EXECUTIVE BOARD MEETING

SM/22/51
Correction 1

March 17, 2022

To: Members of the Executive Board

From: The Secretary

Subject: **Republic of Korea—Staff Report for the 2022 Article IV Consultation**

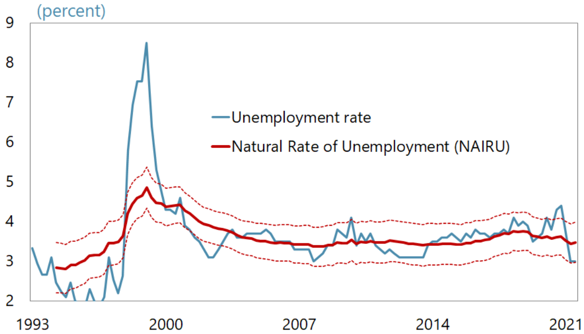
Board Action:	The attached corrections to SM/22/51 (3/4/22) have been provided by the staff:
Evident Ambiguity	**Page 20**
Factual Errors Not Affecting the Presentation of Staff's Analysis or Views	**Pages 8, 17 (para. 15), 18, 19, 26, 33, 36, 39, 60, 71**
Typographical Errors	**Pages 17 (para. 16) and 22**
Questions:	Mr. Kaufman, APD (ext. 37699) Mr. Rafiq, APD (ext. 35993)

and eating out—indicative of rising demand-side pressure. Core inflation has also been rising and has moved above 2 percent recently with rising diffusion of price pressures. Producer prices suggest some potential continuation of inflationary pressures in the pipeline,[1] but wage increases—while rebounding from weakness in 2020—are modest when adjusting for productivity growth. Inflation expectations have also started to reflect heightened inflationary pressures, but medium-term expectations have so far remained well anchored and market analysts generally see inflation converging to target next year (Annex V).

Text Figure. Korea: Structural Labor Market Indicators

Post-COVID estimates of the NAIRU suggests limited structural labor market scarring thus far.

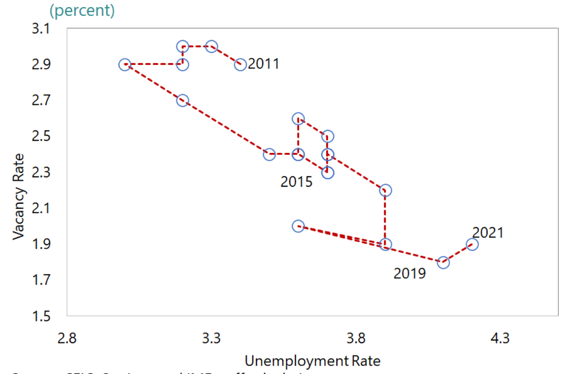
Korea: Natural Rate of Unemployment
(percent)



Source: Concensus forecast, Haver and IMF staff calculations.
Note: The NAIRU is estimated using a time-varying Kalman filter, taking into account inflation expectations, wage growth, import price inflation and ex post inflation.

However, the Beveridge curve has shifted right with unemployment having risen given greater vacancies.

Korea: Beveridge Curve, 2011-2021
(percent)



Source: CEIC, Statista, and IMF staff calculations.

5. The external sector has continued to perform well, supported by robust external demand. The current account surplus in 2021 ~~is projected to have~~has widened to around 4.9 percent of GDP, driven by robust tech exports, a narrowing of the services deficit due to an increased transportation surplus, and a favorable income balance (Figure 4). Reserves remain adequate, increasing by US$20 billion by the end of 2021, including the IMF's 8.2 billion SDR allocation. The NEER and REER depreciated through 2021. More recently, on bilateral basis the won depreciated against the U.S. dollar due to renewed COVID-related uncertainties and the expectation of a faster normalization of U.S. monetary policy. The preliminary 2021 external sector assessment suggests that the external position was broadly in line with fundamentals and desirable policies. (Annex I).

6. Despite some recent tightening, financial conditions remain accommodative, but risk sentiment may be starting to turn. Sovereign and corporate yields have increased but remain low by historical standards, with non-financial corporate balance sheet indicators showing resilience. Korean forward rates have risen more than in other countries, consistent with a relatively improved outlook, and the yield curve has steepened to a post-GFC high. US dollar funding conditions remain stable; bank funding and lending conditions remain compressed; and equity market valuations remain close to their record highs, despite some recent correction, helping support record IPO

[1] Measures of inflation persistence in Korea have historically been low and pass-through from producer to consumer prices has also historically been low (Annex V).

15. The BoK has appropriately begun normalizing monetary policy, given Korea's relatively advanced cyclical recovery and rising inflationary pressures. The policy rate has been raised three times since ~~October~~ August 2021 by a cumulative 75 basis points (bps) and markets are pricing in further hikes by end of this year. The tightening in the policy rate has reduced monetary stimulus, but the stance remains accommodative, as the real policy rate remains below most estimates of Korea's real neutral rate, including that of staff. Korea's relatively balanced macroeconomic policy mix has supported the measured pace of monetary policy normalization so far. There is further room to continue normalizing monetary policy to address inflationary pressures, rebuild policy space and reinforce the tighter macroprudential stance (Figure 7).

16. Going forward, continuing with monetary policy normalization remains appropriate. Korea's recovery is relatively advanced and inflationary pressures are rising, but the recovery is still uneven and there are heightened global uncertainties. In this context, the pace of monetary policy normalization should continue to be data dependent weighing the strength of the economic recovery against rising inflationary pressures. Several considerations could help inform monetary policy going forward including those associated with potential headwinds from high household debt and, in the opposite direction, a lower sensitivity of activity to policy rate changes in recent years (Annex VI and VII).

17. If downside risks materialize, monetary policy can provide further stimulus but could face some tradeoffs if supply disruptions create stagflationary conditions. Conventional monetary policy has some moderate space to provide stimulus if downside risks materialize, but it could face some challenges if supply disruptions further exacerbate inflationary pressures and hinder activity, creating stagflationary conditions. In this context, the BoK should enhance its communications to provide greater guidance on monetary policy to help further anchor expectations and alleviate potential tradeoffs. The next monetary policy framework review would provide an opportunity to address some of the potential challenges associated with the BoK's multiple mandates.[5]

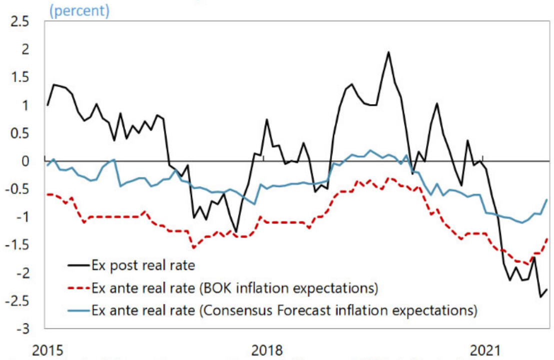
18. Public spending appropriately continued to support the recovery in 2021, but the fiscal deficit was smaller than projected due to strong revenue overperformance. Public spending increased by about 1 percentage point of GDP last year, with the use of supplementary budgets providing scope for adjusting and targeting fiscal support as warranted by the evolving pandemic conditions. However, the deficit is projected to be lower than originally expected due to over-performing tax revenues from the strong economic recovery and buoyant asset markets, which have a transitory component (Box 1). The central government fiscal deficit as of end-November stood at 1.1 percent of GDP, with staff estimating the end-year deficit to be around 2 percent of GDP.

[5] See Republic of Korea: Financial Sector Assessment Program-Technical Note-Macroprudential Policy Frameworks and Tools: https://www.imf.org/en/Publications/CR/Issues/2020/09/18/Republic-of-Korea-Financial-Sector-AssessmentProgram-Technical-Note-Macroprudential-Policy-49749

Figure 7. Fiscal and Monetary Policy Space Indicators

Despite the recent increase in the policy rate, real rates remain negative.

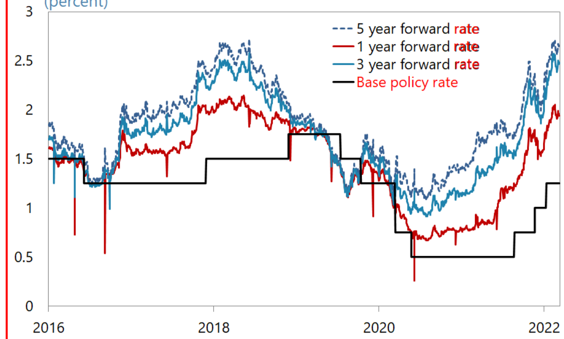
Korea Real Policy Rate
(percent)



Source: Bank of Korea, Consensus Forecast, Haver and IMF staff calculations.

Markets are pricing in additional monetary tightening.

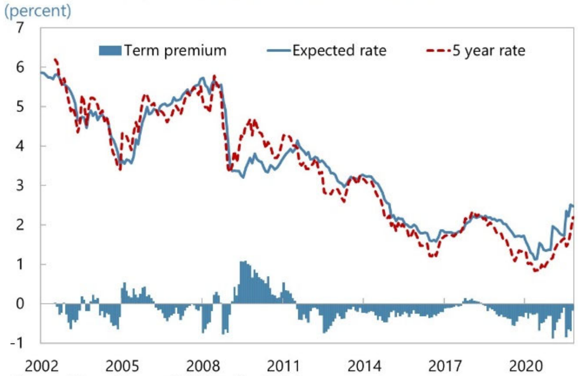
Korea Policy and Implied Forward Rates
(percent)



Source: Bloomberg and IMF staff calculations.

Term premia remains compressed with yields being driven by rate hike expectations.

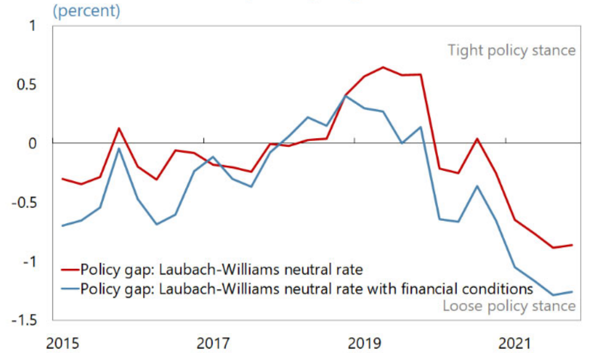
Korea Rate Expectations and Term Premium
(percent)



Source: Bloomberg and IMF staff calculations.

Despite the increase in policy rate, the monetary stance remains stimulative.

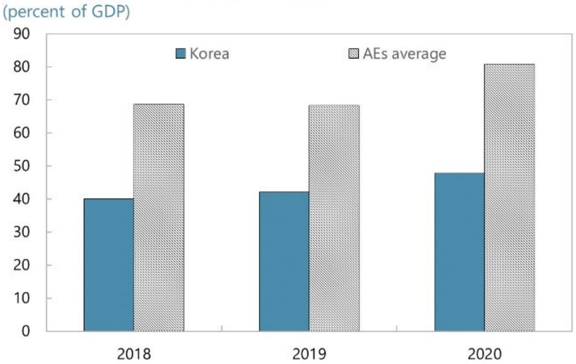
Korea Real Monetary Policy Gap
(percent)



Source: Haver and IMF calculations.
Note: See Rafiq, S. (2021), ' What's in Korea's (R)-Stars', IMF Working Paper No. 21//93

Korea has significant fiscal space due to the relatively low level and sound composition of public debt…

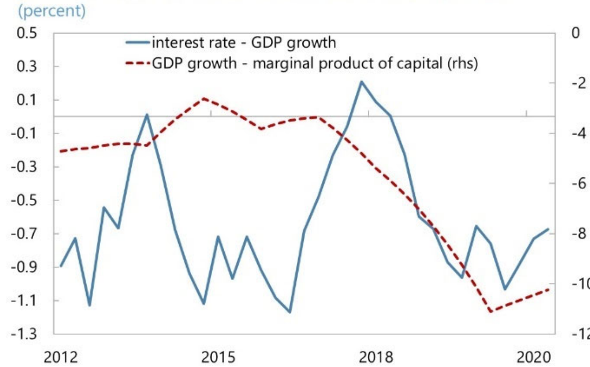
General Government Gross Debt
(percent of GDP)



Sources: World Bank Cross Country Database of Fiscal Space.

Debt buildup driven by higher primary deficits is partially offset by negative r-g..

Korea 5-Year Expected Interest-Growth Gap (r-g)
(percent)



Source: CEIC, Eikon, Penn tables and IMF staff calculations

19. A broadly neutral fiscal stance in 2022 would support the policy normalization process. The fiscal deficit is projected to remain at around 2 percent of GDP, as lower expenditures as a share of GDP (including policy lending) relative to 2021 is offset by less buoyancy in revenues from a moderation in economic growth and house prices. This would imply a broadly neutral fiscal stance, adjusting for temporary housing market-related revenues, which is appropriate at the current juncture. With the emergence of the omicron wave, the authorities' readiness to deploy targeted support is welcome, including the recently proposed 16.9 trillion won supplementary budget aimed at supporting SMEs impacted by the pandemic, particularly in contact-intensive sectors.

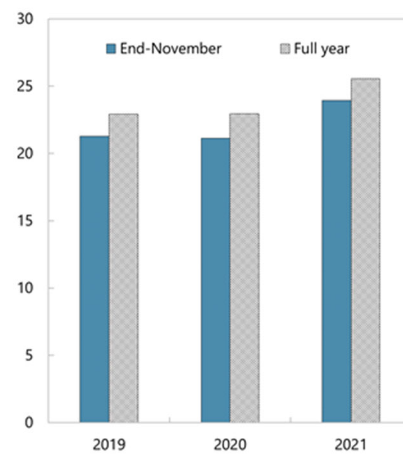
Box 1. Korea's 2021 Tax Revenue Overperformance[1]

Revenue performance has been very strong in 2021. Tax revenues reached 323.4 trillion won by end-November higher than the same period in 2020 and 2019 by 21 and 17 percent, respectively. It has already surpassed tax revenue projection for the whole year of 314.3 trillion won in the 2nd supplementary budget. Tax revenue is projected to reach 343 trillion won, or 16.6 percent of GDP, a decades-high for Korea.

Tax revenue overperformance has been driven by strong economic recovery and the buoyant real estate and stock markets. Taxes on income, profits, and capital gains, and property taxes accounted for nearly the entire increase in tax revenues between November 2019 and November 2021. In contrast, revenues from VAT, custom duties, and other taxes have remained nearly flat in percent of GDP relative to pre-COVID levels.

Going forward, asset market-related tax revenues are projected to decline moderately but remain above pre-COVID levels. Property tax revenue in coming years is expected to stay close to the 2021 level, while capital gains tax revenue is expected to fall moderately as asset prices are assumed to grow only modestly. Tax revenue is therefor expected to decline from 16.6 percent of GDP in 2021 to around 15.5 percent of GDP over the medium term.

Korea: Central Government Revenue
(In percent of GDP)



Source: Haver Analytics.

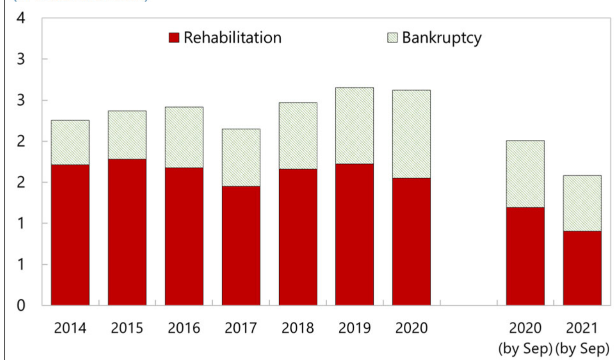
1/ Prepared by Hua Chai.

20. If downside risks materialize, fiscal policy should provide prompt stimulus. Korea has ample fiscal space and, through the pandemic, has demonstrated that its fiscal policy can be nimble to provide targeted stimulus to affected sectors as warranted, which can be particularly appropriate if stagflationary pressures arise.[6] In this context, additional stimulus could be implemented through the front-loading of budgeted expenditure and, if necessary, enacting a supplementary budget as done during the pandemic. Learning from recent experience, the targeting of additional stimulus could also be further improved by calibrating support to specific measures of hardship such as income loss, in line with good practice in other advanced economies.

[6] Staff's Debt Sustainability Analysis (Annex III) shows that central government debt is projected to rise from 36 percent of GDP in 2019 to about 51 percent of GDP in 2025, which is well within manageable levels. The projection is based on current policies and thus does not incorporate the impact of the proposed fiscal rule.

21. Korea's lending support policies during the pandemic have been critical to limit corporate stress, particularly among SMEs. Lending support has centered around maturity extensions for SMEs and small merchants, which aide short-term liquidity and balance sheets capacity by lowering the value of debt measured in present value (NPV) terms. There has been less take up by firms of credit support based on principal and interest payment deferrals. The rapid economic recovery has also aided SME balance sheets, resulting in falling demand for support facilities (Figures 8 and 9). However, some measures of leverage for these firms have increased compared to its pre-COVID trend. Cases of corporate insolvency filings remain lower than pre-COVID. However, this may suggest that some measures currently in place are holding back the necessary exit of unviable firms; pre-COVID around 50 percent of SMEs had an interest coverage ratio below 1 ~~were considered zombie~~.[7]

Korea: Court Insolvency Filing (Corporate)
(In thousand cases)



Source: Court of Korea

22. The withdrawal of lending support policies should be carefully calibrated to reduce risks of sudden tightening of credit, particularly for SMEs, while further focusing on viable firms. The challenge going forward is balancing the need to start withdrawing pandemic lending policies against the risk of reducing support prematurely. A premature withdrawal of support, ahead of durable buoyancy in domestic activity, could cause an abrupt tightening in credit and a spike in insolvencies, particularly among SMEs and small merchants. The lending support policy mix would therefore need to transition from liquidity to solvency support, restructuring, and facilitating exit as markets normalize and uncertainty about firms' viability is resolved (Box 2).[8]

23. Korea's strong prudential framework helped maintain financial sector resilience through the pandemic, but further tightening of prudential measures may be needed to contain the buildup of risks from housing and household debt. The pandemic saw unprecedented growth in household debt and house prices, which are beginning to slow on the back of tighter monetary conditions and borrower-based prudential measures. The authorities' close vigilance over the potential buildup of financial risks and household balance sheets is commendable, including through regular stress testing. Nevertheless, borrower-based policies may need to be tightened further to contain the buildup of risks, while consideration should also be given to strengthening banks' capital buffers for sector-specific risks linked to real-estate (see Section B).

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[7] See Republic of Korea: Financial Sector Assessment Program-Technical Note-Non-Financial Balance Sheet Vulnerabilities and Risks to Financial Stability: https://www.imf.org/en/Publications/CR/Issues/2020/09/18/Republic-of-Korea-Financial-Sector-Assessment-Program-Technical-Note-Non-Financial-Balance-49750

[8] The potential for latent credit risks from corporate and SME lending calls for supervisory vigilance to continue its intensified credit quality monitoring for the period after the exits from COVID-19 support measures. (See Box2).

A strong macroprudential framework can facilitate monetary policy to pursue its primary inflation targeting objective since it is more targeted and reduces the risk of unintended policy spillovers.[9]

24. Current stable and supportive financial conditions provide a window of opportunity to lift the short-selling ban for all listed securities. This would improve price discovery and re-sensitize and improve the ability of market participants to manage their risk-taking. Concerns about equitable access for all investors are more efficiently addressed through strengthening of sanctions for violations, stepping up monitoring, and enhancing the role of market-makers in providing opportunities for retail investors to participate in short-selling. Transparency could also be enhanced by requiring disclosure of short positions taken above a certain proportion of a company's total listed shares. Finally, the single stock futures market provides retail investors with the opportunity to engage in the short selling of equities.

Authorities' Views

25. The Bank of Korea is normalizing monetary policy by comprehensively taking into account growth, inflation and financial imbalances. It raised the base rate three times since August by a cumulative 75 basis points. The BoK views these rate hikes as reflecting current and expected solid growth, a prolonged period of inflation above the target, and accumulated financial imbalances. Moreover, given that robust growth and inflationary pressure are expected to last for some considerable time, and that risks from financial imbalances ~~risks~~ remain high, the BoK believes that monetary accommodation still needs to be appropriately adjusted. In doing so, the BoK will continue to assess any potential trade-offs between policy goals as a result of the reduction in monetary accommodation. Considering the still accommodative monetary policy and the possible increase in pent-up consumption due to accumulated spare household savings, the BoK believes that normalization of monetary policy is less likely to have a negative impact on consumption and growth. The BoK will continue to closely monitor upside and downside risks for the domestic growth and inflation, and whether the risk of financial imbalances is abating, before deciding on the timing of any further adjustment in monetary accommodation.

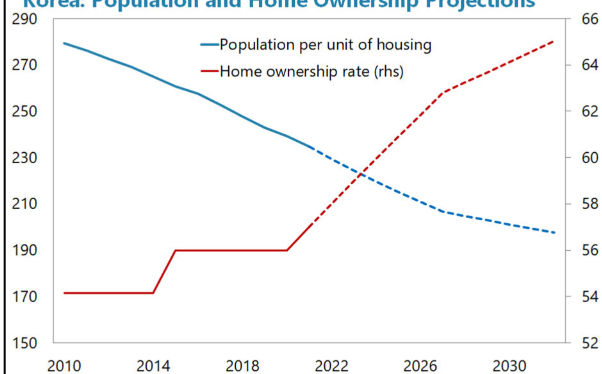
26. The authorities stressed their commitment to exchange rate flexibility and limiting FX intervention to preventing disorderly market conditions. The US dollar FX swap line with the Federal Reserve expired in at the end of 2021, and they don't see a need to renew it given stable US dollar funding conditions. FX prudential measures have contributed to market stability and they will continue to help in the monitoring and reviewing of policy settings as appropriate. In line with the 2020 FSAP recommendation there are plans to revise FX liquidity stress testing under the Basel Ⅲ LCR framework.

[9] Macroprudential policy may also help monetary policy by containing financial risk premia and helping lift the neutral interest rate, as well as by countering the buildup of financial excesses and reducing the probability of monetary policy hitting the effective lower bound (ELB) in the future. See Rafiq, S. (2021), 'What's in Korea's (R)-Stars', IMF Working Paper No. 21/93.

30. While housing supply has expanded in recent years, it has been supasssed by strong housing demand since the pandemic. Housing supply has grown by 30 percent in Seoul over the last decade, but the home ownership ratio remains relatively unchanged and lower than peer countries. To continue improving supply and improve affordability, particularly in urban areas, a number of welcome measures have been introduced: the easing of brownfield density restrictions for redevelopment projects; a fast track one-stop review process for redevelopment projects; allowance of pre- pre-sale of new apartments to facilitate housing access to first-time buyers.[10] Efforts are also underway to upgrade transportation links to greenbelt developments on the outskirts of Seoul. Over the medium term, the supply of new dwellings will need to consider Korea's projected decline in population to avoid the potential risk of boom-bust cycles in the housing market.

31. Real-estate demand drove very strong growth in household debt during the pandemic, but vulnerabilities are mitigated. The tight borrower-based macroprudential stance has supported low NPLs and debt servicing ratios, and lending remains concentrated among high credit score individuals (Figure 11). Moreover, average LTVs are around 4~~5~~0 percent and household income is expected to remain stable which further contains balance sheet risks (Figure 12). FSAP and more recent Bank of Korea stress tests—applying a more severe economic shock than the pandemic downturn—showed that risks from household balance sheets are contained.

Korea: Population and Home Ownership Projections



Source: Haver, Korea Housing Finance Corporation and Statista.

32. Some post-pandemic household lending developments may pose risks going forward. In contrast to pre-COVID trends, a larger share of new bank loan origination has been unsecured lending linked to floating interest rates, which is being used to top up lending and meet tight LTV requirements. There has also been strong growth in bullet loans, linked to the Jeonse market, which raises rollover risks. In turn, some subprime borrowers are resorting to non-banks to increase their financing. This suggests that borrower-based restrictions have been effective, but some mortgage prudential requirements can be circumvented. Moreover, while lending is concentrated among high credit score individuals, credit risks from the uplift in scores is susceptible to economy-wide credit cycles.[11]

[10] However, there is also anecdotal evidence that a house price cap—limiting prices of new pre-sale private sector apartments to 60-80 percent of the actual market price—and an excess capital gain ceiling that limits the capital return on redeveloped apartments, may be distorting incentives and hindering private housing supply.

[11] It is estimated that around 11.5 percent of all borrowers had their credit ratings upgraded since the pandemic because of buoyant asset markets.

capital gains tax hike may have reduced housing supply, as the number of housing units for sale began to rise in September 2021 after a temporary decline since June.

38. The authorities deem the pre-sale apartment price and excess gain caps as necessary to maintain house price affordability. The authorities view the price cap as stabilizing house prices for actual buyers. Increasing the ceiling of pre-sale apartment prices would fuel inflation in existing apartments in the surrounding area. The excess gain cap is required to ensure that the gains of private sector led redevelopment contribute to the public good.

C. Transitioning to a Post-COVID Normal: Promoting Inclusive Growth and Job Creation

As the pandemic abates, policy focus should shift from economic support to structural reform priorities, including in the context of the Korean New Deal (KND). Renewed structural reform momentum, including further articulation and implementation of the KND, will be important in transitioning to a post-COVID normal. Reinvigorating long-term growth and fostering inclusion requires recalibrating policies to support productivity growth and innovation, providing transitory support amidst reforms to address product, services, and labor market rigidities, and ensuring that Korea's human capital remains a central pillar of the transformation process. In this context, fiscal policy should be anchored in a medium-term fiscal framework that stabilizes the path of public debt post-pandemic, considering the expected fiscal implications of demographics, structural transformation costs, and the need to retain space for countercyclical fiscal policy when necessary.

39. Given medium-term fiscal pressures from structural transformation needs and demographics, a rules-based fiscal framework would help anchor public finances and preserve space for countercyclical fiscal policy. A fiscal rule should be introduced and operationalized as the exit from the pandemic takes hold, which should also help strengthen public financial management by safeguarding budgetary independence and enhancing fiscal transparency. The ongoing policy debate is welcome and should help improve the parametric, operational, and institutional aspects of the fiscal framework.[20] Scope for counter-cyclical fiscal policy should be preserved which would need to specify and clarify operational details, including of the 'slowdown provision'.[21]

40. In the context of adopting the new rules-based fiscal framework, consideration should be given to how automatic stabilizers could be strengthened. Korea's automatic stabilizers are currently less effective compared to most OECD economies, due to weaker social protection programs. Strengthening automatic stabilizers would make the fiscal response to economic fluctuations more targeted, timely, and temporary. This would reduce the need for discretionary fiscal policy interventions, buffer the short-term impact of structural reforms, and lower the risk of

[20] A proposed fiscal rule with ceilings of 3 percent of GDP for fiscal deficit and of 60 percent of GDP for government debt was submitted to the parliament in ~~October~~ December 2020. Discussion of the rule~~, including potential revision of these parameters,~~ is ongoing.

[21] The debt and deficit limits could be "soft" limits as discussed in the 2020 Selected Issues Paper "Fiscal Rules in Korea—Some Considerations."

43. Greater access to the reverse mortgage market could help alleviate old-age poverty. Recent measures to raise the number of subscribers, including lowering the minimum age and expanding property eligibility by allowing office-tels (apartments in office buildings) to be used as collateral is welcome. Regulations allowing greater flexibility in monthly drawdown options should allow for greater payments at the early stages of subscription to help with unforeseen circumstances. Pressing ahead with plans to raise the property value ceiling would encourage further participation. Efforts should also be made to allow more non-bank financial institutions to offer reverse mortgages and expand the market.

Product and Labor Market Reforms

44. The pandemic triggered or accelerated shifts in demand and business practices. Demand has shifted from high-contact industries such as accommodation and food services and wholesale and retail trade, toward professional services and higher-skilled manufacturing, as reflected in levels of employment, hours worked, wages, and job vacancy rates (Figure 13). The pandemic has also been accompanied by a rise in automation and digitalization in industries as diverse as food services, retail sales, and financial services. Though many workplaces continued functioning at high capacity through most of the pandemic, remote work has risen in professional services. These developments have buffered the impact of the pandemic and led to higher productivity but could further polarize employment and aggravate inequality; Korea's youth inactivity rate is exceptionally high. Boosting medium-term inclusive growth depends on more durable increases in labor force participation, particularly for females, and service sector productivity (Box 3).

45. Adapting to these trends will require advancing long-standing reform priorities to facilitate structural transformation. The KND is helping Korea adapt to post-COVID trends by catalyzing investment in new growth drivers and helping reskill the labor force to match the new demands for skills (Figure 13). Advancing on other pending reforms is also necessary to help ease longstanding bottlenecks to service sector productivity, spur innovation and investment, facilitate the reallocation of resources across sectors, and ensure creation of high-quality, sustainable employment opportunities:

- *Boosting innovation and productivity growth*: Welcome efforts have been made to facilitate innovation through regulatory sandboxes and partnerships with the private sector to develop dynamic new drivers of growth. Recent steps to streamline regulations should also continue. Additional areas for attention include lowering legal barriers to entry and startup costs, simplifying complex licensing and permit requirements, adjusting regulations that inhibit the expansion of or raise costs for small and medium enterprises, and increasing the flexibility of employment regulations.[23]

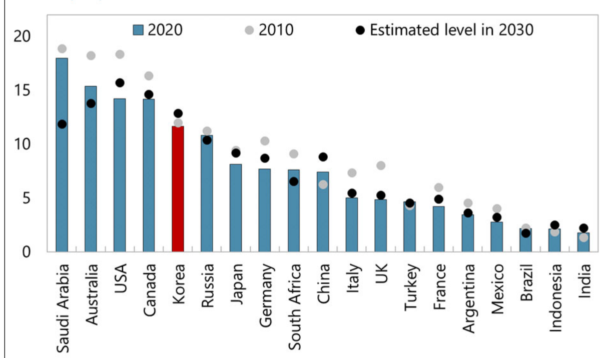
[23] See Swiston, A. (2021), 'Korea's Growth Prospects: Overcoming Demographics and COVID-19', WP/21/92.

bolster training, job creation, and the safety net with a focus on groups where employment prospects were lagging. The authorities believe given the ongoing pandemic it is necessary to put priority on increased stability for the time being but agreed on the need to strike a balance between stability and flexibility.

D. Korea's Climate Policies

48. Korea is among the largest greenhouse gas emitters on a per capita basis. Fossil fuels are primarily used in power generation, industry, construction, transportation, and buildings. Renewable sources only accounted for 5.7 percent of total energy consumption in 2020, significantly lower than other major economies.

Korea: Carbon Dioxide Emission Per Capita
(In tons per person)

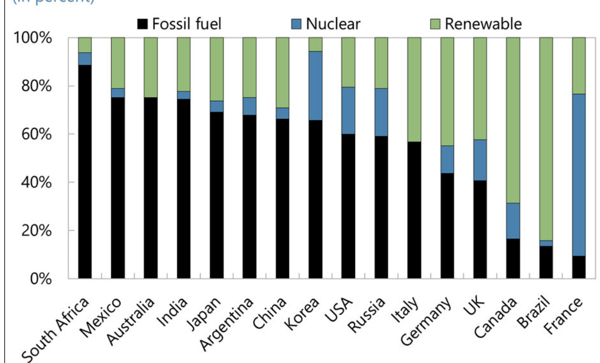


Sources: Our World In Data; and IMF staff calculations.

49. Korea has committed to ambitious carbon reduction goals. Its recently updated Nationally Determined Contribution (NDC) target to reduce emissions by 40 percent from its 2018 level by 2030 is welcome and better aligned with the established goal of achieving carbon neutrality by 2050.

50. A key instrument to achieve its targets is an emissions trading system. Korea established its Emission Trading Scheme (KETS) in 2015. KETS is a cap-and-trade system that applies to 685 large emitters and covers about three quarters of domestic emissions. Other climate mitigation policies adopted include the Renewable Portfolio Standard, a regulatory mandate that requires power generators to increase the use of renewable sources to ~~10~~ 25 percent by ~~2022~~2026; tightened vehicle emission standards for passenger vehicles and light trucks; and a heavy excise on the use of fossil fuels, especially coal. As part of the Green New Deal (GND), Korea set aside US$ 62 billion to invest in green projects, including building green infrastructures, planting new trees, developing clean technologies, and incubating green innovations.

Korea: Electricity Generation by Source in 2020
(In percent)



Sources: Our World In Data.

51. To meet Korea's climate mitigation objectives, current climate policies would need to be significantly strengthened. Some policy options that could be considered include:[26]

[26] See I. Parry, "Fiscal Policies for Reinforcing Korea's Climate Mitigation Strategy" SM/21/22.

Annex VI. Household Debt implications for Monetary Policy in Korea[1]

Analysis suggests that monetary tightening in Korea could have a greater impact on domestic demand because of the high level of household debt.

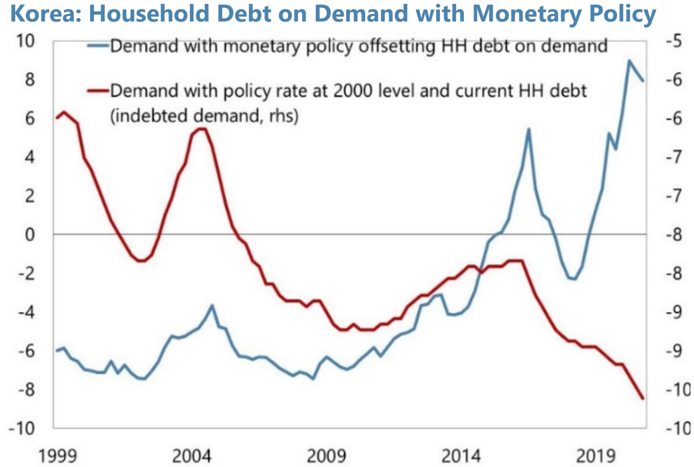
1. **Korea has an elevated level of household debt, also made riskier by its composition.** Approximately 50 percent of household debt is linked to floating interest rates and is structured as a bullet payment. Bullet loans are riskier because they have shorter maturities and therefore greater susceptibility to rollover risk.

2. **These high debt levels can create challenges for monetary policy.** The fall in interest rates has stabilized debt servicing despite significantly higher debt. However, a snapback in rates may dampen domestic demand. Following Mian and Sufi (2021), to estimate the size of this risk, the impact of real interest rates on aggregate demand is estimated given the existing high debt levels.[2]

3. **Domestic demand would have been significantly lower, purely on account of high debt, had real rates been higher in recent years.** If the ~~policy~~ interest rate had stay~~t~~ed at the early 2000 level, given current levels of household debt, domestic demand would be around 10 percent lower. The Bank of Korea has lowered interest rates to offset this shortfall and stimulate demand (blue line). This suggests a tightening in monetary policy would have a greater impact on growth due to the current elevated levels of household debt.

4. **The findings capture the idea that large household debt can burden aggregate demand**. Going forward, if Korea's household debt continues to rise it may further increase the burden on domestic demand. These findings heighten the need for prudential policies rather than monetary policy to contain household debt risks.

Korea: Household Debt on Demand with Monetary Policy



Source: IMF staff calculations.

[1] Prepared by Sohrab Rafiq.

[2] Mian, A. and A. Sufi (2021), 'Indebted Demand', Quarterly Journal of Economics, 136(4): 2243-2307.

Table 1. Korea: Selected Economic Indicators, 2019-22~~1~~

	2019	2020	Estimates 2021	Projections 2022
Real GDP (percent change)	2.2	-0.9	4.0	3.0
Total domestic demand	1.5	-1.5	3.3	3.4
Final domestic demand	1.5	-0.9	3.6	3.1
Consumption	3.2	-2.4	4.1	3.7
Gross fixed investment	-2.1	2.6	2.5	1.8
Stock building ~~2~~1/	0.0	-0.6	-0.3	0.0
Net foreign balance ~~2~~1/	0.8	0.5	0.7	0.0
Nominal GDP (in trillions of won)	1,924	1,933	2,067	2,196
Saving and investment (in percent of GDP)				
Gross national saving	34.8	36.2	37.0	36.8
Gross domestic investment	31.5	31.9	32.1	32.4
Current account balance	3.6	4.6	4.9	4.3
Prices (percent change)				
CPI inflation (end of period)	0.7	0.6	3.7	2.5
CPI inflation (average)	0.4	0.5	2.5	3.1
Core inflation (average)	0.7	0.4	1.4	...
GDP deflator	-0.8	1.3	2.8	3.2
Real effective exchange rate	-4.5	-1.9	0.1	...
Trade (percent change)				
Export volume	-1.1~~-2.1~~	-0.5~~0.9~~	9.8~~8.1~~	6.3
Import volume	-2.5	-0.1	11.8	7.7
Terms of trade	-4.1	3.8	-2.8	-0.5
Consolidated central government (in percent of GDP)				
Revenue	22.9	23.0	25.5	24.5
Expenditure	22.6	25.2	26.2	25.7
Net lending (+) / borrowing (-)	0.4	-2.2	-0.6	-1.2
Overall balance	-0.6	-3.7	-2.0	-2.0
Excluding Social Security Funds	-2.8	-5.8	-4.0	-4.0
General government debt	42.1	48.9	49.6	51.1
Money and credit (end of period)				
Overnight call rate	1.4	0.6	1.4	...
Three-year AA- corporate bond yield	1.9	2.2	2.4	...
M3 growth	9.0	9.1	11.0	6.6
Balance of payments (in billions of U.S. dollars)				
Exports, f.o.b.	556.7	517.9	650.0	721.5
Imports, f.o.b.	476.9	437.3	573.8	648.5
Current account balance	59.7	75.9	88.3	80.3
Gross international reserves (end of period) ~~3~~2/	404.0	438.3	458.3	482.3
In percent of short-term debt (residual maturity)	206.3	191.6	206.8	211.7
External debt (in billions of U.S. dollars)				
Total external debt (in percent of GDP)	28.5	33.3	35.1	38.0

Sources: Korean authorities; and IMF staff estimates and projections.
~~1/ This reflects the available information and projections when the 2022 Article IV Consultation staff report was finalized. It does not incorporate the impact of the subsequently announced supplementary budget.~~
~~2~~1/ Contribution to GDP growth.
~~3~~2/ Excludes gold.