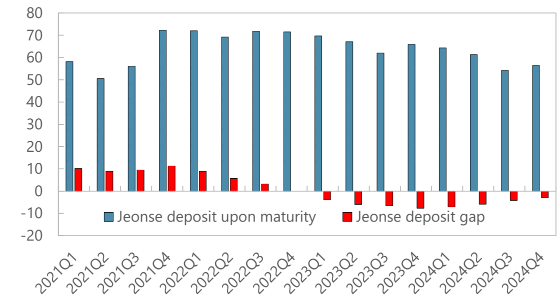
[3] The gap is calculated as net *Jeonse* deposits (deposits from new tenants less deposits owed to existing tenants) that landlords must return to lessees at maturity of *Jeonse* contracts.

Default Rates of Public Housing Guarantees
(In percent)



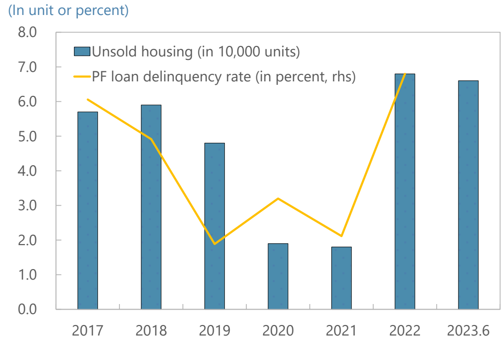
Source: Data provided by individual companies and IMF staff calculations.
Note: Default rate is calculatated as quarterly default amount/total outstanding exposures.

Estimated Jeonse Deposit Return Burden
(In trn won)



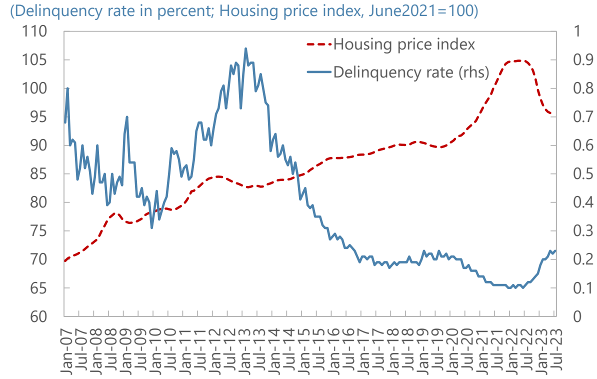
Source: BoK Financial Stability Report, June 2023.
Note: Gap is the difference between the estimated Jeonse deposit amount under a new contract and the deposit to be returned under previous contract.

Unsold Housing Inventory and PF Loan Delinquency Rate
(In unit or percent)



Sources: : BoK Financial Stability Report, June 2023; CEIC.

Housing Price and Mortgage Loan Delinquency Rates
(Delinquency rate in percent; Housing price index, June2021=100)



Source: CEIC.

3. Stress tests help gauge the extent to which these companies have sufficient capital buffers to weather shocks arising from the Jeonse deposit market.[4] A sharp decline in Jeonse deposit prices increases the burden on, and could potentially cause the inability of, landlords to reimburse deposits to tenants. Partial or complete defaults of landlords (causing a "deposit repayment shortfall") triggers the guarantee and can generate a loss for the guarantee companies. We explore stress tests to assess whether, after occurring losses and taking into recovery rates, these companies have sufficient capital to sustain the existing level of guarantees (as of end-2022), or whether they face a capital shortfall.[5]

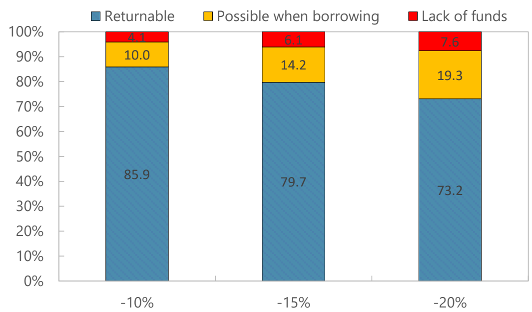
4. Drawing on the Financial Stability Report (FSR) of the BoK (June 2023), we consider three stress scenarios. These are based on declines of 10, 15, and 20 percent in Jeonse deposit prices from the March-2023 level. The baseline assumption is a 1.1 percent price decline, capturing price developments during April-July 2023. The FSR also estimates the share of landlords unable to

[4] This is a top-down exercise based on aggregate exposures by companies, which are not able to capture detailed information of individual guarantee contracts.

[5] The companies are subject to a maximum ratio of outstanding guarantees to capital.

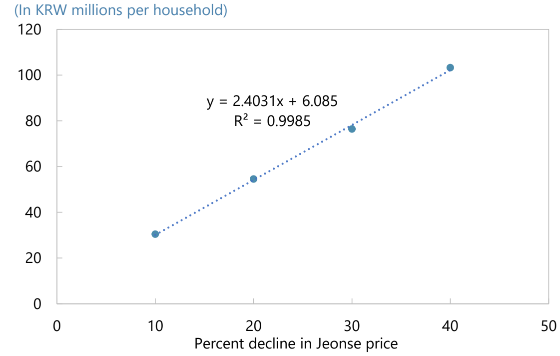
return the entire Jeonse deposit and the average shortfall amount under each scenario.[6] Under stress scenarios, a non-negligeable share of landlords lack funds to return the entire deposits. The larger the decline in Jeonse deposit prices, the larger the average deposit shortfall per landlord. We estimate the losses of each guarantee company under two different assumptions: (i) the default rates are those from the FSR and are common across the three companies; (ii) the default rates are specific to each guarantee company, benchmarked to their 2022 average default rates, and rescaled so that the aggregate default rate matches the one of each scenario.

Jeonse Deposit Repayments under Jeonse Price Senarios
(In percent of total Jeonse deposits)



Source: BoK Financial Stability Report, June 2023.

Average Jeonse Deposit Shortfalls
(In KRW millions per household)



Sources: BoK Financial Stability Report and IMF staff estimates.

5. **A significant amount of capital would be depleted under stress scenarios.** The aggregate unrecovered claims range from 6.1 to 20.8 percent of aggregate capital of three companies depending on the price scenario.[7] The total aggregate capital shortfall (the amount of capital missing to sustain the same level of aggregate guarantees as at the end of 2022) is estimated at 1.0-3.5 trillion won under different price scenarios.

Jeonse Deposits: Unrecovered Claims and Capital Shortfalls [1/]

In percent of capital	Baseline	10 percent decline	15 percent decline	20 percent decline
			Uncovered Claims	
Common default rates [2/]	0.5	6.1	12.6	20.3
Company specific default rates [3/]	0.5	6.3	12.9	20.8
In KRW trn			**Aggregate Capital Shortfalls**	
Common default rates [4/]	0.3	1.2	2.2	3.5
Company specific default rates [5/]	0.3	1.0	1.9	3.0

Sources: KHFC, KHUG, SGI, Investor Rreports, BoK Financial Stability Report and IMF staff estimates.
1/ The table reports the aggregate unrecovered claims of the three insurance companies in percent of aggregate capital and the aggregate capital shortfalls across the three insurance companies
2/ Same default rates on Jeonse deposits (from macro scenarios) across all three insurance companies
3/ Default rates are made specific to each insurance company, by rescaling aggregate default rates based on each company's 2022 default rates
4/ Same default rates on Jeonse deposits (from macro scenarios) across all three insurance companies
5/ Default rates are made specific to each insurance company, by rescaling aggregate default rates based on each company's 2022 default rates

[6] The average deposit shortfalls per households and the number of Jeonse landlords are from the scenarios of the December 2022 FSR. A linear interpolation is used to estimate the deposit shortfalls under our stress scenario.

[7] Aggregate capital includes the base capital of KHFC's credit guarantee fund and equity capital of KHUG and SGI as of end-2022.

6. **A rise of PF default rates would further deplete capital of guarantee companies.** In an extreme tail risk scenario assuming that the PF default rates would rise to the historical peak level (about 1.2 percent in 2012), the implied capital loss is 2.1 trillion won, 13.5 percent of aggregate capital.

Impact of Housing Price Shocks on Project Financing Guarantees

Scenarios	Default rates	Uncovered loss in trn	Uncovered loss in % of base capital
Half of historical peak defaults	0.6	1.0	6.8
Historical peak defaults	1.2	2.1	13.5

Sources: Data provided by individual companies and IMF staff estimates.

7. **Empirical analysis suggests that mortgage default rates remain low even under severe shocks.** According to regression analysis, the estimated impact on mortgage default rates under adverse price shocks is relatively small. Even under the most extreme scenario, the implied increase in the mortgage default rate is limited, reflecting low and stable historical default rates, and the estimated capital losses are modest.

Regressions on Drivers of Mortgage Default Rates

	Mortgage Default Rates			
Variables	(1)	(2)	(3)	(4)
Housing price	-0.0189***	-0.0193***	-0.0193***	0.000723
	(0.00244)	(0.00336)	(0.00339)	(0.00152)
Mortgage rate		0.0542**	0.0567**	0.0135
		(0.0260)	(0.0266)	(0.00964)
GDP growth			-0.00619	0.00581
			(0.0115)	(0.00406)
Constant	2.022***	1.869***	1.882***	-0.124
	(0.211)	(0.355)	(0.358)	(0.156)
Observations	65	57	57	42
R-squared	0.488	0.543	0.545	0.962

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Guarantee Companies' Mortage Loan Loss Under Shocks

Price changes from Mar-2023	Uncovered loss in trn won	Uncovered loss in pct of equity capital
Baseline (-1 percent decline)	0.01	0.20
10 percent decline	0.08	1.99
15 percent decline	0.12	2.98
20 percent decline	0.16	3.98

Note: Assuming recovery rate of mortgage loans at 80% (FSAP assumption).

8. **While systemic concerns seem limited, the loss absorption capacity of housing guarantee companies should be bolstered.** Stress tests suggest that capital would be eroded under adverse price shocks. The implied fiscal contingent liabilities related to public guarantee companies are modest though, with the estimated fiscal cost of recapitalization about ¼ percent of GDP in the most adverse scenario. Such a scenario is based on extreme assumptions that have a low probability of materializing, in part because the Jeonse market has been stabilizing and the authorities have adopted measures to enhance the financial management of individual PF projects.

9. **The authorities have announced measures to enhance the financial soundness of public guarantee companies.** The recent tightening of regulations on the Jeonse price cap for issuing new guarantees is expected to significantly reduce default rates of Jeonse guarantees from 2025 onwards. The government's planned capital injection for a public guarantee company is expected to boost its loss absorption capacity. The statutory operating multiple (the ratio of outstanding guarantees to capital) should be maintained to ensure adequate capital buffers.

Annex IX. FSAP Key Recommendations

Recommendations	Agency	Description of Actions Taken
More Robust Identification of Systemic Risk Conditions		
Conduct an **impact assessment of the 'open banking system' and e-money** on security and operational risks and market structure	FSC/FSS and BoK	▪ The FSC/FSS drew up measures to improve open banking system, including ways to enhance security on October 21, 2020. ▪ The FSC has been working on open banking legislation which includes duties and requirements for organizations using or participating in the system, etc. In this regard, the amendment of the Electronic Financial Transactions Act was proposed to the National Assembly on November 27, 2020. The FSC introduced periodic and non-periodic inspections of fintech companies and established a system/framework for inspecting cyber security system of financial institutions on December 22, 2021. ▪ The FSS has monitored cyber security risks related to open banking system. - Banks and electronic financial service providers offering open banking services (54 in total) in the end of 2020 were subject to inspections (conducted from February to April 2021) on their operation of open banking services.
Assess the potential **rollover risk implied by the Jeonse leasehold system** and its connectedness to securities companies	FSC/FSS and BoK	▪ The FSC announced measures to strengthen household debt management in October 2021, which includes improving DSR rules on individual borrowers in order to establish lending practice based on borrowers' debt-servicing capabilities. The FSS has been identifying areas/regions where *Jeonse* deposit-related risks could occur. The FSS has also been carrying out constant monitoring on these areas/regions.
Enhance **stress testing** practices to better estimate vulnerabilities relating to nonperforming loan (NPL) sales, FX and domestic household liquidity, SME loans, securities intermediaries activities, and sovereign contingent liabilities	BoK and FSC/FSS	▪ Considering the scheduled unwinding of temporary deregulatory measures (lowering FX LCR from 80% to 70%), the FSS plans to revise FX liquidity stress testing under Basel Ⅲ LCR framework. ▪ In line with FSAP recommendations, the FSS has improved the top-down stress testing methodology by developing K-IFRS compatible lifetime expected credit loss models. ▪ It is planned to further improve stress testing methods in the mid-and long-term by collecting related data.

Recommendations	Agency	Description of Actions Taken
Strengthening the Preemptive Management of Systemic Vulnerabilities		
Strengthen the **institutional framework for financial stability** by assigning the MEFM (or a body empowered for the equivalent purpose) macroprudential oversight as its sole primary objective	MOEF, FSC and BoK	▪ The Macroeconomic and Finance Meeting, the meeting in which the agencies concerned with macroeconomic affairs gather and discuss, is operated in Korea with the sole primary objective of analyzing and enhancing macro-prudence. ▪ Furthermore, taking IMF's recommendation into account, the meeting has become a regular affair to discuss the way to enhance macro-prudence. ▪ In light of recent economic circumstances, the 'Emergency Meeting on Macroeconomic and Financial Stability', which is presided over by the minister, was newly launched in addition to the existing meeting presided over by the vice minister.
Widen the **definition of financial holding company** and enhance legal powers to cover all financial conglomerates, including requirements for group- wide liquidity risks and contingency plans	MOEF and FSC/FSS	▪ The Act on Supervision of Financial Groups took effect in June 2021. With the aim of strengthening supervision of non-holding financial conglomerates, the Act contains provisions related to (i) tightened internal control and risk management and (ii) solvency management (contagion risks and concentration risks, etc.), including the supervision of capital adequacy. Under the Act, it is required to submit and implement a management improvement plan in case of group-wide risks. Financial holding groups are already subject to similar measures under the Financial Holding Companies Act. ▪ The FSC and the FSS have been working on liquidity regulations that would be consistent with BCBS recommendations (LCR and NSFR) for bank holding companies and legislation of the revised supervisory regulations and enforcement decrees.
Implement a **Sectoral CCyB framework** for secured and unsecured household exposures of the banking sector	FSC/FSS and BoK	▪ The FSC/FSS is considering measures to require banks to set aside additional capital in proportion to their household assets ranging from 0% to 2.5% of the total risk-weighted assets. ▪ With the growth of household loans slowing down, the FSC/FSS is monitoring macroeconomic developments to determine the adoption and timing of enforcement. ▪ FSC also raised the countercyclical capital buffer (CCyB) requirement for banks and bank holding groups from zero to one percent of total risk-weighted assets beginning on May 2024.

Recommendations	Agency	Description of Actions Taken
Intensifying Supervision and Promoting a Level Playing Field		
Review the **role of state-controlled banks** and ensure that their commercial lending and investment activities conform, at a minimum, with prudential requirements for nationwide banks	FSC/FSS	▪ To improve the resiliency of state-controlled banks with regard to the management of lending and investment activities, the Korea Development Bank and Industrial Bank of Korea adopted the Basel Ⅲ framework for credit risk in December 2020, and finalized the implementation of Basel III in January 2023 with the same prudential requirements as for nationwide banks.
Increase **risk-based supervisory intensity of insurers,** ensure a prudent and proportionate implementation of Korea Insurance Capital Standard (K-ICS) (solvency regime) and design of the capital charge for longevity risks	FSC/FSS	▪ The FSC/FSS announced the final version of Korean-Insurance Capital Standard (K-ICS) and implemented K-ICS in 2023. ▪ K-ICS evaluates assets and liabilities at fair value including insurance liabilities and adds new insurance risks such as longevity risks. ▪ The FSS changed the method of measuring required capital from risk coefficient to stress approach, and increased the risk confidence levels from 99% to 99.5%. ▪ The FSS plans to support the stable establishment of K-ICS in 2023 and examine how insurance companies apply K-ICS and analyze the impact of its application.
Focus the **role of the FSC** towards strategy, addressing nonbank data gaps, market development policies, and crisis preparedness while assigning greater operational and enforcement authority to the FSS	MOEF and FSC/FSS	▪ The FSC is responsible for formulating financial policies, supervising financial institutions, and financial markets, protecting consumers, and advancing Korea's financial industry. ▪ On the other hand, the FSS examines and supervises financial institutions under the oversight and guidance of the FSC as per the Act on the Establishment, etc. of Financial Services Commission. The FSC and FSS will closely cooperate with each other to address financial issues in a timely and harmonious way while playing their own roles as stipulated in the Act.
Support the development of **pension and contractual savings products** by introducing multi-employer pension schemes and building further capacity for oversight of pension funds market	MOEL, MOHW	

Recommendations	Agency	Description of Actions Taken
Reinforcing Crisis Management, Safety Nets, Resolution Arrangements		
Include **cross-border activities and overseas operations of financial conglomerates** in resolution plans, clarify issues relating to resolvability, and relationship between ELA and resolution funding	FSC/FSS	The Recovery and Resolution Plans (RRP) for financial holding companies and banks came into effect in June 2021. Since then, two cycles of RRP are completed. The third cycle will commence during the second half of 2023. - Issues regarding cross-border activities/operations are included in FSC's deliberation standards on RRP and resolution plans developed by the Korea Deposit Insurance Corporation (KDIC). - If financial institutions fail to meet FSC's deliberation standards on RRP, the FSC may require them to supplement and address issues/challenges in accordance with the law. ▪ Pursuant to the amendment of the Act on the Structural Improvement of the Financial Industry (December 2020), D-SIFIs are required to draw up their own recovery plans, and Korea Deposit Insurance Corporation draws up the resolution plans as recommended by the Financial Stability Board. These requirements came into effect in June 2021. The FSS develops evaluation reports on the recovery plans prepared by D-SIFIs, and the FSC approves the recovery plans based on the evaluation reports.
Strengthen the ***insolvency and creditor's* rights regime** through well- resourced courts and a functioning insolvency practitioners' profession	MoJ	▪ The Act on the Establishment and Jurisdiction of Courts of Various Levels was revised in December 2022, and Suwon Bankruptcy Court and Busan Bankruptcy Court will be established to provide residents in each jurisdiction with specialized and faster judicial service regarding rehabilitation and bankruptcy cases. ▪ The Debtor Rehabilitation and Bankruptcy Act was revised in December 2022 to permit overlapping jurisdictions and allow debtors to file rehabilitation cases, simplified rehabilitation cases, bankruptcy cases, or individual rehabilitation cases in Busan Bankruptcy Court if they reside in or their main offices are in Ulsan Metropolitan City or Gyeongsangnam-do (South Gyeongsang Province).

Annex X. Pension Reform Options to Cope with Rapid Aging[1]

1. **Korea has one of the fastest aging populations among OECD countries.** Once the OECD country with the youngest population, with an old-age dependency ratio of 8 in 1990, Korea is projected to become the oldest OECD country by 2050, with an old-age dependency ratio of 80, surpassing even Japan, which is currently the oldest OECD country.

2. **Rapid aging has led to upward pressure on pension spending, albeit from low levels.** Because the Korean pension system is still maturing, spending has increased from 1.8 percent to 4.0 percent of GDP between 2009 and 2022.[2] The main scheme, the National Pension Scheme (NPS), is expected to go into deficit in 2041 and deplete its assets by 2055, despite legislated reductions of replacement rates and increases in the retirement age.[3] The second largest scheme, the Government Employee Pension Scheme (GEPS), is already running deficits, however, at the same time its assets (other than their investment proceeds) are not used to cover these deficits.

3. **Benefit adequacy in Korea is still lagging, resulting in relatively high old-age poverty rates.** At the introduction of the NPS, no entitlements were retroactively calculated for past earnings, leading to few beneficiaries and relatively low average pension benefits of KRW 586,000 per month in 2022 (15 percent of the average wage).[4] In 2019, 43 percent of the population aged 65+ lived in relative poverty, constituting the highest relative poverty rate among OECD countries.

4. **The replacement rates promised by the Korean pension system for private sector workers are low by international standards.** The Korean pension system produces a future theoretical replacement rate of 31 percent for a full career average wage earner, compared to 52 percent for the OECD on average.[5] Replacement rates for low earners (half the average wage) are significantly higher at 43 percent, while higher earners (twice the average wage) have a replacement rate of 19 percent, reflecting the redistributive nature of the NPS benefit formula.

5. **To reduce old-age poverty, a non-contributory social pension (the Basic Pension) was introduced in 2008.** The Basic Pension covers the poorest 70 percent of the elderly population. Retirees can access the Basic Pension from age 65. The amount is dependent on household income and is means-tested against the part of the NPS benefit that is linked to the average income of national pension subscribers over the past three years(making the Basic Pension less redistributive than typical social pensions).

6. **Contribution rates in Korea are low in international comparison.** Korea has a contribution rate of 9 percent, while the contribution rate for the OECD on average is 18 percent

[1] Prepared by Boele Bonthuis and Zsuzsa Munkacsi (both FAD), with inputs from Daniel Baksa (ICD).

[2] Includes: NPS, special regimes and the Basic Pension.

[3] Fiscal outlook of public pension reform measures, National Assembly Budget Policy Office, 2023.

[4] Beneficiaries increased from 27-71 percent of the elderly population between 2003-2022.

[5] Pensions at a Glance 2021, OECD.

(Figure 1A). Only Mexico and Lithuania have a lower contribution rate, and Mexico is in the process of raising it to 15 percent.

7. The retirement age is currently below the OECD average and will remain below average in the future despite reaching 65 years. The current retirement age of 62 is well below the average retirement age of 64 in the OECD (Figure 1B). While the retirement age catches up somewhat with the average of the OECD in the future, it remains low, especially considering the relatively high life expectancy in Korea.

8. A dynamic general equilibrium model called OGRE is applied to estimate the macroeconomic and fiscal impact of aging and pension policies in Korea.[6] Macroeconomic parameters are calibrated to match the long-run properties of the Korean economy, such as the consumption-to-GDP and investment-to-GDP ratios. Several fiscal variables were also targeted, based on government consumption, investment and taxes as a share of GDP.

9. The baseline includes demographic projections by the United Nations and already legislated future pension reforms. Under the baseline, the effective old-age dependency ratio[7] goes up from 25 to 110 percent between 2021 and 2075. In addition, the retirement age will increase by 3 more years (by 2033), and because accrual rates are decreasing, the replacement rate will decrease by 5 percentage points (by 2075).

10. The impact of aging on the public debt-to-GDP ratio is estimated to be large in the baseline. By 2075, public debt-to-GDP would be projected to go up by around 200 percent (Figure 2) despite the legislated future pension reforms. Such a hike in public debt would be accompanied by a severe drop in GDP per capita. Two caveats are important to be highlighted: (i) this figure is a result of a no-policy assumption, that is, it is solely the impact of the demographic change but assumes no change in public or pension policies for more than 50 years, and (ii) the NPS does not have an explicit government guarantee, while the model assumes that the government covers the deficits.

11. Several pension policies are considered to stabilize the public debt-to-GDP ratio: a retirement age increase, a lower pension replacement rate, higher social security contributions and a combination of all three. The adjustments need to be large to stabilize the debt-to-GDP ratio if each policy lever is used in isolation (Table 1). Neither a retirement age increase of 6 years nor halving the replacement rate would be enough to compensate the debt increase in the long run. A 13.8 percentage point higher social security contribution rate would stabilize the debt ratio. None of these policies in isolation seem feasible from a political economy or social point of view.

12. A combination of smaller adjustments of multiple parameters may be better manageable. Table 1 shows some examples, although exact numbers should be carefully calibrated to reflect social preferences. While a higher contribution rate and retirement age would bring Korea

[6] The latest publication presenting OGRE can be found here in Baksa Munkacsi and Nerlich (2020).

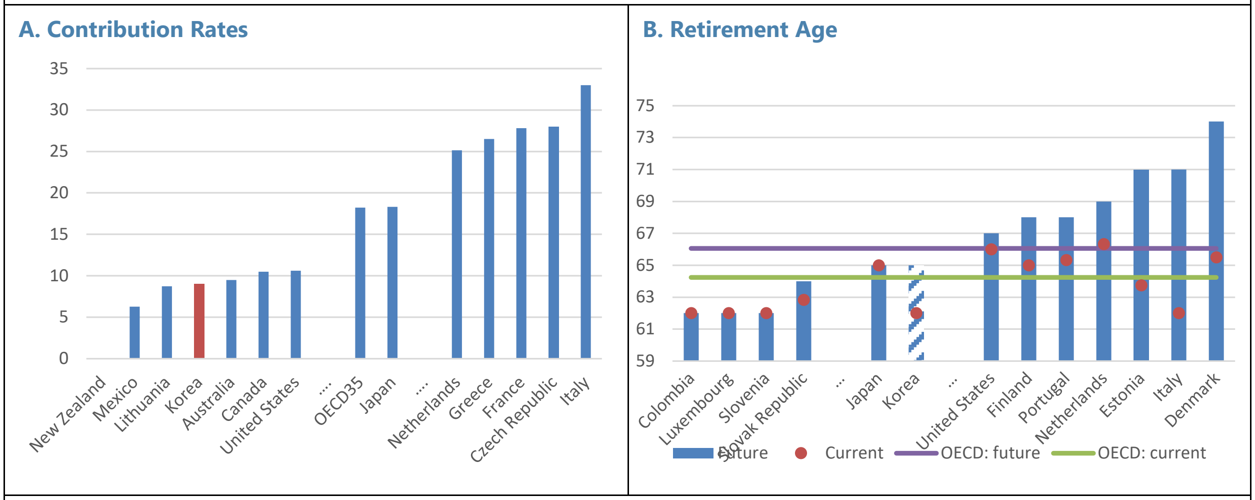
[7] The ratio of the number of people above the effective retirement age (based on the OECD's effective retirement age) compared to the working age population (older than 20 years).

more in line with the OECD average,[8] a lower replacement rate would negatively affect benefit adequacy and would likely only be considered in combination with an increase in the Basic Pension (not modeled).

13. Apart from raising the contribution rate and the retirement age, there are other options to improve the design, equity and fiscal sustainability of the Korean pension system:

- **The role of the NPS and the Basic Pension can be recalibrated.** The NPS is relatively redistributive while the Basic Pension redistributes less than typical social pensions. This leaves space to reduce the benefit levels of the NPS by reducing the weight of the average income of national pension subscribers over the past three years (A-salary), while replacing these benefits with increased Basic Pension benefit levels, means-tested against total old-age income (instead of just the A-value). The recalibration would essentially be a simplification of the pension system and a change of revenue sources, while the reform on aggregate can be largely beneficial and fiscally neutral. In combination with mandatory contributions after the age of 60, this could even improve benefit adequacy.
- **The special pension regimes can be integrated in the NPS.** Running separate schemes for different sectors raises equity concerns, can hinder labor market mobility, and is administratively inefficient. Over the medium term, a gradual convergence of rules between the NPS and special occupational schemes could facilitate an eventual consolidation of pension schemes into a single scheme. A careful assessment of liabilities and future contribution revenue will be necessary before a full integration. To improve the governance of the GEPS, it would be beneficial to use assets before using budget transfers to cover deficits and to consider recalibrating the GEPS mandate to focus on pension administration before eventually integrating it into the NPS.

Figure 1. Reform Options



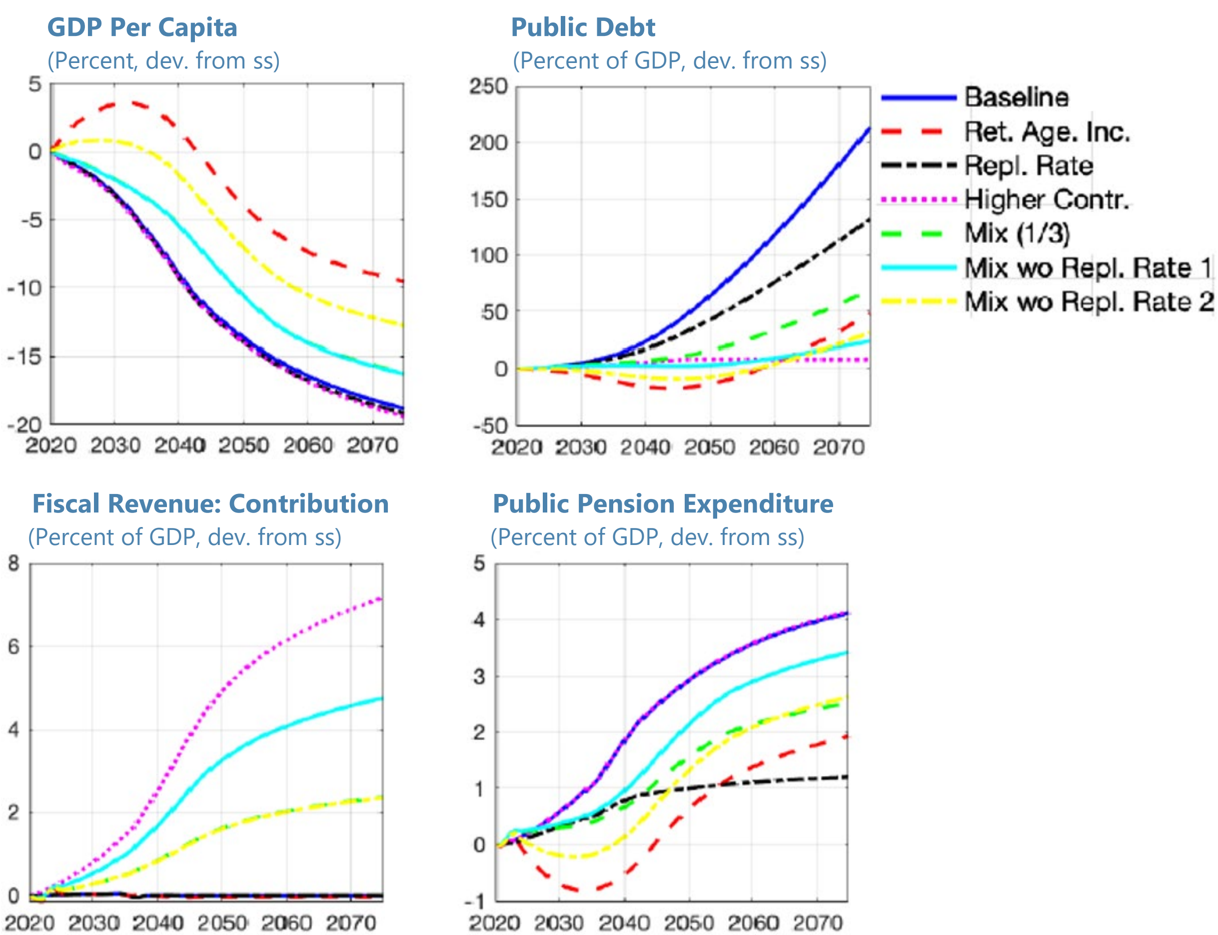
Source: OECD (2021).

[8] An additional retirement age increase of 2 years by 2070 would be equivalent to linking the retirement age to life expectancy gains at age 65 from 2035 onwards.

Table 1. Fiscal Instruments to Stabilize the Public Debt-to-GDP Ratio

Variable	Measurement	Steady-state level	Higher retirement age	Higher contribution rate	Lower replacement rate	Mix of policies (example 1)	Mix of policies (example 2)	Mix of policies (example 3)
Retirement age	Year	67.9	6	0	0	2	2	4
Contribution rate (employee + employer)	Percentage point	12.8	0	13.8	0	4.6	9.2	4.6
Gross replacement rate	Percent (as a share of wage)	22	0	0	-10	-3.3	0	0

Figure 2. Macro and Fiscal Impact of Aging and Pension Policies 50 Years Ahead



Source: IMF staff calculations.

Annex XI. Advancing Labor Market Reforms in Korea[1]

1. **High labor market rigidity is a long-standing issue in Korea** (Figure 1). Employment protection is stronger than the OECD average, with more restrictive regulations on individual dismissals. Non-regular workers account for a significant share of total employment, among the highest in the OECD, with lower wages, fewer benefits, and less job security compared to regular workers, indicative of high labor market duality. Public spending on social protection is among the lowest in OECD, notably on pensions, labor markets, and support for vulnerable groups. The wage system is seniority-based rather than performance-based, with the flexibility of wage determination relatively lower than in other advanced economies. In addition, Korea is among the most overworked countries in the OECD, with long working hours and inflexible working hour arrangements.

2. **The authorities have prioritized reforms to improve labor market flexibility.** They have announced a three-pillar reform plan, including more flexible working hours, switching to a performance-based pay system, and tackling labor market duality. The announced working hour reform in March 2023, which envisaged reducing restrictive regulations on weekly working hours while limiting overtime over longer time intervals, faced pushback from younger workers. The authorities are working on a revised reform proposal, incorporating public opinion from a recent survey. Detailed plans are still being formulated in the other two reform areas.

3. **Empirical analysis shows that labor market reforms would generally pay off over the medium term when implemented under suitable economic and policy conditions.** Following work by Duval and Furceri (2018), we explore local projection techniques to assess the dynamic macroeconomic effects of key labor market reforms across OECD countries during 1970-2020. Our analysis finds that labor market reforms generally raise output and employment in the medium term, but the effects differ with prevailing macroeconomic conditions and policies. Specifically:

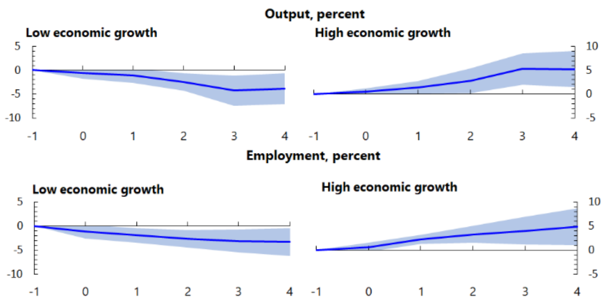
- **Easing employment protection legislation (EPL) on regular workers has positive effects in good times but could become contractionary in periods of slack.** A major EPL reform on regular workers during economic expansions increases both output and employment by about 5 percent on average over the medium term. For countries with high duality (measured by a high share of temporary workers) including Korea, the reform effects on output and employment would increase to about 6 percent.

- **In contrast, ALMPs and labor tax wedge reforms yield more positive impacts during periods of low growth.** These reforms often involve fiscal stimulus that is generally more effective during recessions. With a 10 percent increase in ALMP spending, the output level improves by 1.1 percent on average over the medium term. Similarly, a one percentage point reduction in the labor tax wedge could raise output by 0.6 percent on average.

[1] Prepared by Stella Tam and Xin Cindy Xu (both APD).

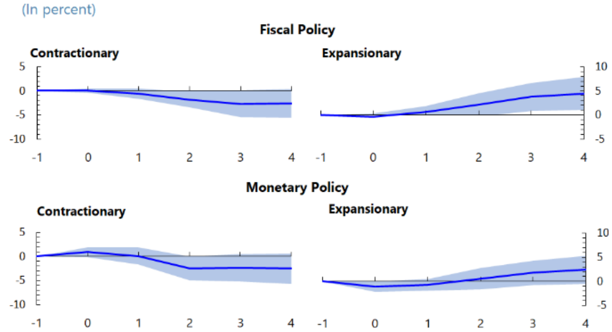
- **Labor market reforms produce higher gains when implemented alongside complementary macroeconomic policies.** Supportive fiscal and monetary policies help mitigate the short-term adverse effect of EPL reforms by facilitating efficient reallocations of labor, in addition to their direct impact on the economy.

EPL Reform Impact on Output and Employment
(In percent)



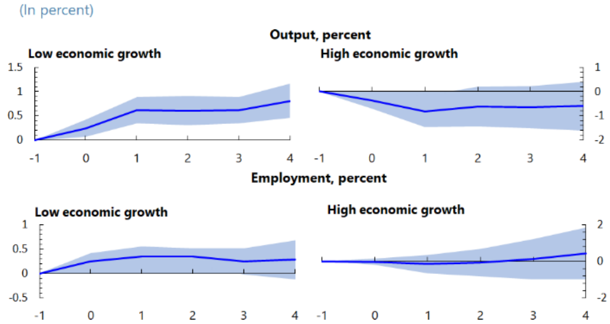
Source: IMF staff calculations;
Note: t=0 is the year of reform. Shaded areas show 90 percent confidence bands

EPL Reform Impact on Output under Different Policy Stances
(In percent)



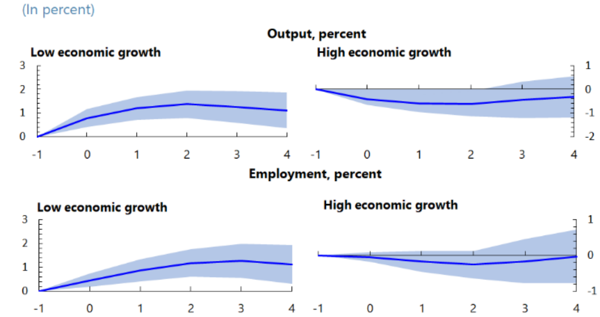
Source: IMF staff calculations;
Note: t=0 is the year of reform. Shaded areas show 90 percent confidence bands

ALMP Reform Impact on Output and Employment
(In percent)



Source: IMF staff calculations;
Note: t=0 is the year of reform. Shaded areas show 90 percent confidence bands

Labor Tax Wedges Reform Impact on Output and Employment
(In percent)



Source: IMF staff calculations;
Note: t=0 is the year of reform. Shaded areas show 90 percent confidence bands

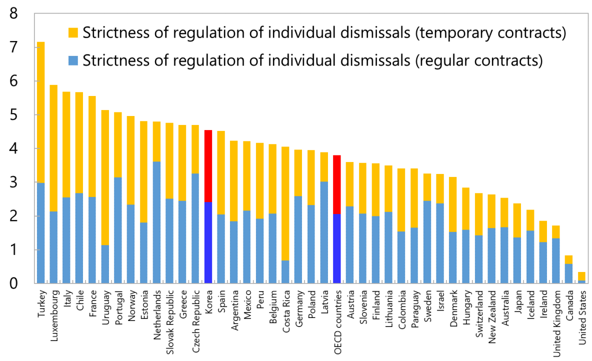
4. **The authorities' intended reforms focus on key bottleneck areas.** The authorities' reform plans touch upon several key areas where Korea lags relative to OECD peers. Concrete implementation plans are still being formulated, including the announced reforms on productivity-based pay and tackling labor market duality. The design and implementation of the work hours reform should be refined to balance the needs of workers and enterprises, ensure sufficient dialogue with stakeholders, and be carefully communicated. More balanced working-time arrangements could help improve work-life balance, encourage female labor participation, while also meeting the fast-evolving industrial demands.

5. **The sequence and prioritization of reforms should be carefully designed based on economic and policy conditions.** Guided by our empirical analysis, under the current disinflationary policy stance, reforms that are not associated with strong contractionary or inflationary impact could be prioritized. In this regard, the authorities' focus on working hours reforms is in the right direction. As growth recovers, deregulations to reduce employment protection for regular workers could be

considered, combined with a stronger social safety net and targeted support to protect vulnerable groups during the transition.

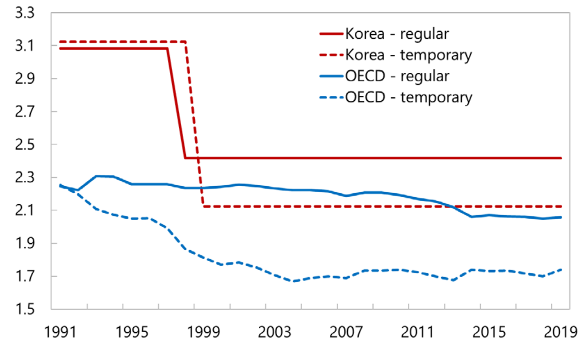
Figure 1. Labor Market Rigidity in Korea

Strictness of Employment Protection
(Index ranging from 0 to 12, with higer values indicating higher strictness)



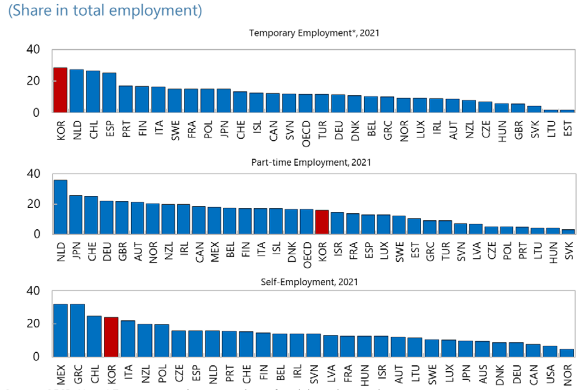
Sources: OECD.

Strictness of Employment Protection
(Index ranging from 0 to 6, with higer values indicating higher strictness)



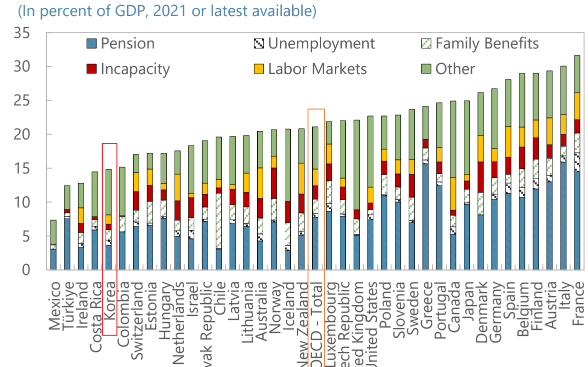
Sources: OECD.

Non-Regular Employment
(Share in total employment)



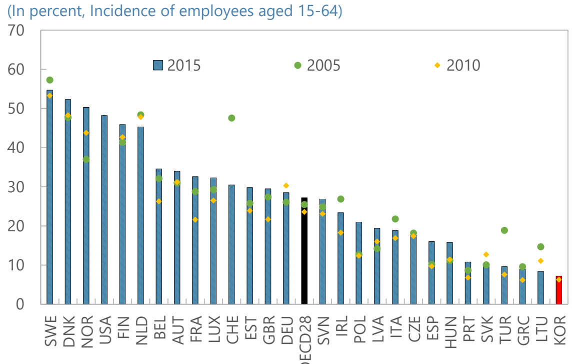
Sources: OECD. Note: * Temporary employment as share of total dependent employment.

Social Spending in OECD
(In percent of GDP, 2021 or latest available)



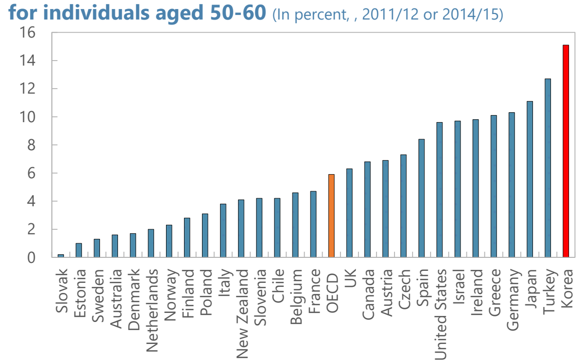
Sources: OECD.

Flexible Working Time Arrangements
(In percent, Incidence of employees aged 15-64)



Sources: OECD Employment Outlook 2021.

Predicted wage growth from 10 to 20 years of tenure for individuals aged 50-60 (In percent, , 2011/12 or 2014/15)



Sources: OECD, "Working Better with Ages", 2019.

Annex XII. Addressing Gender Gaps in the Labor Market[1]

1. Korea has the largest gender gaps among OECD advanced countries. The gender gap in labor force participation is 18 percentage points, while the gender wage gap is 31 percent. Women are disproportionately employed in non-regular jobs: while 30 percent of paid male workers hold non-regular positions, 47 percent of paid female workers are non-regular workers. Korea's working hours are the longest among OECD advanced countries, while the gender gap of working hours is less than the OECD average, indicating that Korean women face much longer working hours compared to women in peer countries. Women are disproportionately employed in less well-paid occupations, such as services and simple manual labor, whereas only 12 percent of managerial positions are held by women (Figure 1).

2. The presence of significant gender gaps in the Korean labor market is primarily rooted in social norms and structural labor market rigidities. Women generally bear a heavier burden on housework compared to men and are expected to play a larger role in childcare and education. Korea's rigid labor market with a seniority-based structure and long working hours makes it challenging for women to manage their work-life balance after childbirth. Consequently, many women opt to leave the labor force in their prime age and return to work after fulfilling childcare and educational duties when they reach their 40s and 50s. Given Korea's dual labor market structure, women returning to work after several years outside the labor force are disproportionately likely to find employment in non-regular jobs, which offer more flexibility but are less well paid and protected than regular positions. This exacerbates gender disparities in terms of job quality and career prospects, contributing to the persistence of the gender wage gap.

3. Addressing structural labor market rigidities can help close gender gaps. The Korean government has implemented a variety of policies to improve women's labor force participation, including expanding child-care support and parental leave, reducing working hours to improve the work-life balance, and providing career transition assistance for career-disrupted women. To further close the gender gaps, structural labor market problems should be addressed, as more flexible work arrangements combined with enhanced social benefits and protection for non-regular workers will help reduce disparities between the genders and the two tiers of the dual labor market.

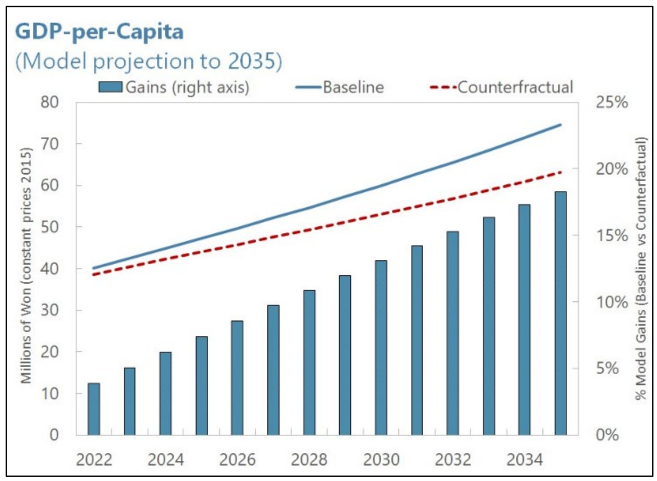
4. Addressing labor market duality can have significant benefits for output, productivity, and labor market outcomes, while reducing inequality and the gender gap. We develop a search and matching model with gendered agents and a dual labor market.[2] We study an increase in flexibility in the dual labor market by reducing firing/severance payments of regular contract workers by 10, 20, and 30 percent. We also study the effects of this policy when paired with policies that

[1] Prepared by Jorge Mondragon (SPR) and Eonyoung Park (APD).

[2] We use the framework for a dual labor market in Korea presented in *Labor Market Duality in Korea* (Schauer, 2018). We extend it to have gendered workers, differentiated by a lower likelihood for women to obtain a regular contract compared to men.

foster female labor force participation.[3] Our analysis yields four main results regarding labor force participation, unemployment, productivity, female participation in both types of contracts, and inequality (Figure 2). Reducing by 30% severance payments alone can yield a reduction in the unemployment rate by 0.5 percentage points and increase labor force participation by 0.9 percentage points for women and 0.3 percentage point for men. In addition, productivity growth increases up to 0.2 percent for men and 0.5 percent for women. Income inequality, measured by the Gini coefficient, falls by 3.4 percentage points. Women participation in nonregular contracts rises by 0.9 percentage points and in regular contracts by 0.5 percentage points. When adding into the analysis policies that foster female labor force participation, we find that female productivity increases even more, about 0.6 percent, whereas the female share of nonregular contracts falls up to 0.3 percentage point and the female share of regular contracts increases by up to 1.0 percentage point.

5. Significant gains in productivity and growth can be achieved by reducing the gender gap in the labor market to the OECD average. A gendered growth accounting exercise based on a standard growth model suggests that Korea could achieve an increase of 18.3 percent in per capita GDP (KRW 10.5 million in constant 2015 prices) by implementing policies that reduce the gender gap in terms of hours worked to the OECD average in 2035. This includes the direct increase in output from adding labor, and technology spillovers, which could increase labor productivity by approximately 1 percent.



[3] Policies to support female labor force participation include measures supporting career development, providing affordable and quality childcare services, increasing flexible working arrangements, and removing gender discrimination practices at work.

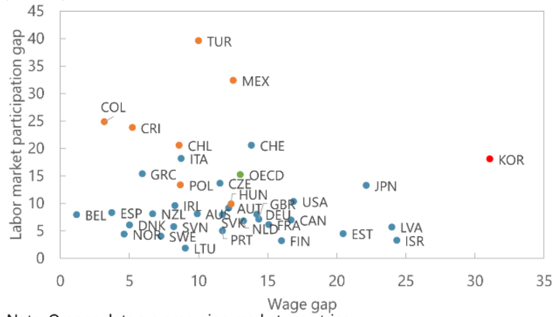
Figure 1. Gender Gaps in the Labor Market

Korea has the largest gender wage gap among advanced OECD countries.

Women's labor force participation drops significantly in their mid-30s compared to the peer countries.

Gender Gap in Labor Force Participation and Wage

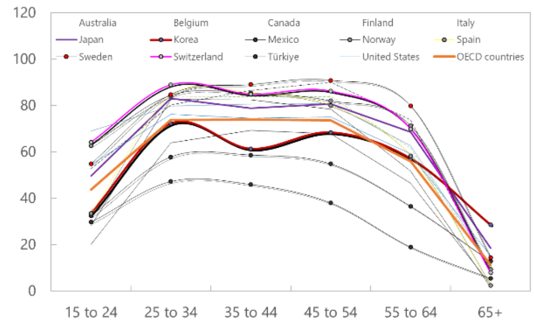
(%, 2021)



Note: Oragne dots are emerging market countries;
Wage gap = median earnings of (men-women)/(men) for full time employee.
Source: OECD.

Women's Labor Force Participation Rate by Age

(%, 2021)



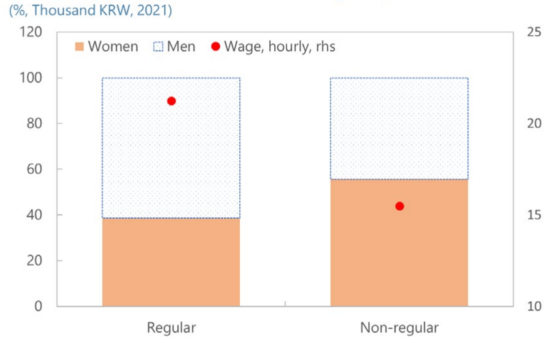
Source: OECD.

Women are in less secure …

… and less well-paid positions such as services and simple workers.

Worker Type by Gender and Monthly Wage

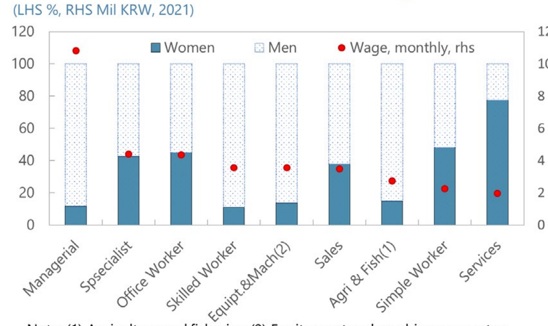
(%, Thousand KRW, 2021)



Source: Korean Statistical Information Service (KOSIS).

Female Share by Job Classification and Wage

(LHS %, RHS Mil KRW, 2021)



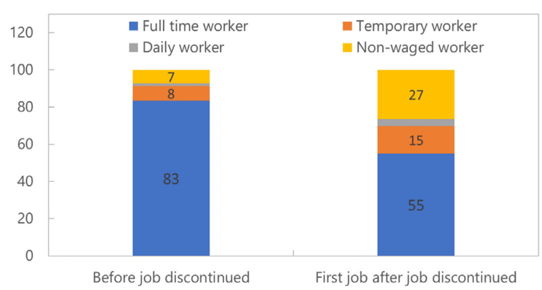
Note: (1) Agriculture and fisheries, (2) Equitpment and machinery operator
Source: Ministry of Labor, Korea.

Career discontinued women return to less secure …

… and less well-paid positions.

Job Status Changes for Job Discontinued Women

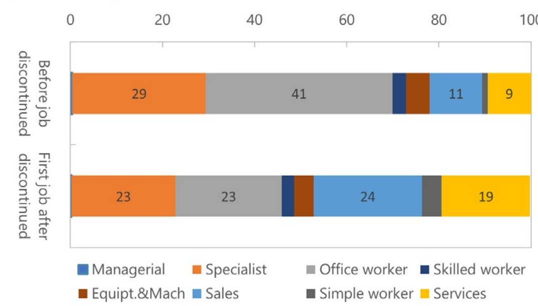
(% of total, 2019)



Note: Non-waged worker : Self-employed and unpaid family workers.
Source: KOSIS, A survey on economic activities of job discontinued women (2019).

Job Classification Changes for Job Discontinued Women

(% of total, 2019)



Source: KOSIS, A survey on economic activities of job discontinued women (2019).

Figure 2. Labor Market Reform: Model Results

Increasing flexibility decreases unemployment and raises labor force participation, especially for women.

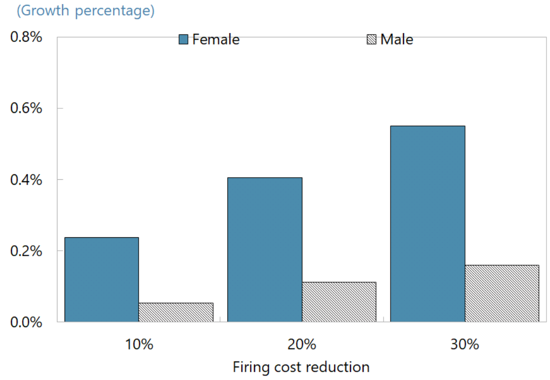
Labor Force Participation Rate and Unemployment Rate
(Change in ppts)

When adding gender policies, the overall effects are similar.

Labor Force Participation Rate and Unemployment Rate
(Change in ppts) - With Gender Policy

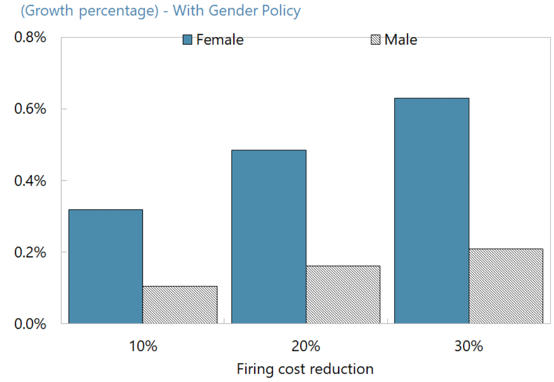
Increasing flexibility raises productivity for both genders, especially for female.

Productivity Increase
(Growth percentage)



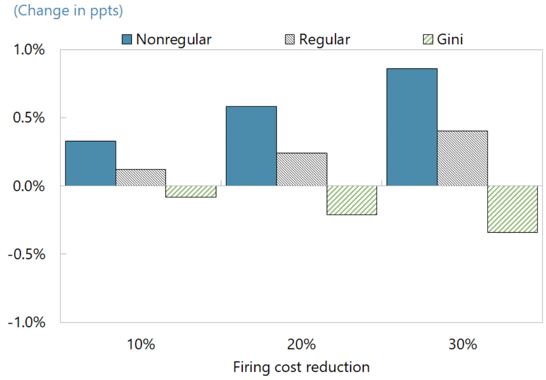
When adding gender policies, female productivity rises more.

Productivity Increase
(Growth percentage) - With Gender Policy



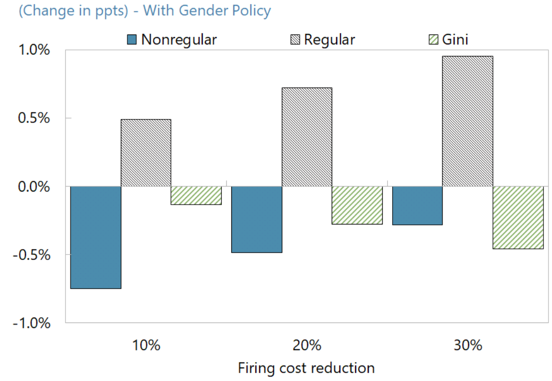
Increasing flexibility reduces Inequality and raises female contract participation for both, especially for nonregular contracts.

Female Contracts Share and Inequality
(Change in ppts)



However, when adding gender policies, the participation of women in regular jobs rises substantially.

Female Contracts Share and Inequality
(Change in ppts) - With Gender Policy



INTERNATIONAL MONETARY FUND

REPUBLIC OF KOREA

STAFF REPORT FOR THE 2023 ARTICLE IV CONSULTATION —INFORMATIONAL ANNEX

October 26, 2023

Prepared By | Asia and Pacific Department

CONTENTS

FUND RELATIONS

(As of August 31, 2023)

Membership Status: Joined August 26, 1955; Article VIII

General Resources Account

	SDR Million	Percent Quota
Quota	8,582.70	100.00
Fund holdings of currency	6,096.93	71.04
Reserve tranche position	2,485.77	28.96
Lending to the Fund		
New arrangements to borrow	8.96	

SDR Department

	SDR Million	Percent Allocation
Net cumulative allocation	10,630.58	100.00
Holdings	11,312.25	106.41

Outstanding Purchases and Loans

None

Financial Arrangements (In SDR Million)

Type	Date of Arrangement	Expiration Date	Amount Approved	Amount Drawn
Stand-by	Dec. 04, 1997	Dec. 03, 2000	15,500.00	14,412.50
Of which SRF	Dec. 18, 1997	Dec. 17, 1998	9,950.00	9,950.00
Stand-by	Jul. 12, 1985	Mar. 10, 1987	280.00	160.00
Stand-by	Jul. 08, 1983	Mar. 31, 1985	575.78	575.78

Projected Obligations to Fund[1]

(SDR Million; based on existing use of resources and present holdings of SDRs)

	2023	2024	2025	2026	2027
Principal	0.0	0.0	0.0	0.0	0.0
Charges/interest	0.0	0.14	0.14	0.14	0.14
Total	0.0	0.14	0.14	0.14	0.14

1/ When a number has overdue financial obligations outstanding for more than three months, the amount of arrears will be shown in this section.

Exchange Rate Arrangement:

Korea's exchange rate system is classified as "free floating" de jure. It has been classified de facto as "floating" since 2009. Over 1997–2008, the exchange rate was classified as "free floating" ("independently floating" under the older classification system). Korea maintains exchange restrictions for security reasons, in accordance with UN Security Council Resolutions, which have been notified to the Fund under the procedures set forth in Executive Board Decision 144 (52/51).

Recent FSAP Participation:

An FSAP was concluded in March 2020. The Financial System Stability Assessment report has been published (Country Report No. 20/120) and is available on the web at:
https://www.imf.org/-/media/Files/Publications/CR/2020/English/1KOREA2020001.ashx

Technical Assistance:

MCM: Remote technical assistance on foreign exchange reserves management was conducted in November 2020.

RES: Remote technical assistance on macroeconomic effects of Korea's climate policies in October 2021.

FAD: Remote technical assistance on fiscal policies for achieving Korea's 2020 climate mitigation goals in November 2021.

STATISTICAL ISSUES

As of September 19, 2023

I. Assessment of Data Adequacy for Surveillance
General: Data provision is adequate for surveillance.
National Accounts: The overall structure of the national accounts follows the recommendations of the *System of National Accounts 2008*. Chain-linked (reference year 2015) and nominal GDP estimates are compiled using the production and expenditure approaches; nominal GDP estimates are also compiled using the income approach. The production approach provides the headline GDP, and a statistical discrepancy is identified on the expenditure side.
Consumer Price Index: The Consumer Price Index (CPI) covers 92.9 percent of total households of Korea; it excludes farming and fishing households. The geographical coverage, which includes 38 urban areas, should ideally be extended to rural areas. The consumption basket is updated every three years; currently, expenditure weights are derived from the *2020 Household Income and Expenditure Survey*. The CPI is calculated using methods consistent with the *2020 CPI Manual*, including imputation of missing and seasonal products, geometric means of prices at the lowest levels, and quality adjustment when specifications change.
Producer Price Index: The Producer Price Index (PPI) covers all domestic industrial activities and a large segment of services activity. It excludes exported products, however, because export price indexes are compiled separately. The current PPI (2015 = 100) follows recommended compilation processes from the *2004 PPI Manual*. The index weights are updated each year based on the national accounts input-output tables with a three-year lag. The PPI classification by activity conforms to the Korean Standard Industry Code (KSIC), which is itself based on the International Standard Industrial Classification (ISIC)—with slight modifications only to reflect local considerations. PPIs by stage of processing are also disseminated.
Government Finance Statistics: Two sets of government finance statistics (GFS) are compiled for the central government, one using national definitions and the other using internationally recognized standards based on *GFSM 2001*. The Korean authorities compile annual consolidated GFS data on the general government for inclusion in the IMF's Government Finance Statistics Database. These data include a statement of general government operations and a full balance sheet.
Financial Sector Data: Monetary and financial statistics (MFS) compiled by the Bank of Korea (BOK) broadly follow the IMF's *Monetary and Financial Statistical Manual and Compilation Guide*. The BOK compiles monthly monetary data for the central bank and other depository corporations using the standardized report forms (SRFs). The BOK does not compile data for other financial corporations using the SRFs. Korea compiles quarterly Financial Soundness Indicators (FSIs) and metadata in line with the 2019 *FSI Compilation Guide* for dissemination on the FSI website, with data currently available through 2023Q2.

Korea also compiles data on several key series and indicators of the Financial Access Survey (FAS), including the two indicators (commercial bank branches per 100,000 adults and ATMs per 100,000 adults) adopted by the UN to monitor Target 8.10 of the Sustainable Development Goals (SDGs).	
External Sector Statistics: The BOK currently compiles the balance of payments and international investment position (IIP) statistics consistent with the *Balance of Payment and International Investment Position Manual, sixth Edition* (*BPM6*) analytical framework (see http://ecos.bok.or.kr/). The BOK adopted the *BPM6* in March 2014.	
II. Data Standards and Quality	
Korea subscribed to the Special Data Dissemination Standard (SDDS) on September 20, 1996 with metadata published on the Data Standards Bulletin Board (DSBB). The latest annual observance report for Korea is available on the DSBB.	A Data ROSC report was published in May 2003 and updated in July 2010.

Table 1. Korea: Table of Common Indicators Required for Surveillance
(As of October 3, 2023)

	Date of Latest Observation	Date Received	Frequency of Data[7]	Frequency of Reporting[7]	Frequency of Publication[7]
Exchange Rates	9/30/2023	9/30/2023	D	D	D
International Reserve Assets and Reserve Liabilities of the Monetary Authorities[1]	Aug. 2023	Sep. 2023	M	M	M
Reserve/Base Money	Jul. 2023	Sep. 2023	M	M	M
Broad Money	Jul. 2023	Sep. 2023	M	M	M
Central Bank Balance Sheet	Jul. 2023	Sep. 2023	M	M	M
Consolidated Balance Sheet of the Banking System	Jul. 2023	Sep. 2023	M	M	M
Interest Rates[2]	9/30/2023	9/30/2023	D	D	D
Consumer Price Index	Aug. 2023	Sep. 2023	M	M	M
Revenue, Expenditure, Balance and Composition of Financing[3] – General Government[4]	2021	Jan. 2023	A	A	A
Revenue, Expenditure, Balance and Composition of Financing[3]– Central Government	Jul. 2023	Sep. 2023	M	M	M
Stocks of Central Government and Central Government-Guaranteed Debt[5]	Jul. 2023	Sep. 2023	M	M	M
External Current Account Balance	Jul. 2023	Sep. 2023	M	M	M
Exports and Imports of Goods and Services	Jul. 2023	Sep. 2023	M	M	M
GDP/GNP	Q2 2023	Q3 2023	Q	Q	Q
Gross External Debt	Q2 2023	Q3 2023	Q	Q	Q
International Investment Position[6]	Q2 2023	Q3 2023	Q	Q	Q

[1] Any reserve assets that are pledged or otherwise encumbered should be specified separately. Also, data should comprise short-term liabilities linked to a foreign currency but settled by other means as well as the notional values of financial derivatives to pay and to receive foreign currency, including those linked to a foreign currency but settled by other means.

[2] Both market-based and officially determined, including discount rates, money market rates, rates on treasury bills, notes and bonds.

[3] Foreign, domestic bank, and domestic nonbank financing.

[4] The general government consists of the central government (budgetary funds, extra budgetary funds, and social security funds) and state and local governments.

[5] Including currency and maturity composition.

[6] Includes external gross financial assets and liability positions vis-à-vis nonresidents.

[7] Daily (D); weekly (W); monthly (M); quarterly (Q); annually (A); irregular (I); and not available (NA).

**Statement by Hu Jin Kim, Alternate Executive Director for Korea,
Jae Woo Oh, Senior Advisor to Executive Director, and
Eunji Choi, Advisor to Executive Director
November 13, 2023**

On behalf of the Korean authorities, we would like to thank Mr. Harald Finger and his team for the candid and constructive discussions during the 2023 Article IV consultations. The authorities value staff's continuous engagement and broadly concur with staff's assessment on the economic outlook and policy recommendations.

Recent Development and Outlook

The Korean economy has shown resilience on the back of sound economic fundamentals and effective policy responses. In 2023, the growth trajectory was affected by a global tech downcycle, reduced import demand from China and prolonged monetary tightening in major countries. However, growth continues to recover as exports of semiconductors, vehicles and petroleum products rebound. The current account surplus widened in the third quarter with a trade surplus for the fifth consecutive month in October. This year's annual growth rate is expected to be 1.4 percent, in line with staff's forecast.

Despite the near-term uncertainties highlighted by staff, the authorities remain positive about the year ahead. Their growth forecast of 2.4 percent[1] in 2024 is broadly in line with the staff's view, outpacing that of other major advanced economies. Private consumption is expected to rebound moderately, driven by the ease of inflationary pressures and favorable labor market conditions. Facility investment is also expected to turn around, supported by greater investment in advanced semiconductor manufacturing processes and an increase in inward direct investment for supply chain diversification. In addition, the current account surplus is expected to expand further, fueled by rising demand from major trading partners, a recovery in the IT industry and an influx of Chinese tourists.

Although consumer price inflation experiences fluctuations, it is projected to continue to moderate toward the authorities' target. In 2023Q3, both core inflation and short-term inflation expectations remained in the low to mid-3 percent range. Core inflation is expected to fall moderately, due to weaker demand-side inflationary pressures. Consumer price inflation rose to 3.8 percent in October from 2.3 percent in July, driven by higher prices for energy and agricultural products. However, looking ahead, it is forecast to moderate

[1] Growth forecast for 2024: (Ministry of Economy and Finance) 2.4 percent, (Bank of Korea) 2.2 percent.

gradually by end-2023 and to continue to slow modestly in 2024. The authorities see continued upside risks to inflation, stemming from volatile global oil prices and the Israel-Hamas conflict.

As shown by staff's stress test results, the authorities recognize that foreign exchange reserves provide sufficient FX liquidity buffers under plausible shocks. In addition, the Korean government takes note of the Fund's decision to drop Korea from the coverage of the Assessing Reserve Adequacy for Emerging Markets (ARA EM) metric starting this year. The authorities also agree with staff's assessment that the external sector is broadly in line with the level implied by medium-term fundamentals and desirable policies. They reaffirm that the foreign exchange rate is determined in the market and that FX intervention is conducted only in exceptional market conditions.

Monetary and Fiscal Policy

The authorities concur with staff that near-term macro policies should remain restrictive. Monetary policy remains restrictive and data dependent amid persistent core inflation with high uncertainties. Fiscal policy has shifted from bolstering economic recovery to normalization, limiting a rise in public debt as well as supporting disinflation.

The Bank of Korea (BOK) has maintained a restrictive policy stance with an emphasis on ensuring price stability, while paying attention to financial stability. The BOK has responded to high inflation pressures and financial imbalances by raising the Base Rate to 3.5 percent, the level slightly above the range of the neutral interest rate. While the domestic economic growth is forecast to gradually improve and inflation is projected to remain high above the target level for a considerable time with high uncertainties, the BOK sees that it is premature to lower vigilance, providing the forward guidance accordingly.

The fiscal stance remains contractionary this year, as planned in the 2023 budget. According to Staff, the central government fiscal deficit will narrow to around 1.8 percent of GDP, down from 3 percent in 2022. Despite the revenue shortfall, the authorities have covered most of this year's budgetary spending by using government deposits and funds, without additional debt financing.

The 2024 budget proposal shows the authorities' strong commitment to fiscal soundness. Total government expenditure growth is the lowest in the last 20 years, and staff projects a further narrowing of fiscal deficit to 1.7 percent of GDP in 2024. The authorities seek to eliminate wasteful spending and concentrate financial resources on key national agendas, such as welfare spending for the vulnerable and investment in national strategic technologies. They are also consolidating underperforming subsidized projects into areas with the highest expected returns in order to improve the efficiency of R&D spending.

The authorities strongly agree with staff's view that fiscal policy should be anchored in a well-designed, rules-based fiscal framework. The government looks forward to constructive discussions in the National Assembly on the proposed fiscal rule which will take effect in 2025, if passed. The authorities are committed to managing fiscal policy in compliance with the fiscal rule. Meanwhile, they believe that the proposed fiscal rule, which includes an escape clause, can maintain sufficient room for counter-cyclical fiscal policy without the need for a transition phase.

Amid global trade tensions, the authorities remain committed to non-distortionary, open trade and adherence to the WTO process. Both the government and businesses are making efforts to diversify trade partners and sourcing. The authorities are also prioritizing long-term policies that promote innovation and advance structural reforms to ensure businesses' resilience and adaptability in this evolving landscape.

Financial Sector Policy

During the recent financial stress episodes, the authorities quickly stabilized financial markets through decisive and well-coordinated policy reactions. Recent financial market unrest occurred mostly in the real estate sector which had shown prolonged risk-taking behavior in a low interest rate environment. In the wake of the liquidity squeeze, triggered by the ABCPs default, deposit withdrawals at MG Community Credit Cooperatives (MGCCCs) and a significant decline in housing prices, the authorities took preemptive market stabilization measures to restore market confidence and contain systemic spillovers. Throughout the process, the apex meeting composed of the heads of all relevant policy regulators - the Ministry of Economy and Finance, the Financial Services Commission, the Financial Supervisory Service, and the BOK, was regularly convened. This collaborative framework signaled a robust institutional capacity for markets and facilitated swift and decisive policy actions.

The authorities share staff's view that financial risks remain manageable. They see a need for addressing high levels of private debt but also limited potential risks on the back of the strong macroprudential measures in place, such as LTV and DSR ceilings, as well as debt-restructuring and insolvency schemes. Repayment risk from a decline in Jeonse prices is also well contained as a significant portion of Jeonse deposits is backed by public housing guarantee companies, whose loss-absorption capacity is being further strengthened. The authorities are also committed to ensuring the resilience of financial institutions. Although the banking sector remains resilient to adverse shocks, thanks to strict prudential requirements and substantial capital buffers, the authorities aim to strengthen both liquidity and loss absorption capacities. In particular, they plan to activate the countercyclical capital buffer (CCyB) and are considering a sectoral CCyB for household exposures. In addition, financial regulators have reassessed regulatory standards for NBFIs and continue to review remaining gaps in capital ratios and lending-related regulations between banks and NBFIs.

As market conditions have normalized, the authorities have been phasing out market stability measures in an orderly and gradual manner. In addition, in line with staff recommendations, housing market regulations for long-term mortgage loans and subsidized mortgage lending programs have been tightened. As suggested by staff, the authorities also plan to improve the supervisory framework and regulatory requirements for MGCCCs, taking into account their unique business characteristics and social consensus.

Structural Policies

The Korean government is firmly committed to pursuing structural reforms to enhance growth potential and address long-term challenges from demographic and climate change.

The authorities are pursuing labor and gender reforms to improve productivity over the medium to long term. Key agendas for labor reforms include increasing working hour flexibility, shifting from seniority-based wages to a performance-based pay system and addressing labor market duality. Proposals for changes in working hour regulations are incorporating public opinion through surveys. A committee has been formed to discuss plans to reduce labor market duality and design a roadmap for wage system reform. In addition, the authorities share staff's view that narrowing the gender gap can facilitate female labor force participation, increase labor productivity and reduce income inequality. To this end, various policy packages have been put in place, including generous childcare support, retraining programs for re-entry into the labor market after childcare leave, retention programs to prevent such career breaks, and education programs for women's employment in high-wage sectors.

The authorities are also committed to pension reform in order to address long-term fiscal challenges from the aging society and ensure the sustainability of the pension system. The 5th Comprehensive Plan for the National Pension Operation was recently unveiled by the authorities and submitted to the National Assembly for further discussion. It focuses on strengthening old-age income, enhancing inter-generational equity, and improving financial stabilization and fund management. The authorities suggest starting a social discussion about contribution rates and income replacement rates through a special committee in the National Assembly. In line with staff's recommendation, the authorities note that the adjustment of replacement rates needs to be considered in conjunction with reforms of basic and retirement pensions.

The Korean government continues to explore various policy options to achieve carbon neutrality by 2050. In April 2023, the authorities released the 1st National Framework Plan for Carbon Neutrality and Green Growth, which is a legally binding plan at the highest level. This framework includes sectoral and annual GHG emissions reduction targets through 2030 and implementation plans. It also contains feasible adjustments to existing sectoral mitigation targets, with the acceptance of the private sector. The authorities are preparing new, detailed policy measures in accordance with the Framework Plan. In line with staff's recommendation, they are considering a gradual increase in the share of auctioned allowances under the Emissions Trading Scheme (ETS) to further strengthen mitigation policies.