[Overview]

Korea's financial system has maintained a generally stable picture, thanks to continuing favorable levels of soundness among financial institutions and in the foreign exchange sector. However, potential financial system risk is judged to have increased somewhat, as financial soundness in the household and corporate sectors has declined.

First, amid a lack of improvement in household income conditions, the amount of household debt has expanded greatly due to increased housing purchases for example. In the corporate sector, meanwhile, sales have fallen greatly and financial structure stability has lessened as well.

The slump in profitability at banks has persisted, but amid favorable capital adequacy the trend of improvement in asset soundness has been sustained, even despite the declines in household and corporate sector financial soundness, thanks to the easing of borrowers' repayment burdens due to the continuing low interest rates. At non-bank financial institutions most management indicators have shown signs of improving. The financial markets have shown somewhat unstable movements, meanwhile, with stock price and exchange rate volatilities expanding and credit concerns in the corporate bond market rising. Foreign exchange soundness has maintained a satisfactory level, with net external assets increasing and the ratio of short-term external debt falling.

These changes in the financial stability situation are reflected in the Financial Stability Map.[1)][2)] The Financial Stability Index (FSI)[3)], showing the situation related to financial stability, did meanwhile rise from 3.5 in April 2015 to the 5.0 level as of October 2015, but also remains below the "Warning" stage threshold (8).

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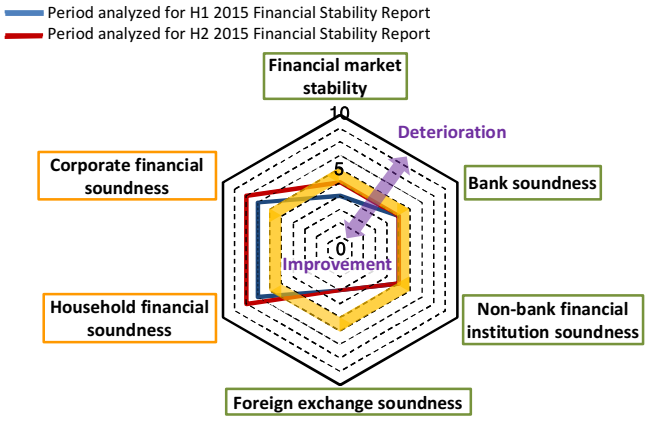
1) The Financial Stability Map presents a comprehensive picture of stability in six dimensions – two concerning macroprudential soundness conditions (the debt servicing capacities of the household and business sectors) and four concerning the financial system (banks, non-bank financial institutions, the financial markets and foreign exchange soundness). If the decile reading of a particular dimension is from 5 to 6, then this may be seen as a degree of stability in that dimension corresponding to its average levels in the past (since 1995).

2) The financial market infrastructure has been included as a sector related to financial system stability beginning from the H1 2015 FSR. Since this is a sector connected with the financial substructure, however, including the payment and settlement system for example, it is not included in the Financial Stability Map.

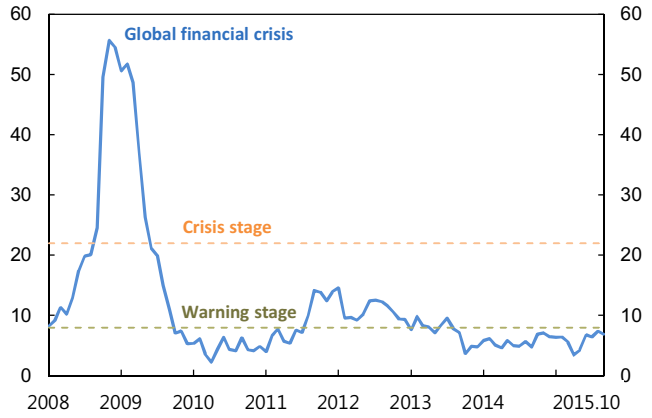
3) The Financial Stability Index (FSI) is an index created by converting a variety of different financial stability indicators into a single index, and can be used as one of the indicators for judging overall macroprudential conditions. Here the optimum critical threshold Warning and Crisis stages are calculated on the basis of the "noise-to-signal ratio" approach, at 8 and 22 respectively. For further details refer to the April 2012 Financial Stability Report, <Box IV-1> "Outline of Financial Stability Index (FSI)".

Financial Stability Map[1)2)]



Notes: 1) The closer to the center, the greater the degree of stability
2) Macroprudential soundness condition dimensions, Financial system dimensions

Financial Stability Index (FSI)[1)]



Note: 1) The Financial Stability Index is measured based on values from 0 (min) to 100 (max). The closer it is to 100, the higher the level of instability. <The level during the Asian financial crisis (Jan.1998) equals 100>

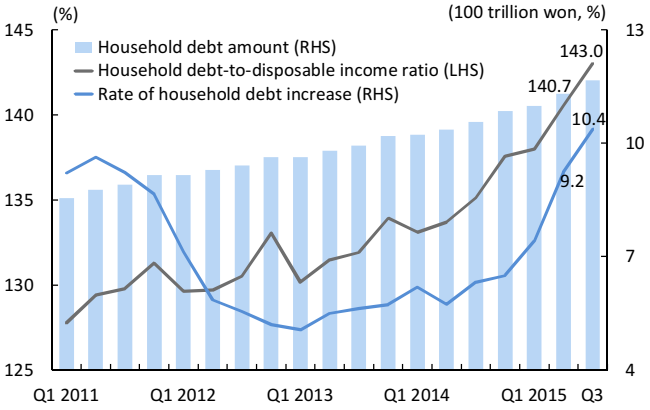
Source: The Bank of Korea

[Korea's Financial Stability Situation]

1 The financial soundness of the household sector has declined, despite improvements in the debt structure including expanded proportions of fixed-rate and amortizing loans, as the pace of increase in debt has been continually accelerating.

At 1.17 trillion won as of end-September 2015, total household debt had risen by 10.4% year-on-year, with its pace of increase having continually grown since the third quarter of 2014. The household debt-to-disposable income ratio, at 143.0% (estimated) as of end-September 2015, was also 5.0% points higher than at the end of March 2015 (138.0%).

Amount and rate of increase[1)] of household debt[2)], and household debt-to-disposable income[3)] ratio



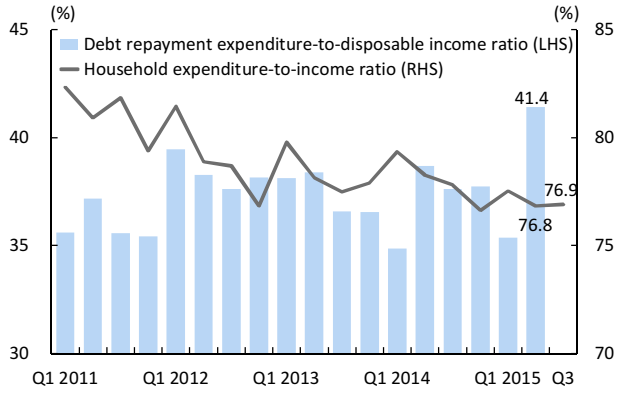
Notes: 1) Year-on-year
2) Household credit statistics basis
3) Disposable income for Q1~Q3 2015 estimated using household disposable income-to-gross national income ratio (average over immediately preceding three years)

Source: The Bank of Korea

The ratio of household debt repayment expenditures to disposable income stood

at 41.4% in the second quarter of 2015, having jumped by 2.7% points year-on-year. This was a result mainly of factors such as the expansion in the proportion of amortizing loans and a decline in business incomes. The household expenditure-to-income ratio on the other hand fell by 1.5% and 0.9% points year-on-year respectively in the second (76.8%) and third (76.9%) quarters, due mainly to a decrease in consumption expenditures in line with the outbreak of Middle East Respiratory Syndrome (MERS).

Household debt repayment expenditure[1] -to-disposable income and household expenditure[2]-to-income[3] ratios



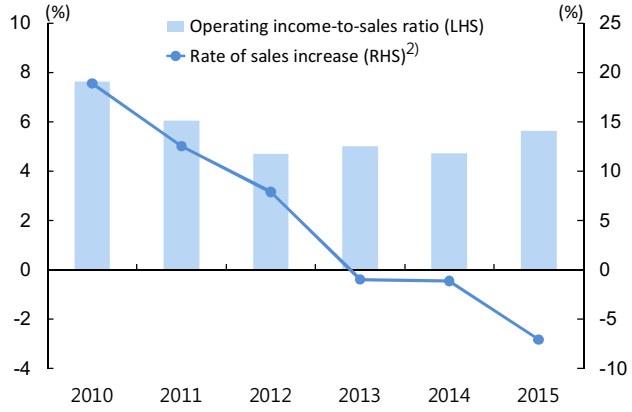
Notes: 1) Amounts of loan principal and interest repayment, credit card settlement costs, etc.
2) Consumption and non-consumption (taxes, pension / insurance payments, interest costs, etc.) expenditures
3) Earned income, business income, property income, transfer income, etc.
Source: The Bank of Korea, Statistics Korea

The household financial debt-to-financial assets ratio (44.0% at end-June 2015) meanwhile maintained a relatively favorable picture, in spite of the accelerated pace of increase in household debt, owing to the continuing high rate of increase in financial assets. At 44.9% as of year-end 2014, this ratio was higher than the 36.9% average of the 23 OECD member countries.

2 Profitability in the corporate sector has improved slightly but financial soundness has declined, with a large-scale deterioration in growth and a rising number of financially vulnerable firms.

The rate of sales growth recorded a substantial negative level (-7.1%) in the first half of 2015, and the sluggishness of growth deepened. The operating income-to-sales ratio was 5.6%, higher by 0.9% point than in the first half of 2014 (4.7%), as profitability improved. This result is seen as mainly because of firms having pursued productivity more than expansions in size as their business strategy priorities, in line with the worsening of external conditions.

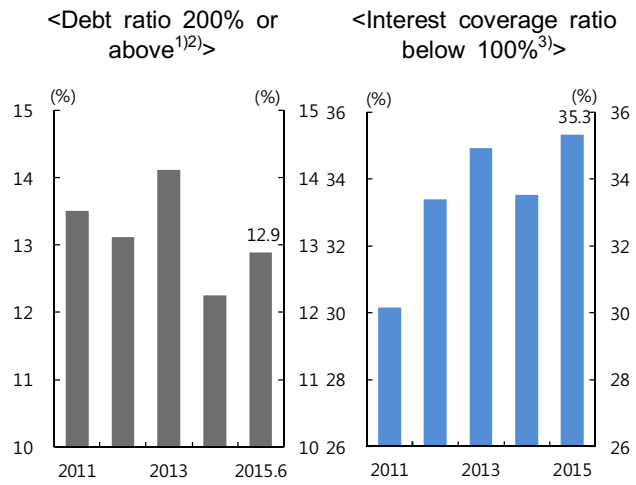
Corporate growth and profitability[1]



Notes: 1) First-half basis 2) Year-on-year
Source: KIS-Value

Corporate financial structure soundness has deteriorated somewhat, due to increases in debt and declines in short-term repayment capacities and so on. The proportion of corporations with debt ratios of 200% or above has risen (end-2014 12.3% → end-June 2015 12.9%), and that of companies with interest coverage ratios below 100% has also shown a slight increase.

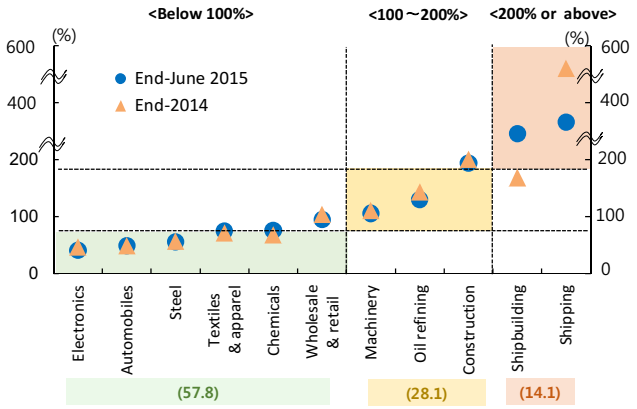
Indicators of corporate financial sector soundness



Notes: 1) Debt/Equity 2) End-period basis 3) First-half basis
Source: KIS-Value

Looking at the individual industries' debt ratios, meanwhile, most industries except for shipbuilding and shipping have not seen any great changes. In the case of the shipbuilding industry, however, its debt ratio has exceeded 200% in 2015, in line with a slump in overall business conditions.

Changes in debt ratios, by major industry[1)]

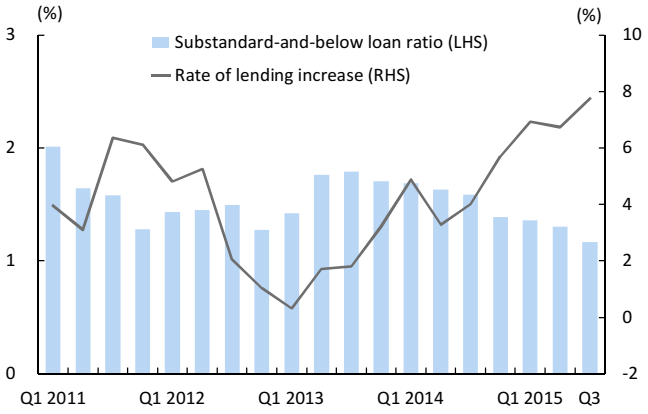


Note: 1) Figures in parentheses are the proportions in the total debt of all industries accounted for by the debts in the groups of industries indicated.
Source: KIS-Value

3 Banking sector soundness has shown a generally favorable picture despite a structural slump in profitability, with asset soundness improving and so on.

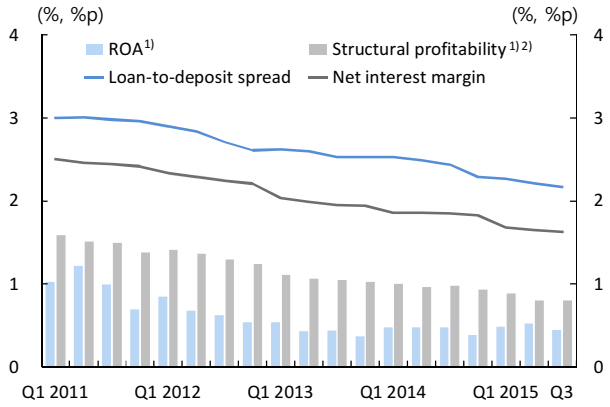
Profitability has expanded, centering around loans, and asset soundness has also shown a trend of improvement due to a continuing trend of decline in substandard-and-below loan ratios for example. With financial soundness in the household and corporate sectors declining, however, potential default risks are seen to have increased.

Commercial bank substandard-and-below loan ratio, and rate of lending increase[1)]



Note: 1) Year-on-year
Sources: Commercial banks' business reports

Commercial bank profitability indicators

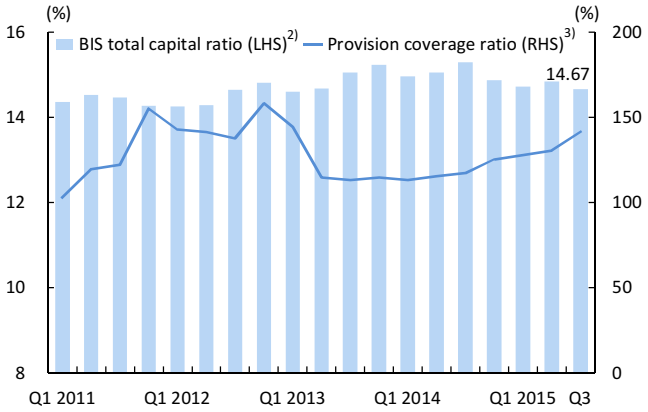


Notes: 1) Annualized cumulative quarterly record
2) (Interest income + Fee income + Trust account income – Operating expenses) / Total assets
Sources: Commercial banks' business reports, the Bank of Korea

Profitability has continued its trend of decline, with the return on assets (ROA) falling from 0.48% in the first quarter of 2015 to 0.44% in the third quarter for example. Banks' structural margin ratio, indicating their capacities for generating sustainable profits, has continued to decrease, with declines in their loan-to-deposit interest rate spreads and net interest margins, and recorded 0.80% in the third quarter of 2015, the lowest level since compilation of this statistic began in 1999.

Capital soundness has remained at a satisfactory level. At 14.67% as of the third quarter of 2015, the BIS total capital ratio was lower by 0.18% point than in the previous quarter but still greatly above the regulatory standard (8.0%). The provision coverage ratio, which shows banks' capacities for absorbing expected losses, was 141.5% (estimated) in the third quarter and had also sustained its trend of increase.

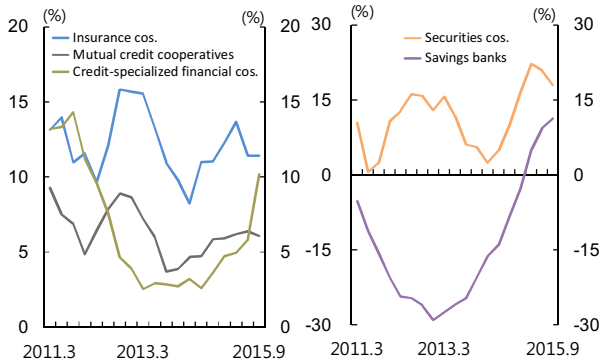
Commercial bank BIS total capital and provision coverage ratios[1)]



Notes: 1) Period-end basis
2) Basel II basis until Q3 2013, Basil III basis from Q4 2013
3) Loan loss provisions (including loan loss reserves) / Substandard-and-below loans

Sources: Commercial banks' business reports

Non-bank financial institution rates of total asset growth, by financial sector[1)]



Note: 1) Year-on-year; excluding increases due to new market entries (NongHyup Life Insurance, NongHyup Property & Casualty Insurance, KB Kookmin Card, Woori Card and Hana Card) and accounts receivable of securities companies

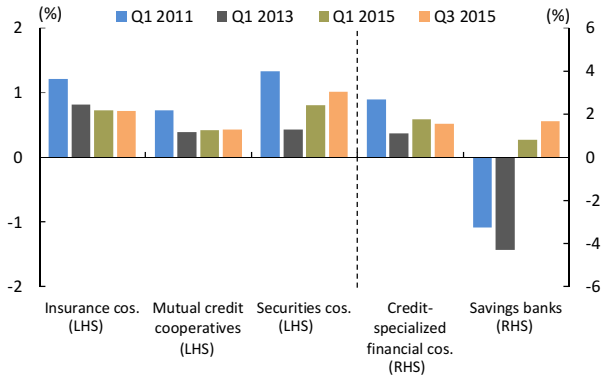
Sources: Commercial banks' business reports

4 Non-bank financial sector soundness has improved overall, with trends of growth being sustained and capital adequacy showing favorable levels.

Rates of total asset growth have fallen slightly in some non-bank financial institution sub-sectors, but as of the end of September 2015 the sector as a whole was sustaining its trend of growth and showing a high level of 10.5% year-on-year.

Profitability has generally improved. Returns on assets (ROA) have risen, owing to declines in loan loss provisions at mutual credit cooperatives, to expansions in fee incomes and decreases in interest expenses at securities companies, to increases in interest earnings and declines in loan loss provisions following reductions in bad loans at mutual savings banks, etc. These improvements in non-bank financial institution profitability owe mainly to the declines in market interest rates, however, and so the volatility of profits can expand in line with any changes in the financial market environment in the future.

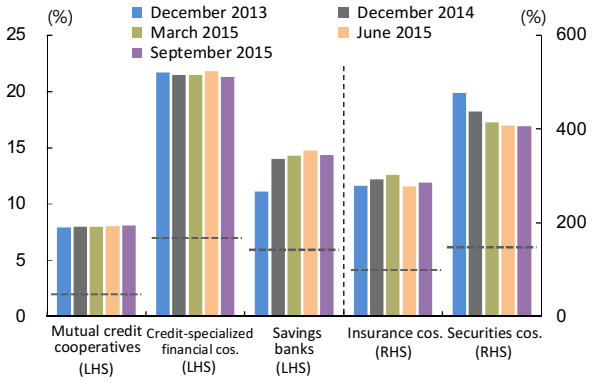
Non-bank financial institution ROAs[1)]



Note: 1) Net incomes for past one year / Average total assets for past one year
Sources: Financial institutions' business reports

Capital adequacy ratios have fallen slightly in some sectors, but are maintaining satisfactory levels greatly exceeding the financial supervisory standards in all sectors.

Non-bank financial institution capital adequacy ratios[1)2)]

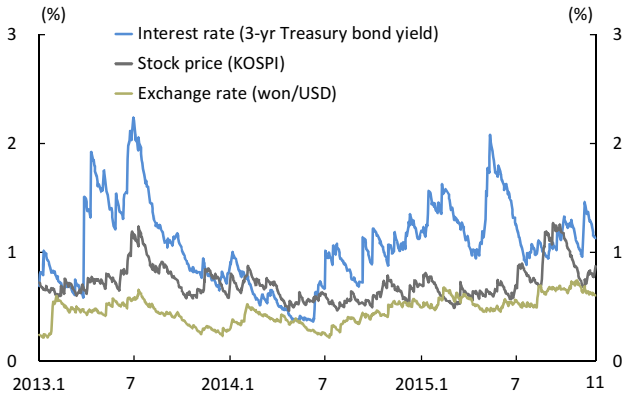


Note: 1) mutual credit cooperatives' net capital ratio (2%; community credit cooperatives 4%; agricultural cooperatives 5%), credit-specialized financial companies' adjusted-capital ratio (7%; credit card companies 8%), savings banks' BIS capital ratio (6%; companies with assets over 2 trillion won 7%), Insurance companies' risk-based capital ratio (supervisory standard 100%), securities companies' net operating capital ratio (150%)
2) Dotted lines indicate the relevant supervisory capital adequacy standards.
Sources: Financial institutions' business reports

5 The domestic financial markets have shown some degree of instability, with the volatility of market prices expanding and credit concerns growing for example.

Stock price and exchange rate volatilities have increased, on concerns about a global economic slowdown and expectations of a policy interest rate hike by the US Federal Reserve among other factors.

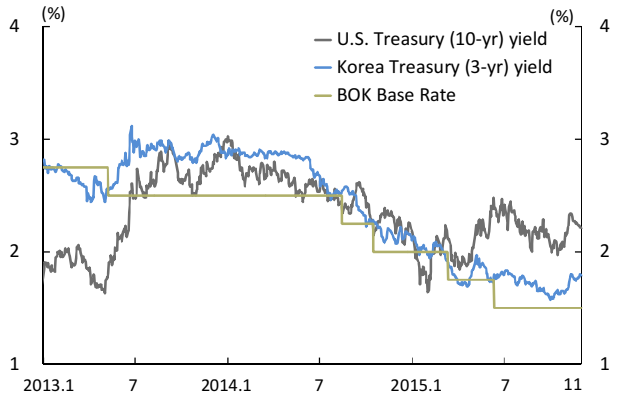
Interest rate, stock price and FX volatilities[1)]



Note: 1) Daily volatility calculated using exponential weighted moving average (EWMA) method
Source: The Bank of Korea

The Treasury bond (3-year) yield had fallen, due to spreading economic unrest in China and other emerging market economies, but has reversed to an increase since October on expectations of a domestic economic recovery and the possibility of a Fed rate hike.

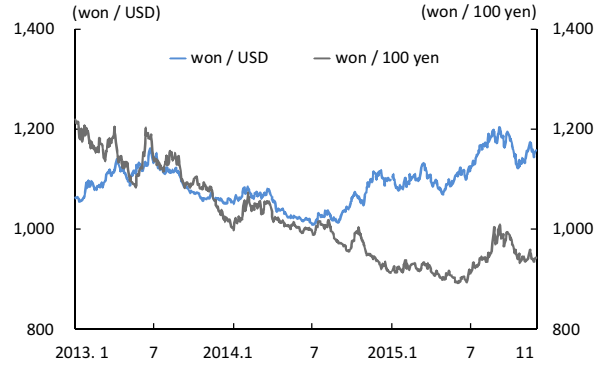
Korea and U.S. Treasury bond yields, and BOK Base Rate



Sources: Korea Financial Investment Association, Bloomberg

The won/US dollar exchange rate has fluctuated sharply, in line with changes in expectations related to monetary policies at home and abroad, while the won/yen rate, after having risen on a trend of safe asset preference, has reversed to a decline since October as global risk preferences have improved.

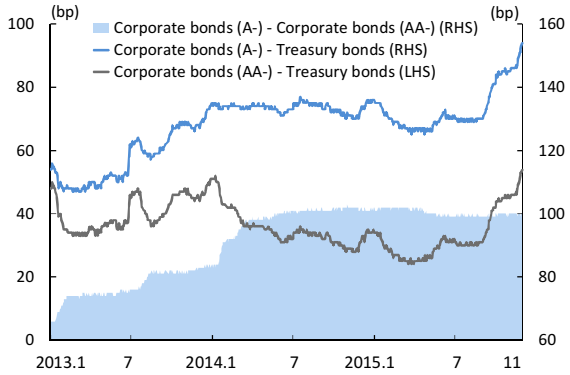
Won / USD and won / yen exchange rates



Source: The Bank of Korea

In the corporate bond market, meanwhile, owing to increased credit concerns following the slumps in corporate business conditions, credit spreads on both prime and non-prime corporate bonds have widened rapidly.

Corporate bond credit spreads[1], and spread across credit ratings

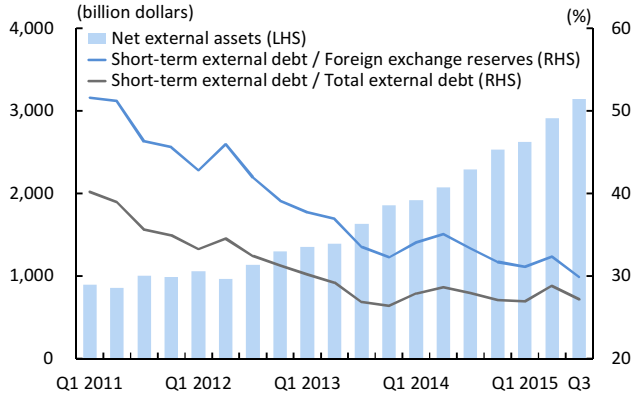


Note: 1) 3-year maturity basis
Source: Korea Financial Investment Association

6 Foreign exchange soundness has shown a favorable picture overall.

The net external asset amount has continued to grow while the external payment capacity has maintained sound conditions, with the ratios of short-term external debt relative to foreign exchange reserves and to total external debt sustaining their low levels.

Net external assets, and liquidity indicators

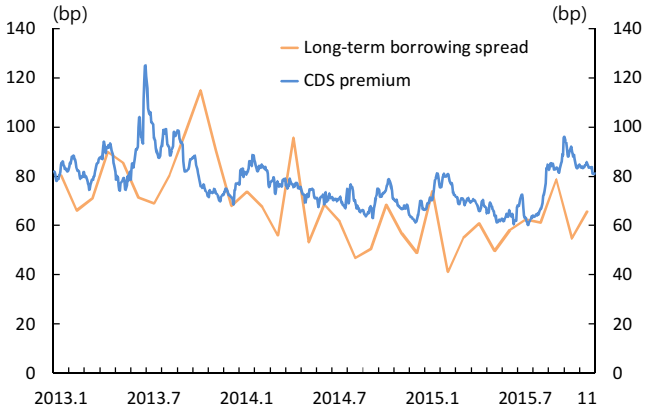


Source: The bank of Korea

Domestic banks' foreign currency funding conditions have shown temporary deteriorations in the second

half of 2015, with the highlighting of the likelihood of a policy rate hike by the US Federal Reserve and of concerns about the economic slump in China, but have shown a favorable picture overall. In particular, although the spread on long-term foreign currency borrowings rose to 79 basis points in September, it then fell from October with the continuation of the current account surplus and so on, and has since then shown a trend of small fluctuations at around the 60bp range.

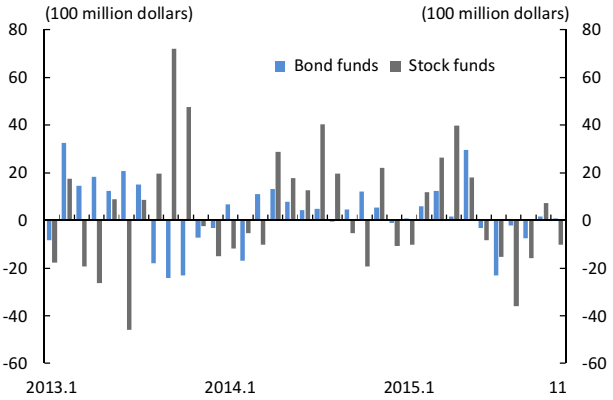
Domestic bank long-term borrowing spread[1] and CDS premium[2]



Notes: 1) Borrowing spreads based on LIBOR (nine domestic bank basis); calculated by amount-weighted averaging
2) Based on simple average of CDS premiums of Kookmin Bank, Industrial Bank of Korea, Shinhan Bank, Woori Bank, and KEB Hana Bank
Sources: The Bank of Korea, Bloomberg

The volatility of foreigners' securities investment fund flows has expanded, on the influence of changes in global fund flows, etc. From June 2015 these funds showed a large-scale outflow, influenced by international financial market instability. Since October, however, foreigners' securities investment funds have shown small degrees of net inflows and net outflows, in line with the expectations of a Fed rate hike within this year and so on.

Net foreign investor portfolio investment fund flows[1]

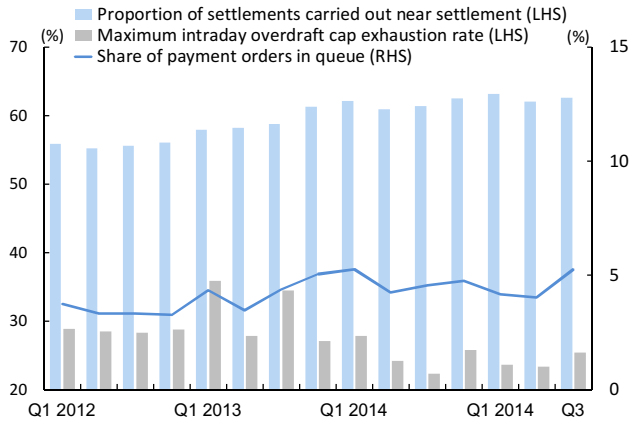


Note: 1) Monthly amounts of net inflows and outflows
Source: The Bank of Korea

7 Settlement risk in the major payment and settlement systems has been managed stably.

The maximum intraday overdraft cap exhaustion rate and the proportion of payment orders in queue for settlement, which reveal the levels of secured settlement liquidity of institutions participating in the large-value payment system, BOK-Wire+, have shown generally favorable pictures. Moreover, since the second quarter of 2015 there have been zero cases of operating hours extension due to computer system failures at participant institutions.

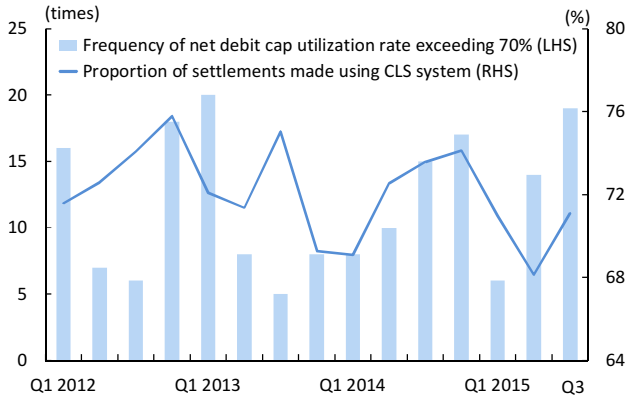
Large-value payment system risk indicators



Source: The Bank of Korea

The proportion of foreign currency settlements carried out through the CLS system has fallen since the first quarter of 2015, owing for example to an increase in transactions involving the Chinese yuan, a non-CLS settlement currency, but has still maintained a high level in the 70% range. In the retail payment systems operated by the Korea Financial Telecommunications & Clearings Institute, the number of cases of net settlement participants' net debit cap utilization rates exceeding the 70% warning level has meanwhile risen since the second quarter of 2015, in line for example with temporary large-scale fund transfers due to some companies' subscriptions to public offerings and the related refunds.

Retail payment and foreign exchange settlement system risk indicators



Source: The Bank of Korea

The securities settlement systems have been operated stably, with a decrease in the proportion of payments for settlement of exchange-traded and over-the-counter stock and government bond transactions made after the settlement delay penalty deadline, etc.

Securities settlement system risk indicators

(%)

	Payment deadline[1]	Penalty deadline[2]	Payment shares[3]				
			2014		2015		
			Q3	Q4	Q1	Q2	Q3
Exchange-traded stocks	16:00	16:00	-	-	-	-	-
Exchange-traded gov't bonds	16:00	17:00	0.11	-	0.04	-	-
OTC stocks[4]	16:50	16:50	-	0.08	0.01	0.001	-

Notes: 1) Settlement deadline under system operating rules
2) Deadline after which settlement delay penalty assessed
3) Shares of payment funds paid after the settlement deadlines
4) Institutional investors

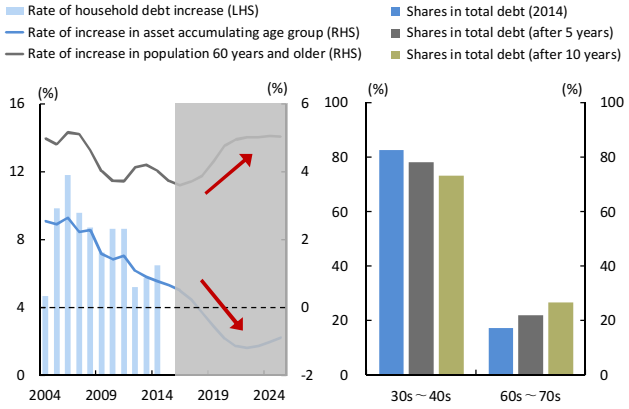
Source: The Bank of Korea

[Analysis of Financial Stability Issues]

1 Compared to the cases of major countries the speed of population aging in Korea is rapid, and so its effects on overall household debt through a variety of channels can become large.

Population aging is foreseen as likely to cause a slowdown in the pace of household debt growth – due to a decrease in the asset accumulating population aged 35 to 59, the core group with demand for debt, and to an increase in the population aged 60 and above, who have high propensities to reduce their debts. But even if members of the elderly cohort liquidate parts of their debt after retirement, the proportion in total financial debt accounted for by this group appears likely to rise, as members of the 50s age cohort, the current main holders of financial liabilities, enter their 60s. It has been analyzed that Korean households in fact expand their debts up until the age of 57, after which they are repaying their debts through means such as disposals of real assets.

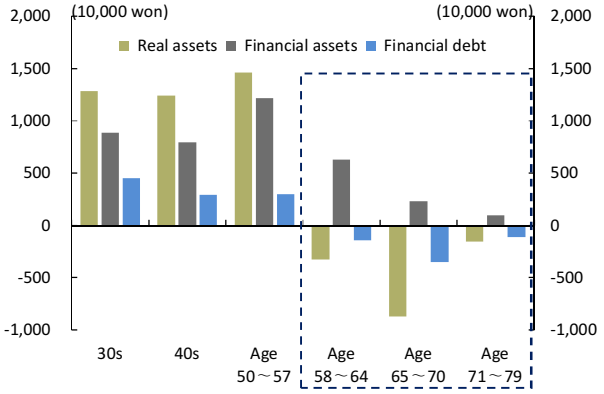
Rates of increase in population structure and household debt[1], and financial debt distribution[2]



Notes: 1) Household credit statistics basis
2) Projections calculated to reflect changes in the distribution compared to 2014

Sources: The Bank of Korea, Statistics Korea (Survey of Household Finances and Living Conditions)

Changes in financial debts and assets, by age group[1]



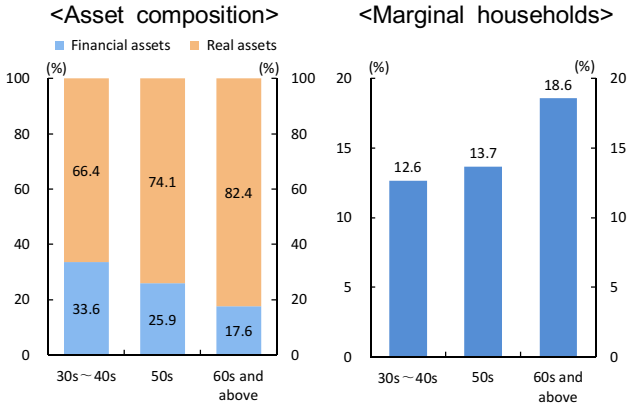
Note: 1) Average per-household yearly amounts between 2010 and 2014

Sources: The Bank of Korea, Statistics Korea (Survey of Household Finances and Living Conditions)

Meanwhile, population aging can cause risks of declines in real estate prices stemming from increased disposals of real assets in the process of debt deleveraging, and of increased numbers of vulnerable elderly families. These risks can be particularly large because the speed of Korean population aging is rapid and the 50s and 60s age cohorts,

whose demand for debt deleveraging is great, are holding mainly real assets, while the proportion of marginal households in this group is also high. The effects of population aging are expected to be felt full-scale within three to four years, and since responding within a short period of time will be difficult it is necessary to respond preemptively, through continuing household debt management, through the revitalization of real estate finance by the introduction of reverse mortgages, though the creation of specially designed jobs for the elderly, and so on.

Asset composition by age group, and shares of marginal households1)2)

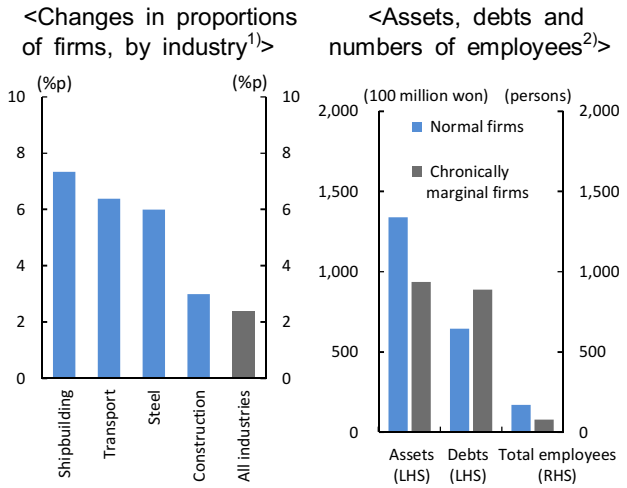


Notes: 1) End-March 2014 basis
2) Shares of marginal households in the different borrower age groups
Sources: The Bank of Korea, Statistics Korea (Survey of Household Finances and Living Conditions)

2 The number of chronically marginal firms unable to cover their interest expenses with operating incomes for a long period of time since the global financial crisis is increasing, and they are working as a factor burdening the macro financial economy.

Among corporations subject to external audits, the proportion of chronic marginal firms rose by 2.4% points between 2009 and 2014 - from 8.2% (1,851 companies) to 10.6% (2,561). Among the different industries, this proportion increased by large extents in the shipbuilding, transportation, steel and construction industries. As of end-2014, chronically marginal firms accounted for levels of 7.8% (239 trillion won) of the total assets of all corporations subject to external audits, 14.1% (228 trillion won) of their total liabilities, and 5.4% (191,000 people) of their total employees. Compared to normal companies, chronically marginal firms have low degrees of contribution to the real economy, while their levels of dependence on debt are high.

Status of chronically marginal firms

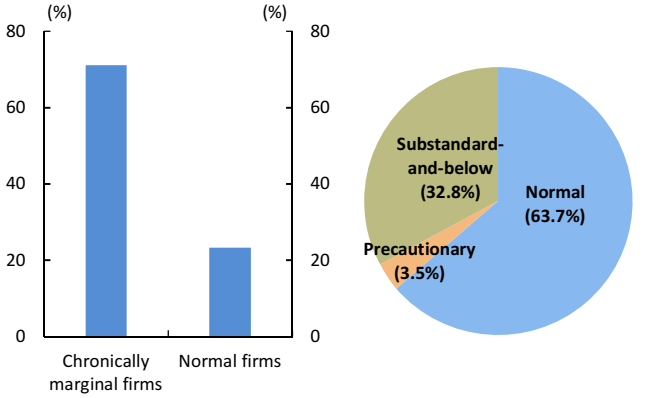


Notes: 1) Changes in proportions between 2009 and 2014
2) End-2014 per-industry averages
Source: KIS-Value

Due to worsening cash flows stemming from their slumps in profitability, the majority of chronic marginal firms are managing to survive through reliance on borrowings. Financial institutions have continued their credit supply to these firms, based mainly on collateral and guarantees, in line with their practices of forbearance lending characterized by tendencies toward leniency in the rating of firms' credit levels and in their own management of asset soundness. The ongoing low interest rates have also worked as a factor intensifying chronically marginal firms' reliance on borrowings, by alleviating their interest payment burdens.

Proportions of firms in deficit[1)]

Chronically marginal firm loan soundness classifications[2)]



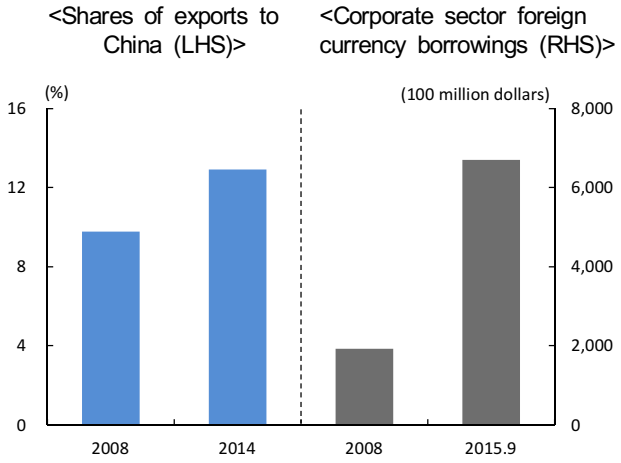
Notes: 1) Firms that averaged negative (-) operating income-to-sales ratios between 2009 and 2014
2) Based on chronically marginal firms that have recorded three consecutive years of operating deficits and of debt ratios above 200% (five domestic bank basis, as of end-June 2015)
Sources: KIS-Value, the Bank of Korea

As the number of chronically marginal firms increases, their negative effects on investment and employment can expand and on resource allocation efficiency fall, thus constraining economic growth. Moreover, since chronically marginal firms' financial conditions are weak, their large-scale defaults at times of domestic or external shock occurrence could work as a factor of destabilizing the financial system. Efforts will thus have to be redoubled to ensure that corporate restructuring can be pushed ahead with, preemptively and effectively, through for example improvement of the restructuring system and strengthening of the role of the creditor financial institutions.

3 Emerging market economies have shown trends of instability recently, with the values of their currencies falling and capital flowing out from them. In line with these developments there is a possibility of substantial effects on the Korean economy, which has close connections with EMEs.

Looking at the factors causing instabilities in emerging economies, the strengthened interlinkages with China of their real economies and financial sectors since the financial crisis have raised the possibilities of the slowdown in Chinese economic growth spreading rapidly to affect them. Since the second half of 2014, concerns have increased that EMEs' international credit standings will decline as the current and fiscal balances of raw material-exporting countries deteriorate due to the slowdown in Chinese economic growth. Moreover, capital liberalization in EMEs has progressed greatly and their external borrowings have also expanded since the global financial crisis, centering around their corporate sectors. Owing to these factors there are potential risks of foreign debt repayment burdens and capital outflow volatility becoming large when the US Federal Reserve raises its policy rate in the future.

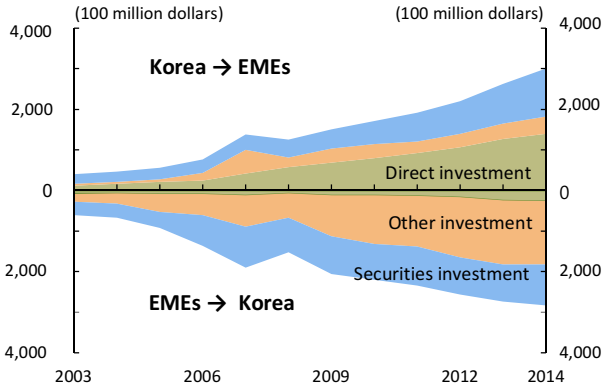
External dependency of major EMEs[1)]



Note: 1) Shares of exports to China based on India, Indonesia, Malaysia, Thailand, Brazil, Turkey, Russia, the Republic of South Africa and Korea, while Corporate sector foreign currency borrowings add China as well
Source: The Bank of Korea

Given the steadily expanded size of trade and capital transactions between Korea and other emerging market countries, instabilities in EMEs could not only have adverse impacts on the Korean real economy, but also cause pressures for outflows of foreigners' securities investment funds.

Status of investment between Korea and EMEs[1)]



Note: 1) Based on sums of Korea's international investment positions (IIP) vis-a-vis China, Southeast Asia, Central and South America and the Middle East
Source: The Bank of Korea

Empirical analysis has also shown that the Korean economy, even if its economic fundamentals are sound, can experience greatly worsening foreign currency funding conditions in times of international financial market instability. This is because, due to Korea's high interconnectedness with EMEs in the real and financial sectors, as well as to the trend of strengthening financial market synchronization, global risk aversion can spread to the domestic economy if factors such as an economic slowdown in China, a US interest rate hike and instabilities in EMEs should appear together. As of September 2015 it was analyzed that the probability of Korea's foreign currency funding conditions (CDS premium) worsening in the existing conditions was 23.2%, but that this would increase to 48.0% in the case where financial instabilities in EMEs expanded, and increase greatly to 75.0% should upward pressures on international interest rates rise due to rate hikes by the US Federal Reserve appear.