

AMRO Annual Consultation Report

Korea - 2017

The ASEAN+3 Macroeconomic Research Office (AMRO)

March 2018

Acknowledgements

1. This Annual Consultation Report on Korea has been prepared in accordance with the functions of AMRO to monitor, assess and report its members' macroeconomic status and financial soundness and to identify the relevant risks and vulnerabilities, and assist them in the timely formulation of policy recommendation to mitigate such risks (Article 3(a) and (b) of AMRO Agreement).
2. This Report is drafted on the basis of the Annual Consultation Visit of AMRO to Korea from August 16 – 25, 2017 (Article 5 (b) of AMRO Agreement). The AMRO Mission team was headed by Dr Sumio Ishikawa, Group Head and Lead Economist. Members include Dr Jinho Choi (Specialist and Country Economist for Korea), Ms Wanwisa Vorrarikulkij (Specialist and Back-up Economist for Korea), Dr Joseph Hyunjung Kim (Senior Economist) and Mr Suan Yong Foo (Senior Expert). AMRO Director Dr Junhong Chang and Chief Economist Dr Hoe Ee Khor also participated in key policy meetings with the authorities. This AMRO Annual Consultation Report on Korea for 2017 was prepared by Dr Sumio Ishikawa, Dr Jinho Choi, Ms Wanwisa Vorrarikulkij, Dr Joseph Hyunjung Kim, and Mr Suan Yong Foo; peer reviewed by Dr Jae Young Lee (Group Head and Lead Economist) and Mr Anthony CK Tan (Senior Economist); and approved by Dr Hoe Ee Khor (AMRO Chief Economist).
3. The analysis in this Report is based on information available up to 25 January 2018.
4. By making any designation of or reference to a particular territory or geographical area, or by using the term “member” or “country” in this Report, AMRO does not intend to make any judgements as to the legal or other status of any territory or area.
5. No part of this material may be disclosed unless so approved under the AMRO Agreement.
6. On behalf of AMRO, the Mission team wishes to thank the Korean authorities for their comments on this Report, as well as their excellent meeting arrangements and hospitality during our visit.

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Executive Summary

- 1. The Korean economy continues to gain strength, mainly driven by exports and private investment, with strong support from fiscal policy.** In H1 2017, the economy was revitalized with stronger facilities and construction investment and a rebound in exports, while private consumption showed nascent signs of recovery. The new government's supplementary budget also helped boost growth. By sector, Information and Communication Technology (ICT) has strongly outperformed non-ICT sector. Employment growth, meanwhile, has shown only a modest recovery since June 2017. The economy expanded by 3.1 percent in 2017, above the potential growth rate. In 2018, growth will likely moderate to 2.9 percent due to slower construction and despite continuing improvement in private consumption supported by higher government spending.
- 2. Inflation has picked up and is around the medium-term target of 2.0 percent.** Demand-side inflation pressures remain subdued with stable core inflation and moderate wage growth. Core inflation has been below 2.0 percent since H2 2016 while the output gap has been slightly negative. Moving forward, headline inflation is projected to remain at 1.9 percent in 2018, the same as in 2017 while core inflation is expected to rise to 2.0 percent in 2018 from 1.5 percent in 2017. Although cost-push factors are expected to be modest with stable oil and agricultural prices, a recovery in private consumption, supported by higher government spending, and the closing of the output gap, are expected to translate into higher inflationary pressures with a time lag.
- 3. The external position remains strong.** The current account surplus has remained sizable on the back of a large trade surplus despite a deterioration in the services account deficit. The financial account has posted net outflows due to continuing overseas portfolio investment by residents while non-residents' portfolio investment remains positive on a net basis. External debt payment capacity remains sound with improved maturity structure and strong foreign exchange reserve buffers. The current account surplus is projected at 5.5 percent of GDP in 2017 before moderating to 4.9 percent in 2018.
- 4. Credit to the private sector—particularly to households—continues to increase.** The imposition of stricter loan screening guidelines on banks in 2016 and non-banks in 2017 has contributed to a slowdown in lending to households. Financial institutions' buffers to cover expected and unexpected losses remain sufficient, with high capital adequacy ratios and low NPL ratios in both banks and non-banks. The financial markets have been relatively stable despite elevated geopolitical tensions
- 5. Fiscal buffers remain ample with strong revenue collection.** Fiscal revenue has shown strong improvement with brisk tax collection since 2016. In 2017, fiscal spending expanded with a higher priority on job creation. On a net basis, the fiscal balance is expected to deteriorate slightly in 2017, but the government debt level in terms of GDP remains low. The new five-year policy roadmap will be supported by additional expenditure of 178 trillion won for five years, which means that greater fiscal discipline will be required over the medium-term to ensure fiscal soundness.
- 6. Key near-term risks to Korea's outlook include rising trade protectionism and geopolitical tensions.** Headwinds to the growth outlook comprise a sustained drag on private consumption from high household debt, and rising trade protectionism. Meanwhile, heightened geopolitical tensions and tighter global financial conditions may pose significant tail risks to financial stability. U.S. trade protectionism, including potential

amendments to the Korea-U.S. FTA, may be a drag on Korea's strong exports through bilateral and spillover channels.

7. **From a longer-term perspective, key challenges are centered around declining potential growth rate.** This is due to a combination of factors including a rapidly aging population, sluggish fixed investment and slow productivity growth. Widening income inequality among households may make it difficult to broaden domestic demand. In the corporate sector, the uneven growth between ICT and non-ICT companies has led to concerns about excessive concentration in the ICT sector which makes the economy susceptible to shocks arising from global ICT downturns and fierce competition in the ICT sector. The continued relocation of production lines abroad could adversely affect Korea's key manufacturing sectors, further weakening domestic employment.
8. **The active use of fiscal policy to pursue an inclusive economic growth strategy without jeopardizing fiscal sustainability is commendable.** The government's strong commitment to achieving more inclusive growth is welcome. However, it may be necessary to adjust the speed of policy implementation to avoid disrupting labor market stability and to be mindful of the risk of increasing costs for the business sector—especially SMEs—in the near-term. Given the rising demand for welfare and social services owing to an aging population, it is important to minimize the risk to fiscal sustainability by improving expenditure restructuring while broadening the tax base.
9. **The current accommodative monetary policy should be headed toward a gradual normalization to build up policy space in view of the robust economic growth.** Monetary condition has become accommodative with the recent rise in inflation and it would be prudent to shift the policy mix such that there is greater reliance on fiscal policy to help sustain the growth momentum and facilitate the restructuring of the economy. Another consideration is the high level of household debt, which has increased rapidly in the last few years, and needs to be contained through strict macroprudential measures and lending conditions. It is therefore timely for the Bank of Korea to start the gradual normalization of monetary policy to build up policy space.
10. **Strict macroprudential measures will help contain and stabilize the rapid growth in household debt and housing prices.** The recent macroprudential measures are expected to curb excessive demand in housing markets in some areas and slow down the growth in household debt. A further tightening of macroprudential policy should be considered with some caution after reviewing the effectiveness of the policies already in place. Moreover, special attention should be paid to protecting households with non-speculative demand for housing from losing access to financing.
11. **The continued implementation of structural reforms is required to strengthen long-term growth potential.** The new government's "innovative growth" pillar, encompassing strong support to cutting-edge technologies, intensive investment in competitive SMEs, a build-up of 5G, and Internet of Things (IoT) networking infrastructure, is commendable. Furthermore, greater efforts should be made to expedite a broad range of institutional reforms that have been delayed or derailed due to recent political uncertainty, including labor market reforms and financial innovation.

A. Recent Developments and Outlook

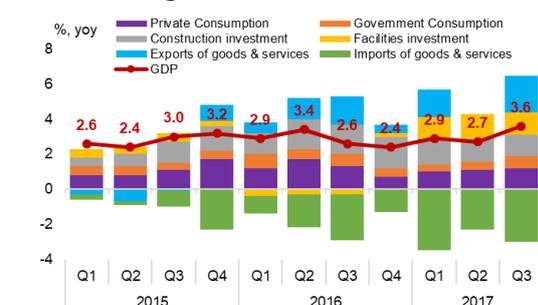
A.1 Real Sector and Prices

1. **The Korean economy continues to grow in 2017, mainly driven by private investment and exports.** In Q3 2017, real GDP growth expanded strongly to 3.8 percent on a yoy basis from 2.7 percent in Q2. By expenditure, the main contributions came from stronger facilities, construction investment and exports. Merchandise exports continued to show healthy growth although its contribution to total exports was partially offset by a sharp drop in service exports. Imports saw robust growth mainly led by capital goods and oil products. Private consumption remained relatively weak amid a sluggish improvement of households' real incomes. Consumer sentiment, meanwhile, exhibited a strong upward trend after the Presidential election in May, and then edged down with rising geopolitical tensions.

2. **On the production side, the construction and manufacturing sectors showed strong growth followed by some moderation, while the service sector continued to slow.** According to GDP data, in Q3 2017, construction continued to expand strongly by 7.0 percent on a yoy basis and manufacturing grew by 6.6 percent, mainly led by electronic and electrical products and machinery. Services grew by 2.4 percent, up from 1.9 percent in Q2. By industry type, the Information and Communication Technology (ICT) sector continued to outperform the non-ICT sector due to the current IT upcycle. In the third quarter, industrial production indicators suggest that manufacturing posted some corrections while construction declined significantly.

3. **Employment growth is showing a modest recovery, mainly led by construction, manufacturing and elderly workers.** Manufacturing employment growth has turned positive on a yoy basis since June this year owing to improved exports, and is likely to overcome the negative impacts from the previous year's corporate restructuring (see Box A. Key Updates on Korea's Corporate Restructuring). Construction employment continues to rise. In contrast, services employment remains stagnant mainly in the hotel and restaurant sectors, weighed down by the decrease in Chinese tourist arrivals. By age, the 50-59 and the over 60 age groups continue to lead employment growth while youth employment remains weak.

Figure 1. Real GDP Growth



Note: The contributions of imports to GDP are expressed as minus.
Source: Bank of Korea

Figure 2. Industrial Production



Note: Based on yoy growth rates of smoothed indices (3 month moving averages).
Source: Statistics Korea, AMRO staff calculations

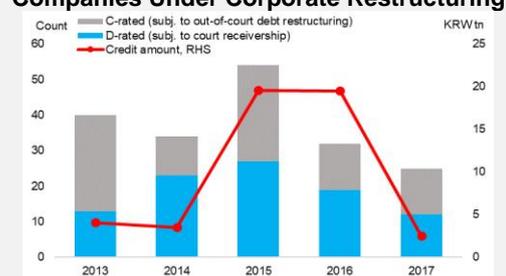
Box A. Key Updates on Korea's Corporate Restructuring

Since the second half of 2015, the Korean government has pushed forward full-scale corporate restructuring in vulnerable industries. In October 2015, in response to a surge of unprofitable firms, the government formed an inter-ministerial council to speed up restructuring by selecting five vulnerable sectors—shipbuilding, shipping, steel, construction and petrochemicals. In April 2016, the Financial Services Commission (FSC) proposed a ‘three-track restructuring’ system under which industries are divided into three categories, depending on industrial characteristics and firm’s business situations:

- Track 1: Business cycle-sensitive (shipping, shipbuilding) → creditor group-led industrial restructuring in line with the government’s basic direction
- Track 2: Debt-constrained sector → credit risk assessment-based restructuring
- Track 3: Oversupply sector (steel, petrochemicals) → autonomous business restructuring motivated by tax incentives and streamlined regulations

With restructuring in shipping and shipbuilding largely completed, the number of corporates for restructuring posted a decline in 2017. In the shipping industry, since the fallout of Hanjin Shipping’s bankruptcy, remaining companies including Hyundai Merchant Marine and SM Line are substantially filling the gap left by Hanjin in the market shares for key routes. In the shipbuilding industry, Daewoo Shipping Marine, rescued from a liquidity crunch by state banks and bondholders in April 2017, showed a mild business recovery, turning to positive earnings in the first quarter of 2017 while pursuing self-restructuring efforts such as manpower reduction and asset sales. As of August 2017, the number of large companies subject to restructuring and the amount of their debt showed a decline in aggregate compared to the previous four years’ records.

Figure A1. The Number of Large Companies Under Corporate Restructuring



Note: Based on annual creditor banks’ assessments for over 1,900 large corporations with loans of over 50 billion won.
Source: Financial Supervisory Service

In April 2017, the FSC set out a new approach to corporate restructuring with a focus on a more capital market-based restructuring scheme. The existing framework has been mainly led by creditor banks, but an increasing number of Korean corporates are relying on the capital market for financing, such as corporate bonds or commercial papers. Such a change made the process of adjusting the interests of creditors more complicated and difficult. Against this backdrop, the FSC aims to shift to a new approach to corporate restructuring, in which capital market players/approaches, including private equity funds and pre-packaged plans, are more actively engaged in the process of credit risk evaluation and debt restructuring.

4. Going forward, the Korean economy is projected to grow by 2.9 percent in 2018.

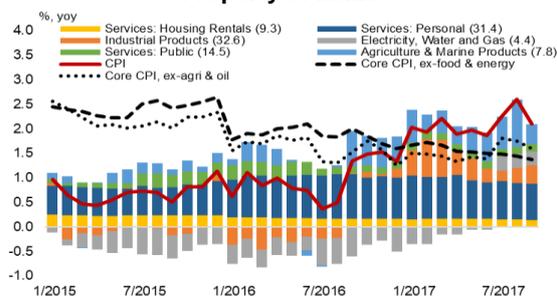
In the second half of 2017, private consumption was boosted by direct cash subsidies to the household sector from a supplementary budget. Exports and facilities investment led by the current ICT upcycle remained strong. In contrast, construction investment moderated, mainly reflecting tighter policy measures in the housing market as well as slower pace in housing starts since last year. In 2018, growth will likely decline to 2.9 percent due to slower construction despite a continuing improvement in private consumption supported by expansionary government spending.

5. **Headline inflation has picked to reach the medium-term target of 2.0 percent or thereabouts, and this was mainly due to higher energy and agricultural prices.** In January 2017, monthly CPI inflation (on a yoy basis) reached 2.0 percent, the BOK's target level, for the first time since the target was revised down from target range between 2.5 and 3.5 percent in January 2016, and has hovered above the target since then (Figure 3). However, the pick-up in consumer inflation was mainly attributed to supply-side pressures, including a recovery in oil prices as well as a sharp rise in food prices due to unfavorable weather conditions and a bird flu outbreak. A base effect from the temporary cut in electricity tariff during July to September 2016 also accounted for a rise in the headline inflation with a one-year lag.

6. **Demand-side inflation pressures remain subdued with stable core inflation and moderate wage growth.** Core inflation, excluding food and energy, remains below 2.0 percent while the output gap is slightly negative and narrowing. In the first half of 2017, nominal wages (cumulative, per regular worker) grew by 3.0 percent on a yoy basis, falling short of the growth of 3.2 percent and 4.1 percent in the same periods in 2015 and 2016, respectively. Households' one-year-ahead inflation expectations continued to be anchored at around the 2.5 percent range. Housing purchase prices remained stable, except in some areas—including Seoul, Busan, and Sejong City—that saw rapid price rises after the presidential election in May.

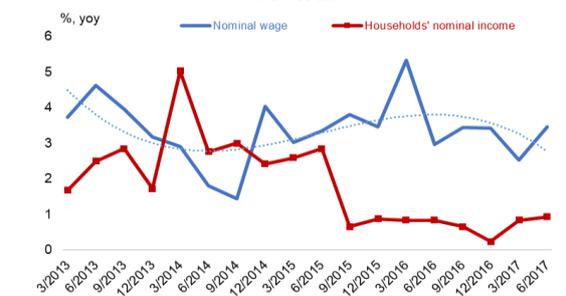
7. **Moving forward, headline CPI inflation is expected to remain at around 2.0 percent in 2017-18.** Cost-push inflationary pressures are expected to moderate, mainly owing to stable oil and agricultural prices. Instead, a recovery in private consumption supported by expansionary government spending and the closing of the output gap are expected to translate into inflationary pressures with a time lag. On average, headline inflation is projected to be 1.9 percent in 2018, the same as in 2017. In contrast, core inflation is expected to rise to 2.0 percent in 2018 from 1.5 percent in 2017, mainly driven by upward demand-side pressures.

Figure 3. CPI Inflation and Contributions by Property of Items



Note: Figures in the legend indicate percentage shares in the CPI basket.
Source: Statistics Korea, AMRO staff calculations

Figure 4. Nominal Wage and Households' Income Growth



Note: Nominal wage growth is based on quarterly wage averages of all workers, including permanent, temporary and daily employees, in all industries. The dotted line indicates a polynomial trend of the wage growth.
Source: Ministry of Employment and Labor, Statistics Korea

Authorities' Views

8. **The authorities largely agreed with AMRO's growth outlook while their GDP forecasts (3.0 percent in 2018) remain slightly above AMRO's projection.** They expect that the 2017 supplementary budget as well as the new government's income-led growth initiatives will be effective in boosting private consumption. On the inflation front, the authorities agreed that despite rising headline inflation, demand-driven pressures remain subdued, with the realization of 1.9 percent in 2017. In contrast, they take a different view on the inflation forecast for 2018, expecting it to moderate to 1.7 percent on the back of stabilizing oil and agricultural prices that will outweigh a rise in demand pressures from expansionary government spending.

A.2 External Sector

9. **The current account continues to register a strong surplus amid a deterioration in the services account deficit.** In the first seven months of 2017, the current account surplus remained sizable on the back of a large merchandise trade surplus, following a significant surplus of 7.0 percent of GDP in 2016. Exports and imports have shown a strong recovery since Q4 2016, largely due to rising export prices, while export volume growth has turned positive since January 2017. In contrast, the services account registered increased deficits, largely due to a sharp drop in tourist arrivals and a continuing slump in the shipping industry. The primary income account worsened due to an increase in dividend payments to foreign investors. Moving forward, the current account surplus is projected to be 5.4 percent of GDP in 2017 before moderating to 4.9 percent in 2018.

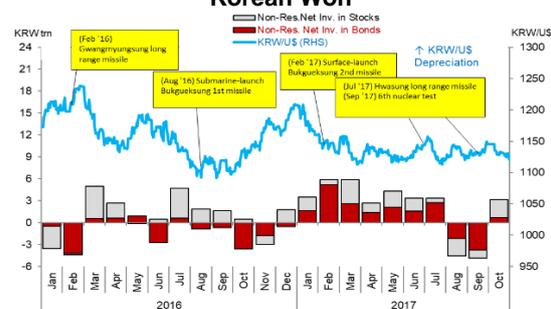
10. **The financial account showed an increase in net portfolio investment assets abroad.** The financial account continued to post net outflows, largely due to continuing portfolio investment abroad by residents in search of higher yields on the back of ample foreign currency liquidity and a prolonged low interest rate environment. On the other hand, non-residents' portfolio investments in Korea increased significantly to register a net inflow since early this year, while showing net outflows in August and September, partly affected by elevated geopolitical tensions with North Korea (Figure 5).

11. **The Korean won has been largely stable despite the U.S. Fed rate hikes and elevated geopolitical tensions with North Korea.** In the first three months of 2017, the won appreciated strongly against the U.S. dollar, largely due to weaker U.S. dollar on diminishing expectations of U.S. fiscal stimulus and more gradual pace of Fed rate hikes. Since April 2017, the won has been largely stable against the dollar while the geopolitical tensions triggered by missile tests by North Korea have caused short-lived bouts of volatility in the currency. On a

real effective exchange rate basis, the Korean won has appreciated since the second half of 2016, according to the BIS Broad Index.¹

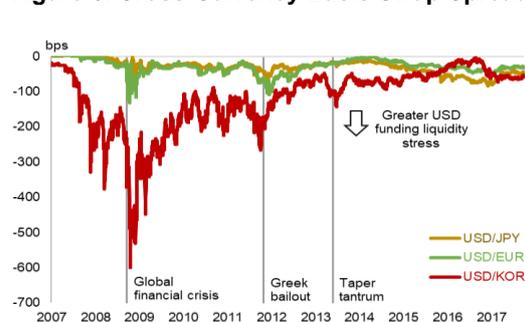
12. **External debt payment capacity remains strong with an improved maturity structure and strong foreign exchange reserve buffers.** Gross external debt remains low at about 28.0 percent of GDP as of June 2017. By maturity composition, short-term debt with tenure of less than one year accounts for around one-third of the total amount. In terms of repayment capacity, foreign exchange reserves reached over USD380.0 billion, equivalent to around 10 months of imports and more than three times the short-term external debt. Moreover, Korea's net financial assets invested overseas, or net international investment position (IIP), has remained positive and sizable since 2014. As a proxy for USD short-term liquidity, Korean won swap spreads have widened slightly since Q4 2016 when the Fed embarked on rate hikes, but have remained relatively low, comparable to those of euro and yen.

Figure 5. Foreigners' Portfolio Investments and Korean Won



Note: The box memo indicates North Korea's key missile provocations.
Source: Financial Supervisory Service, Bank of Korea

Figure 6. Cross-Currency Basis Swap Spreads



Note: Based on 1-year swap spreads, which indicate the interest rate differentials between money market and derivative markets for USD borrowing.
Source: Bloomberg

A.3 Financial Sector

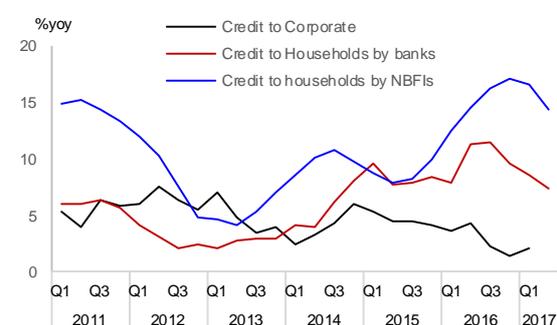
13. **Credit to the private sector continues to rise, especially to households.** In the first half of 2017, household credit continued to grow, albeit at a moderate pace, whereas corporate credit growth slowed down. Stricter loan screening guidelines for banks introduced in February 2016 and tightened regulations on mortgage loans in mid-2017 contributed to a slowdown in commercial bank mortgage lending to households. Similarly, after the government extended the adoption of tighter loan screening guidelines to non-banks in March 2017, non-bank lending to households continued to expand at a decelerating pace.

14. **However, from a prudential perspective, financial institutions' capital adequacy and asset quality remain sound.** Commercial banks' financial buffers to cover expected and unexpected losses remain largely sufficient with high capital adequacy ratios and loan loss

¹ According to the bi-annual assessments of major U.S. trading partners' foreign exchange policies in April 2017, the U.S. Treasury estimated that the Korean authorities sold USD6.6 billion on a net basis, finding lack of evidence on asymmetric foreign exchange interventions to support won depreciation. In conclusion, the U.S. Treasury decided to retain Korea on its Monitoring List owing to meeting the two other criteria (significant bilateral trade surplus, material current account surplus).

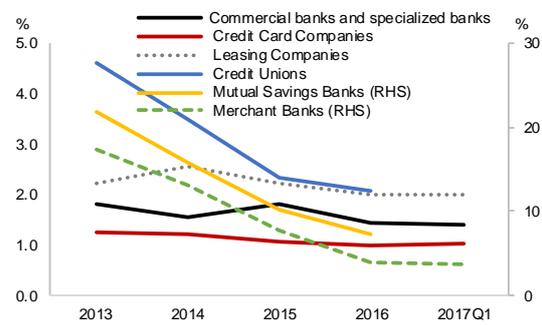
provisions. Meanwhile, non-bank financial institutions remain resilient with capital adequacy ratios above the minimum regulatory requirements. Despite rapid growth in lending to households, the credit risk of banks and non-banks are still manageable. Substandard-or-below loan ratios of banks and non-banks have largely declined since 2015. On the borrowers' side, household financial conditions remain sound with the financial liabilities-to-assets ratio at around 46.1 percent in the first quarter of 2017. Likewise, corporates' financial position improved due to rising profitability. Meanwhile, the interest coverage ratio increased to 900.0 percent during the first half of 2017, while the debt-to-equity ratio declined to 73.0 percent in the second quarter of 2017.

Figure 7. Private Credit Growth



Source: Bank of Korea, AMRO staff calculations

Figure 8. Substandard-or-below Loan Ratio



Source: Financial Supervisory Service

15. **Housing prices have remained largely stable although prices in a few urban areas, such as Seoul and Sejong City, have registered a rapid increase since May 2017.** In the first half of 2017, nationwide housing prices registered a modest recovery with monthly growth rates of less than 0.2 percent. In late May, housing prices in urban areas such as Seoul, Busan, and Sejong City began to rise again sharply amid optimistic market sentiments on the back of improving economic conditions and with a new government coming into office, after showing some moderation triggered by tightening measures in November 2016.² In response to the resurgence in housing prices, the government tightened policy measures in June and August 2017, to curb speculative demand in some areas as well as to mitigate spillovers to other regions.³ The government attributed such price spikes to speculative demands, as reflected in the upward trends of purchases by multi-home owners as well as rising transactions of reconstructed apartments in pre-sale markets. Since the adoption of stricter regulations in August, the pace of housing price increase in areas with overheating has turned modest. Meanwhile, nationwide leasehold (*Jeonse*) prices of houses and

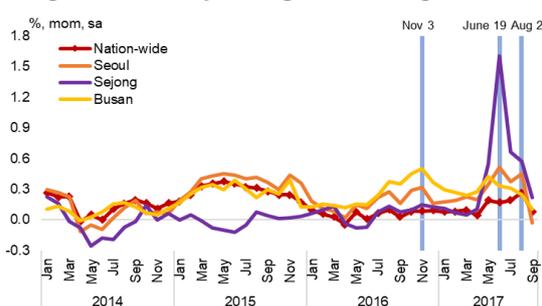
² On 3 November 2016, the government unveiled a set of measures to cool the overheating housing market, which included an extended ban on the transfer of home purchasing rights in certain areas, including Seoul and Gyeonggi Province.

³ On 19 June 2017, the land and finance ministries jointly announced measures to tighten mortgage regulations, including lowering the LTV (70→60 percent) and DTI (60→50 percent) ratios in Seoul, Gyeonggi Province and parts of Busan, as well as to restrict transactions of the right to buy apartments under construction. In addition, on 2 Aug 2017, more stringent measures were announced to further tighten mortgage regulations, including lowering the LTV (60→40 percent) and DTI (50→40 percent) ratios in Seoul, Sejong City and Gwacheon City. The LTV and DTI ratios with multiple mortgage borrowers were further tightened by 10.0 percentage points.

apartments in the first half of 2017 grew by 1.0 percent on a yoy basis, moderating from the same period in 2016.

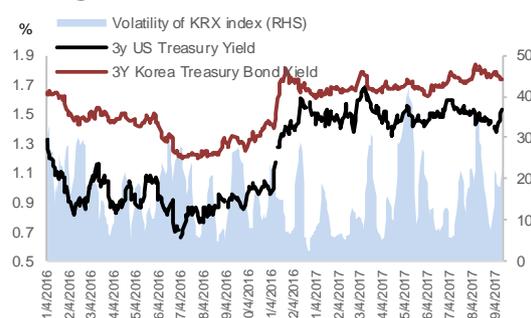
16. **The financial markets have been largely stable despite elevated geopolitical tensions.** The stock market registered a rapid rise in the first half of 2017, mainly due to improving corporate earnings and global risk-on sentiments. Heightened geopolitical risk in the Korean peninsula led to temporary volatility of the stock indices as well as a rise in sovereign risk as reflected in credit default swap premium. Korean government bond yields rose at around the time of the increases in the Fed funds rate and the U.S. presidential election.

Figure 9. Monthly Change in Housing Prices



Note: The shaded areas indicate the dates when the announcements on major tightening regulations for the housing markets were made.
Source: Korea Appraisal Board, AMRO staff calculations

Figure 10. Financial Market Conditions



Source: Korea Financial Investment Association, Korea Exchange, U.S. Federal Reserve Board, AMRO staff calculations

A.4 Fiscal Sector

17. **Since assuming office in May 2017, the new government has been pursuing a new growth strategy making active use of fiscal policy.** The Moon administration announced that it would seek a new economic paradigm ('human-centered economy') to overcome low-growth and income polarization. Its four main pillars include: i) income-led growth, ii) economy creating more jobs, iii) fair competition, and iv) growth through innovation. To this end, the government has pledged that fiscal spending will be increased at a much faster rate than nominal GDP growth in the next five years (see Box B. The New Government's Economic Policy Initiatives).

18. **Fiscal revenue has shown strong improvement with brisk tax collection since 2016.** In 2016, total revenue stood at 24.5 percent of GDP, up from 23.8 percent in the previous year. In particular, annual tax revenue grew by 11.0 percent from a year earlier, exceeding the target amount by 4.2 percent, on the back of strong corporate earnings and active property markets. In 2017, revenue collection is expected to remain favorable, as evidenced by the strong revenue growth of 9.8 percent on a yoy basis during the first ten months. The total revenue-to-GDP ratio is budgeted to increase to 25.1 percent. In the first ten months, total revenue grew at a steady pace with a progression rate of about 88.0 percent, higher than in the same period in 2016.

Box B. The New Government's Economic Policy Initiatives

In July 2017, the Moon administration announced a new five-year policy roadmap with a focus on growth, job creation and welfare. The five-year plan presented a comprehensive reform agenda on a wide range of areas including political, social and economic issues, and national security. In the economic policy area, the new government diagnosed that the current economic growth strategy has been supporting large exporting firms, thus worsening income inequality due to a breakdown in the linkages between growth, employment and household income. The new government has made a strong commitment to restore the virtuous cycle between growth and income distribution.

Under the new framework, Korea's economic policy paradigm has shifted from quantitative growth targets to achieving "qualitative" growth and pursuing co-prosperity. The new economic policy consists of four main pillars. The first pillar is "*income-led growth*", boosting minimum wage and cutting core costs of living—including housing, healthcare and education expenses—in order to increase household disposable income. The second pillar, "*job-centered economy*", aims to expand job creation and improve labor conditions in order to overcome jobless growth. The third pillar is "*innovative growth*"—which aims to create market systems where firms are able to engage freely in economic activities, while measures such as deregulation or preparedness for the fourth industrial revolution, can help boost their productivity. Under the fourth pillar "*fair competition*", the new government is of the view that although Korea is a market economy, there are areas where fair competition is lacking, especially in the relationship between large corporates and SMEs. This calls for the government to create a more level playing field and enhance fair competition.

Table B1. The Moon Jae-in Administration's New Economic Policy Direction

Income-driven Growth	Job-centered Economy	Innovative Growth	Fair Competition
<ul style="list-style-type: none"> • Increase households' disposable income • Secure the vulnerable group's income by strengthening social safety nets • Expand education investment to provide all children with opportunities to grow qualified professionals 	<ul style="list-style-type: none"> • Pursue job creation-friendly economic policies to overcome jobless growth • Promote employee-centered labor market to improve job quality • Strengthen active labor market policies 	<ul style="list-style-type: none"> • Promote cooperation and innovation to develop SMEs as the country's growth engine • Prepare for the fourth industrial revolution • Enhance economic cooperation to cope with trade protectionism 	<ul style="list-style-type: none"> • Remove unfair practices toward subcontractors • Improve corporate governance to create a level playing field • Pursue shared growth and protect small merchants • Promote social economy

Source: Ministry of Strategy and Finance

The new five-year policy roadmap will be supported by active fiscal policy, an additional 178 trillion won, and will require prudent fiscal discipline over the medium-term. The five-year roadmap to improve growth, employment and social welfare is estimated to cost a total of 178 trillion won from 2018-2022. The new government has presented a blueprint to finance the cost through higher tax revenues (82.6 trillion won) and by restructuring fiscal spending (95.4 trillion won). According to the plan, the former can be readily achieved given the strong revenue collection in the past and will also be supported by potential taxation adjustments, including cutting tax exemptions and fighting tax evasion. On the expenditure side, a third of the 95.4 trillion won will be covered by excess reserves from government funds and the remaining two-thirds by restructuring low-priority projects.

As a first step, the 2018 budget proposal aims to successfully initiate the five-year policy roadmap while carrying out strong fiscal restructuring. Major welfare initiatives include: i) strengthening childcare support (for example, 100,000 won per month for children aged 0-5), ii) encouraging young worker employment (for example, provide SMEs with 20 million won per newly hired young adult for three years), iii) improving housing support for the newly-married, iv) raising the basic pension for the elderly (from 206,000 to 250,000 won per month), and v) improving welfare for the low income (for example, increasing the energy voucher from 95,000 to 102,000 won). Key initiatives for innovation growth include: i) expanding investment in the fourth industrial revolution, and ii) increasing the number of startups receiving support through the Tech Incubator Program for Startups from 150 to 284. On the other hand, key fiscal restructuring initiatives include: i) prudently managing social overhead capital (SOC) budgets and significantly expanding spending on welfare and job creation, and ii) carrying out zero-based budgeting, and increasing spending efficiency by revising the budget and expenditure system to help those in need.

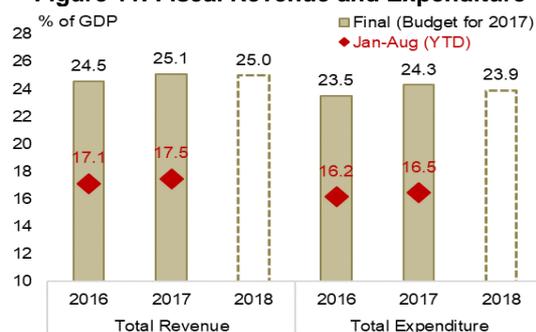
19. **Fiscal spending has expanded owing to the job creation priority of the new government.** In 2016, total expenditure amounted to 23.5 percent of GDP, edging down from 23.9 percent in 2015. In the 2017 budget, the target is to increase expenditure to 23.7 percent of GDP. The new government proposed a supplementary budget, which was approved in July 2017, to support its job creation initiative. The extra spending will be disbursed to support job creation in the public sector, job-seeking and wage subsidies for youth employment, as well as to improve job conditions, including funding support to young workers in SMEs, an increase in childcare leave benefits, and the expansion of public childcare centers.⁴ This is in contrast to the 2016 supplementary budget that was proposed to support mainly corporate restructuring. The government has announced that the supplementary budget would be swiftly implemented in the second half of 2017 by spending 70.0 percent of the supplementary budget by the end of September.⁵

20. **On a net basis, the fiscal balance is expected to deteriorate slightly in 2017, but the government debt to GDP ratio is likely to remain relatively low.** In 2016, the overall fiscal balance improved to 1.0 percent of GDP from 0.0 percent in 2015. Similarly, the operational fiscal balance, which is net of the social security fund balance and a benchmark indicator to assess Korea's fiscal stance, also improved to -1.4 percent in 2016 from -2.4 percent a year earlier. In 2017, the new government's higher reliance on fiscal spending is likely to lead to a slight widening of the operational fiscal deficit. The government's debt-to-GDP ratio remains relatively low with the central and the general government debt-to-GDP ratios standing at 36.1 and 38.3 percent respectively, as of the end of 2016.

21. **The 2018 budget proposal calls for accelerated spending, with a greater focus on job creation and social safety nets, on the back of strong tax revenue projection.** According to the 2018 budget proposal, total expenditure is expected to edge up to about 23.9 percent of GDP. In line with the government's commitment to maintain higher spending in the next five years, 2018 spending is expected to grow much faster than in the previous years, and much faster than the nominal GDP growth projections. By allocation, health, welfare, employment and education saw a sharp increase in expenditure share, while the expenditures on SOC and industry support dropped. Despite higher growth in spending, the fiscal balance is unlikely to worsen in 2018, as the strong tax revenue collection is expected to continue.

4 The 2017 supplementary budget has three main areas of spending: job creation (4.2 trillion won), job condition improvement (1.2 trillion won), and social safety net enhancement (2.3 trillion won). The concrete policy measures on job creation include the employment of 12,000 additional workers in the public sector, and support for youth employee wages in SMEs (for every third worker after hiring two employees) for three years. Eligible young workers in SMEs can get two-year saving funds of 16 million won (or USD15,000), co-paid by employers and the government. Moreover, youth in eligible job-seeking programs can be given monthly allowances of 300,000 won for three months.

5 According to the Ministry of Strategy and Finance, as of 25 October 2017, the progress rate of the supplementary budget implementation registered at 86.4 percent, which exceeded the government target of 84.5 percent for the same period.

Figure 11. Fiscal Revenue and Expenditure

Note: Annual figures for 2017 and 2018 are based on the supplementary budget and the budget proposal respectively.
Source: Ministry of Strategy and Finance

Figure 12. 2018 Budget Proposal on Expenditure

	Budget (KRW trn)	% Share	YoY %
Health, Welfare, Employment	146.2	34.1	12.9
- Of which: Job Creation	19.2	2.1	12.4
Education	64.1	14.9	11.7
Public admin., Local governments	69.6	16.2	10.0
National Defense	43.1	10.0	6.9
Diplomacy, Reunification	4.8	1.1	5.2
Social order, Safety	18.9	4.4	4.2
R&D	19.6	4.6	0.9
Agriculture, Forestry, Fishery, Food	19.6	4.6	0.1
Industry, SME, Energy	15.9	3.7	-0.7
Environment	6.8	1.6	-2.0
Culture, Sports and Tourism	6.3	1.5	-8.2
SOC	17.7	4.1	-20.0
Total Expenditures	429.0	100.0	7.1

Note: YoY growth is calculated from comparisons with the 2017 official budget.
Source: Ministry of Strategy and Finance

B. Risks, Vulnerabilities and Challenges

22. **Our baseline projection may be affected by various risk factors.** In the baseline scenario, the Korean economy is expected to grow at its potential growth rate in the near term. However, headwinds to the growth outlook comprise a sustained drag on private consumption from high household debt and weaker external demand due to rising trade protectionism. In addition, heightened geopolitical tensions and tighter global financial conditions may pose significant risks to macroeconomic and financial stability. Longer-term challenges and vulnerabilities include widening income inequality and an aging population. Meanwhile, the successful implementation of the government's new economic policy agenda could raise the growth potential by rebalancing the economy to depend more on domestic demand. A faster recovery in global demand may also pose upside risks to the growth outlook.

B.1 Near-term Risks to the Macro Outlook

23. **A drag on private consumption due to high household debt remains a key downside risk to the growth outlook.** Given the debt distribution is skewed towards mid- to high-income borrowers with large financial assets and low default rates, the high household debt is not likely to pose a systemic risk for the financial system, although it is a source of vulnerability. However, consumption by households may be constrained by debt servicing burdens in an environment of rising global interest rates, especially among vulnerable groups of borrowers with poor credit ratings, and among the low income and self-employed borrowers.

24. **In terms of the external sector, U.S. trade protectionism may serve as a drag on Korea's strong exports through bilateral and spillover channels.** The imposition of trade tariffs by the U.S. on exports of targeted countries with large current account surpluses, if they materialize, would directly and indirectly affect Korean exports. In addition, potential amendments and modifications of the Korea-U.S. FTA may pose downside risks to Korea's trade prospects. Moreover, U.S. threats to impose trade measures against China and the

amendment of NAFTA, if they materialize, may result in adverse spillovers to Korean exporters with high dependence on the processing trade in China or some production bases in Mexico producing automobiles for the U.S. market.

25. **Geopolitical risks over the Korean peninsula needs close monitoring.**⁶ Rising geopolitical tensions with North Korea should be watched closely, although the financial markets have remained generally stable thus far. In particular, additional provocations by North Korea followed by stricter sanctions would further escalate tensions, thereby amplifying volatilities in the financial markets and capital flows as well as negatively impacting economic sentiments.

26. **The pace of global monetary policy normalization remains an important risk factor to external financial stability.** The likelihood of faster-than-expected monetary policy normalization in advanced economies remains a concern as it could cause major capital outflows from emerging markets, including from Korea. Despite strong fundamentals in the external sector, Korea's capital markets—with their high degree of openness and liquidity—are vulnerable capital outflows, especially in periods of global financial distress.

B.2 Longer-term Challenges and Vulnerabilities

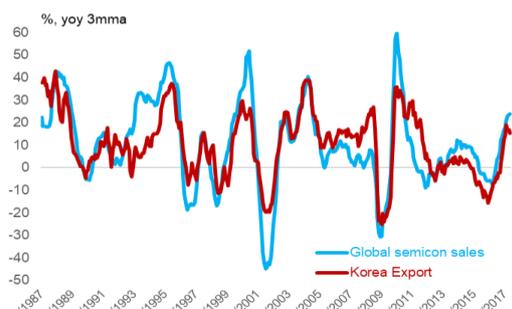
27. **Korea's increasing export reliance on a small number of semiconductor producers may increase the economy's vulnerability to global ICT downturns and fiercer competition in the industry.** The ICT industry has driven a strong rebound in Korea's exports and associated facilities' investment due to the boom in global demand for memory chips. That said, the increasing dependence of export and private investment on a small number of world-class chipmakers may mask Korean firms' declining competitiveness in non-ICT industries such as automobiles. In the medium-term, the fading away of the current "supercycle" in semiconductors as well as the fierce competition from latecomers like China could threaten Korea's exports and growth.

28. **On the domestic front, the outsourcing abroad of production lines will adversely affect Korea's key manufacturing sectors, further weakening domestic employment.** Korean companies have expanded production lines in overseas factories to exploit lower wages and tax incentives. As overseas production bases are still largely assembly lines using parts and components from Korea, a substantial portion of added-valued activities still take place as domestic production in Korea. However, the continued relocation abroad of Korean SMEs to facilitate local procurement of intermediate goods could lead to a declining domestic

⁶ In addition, it is worthwhile to note that sustained tensions with China in relation to the U.S. THAAD missile deployment in Korea for prolonged periods have adversely impacted the number of Chinese tourists visiting Korea and discouraged Korean firms' business operations in China since 2016. However, the agreement between both parties in late October 2017 to normalize the relations after a year-long dispute on THAAD is expected to reduce the negative spillovers to Korea's economic activities associated with China.

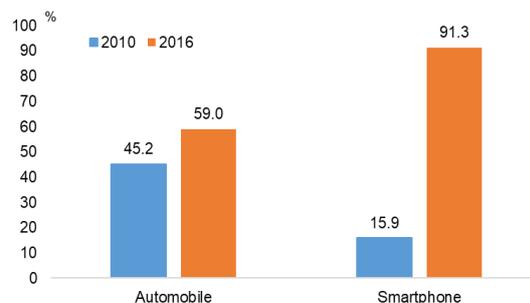
manufacturing sector, thereby weakening the labor market further, but potentially helping strengthen the current account balance through repatriations of earnings. A weak services sector with low productivity further weighs on the longer-term prospects for domestic production.

Figure 13. Semiconductor Cycles and Korean Exports



Note: Based on global semiconductor net billings and Korea's export values.
Source: Korea Customs Service, World Semiconductor Trade Statistics, AMRO staff calculations

Figure 14. Overseas Production Shares in Selected Industries

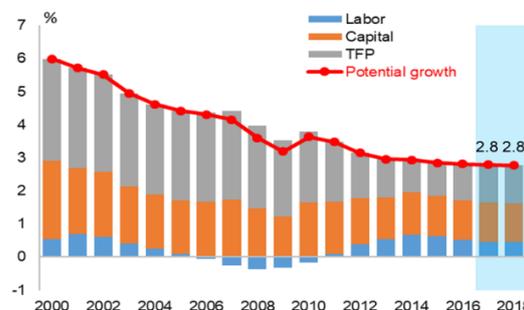


Note: Automobiles includes motor vehicle production by Hyundai and Kia.
Source: Korea Automobile Manufacturers Association, Ministry of Trade, Industry and Energy

29. **Korea's widening income inequality remains an obstacle to broadening domestic demand for sustainable growth.** The income gap between households and corporates has substantially widened since the Asian Financial Crisis. Decomposing the gross national income by sector indicates that, in real term, household income has increased at a slower pace than GDP while corporate income has increased much faster. Moreover, even among households, market income-based inequality has generally been worsening over the past decade, although the government's redistribution policies have helped limit the rise in inequality. By type of employment, the wage gaps between regular and non-regular workers—with the latter accounting for one-third of all employees—remain the same or have worsened, adversely affecting private consumption.

30. **Given the rapidly aging population, a combination of sluggish capital stock accumulation and slower productivity will also lead to a decline in potential growth.** Korea's working-age population is estimated to reach its peak in 2016, and the total population is expected to shrink starting in 2032. Moreover, capital stock growth has slowed after physical capital accumulated rapidly during high-growth periods in the 1980s and 1990s. Korea's labor productivity is ranked the lowest among OECD members,

Figure 15. Potential Growth



Note: Based on the production function method. Labor input is measured as the number of hours worked. The 2017-18 figures in the blue shade are based on AMRO projections.
Source: Statistics Korea, Bank of Korea, AMRO staff estimation

and poor labor productivity, especially in the service sector, is also responsible for declining growth momentum.

Authorities' Views

31. The authorities largely agreed with AMRO's view on the short-term risk factors.

On the financial side, the authorities agreed that escalating geopolitical tensions may trigger a spike in market volatility, while the negative impacts from rising household debt on the financial sector remain limited. Furthermore, the authorities remained concerned that local real estate markets may see a revival in overheating in major urban areas.

32. With respect to long-term challenges, the authorities broadly agreed with AMRO's assessment.

The authorities also noted that the economy's declining potential growth could be further affected by income imbalances between households and firms, and sectoral imbalances across industries. For the latter, they attributed lower trend growth to the "catch-up" growth policy centering on large firms, manufacturing firms, and firms that export. Moreover, labor market dualism and income bi-polarization have given rise to stagnant domestic demand while heightening social tension.

C. Policy Discussions and Recommendations

C.1 Active Role of Fiscal Policy in Pursuing Inclusive Growth

33. **The new government's active use of fiscal policy to pursue its inclusive economic growth strategy is commendable.** The government is strongly committed to achieving more inclusive growth. In recent years, the economy has shown strong resilience by growing at around 3.0 percent in the face of not just external shocks but also non-economic shocks, such as the Middle East Respiratory Syndrome (MERS) Crisis in 2015 and the presidential scandal in 2016. Notwithstanding the economic resilience, a widening income gap between the corporate and household sectors, and sectoral imbalances across industries have weakened the virtuous cycle from production to spending through equitable income distribution that is a prerequisite for strong and sustainable growth. In this context, we welcome the shift to the new policy paradigm to overcome low growth and income polarization by supporting vulnerable parts of the economy, as well as to foster confidence. Given the relatively low level of government debt, fiscal spending can be increased to help support household incomes and strengthen social safety nets including unemployment benefits.

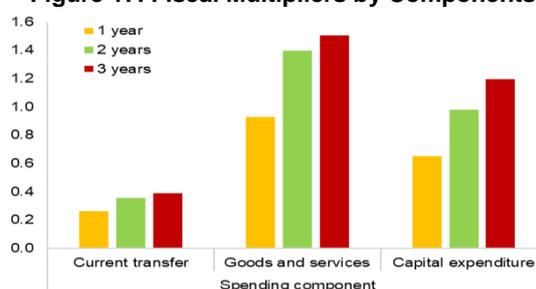
34. **Seeking more inclusive growth should eventually contribute to enhancing the sustainable growth potential.** Several studies have pointed out that fiscal stimulus boosted by cash transfers tends to be relatively small, especially compared to public investment-led fiscal stimuli, although it may help enhance income distribution and the social safety nets.⁷ A temporary increase in government consumption may lead to a substantial boost in growth, but at the expense of crowding out private consumption. Hence, from a long-term perspective, fiscal spending should be effectively utilized to strengthen weak supply-side factors, that is, encouraging higher labor participation among the youth and women, as well as fostering more innovative growth engines including new technologies such as Internet of Things (IoT) and artificial intelligence (AI).

Figure 16. Medium-Term Fiscal Balances



Note: The figures for 2017-21 are based on the Medium-Term Fiscal Management Plan (MTFMP) for 2016-2020 and 2017-2021 (latest revision).
Source: Ministry of Strategy and Finance

Figure 17. Fiscal Multipliers by Components



Note: Cumulative fiscal multipliers by expenditure components by the Bank of Korea's fiscal satellite model.
Source: Son, Kim and Hwang (2013)

⁷ This partly reflects the fact that current transfer items are not directly incorporated in GDP unlike government consumption or investment. For more details, refer to Park H. (2013), "A Meta-Analysis on Multiplier Effects of Fiscal Policy", *Proceedings of KAPF-KIPF Policy Conference*; Lee, Cho and Shin (2016), "A Model-based Analysis of the Economic Effects of Fiscal Spending by Items", *National Assembly Budget Office (NABO) Working Paper*, No. 21.

35. **Safeguarding against potential headwinds that the labor markets and the corporate sector are faced with, is desirable.** The new government's policy direction comprises establishing an employment-friendly economic-social system, improving employer-centric labor market practices, and strengthening active labor market policies. Nonetheless, it is necessary to adjust the speed of implementation so as not to disrupt labor market stability and to be mindful of the risk of increasing costs for the business sector, especially the SMEs. More importantly, creating a business environment with enhanced labor market flexibility to incentivize domestic investment and employment expansion is important.

36. **The authorities' strong commitment to restructure fiscal spending and broaden the tax base is welcome as it is essential to retain fiscal sustainability.** For the income-led growth strategy to be successful, it is important to minimize the risk to fiscal sustainability by focusing on expenditure reprioritization and improving spending efficiencies. In this regard, formulating concrete measures with more specific timetables would help secure stronger support from corporates and the general public. To meet the rising demand for welfare and social services owing to an aging population, it may also be necessary to consider broadening the tax base to some extent as well as make existing tax incentives more selective. In this respect, the 2018 tax proposal—increasing the tax rates for high-income earners and large corporates—may contribute to improving income inequality and higher revenues. Enhancing communication with the general public on near-term fiscal projections will also be helpful for this purpose.

Authorities' Views

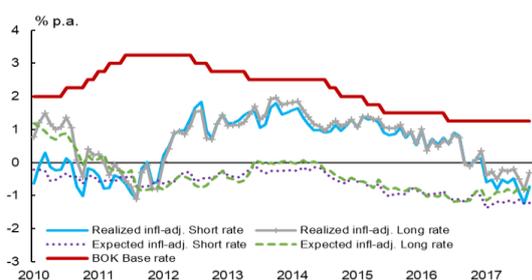
37. **The authorities have stressed the need for an active role for fiscal policy to support the labor market, while ensuring efficient resource allocation in the private sector.** Slowing job creation in the private sector and deteriorating youth employment conditions call for an increased role for the public sector to support job creation. The authorities plan to expand the number of jobs available in the public sector, particularly in areas with high demand, such as social workers, police officers and firefighters. A sustained period of unemployment hampers young people's ability to acquire work skills, and hence, supporting them to participate in the labor market will contribute to better allocation of resources and efficiency.

C.2 Unwinding Accommodative Monetary Policy

38. **Monetary and financial conditions have remained accommodative for extended periods of time.** The Bank of Korea (BOK) has implemented an accommodative monetary policy in response to weak economic growth and low inflation since mid-2012 when the output

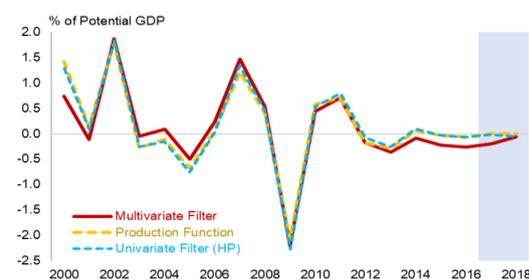
gap turned negative. It is assessed that maintaining an accommodative monetary policy has contributed to lowering borrowing costs at both short- and long-term maturities. However, the recent rise in headline inflation have led to negative real interest rates, while the output gap is estimated to have already, or will have closed by next year.

Figure 18. Policy Rate and Real Interest Rates



Note: 3-month KORIBOR and 3-year Treasury Bond rates were used for short- and long rates, adjusted to CPI inflation and BOK household expectations.
Source: Bank of Korea, CEIC, AMRO staff calculations

Figure 19. Output Gap



Note: The shaded area indicates projection periods.
Source: AMRO staff estimates

39. Moving forward, the current accommodative monetary policy should be headed toward a gradual normalization to build up policy space in view of the robust economic growth. Monetary condition has become accommodative with the recent rise in inflation and it would be prudent to shift the policy mix to greater reliance on fiscal policy to help sustain the growth momentum and restructure the economy. Another consideration is the high level of household debt which has increased rapidly in the last few years and needs to be contained through strict macroprudential measures and lending conditions. It is therefore timely for the BOK to start the gradual unwinding of its accommodative monetary policy.

40. Notwithstanding, the timing and pace of unwinding monetary easing should be consistent with macroeconomic and financial developments, and the external policy environment. The BOK may need to review its monetary policy stance, taking into account sequential growth, inflation trend, and financial stability conditions including the level of household debt, global monetary policy normalization, as well as heightened geopolitical tensions over the Korean peninsula. Continued efforts for clear and consistent communication will help financial market expectations to evolve largely in line with the authorities' view.

Authorities' Views

41. The BOK maintains a cautious view on the tightening bias while broadly agreeing with the need for it. The BOK is in full agreement that the authorities could consider adjusting the degree of monetary policy accommodation, given that economic growth is gaining traction and inflation has risen to its target level. However, the BOK maintains an accommodative policy stance while taking a "wait-and-see" approach until growth and inflation trends show marked improvement. The BOK also stressed that it will carefully monitor any changes in the

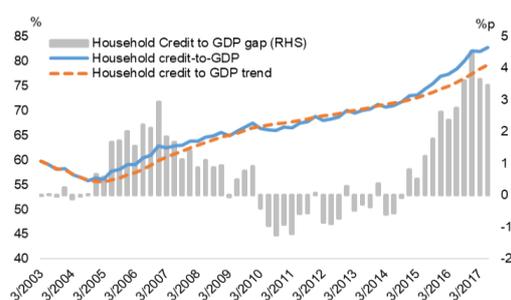
monetary policies of major countries, conditions related to trade with major countries, the trend of increasing household debt, and geopolitical risks.

C.3 Prudent Macroprudential Policy to Safeguard Financial Stability

42. Macroprudential policy should prioritize the curbing of household debt growth to single digits while safeguarding against speculative demand in the housing market.

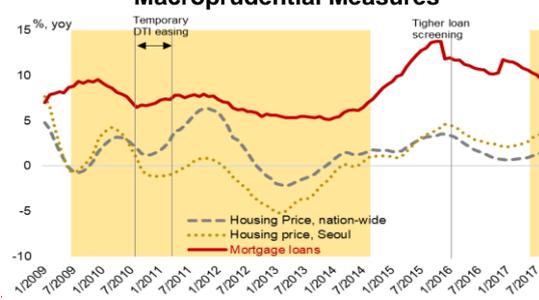
To moderate the continued expansion in household debt, the new government announced comprehensive measures for household debt management on 24 October 2017, comprising the newly introduced Debt Service Ratio (DSR) guidelines and stricter Debt-to-Income (DTI) criteria. Earlier this year, in response to the overheating housing markets in some areas, Loan-to-Value (LTV) ratio and DTI regulations were strengthened for the first time in three years, accompanied by tighter restrictions on housing transactions through stronger tax measures (see Box C. Comprehensive Measures for Household Debt Management).

Figure 20. Household Credit-to-GDP Gap



Note: Household credit-to-GDP gaps are calculated using the one-sided Hodrick-Prescott filter with a smoothing parameter of 25000.
Source: Bank of Korea, AMRO staff calculations

Figure 21. Housing Prices, Mortgage Loans and Macroprudential Measures



Note: The shaded areas correspond to the periods when LTV and DTI regulations largely remained tightened (July 2009-July 2014; June 2017-) assessed by Korea Appraisal Board.
Source: Korea Appraisal Board, Bank of Korea

43. **Stricter macroprudential measures will help contain and stabilize the rapid growth in household debt and housing prices.** Recent macroprudential measures are expected to curb excessive demand in housing markets in some areas and slow down the growth in household debt. A further tightening of macroprudential policy should be considered only after scrutinizing the effectiveness of the policies in place. In particular, an abrupt slowdown in construction investment—which accounts for about 15.0 percent of GDP—is not desirable. Special attention should also be paid to protecting households with non-speculative demand for housing from losing access to financing.

44. **The authorities should step up efforts to minimize the blind spots in regulating household credit.** In response to tighter regulations on consumer lending across a wider range of financial institutions, households' borrowing sources expanded from banks to non-banks, as well as from mortgages to credit loans. Some households with self-employed individuals have even relied on corporate loans to get around the tighter regulations on lending

to household. As such, more concerted efforts are needed to capture information on less regulated borrowing sources so that aggregate household debt can be managed as intended.

Authorities' Views

45. **The authorities also note that addressing high household debt issues calls for an eclectic approach balancing financial and macroeconomic stability.** The authorities are fully aware that adjusting household debt has substantial implications for not only the financial sector but also the real estate market and private consumption. In this context, the authorities aim to complement newly adopted stricter macroprudential measures with the provision of tailored assistance to borrowers with different debt repayment capabilities, and to protect vulnerable groups—households that have borrowed from non-banks, homebuyers with collective borrowing, or the self-employed. To rein in some potential risks stemming from the borrowings to the self-employed, the authorities will introduce a tighter review process on them.⁸

Box C. Comprehensive Measures for Household Debt Management

Despite households' debt repayment capacity being sound, the authorities felt that comprehensive policy actions for household debt management were needed to protect vulnerable borrowers, including the self-employed, and to manage the growth of household debt moving forward. In the household sector, the increase in financial assets, though gradual, has kept pace with the rise in financial liabilities, such that the liabilities-to-assets ratio has remained at 45.5 percent on average over 2010-2016. At the same time, the low delinquency ratio of banks' mortgage loans suggests that overall debt-servicing capacity has remained strong. However, the Korean authorities were increasingly concerned over the heightened strain on overextended borrowers, including the self-employed, and the potential impairment of banks' assets, which would arise if loan defaults increase due to some combination of economic growth slowdown and/ or interest rate hikes.

In October 2017, the Korean authorities announced the Comprehensive Measures for Household Debt Management with important policy objectives for both the short-term and mid- to long-term. This included managing household debt and thereby reducing financial risks in the short-term, while improving borrowers' repayment capacities and strengthening macroeconomic soundness in the mid- to long-term. The authorities aim to achieve a "soft landing" for household debt growth by fine-tuning the application of the Debt-to-Income (DTI) framework and introducing the new Debt-Service Ratio (DSR) framework. To improve borrowers' repayment capacity, the borrowers are divided into four groups according to the degree of debt stress and their debt-repayment capacity, and tailored assistance will be provided to each group of borrowers. The authorities will continue to increase the share of fixed rate loans and amortizing loans in banks' mortgage loan portfolios to improve the structure of household debt.

In assessing the degree of debt stress, the DSR and Debt-to-Asset (DTA) ratio will be used and borrowers will be classified into Group A to C. Group A will comprise borrowers with DSR

⁸ 'Examination Guidance for Private Business Loans' will be effective from March 2018 under the new 'Financial Institutions Loan Review Process' that was announced in November 2017.

lower than or equal to 40.0 percent and DTA lower than or equal to 100.0 percent; Group B comprise borrowers with either DSR higher than 40.0 percent and DTA lower than or equal to 100.0 percent or DSR lower than or equal to 40.0 percent and DTA higher than 100.0 percent; and Group C with DSR higher than 40.0 percent and DTA higher than 100.0 percent. (Table C2) Borrowers with no repayment ability will be classified as Group D. Each group of borrowers will receive different assistance from the authorities. Debt could be written off for Group D borrowers after a thorough review of their repayment capacity to prevent moral hazard.

Table C1. Policy Response Tailored for Characteristics of Borrowers

Group	Characteristics of Borrowers	Criteria	Policy Focus/ Response	Estimated loan amounts and share (percent in household credit, as of Q4 2016)																
A	Borrowers with sufficient debt repayment ability	<table border="1"> <tr> <td></td> <td></td> <td>DSR</td> <td>DSR</td> </tr> <tr> <td></td> <td></td> <td>≤40%</td> <td>>40%</td> </tr> <tr> <td>DTA</td> <td>≤100%</td> <td>A</td> <td>B</td> </tr> <tr> <td></td> <td>>100%</td> <td>B</td> <td>C</td> </tr> </table> <p>DSR: Debt Service Ratio DTA: Debt to Asset Ratio</p>			DSR	DSR			≤40%	>40%	DTA	≤100%	A	B		>100%	B	C	Boosting household income and managing financial soundness	KRW724 trillion (54%)
			DSR	DSR																
			≤40%	>40%																
DTA	≤100%	A	B																	
	>100%	B	C																	
B	Borrowers with sound debt repayment ability	Preventing delinquencies by restructuring their debt in a pre-emptive manner, reducing their debt repayment burden, and providing government backed micro loans	KRW525 trillion (39%)																	
C	Borrowers with insufficient debt repayment ability	Reducing their extra burden of overdue interest and support their recovery of credit rating	KRW94 trillion (7%)																	
D	Borrowers with no repayment ability	Writing off small and long-overdue debt and assisting borrowers to file for personal rehabilitation or bankruptcy	KRW100 trillion (no longer included in household debt, due to banks' write-offs)																	

Source: Financial Services Commission, Press Release, 24 October 2017

Meanwhile, the newly-adjusted DTI framework and newly-implemented DSR framework are underpinned by sound macroprudential considerations, and therefore could be expected to enhance the country's overall financial system stability and macroeconomic resilience.

DTI Framework

The authorities will tighten regulations on DTI, particularly for owners of multiple homes. For borrowers with multiple outstanding mortgages, banks previously considered as debt the principal- and interest payments for new mortgage loans, but only interest payments for existing loans. However, under the new rule, banks will be required to include both principal- and interest payments for new loans and existing loans. Also, in calculating a borrower's income, banks will be required to check income records for the most recent two years, compared to one year previously. Furthermore, hard-to-verify income, such as estimated incomes from pension payment, will be discounted for DTI calculation. With rules lowering DTI ceilings taking effect in June and August 2017, the new measures are expected to significantly discourage the take-up of additional mortgage loans.

Table C2. Recent Changes in LTV and DTI Regulations

	before	19 June 2017	2 August 2017	24 October 2017
LTV	70% • nationwide	70% • nationwide	70% • nationwide	No Change
		60% • Selected areas in Seoul Metropolitan area, Gyunggi, Busan, Sejong City ^{1/}	60% • Non-speculative selected areas in Seoul Metropolitan, Gyunggi, Busan, Sejong City • 50% for multiple mortgage borrowers	
			40% • Speculative (overheating) selected areas in Seoul Metropolitan, Gwacheon, Sejong City ^{2/} • 30% for multiple mortgage borrowers	
DTI	60% • Seoul Metropolitan area	60% • Seoul Metropolitan area	60% • Seoul Metropolitan area	

	<ul style="list-style-type: none"> only for apartment mortgages, excluding collective loans 	<ul style="list-style-type: none"> including collective loans 	<ul style="list-style-type: none"> including collective loans 	
		50% <ul style="list-style-type: none"> Selected areas in Seoul Metropolitan area, Gyunggi, Busan, Sejong City^{1/} including collective loans 	50% <ul style="list-style-type: none"> Non-speculative selected areas in Seoul Metropolitan, Gyunggi, Busan, Sejong City 40% for multiple mortgage borrowers 	
			40% <ul style="list-style-type: none"> Speculative (overheating) selected areas in Seoul Metropolitan, Gwacheon, Sejong City^{2/} 30% for multiple mortgage borrowers 	
	<ul style="list-style-type: none"> Debt means P + I (new mortgage) + I (existing mortgage)^{3/} 			<ul style="list-style-type: none"> Debt means P + I (new mortgage) + P + I (existing mortgage)^{3/}

Note: 1/ All 25 districts in Seoul, 7 cities (including Gwacheon City) within Gyunggi Province, 7 districts in Busan City, and Sejong City.

2/ All 25 district in Seoul, Gwacheon City, and Sejong City.

3/ "P" means Principal. "I" means Interest.

Source: Financial Services Commission, Press Release, 24 October 2017 and various sources, prepared by AMRO

DSR Framework

For prudential purposes, a DSR framework will be introduced in the banking sector in the second half of 2018, and will be gradually expanded to the non-banking sector later. The DSR refers to borrowers' overall burden of principal and interest payments for all loans against their annual income. The DSR framework would play a key role in improving banks' risk management. For example, banks would have to make more comprehensive credit risk assessments using the DSR framework if the borrower has additional financial liabilities, including other mortgage loans, car loans or unsecured consumer loans.

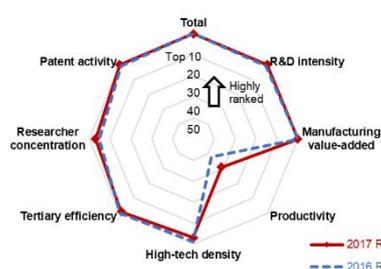
Looking ahead, it is important for the Korean authorities to finetune the details of the DTI and DSR frameworks, so that the structure of household debt can be improved. For example, the formula for calculating DTI, which naturally feeds into the computation of DSR, should include incomes, amortizing schedule, loan tenures and interest rates. Given the still large share of bullet mortgage loans, the formula for calculating principal payment for bullet loans may need to be adjusted to encourage borrowers to move to amortized loans. Also, consideration may be needed to ensure consistent treatment of hard-to-verify income in the formula.

At the same time, the authorities need to be mindful of the unintended effects arising from the lagged implementation for NBFIs. According to the October announcement, the DSR framework will apply to banks starting from the second half of 2018, and will gradually be extended to apply to NBFIs as well. The lack of a clear timeline for NBFIs might incentivize some imprudent borrowers to turn to NBFIs before this regulatory treatment is equalized between banks and NBFIs. This might lead to the build-up of more vulnerabilities in the NBFi sector.

C.4 Structural Reforms to Strengthen Growth Potential

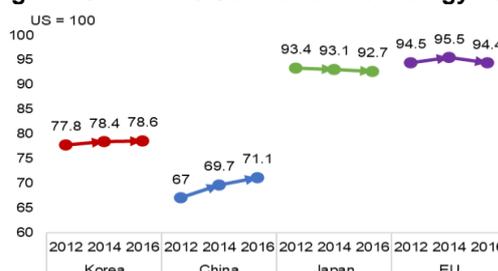
46. **Korea has maintained a competitive edge in high-tech industries.** Korea has often been ranked as one of the global frontrunners in some areas such as R&D intensity, manufacturing value-added, and high-tech density. On the whole, Korea's science and technology gap with the top countries has steadily narrowed, while its lead over second movers such as China, is being closed. Continued improvement and efficient allocation of such rich intellectual endowments will help boost the economy's competitiveness in terms of cutting-edge technology, such as hyper-connectivity and superintelligence.

Figure 22. Korea's Innovation Competitiveness



Note: Based on the Bloomberg Innovation Index, which lists the top 50 of more than 200 countries using a variety of sources (Bloomberg, IMF, World Bank, OECD, World Intellectual Property Organization, United Nations).
Source: Bloomberg

Figure 23. Korea's Science & Technology Level



Note: Based on the Korean government's bi-annual technology assessments for technology level in 10 major fields in comparison with major competitors.
Source: Korea Institute of S&T Evaluation and Planning (KISTEP)

47. **The government's emphasis on innovative growth is aimed nurturing new start-ups and facilitating a build-up of network infrastructure.** Given Korea's huge potential in new tech industries, the new government's "innovative growth" pillar, which entails at providing strong support to cutting-edge technologies, intensive investment in competitive SMEs, and a build-up of 5G and IoT networking infrastructure, is commendable.⁹ In this context, new policy schemes for innovative growth in the 2018 budget proposal—industrial restructuring into innovative ecosystem which enables SMEs to collaborate in the areas of R&D and marketing, expansion of infrastructure for start-ups, and deregulation to encourage firms to develop big data applications and new business models which integrate manufacturing and service industries—should be implemented as pledged to facilitate high-quality investment and growth.

48. **The implementation of structural reforms that were delayed should be resumed.** Greater efforts should be made by the new government to expedite the implementation of a broad range of institutional reforms that were delayed or derailed owing to the recent political uncertainty. For example, much attention should be given to labor market reforms for securing employment flexibility, promoting productivity in the service sector, and financial innovations to encourage venture capital investment with higher risk-sharing. Given the rapidly aging

⁹ To list a few policy initiatives to promote the innovative growth, a presidential committee on the Fourth Industrial Revolution will be established in the second half of 2017, and core infrastructure such as a network dedicated for the Internet of Things (IoT) will be established, together with efforts for 5G commercialization by 2019. Intensive investments will be made in core technologies, including artificial intelligence, and a priority will be placed on nurturing forward-looking new industries with high added value, such as self-driving cars, precision medicine and drones. Moreover, R&D in SMEs will be doubled in the next five years, and venture funds will be expanded by a large margin to reach 5.0 trillion won in 2022 from 3.2 trillion won as of 2016.

population, strengthening social safety nets, including healthcare and education, will contribute to more active participation of women and the elderly in the labor force.

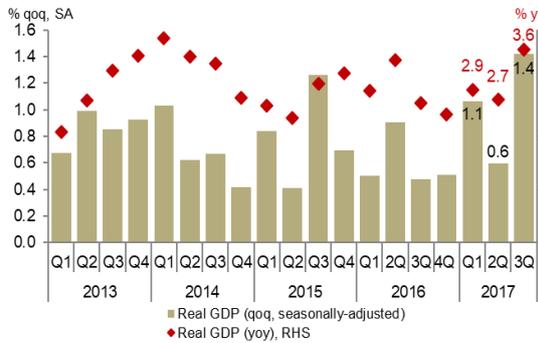
Authorities' Views

49. The authorities broadly agreed with AMRO's assessment. The authorities stressed that promoting innovative industries is one of key pillars in the new government's Economic Policy Direction with action plans and timetable. In the area of labor reforms, the authorities emphasized that efforts to increase employment flexibility will continue. However, past experiences have shown that under circumstances when unemployment benefits and supports were not provided properly, the government's policy drive for labor market flexibility only led to amplifying unemployment shocks with great resistance from employees. Taking this into account, the authorities will prioritize the strengthening of social safety nets—such as unemployment benefits—to secure labor market stability before promoting employment flexibility.

Appendix 1. Selected Figures for Major Economic Indicators

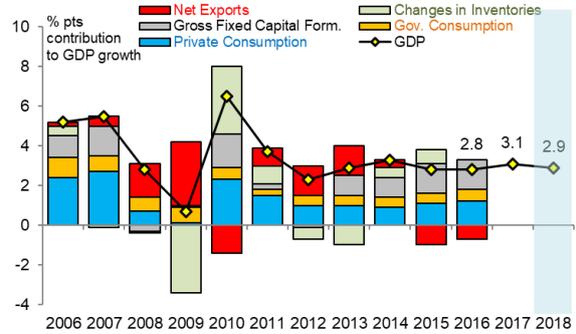
Figure 1.1. Economic Growth and Real Sector

In Q3 2017, GDP growth continued to maintain a strong momentum, after a brief pause in Q2.



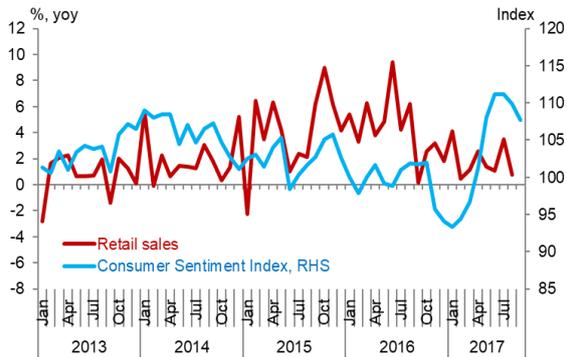
Source: Bank of Korea

In 2016, domestic demand continued to buttress growth, despite negative contributions from net exports.



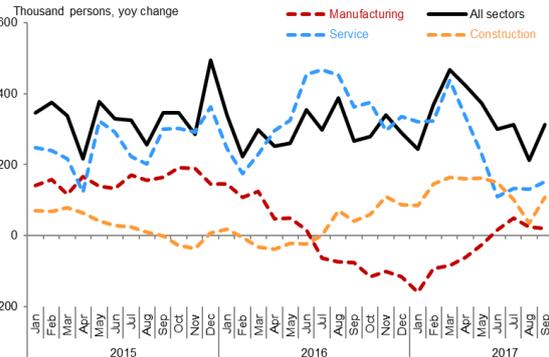
Note: The 2018 figure indicates AMRO projection.
Source: The Bank of Korea, AMRO staff estimates

Despite weak private consumption, consumer sentiment improved sharply after the Presidential election in May, then retreated due to geopolitical tensions.



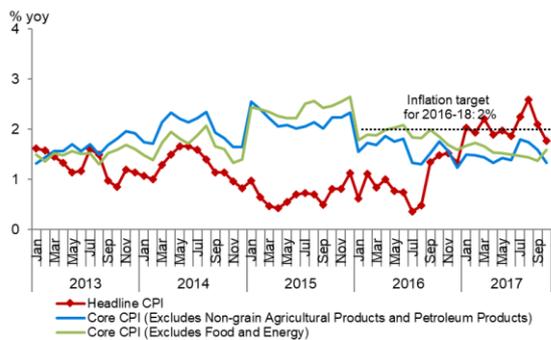
Source: Statistics Korea, Bank of Korea

In the labor market, manufacturing employment showed some recovery, while construction and services sectors slowed down.



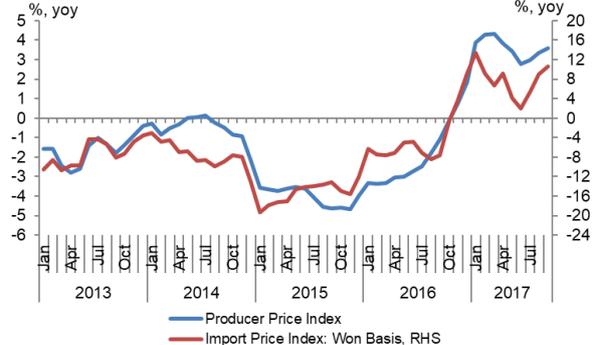
Source: Statistics Korea

Headline inflation exceeded the BOK's inflation target level, while core inflation remained subdued.



Source: Statistics Korea

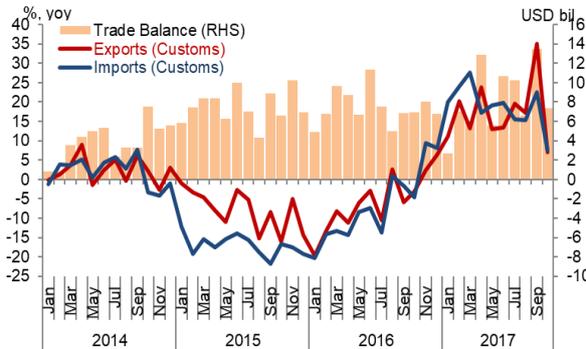
Producer and import prices have surged with some fluctuations, largely reflecting oil prices.



Source: Bank of Korea

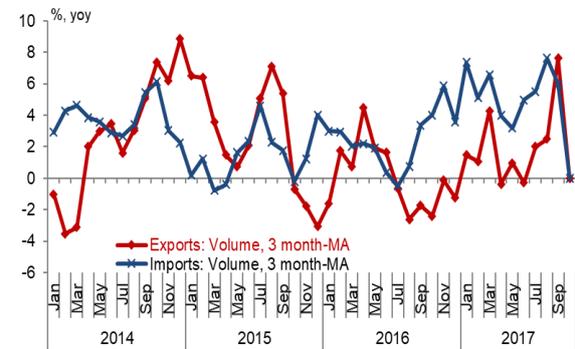
Figure 1.2. External Sector

Since Q4 2016, exports and imports have shown a strong recovery, largely due to rising export prices...



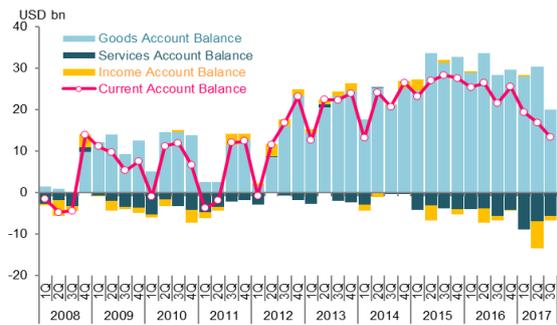
Source: Korea Customs Service

...and export volume growth is on an upward trend.



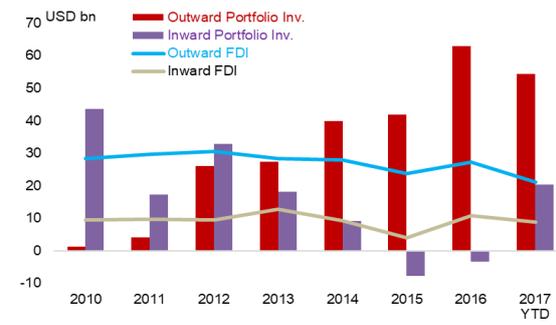
Source: Korea Customs Services

In the BoP, the current account is consistently registering a surplus amid a worsening services account balance.



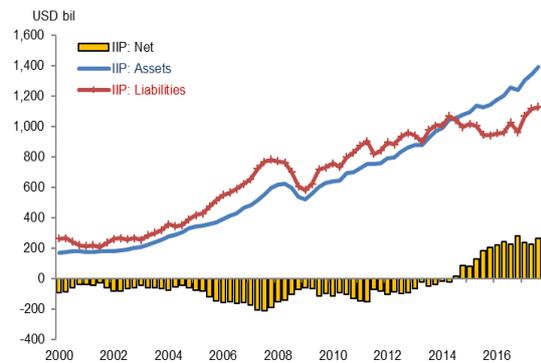
Source: Bank of Korea

In 2017, residents' overseas portfolio investment is showing net outflows, while foreigners' inward investment has turned positive on a net basis.



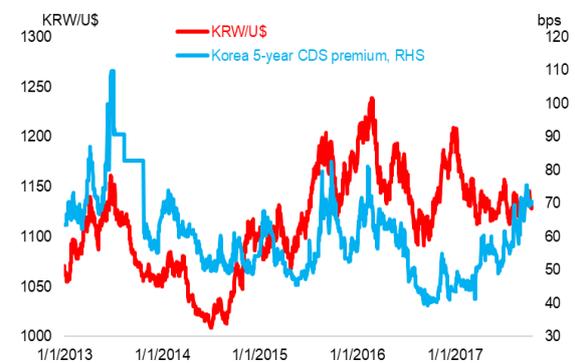
Note: The 2017 year-to-date (YTD) figures indicate the cumulative sums of monthly balances from January to August.
Source: Bank of Korea

Korea's net portfolio investment assets have turned positive since Q3 2014.



Source: Bank of Korea

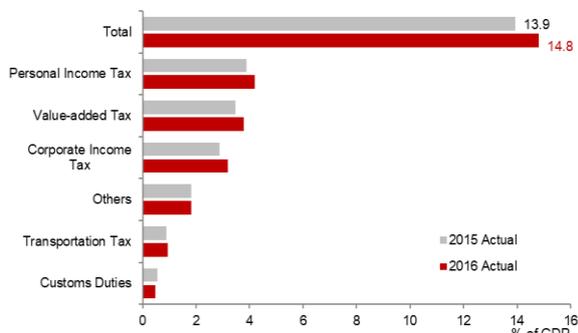
The won has stayed largely stable since Q2 2017, despite a rise in sovereign risk premium due to heightened geopolitical tensions.



Source: Bloomberg

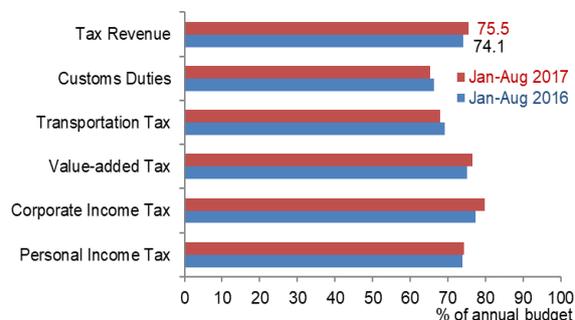
Figure 1.3. Fiscal Sector

In 2016, tax revenue collection improved significantly, mainly due to an increase in corporate earnings and a housing boom.



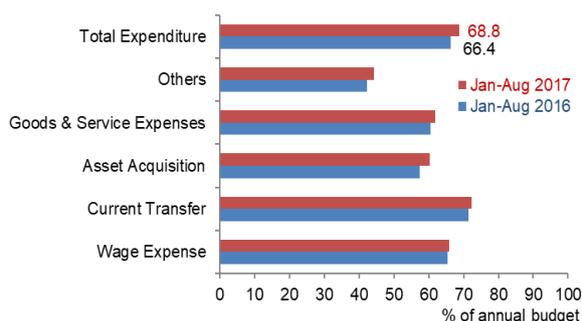
Note: Total includes tax revenues from the General and the Special Accounts.
Source: Ministry of Strategy and Finance

In the first eight months of 2017, tax revenues remain even stronger than in 2016 in terms of progress rate.



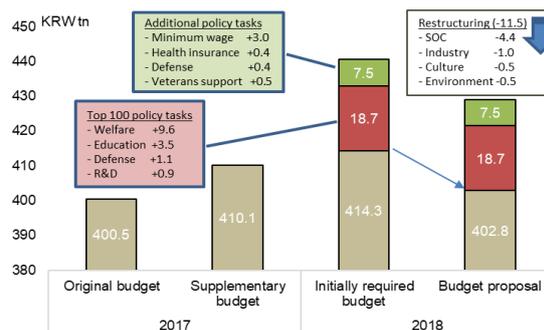
Source: Ministry of Strategy and Finance

In the first eight months of 2017, the speed of fiscal spending outpaced that seen in 2016.



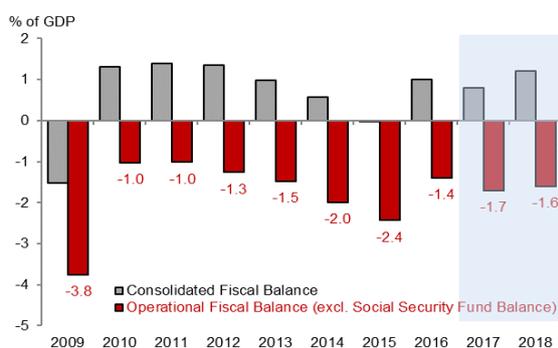
Source: Ministry of Strategy and Finance

The 2018 budget proposal aims to strike a balance between more active fiscal policy (+26.3 trillion won) and expenditure restructuring (-11.5 trillion won).



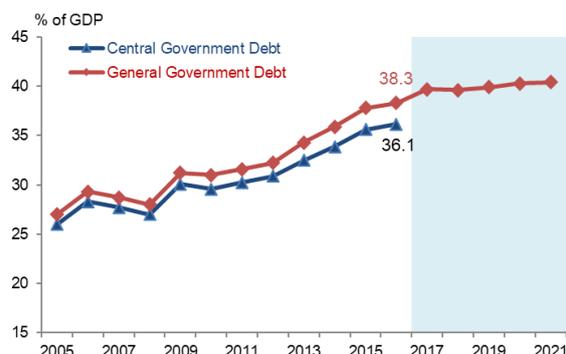
Source: Ministry of Strategy and Finance

The fiscal balance is expected to deteriorate slightly in 2017-2018, but remain below 2.0 percent.



Note: The 2017-2018 figures are based on the 2017 Supplementary Budget and 2018 Budget Proposal.
Source: Ministry of Strategy and Finance

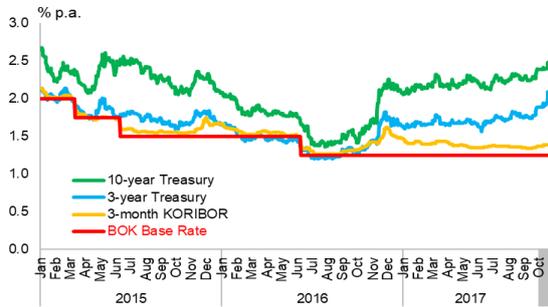
Government debt is anticipated to grow steadily while remaining at a relatively low level.



Note: General Government Debt (D1) includes the budget accounts and the funds of central and local governments. The projection figures in the shaded area are based on the Medium-Term Fiscal Management Plan (MTFMP) for 2017-2021.
Source: Ministry of Strategy and Finance

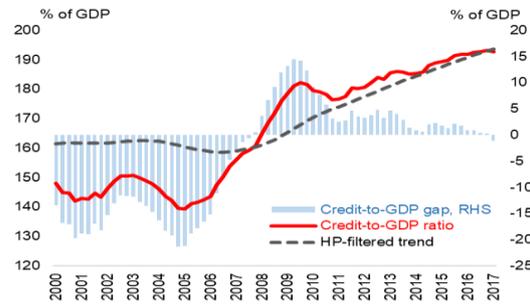
Figure 1.4. Monetary and Financial Sectors

Amid a historically low policy rate, market interest rates at longer maturities picked up since November 2016, affected by external uncertainties.



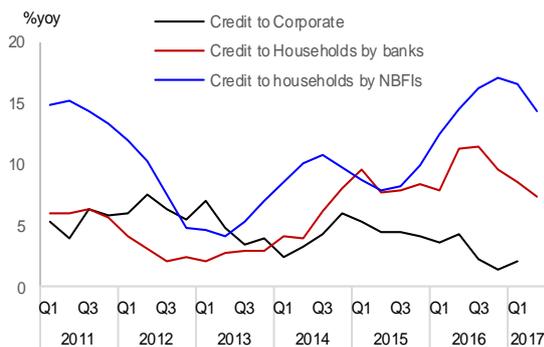
Source: Bank of Korea, Bloomberg

Total credit to private the non-financial sector remains close to the long-term trend.



Source: BIS

While corporate loan growth remains subdued, household credit expansion has moderated, affected by tighter regulations on bank loans since 2016.



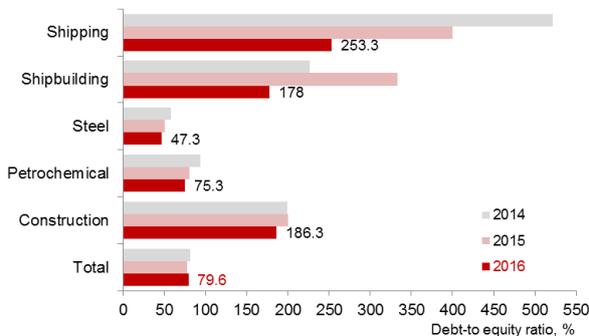
Source: Bank of Korea

Stock markets posted a sharp rise in H1 2017, mainly due to improving corporate earnings and global risk-off sentiments.



Source: Korean Stock Exchange, Thomson Reuters IBES

On the corporate side, the overall debt ratio is on a downward trend, while the shipping and shipbuilding sectors remain highly leveraged.



Note: Debt-to-equity ratios were aggregated from the financial statements of 2,007 listed and non-listed companies.
Source: KIS-Value, Bank of Korea

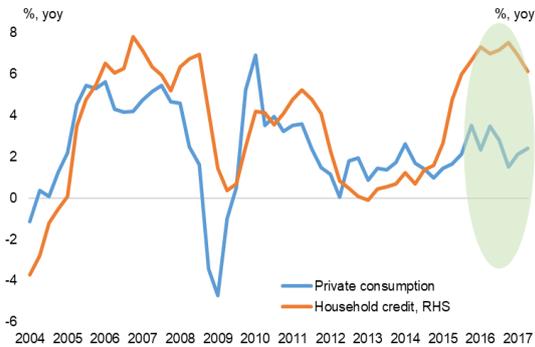
In Q2 2017, corporates' rising profitability increased the interest coverage ratio over the same period in 2016.



Note: Based on financial statements of 3,324 firms (sampled out of 16,645 firms with the asset size of 12.0 billion won or above) across all industries.
Source: Bank of Korea

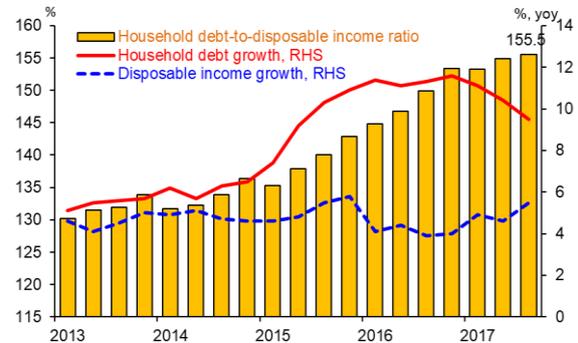
Figure 1.5. Risks, Vulnerabilities and Challenges

Private consumption remains stagnant, partly constrained by rapidly rising household debt.



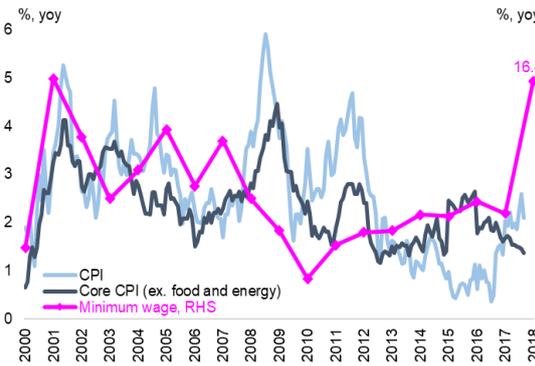
Source: Bank of Korea

The household debt-to-income ratio has grown up to 155.5 percent in Q3 2017 with the debt growing much faster than disposable income.



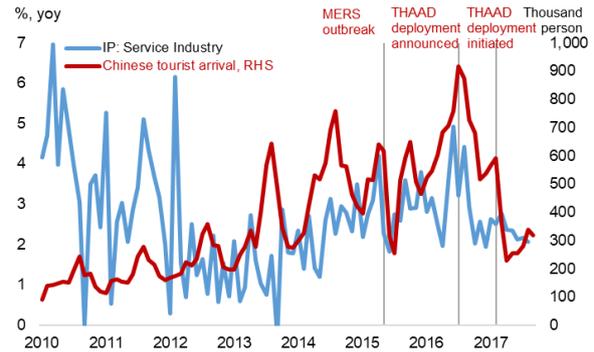
Source: Bank of Korea

The likely effects of rapid minimum wage hikes on inflation remain uncertain in the coming years due to lack of historical episodes under low inflation environments.



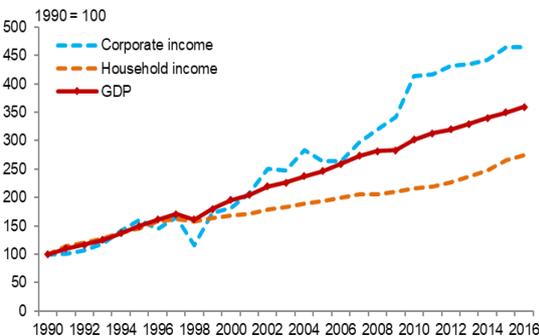
Source: Statistics Korea, Minimum Wage Commission

Sustained tensions with China over the U.S. THAAD missile deployment in Korea have a negative impact on Korea's tourism and service sectors.



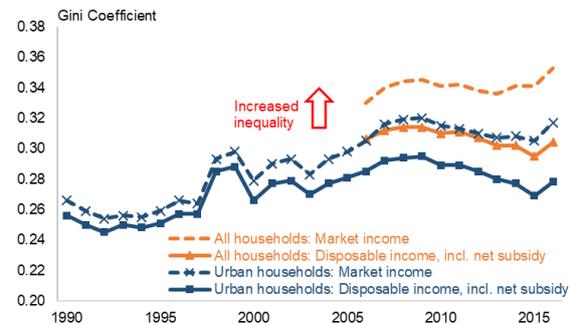
Source: Statistics Korea, Korea National Tourism Organization

The income gap between households and corporates has widened since the Asian Financial Crisis.



Note: Real gross corporate and household incomes are based on sectoral GNI, adjusted by aggregate GNI deflators.
Source: Bank of Korea, AMRO staff calculations

Among households, market-based income inequality (not including net subsidy) has been worsening.



Note: Market income consists of labor and capital incomes plus private transfers. Disposable income consists of market income plus net government transfers.
Source: Statistics Korea

Appendix 2. Selected Economic Indicators and Projections

	2014	2015	2016	2017	2018
				Projection	
Real Sector and Prices	(In percent change unless specified)				
Real GDP	3.3	2.8	2.8	3.1	2.9
Private consumption	1.7	2.2	2.5	2.6	2.5
Government consumption	3.0	3.0	4.3	3.7	3.8
Construction investment	1.1	6.6	10.7	7.5	-0.9
Facilities investment	6.0	4.7	-2.3	14.6	3.0
Exports of goods and services	2.0	-0.1	2.1	2.0	3.8
Imports of goods and services	1.5	2.1	4.5	7.2	3.5
Labor Market					
Unemployment rate (in percent)	3.5	3.6	3.7	3.7	3.8
Prices					
CPI Inflation	1.3	0.7	1.0	1.9	1.9
Core Inflation, excluding food and energy	1.7	2.4	1.9	1.5	2.0
External Sector	(In billions of U.S. dollars unless specified)				
Current account balance	84.4	105.9	99.2	78.5	75.0
Current account balance (percent of GDP)	6.0	7.7	7.0	5.4	4.9
Trade balance, customs cleared	47.2	90.3	89.2	95.3	92.0
Exports, customs cleared	572.7	526.8	495.4	573.7	600.7
Imports, customs cleared	525.5	436.5	406.2	478.4	508.6
Financial account balance, excl. int'l reserves	71.4	94.2	95.0	82.7	70.5
Direct investment, net	18.8	19.7	17.9	14.6	15.0
Portfolio investment, net	30.6	49.5	67.0	57.8	48.5
Financial derivatives, net	-3.8	1.8	-3.4	-8.3	-8.0
Other investment, net	25.9	23.3	13.6	18.5	15.0
Gross international reserves (end-period)	363.6	368.0	371.1	389.3	395.0
Fiscal Sector (Central Government)	(In percent of GDP)				
Total revenue	24.0	23.8	24.5	25.1	25.0
Total expenditure and lending minus lending	23.4	23.8	23.5	24.3	23.9
Fiscal balance	0.6	0.0	1.0	0.8	1.1
Fiscal balance, excluding social security funds	-2.0	-2.4	-1.4	-1.7	-1.6
Monetary and Financial Sector	(In percent per annum, end-period unless specified)				
Bank of Korea base rate	2.00	1.50	1.25	1.50	-
3-year Treasury bond yield	2.1	1.7	1.7	2.1	-
3-year, AA- Corporate bond yield	2.4	2.1	2.2	2.6	-
Broad money growth (percent change)	8.7	9.0	7.9	6.6	-
Exchange rate (won per USD, average)	1,053.1	1,131.5	1,160.4	1,130.5	-
Exchange rate (won per USD, end-period)	1,099.3	1,172.5	1,207.7	1,070.5	-
Memorandum Items					
Nominal GDP in trillions of won	1,486.1	1,564.1	1,637.4	-	-
Nominal GDP in billions of U.S. dollars	1,411.0	1,382.4	1,411.0	-	-

Note: 2017 data figures reflect realizations available up to 25 January 2018.

Source: Korean authorities, AMRO staff estimates

Appendix 3. Data Adequacy for Surveillance Purposes: a Preliminary Assessment

Criteria/Key Indicators for Surveillance	Data Availability ⁽ⁱ⁾	Reporting Frequency/Timeliness ⁽ⁱⁱ⁾	Data Quality ⁽ⁱⁱⁱ⁾	Consistency ^(iv)	Others, if Any ^(v)
National Account	Yearly and quarterly data are available (for expenditure, production and income approach)	Quarterly data are released, within 2 months after the end of the reference quarter (for preliminary data)	-	-	-
Balance of Payment (BOP) and External Position	Monthly BOP data are available in detail	Monthly BOP data are released within one month after the end of the reference period), while quarterly IIP data are released within two months after the end of the reference period.	-	-	-
Central Government Budget/External Debt	Monthly central government public finance data are available, while quarterly external debt data available in detail	Monthly central government public finance data are released within four months after the end of the reference period), while quarterly data on external debt are released within two months after the end of the reference period.	-	-	-
Inflation, Money Supply and Credit Growth	Monthly inflation, money supply and credit growth are available	Monthly inflation data are released within one month after the reference period, while data on money supply and credit growth are released within two months after the end of the reference period.	-	-	-
Financial Sector Soundness Indicators	Available	Monthly data are released within one to two months after the end of the reference period, while quarterly data are available three months after the end of the reference period.	-	-	-
Housing Market Indicators	Available	Monthly data are released within one month after the end of the reference period.	-	-	-

Notes:

- (i) Data availability refers to whether the official data are available for public access by any means.
- (ii) Reporting frequency refers to the periodicity that the available data are published. Timeliness refers to how up-to-date the published data are relatively with the publication date.
- (iii) Data quality refers to the accuracy and reliability of the available data given the data methodologies are taken into account.
- (iv) Consistency refers to both internal consistency within the data series itself and its horizontal consistency with other data series of either same or different categories.
- (v) Other criteria might also apply, if relevant. Examples include but are not limited to potential areas of improvement for data adequacy.

Source: AMRO staff compilations. This preliminary assessment will form the "Supplementary Data Adequacy Assessment" in the EPRD Matrix.