Macroprudential indicators

December 2016

General note:

'Index: 31 December 2015 = 1' means that the given index was normalized so that its value on the specified date (31 December 2015) was equal to 1.

Macroeconomic risk indicators

1 Manufacturing Purchasing Managers' Index (PMI) in selected economies
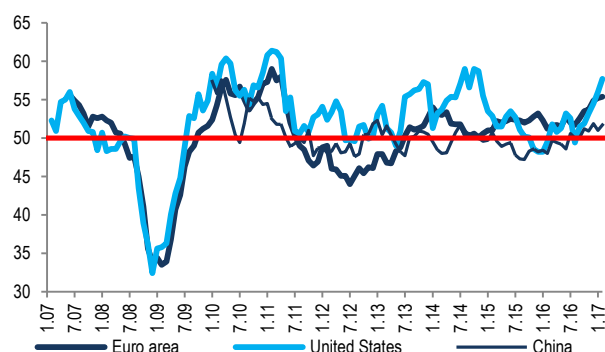
Source: Bloomberg.
Note: PMI (Purchasing Managers' Index) is an indicator of the economic health of the manufacturing or service sector: an index value of more than 50 represents expansion, while a value of below 50 represents contraction.

2 Services Purchasing Managers' Index (PMI) in selected economies
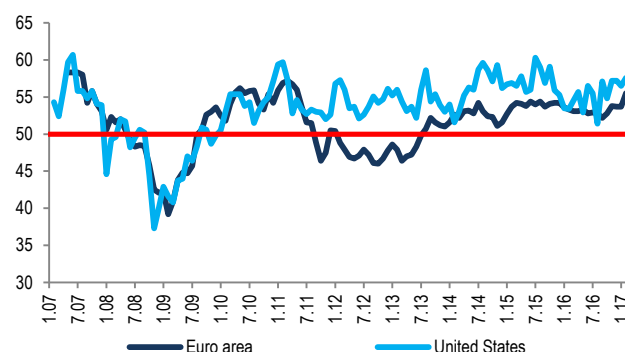
Source: Bloomberg.
Note: PMI (Purchasing Managers' Index) is an indicator of the economic health of the manufacturing or service sector: an index value of more than 50 represents expansion, while a value of below 50 represents contraction.

3 Consumer confidence indicators in the United States
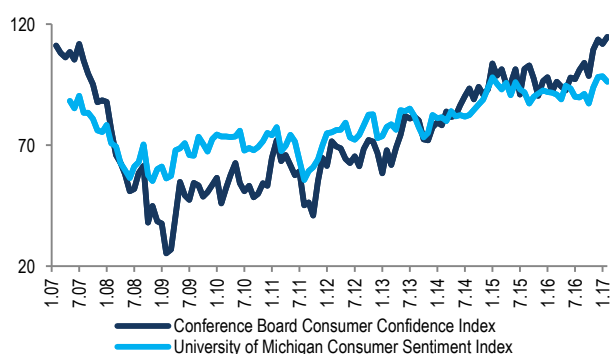
Source: Bloomberg.
Note: The chart refers to US consumer confidence indices produced by two different institutions.

4 Economic sentiment indicators in the euro area
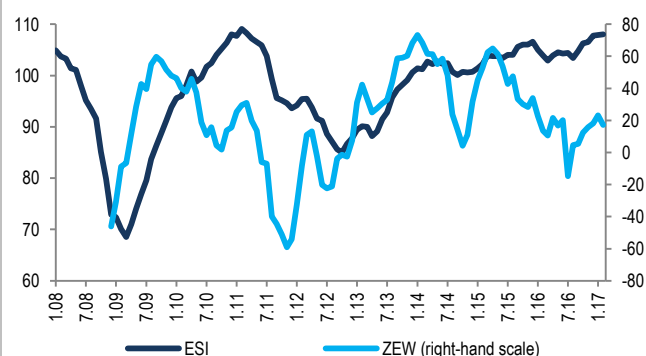
Source: Bloomberg.
Notes: ESI is the Economic Sentiment Indicator compiled by the European Commission. ZEW represents the economic sentiment indicator compiled by a private company ZEW (Zentrum für Europäische Wirtschaftsforschung).

5 Unemployment rates in selected economies (%)
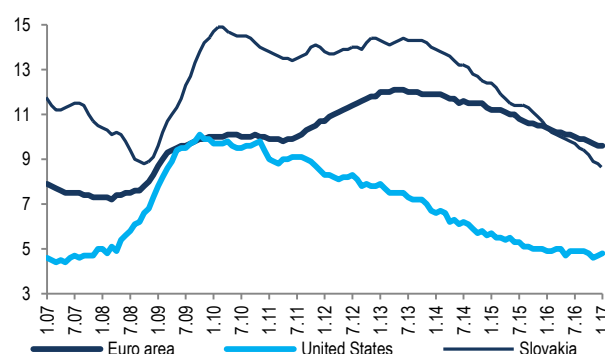
Source: Eurostat, Bureau of Labor Statistics.
Note: Seasonally adjusted.

6 Consumer price inflation in selected economies (%)
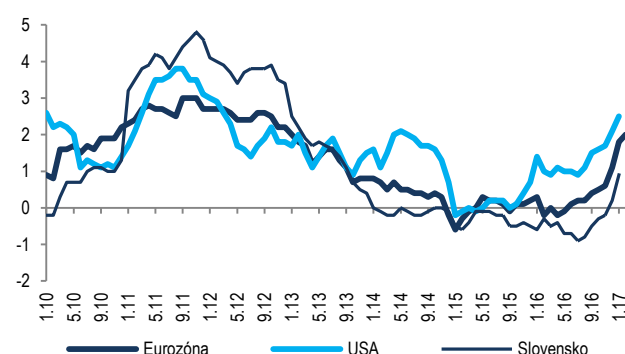
Source: Eurostat, Bureau of Labor Statistics.
Note: Year-on-year percentage changes in the consumer price indices.

7 Industrial production indices in selected economies

Legend: Euro area — United States — Slovakia — Germany
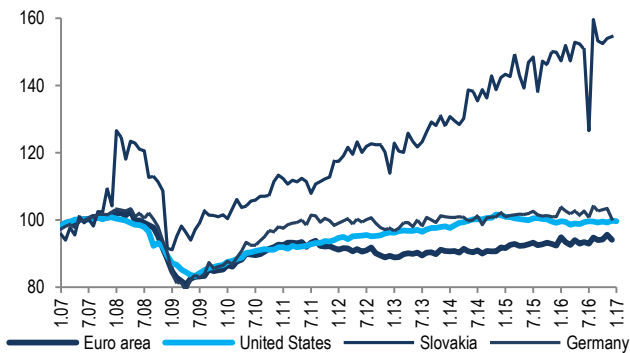
Source: Eurostat, US Federal Reserve.
Notes: Rebalanced (average: 2007 = 100).
Seasonally adjusted.

8 Retail sales indices in selected economies

Legend: Euro area — United States — Slovakia — Germany
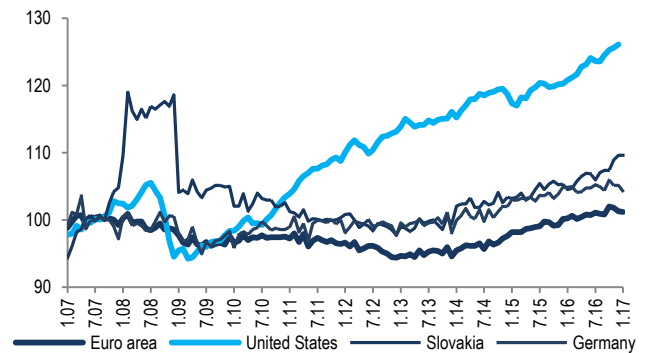
Source: Eurostat, US Department of Commerce.
Notes: Rebalanced (average 2007 = 100).
Seasonally adjusted.

9 General government balances of EU countries in 2015 (%)

Greece, Spain, Portugal, UK, France, Croatia, Finland, Slovakia, Slovenia, Poland, Italy, Belgium, Euro area, Ireland, Netherlands, Bulgaria, Denmark, Hungary, Malta, Latvia, Cyprus, Austria, Romania, Czech Republic, Lithuania, Estonia, Sweden, Germany, Luxembourg
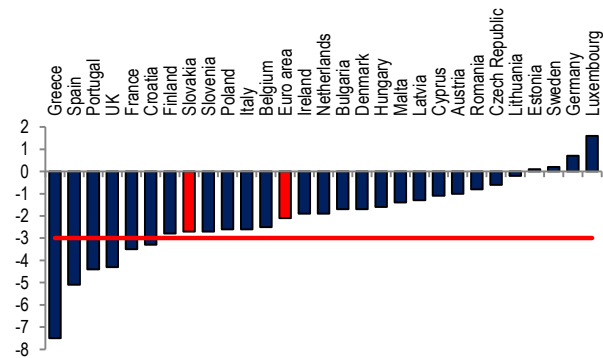
Source: Eurostat.
Note: Balance is expressed as a percentage of GDP.

10 Gross government debt of EU countries in the third quarter of 2016 (%)

Greece, Portugal, Italy, Cyprus, Belgium, Spain, France, Euro area, UK, Croatia, Austria, Slovenia, Ireland, Hungary, Germany, Netherlands, Finland, Malta, Poland, Slovakia, Sweden, Lithuania, Czech Republic, Denmark, Latvia, Romania, Bulgaria, Luxembourg, Estonia
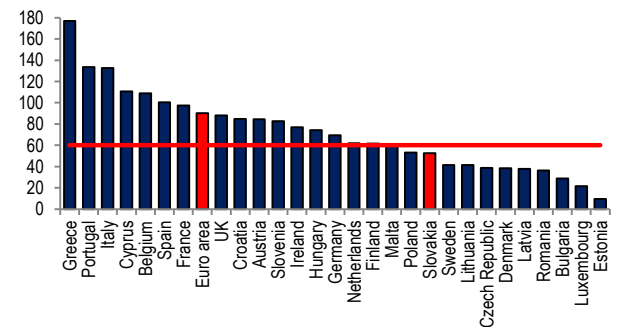
Source: Eurostat.
Note: Gross government debt is expressed as a percentage of shares of GDP.

Financial market risk indicators

11 Price commodity indices (31. 12. 2015 = 1)

Legend: Brent oil price index — Gold price index
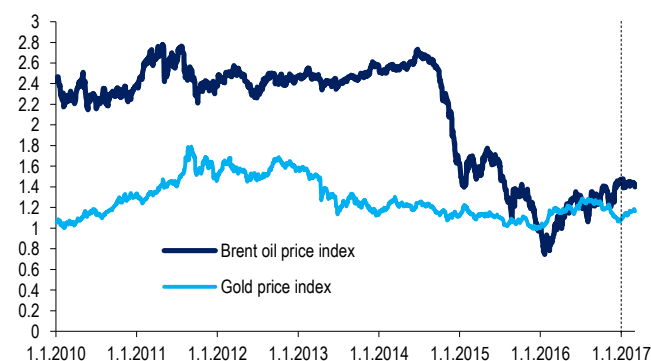
Source: Bloomberg, NBS.

12 Exchange rate indices (31. 12. 2015 = 1)

Legend: USD / EUR, CZK / EUR, HUF / EUR, PLN / EUR
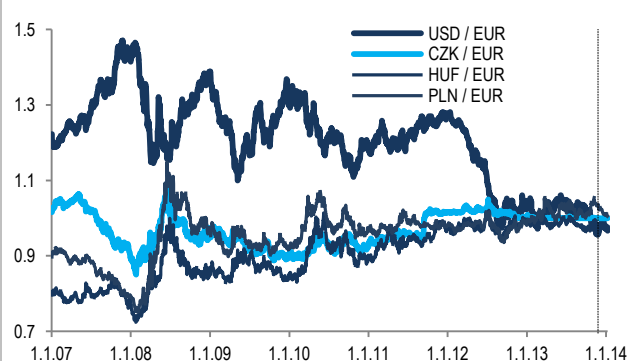
Source: Bloomberg, NBS.

13 Equity indices (31. 12. 2015 = 1)

Legend: EUROSTOXX, NIKKEI, S&P 500
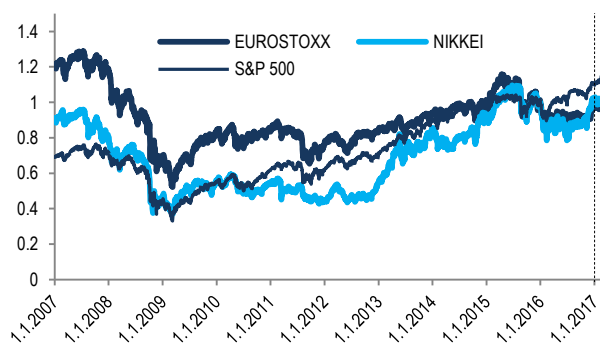
Source: Bloomberg, NBS.

14 Share price indices of the parent institutions of the five largest domestic banks (31. 12. 2015 = 1)

Legend: UniCredit, KBC, Erste Bank, RZB, Intesa
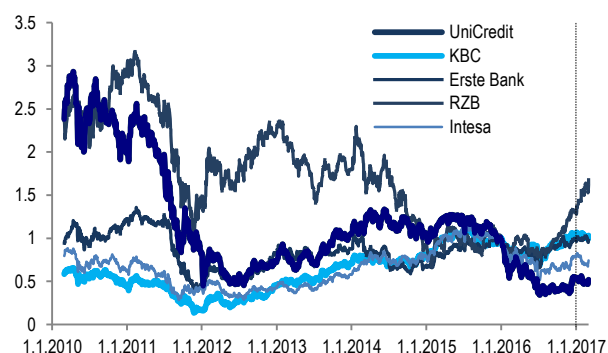
Source: Bloomberg, NBS.

15 Yield curve slopes in selected economies (p. p.)

Legend: Germany, United states
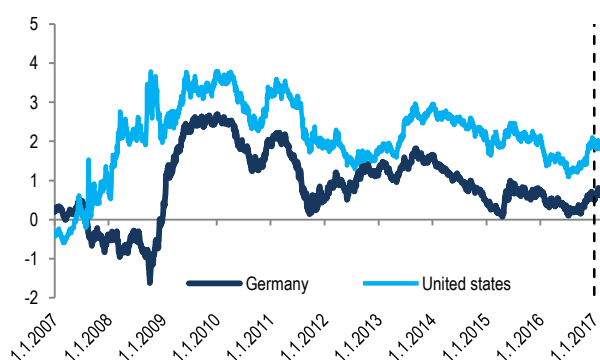
Source: Bloomberg, NBS.
Notes: The yield curve slope is expressed as the difference between the yield to maturity on 10-year and 3-month government bonds.
p. p. – percentage points

16 Volatility of equity indices

Legend: VIX, VSTOXX
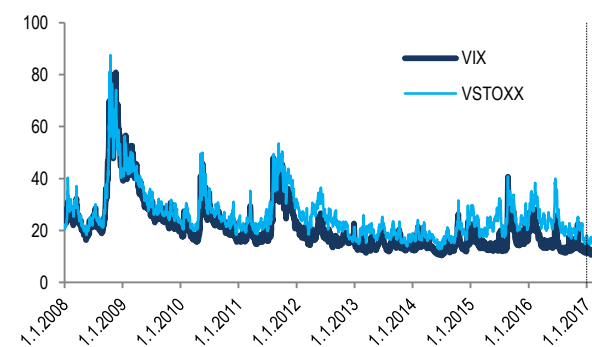
Source: Bloomberg.

17 CDS spread indices (b. p.)

Legend: iTraxx Europe 5Y, iTraxx Senior Financials 5Y
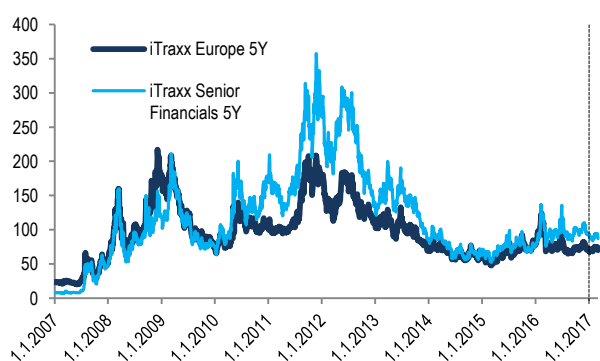
Source: Bloomberg, NBS.
Note: b. p. – basis points

18 CDSs of the parent institutions of the largest Slovak banks (b. p.)

Legend: Max - min range of the parent institutions' CDS spreads, iTraxx Senior Financials 5Y
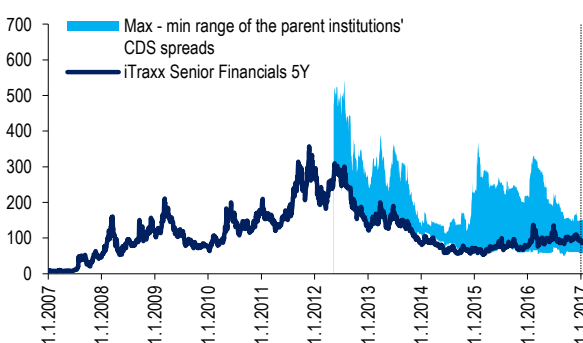
Source: Bloomberg, NBS.
Note: b. p. – basis points

19 Three-month rates and the OIS spread (%, p. p.)
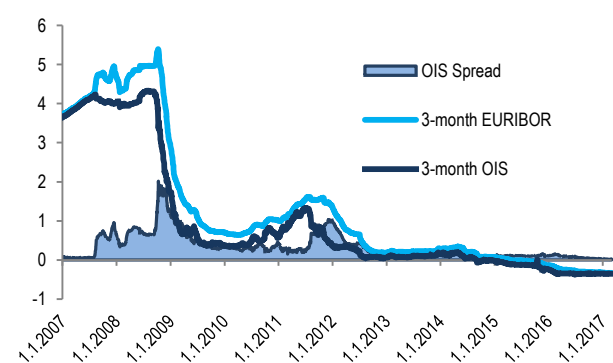
Source: Bloomberg, NBS.
Note: p.p. – percentage points.

20 Inflation-linked swap prices (p. p.)
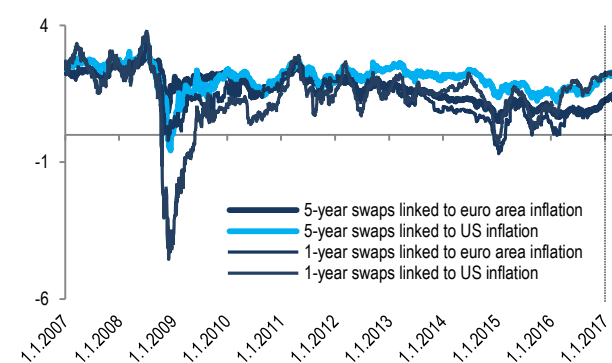
Source: Bloomberg, NBS.
Notes: Inflation-linked swaps are swap transactions in which one counterparty pays a fixed rate (a swap price) and the other pays a rate corresponding to the return on a selected price index. The inflation-linked swap price is calculated on a non-coupon basis.
p.p. – percentage points.

21 Credit spreads on 5-year government bonds issued by lower-rated countries (p. p.)
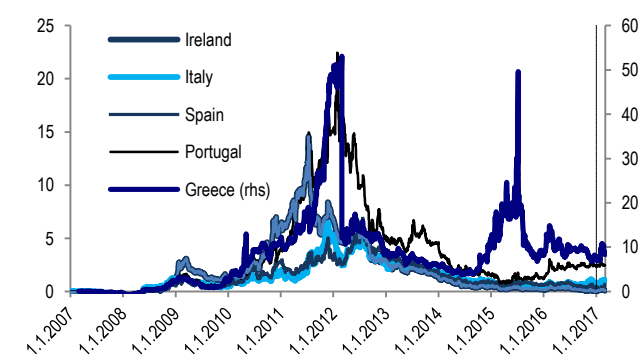
Source: Bloomberg, NBS.
Notes: The vertical scales shows differences between the yield on 5-year bonds issued by the given countries and 5-year OIS rates, representing a 5-year interest rate on high-rated bonds. p. p. – percentage points.

22 Credit spreads on 5-year government bonds issued by selected central European countries and Germany (p. p.)
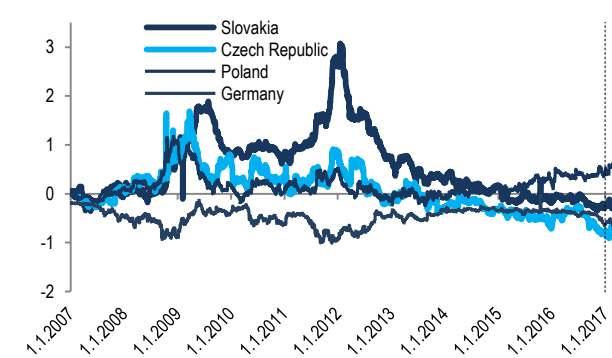
Source: Bloomberg, NBS.
Notes: The Chart shows the difference between yields on 5-year government bonds denominated in the domestic currencies of the given countries and 5-year swap rates for the respective currencies. p. p. – percentage points.

Corporate credit risk indicators

23 Exports and the business environment
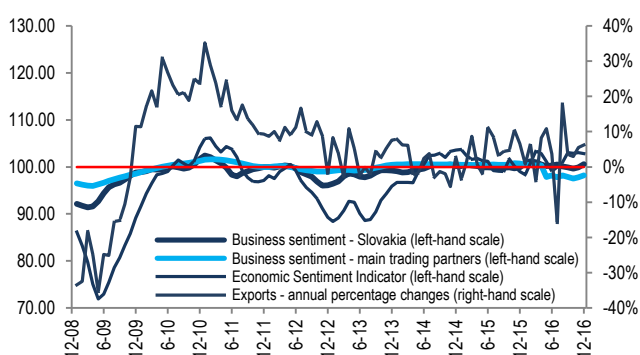
Source: NBS, OECD, Statistical Office of the SR.

24 Exports and NFC sales
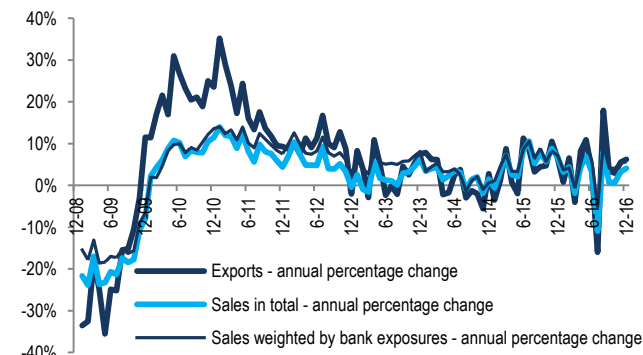
Source: NBS, OECD, Statistical Office of the SR.

25 Sales in selected sectors compared with their level for the period 06/2007 to 06/2008

Legend: NFC sector in total; Industry; Construction; Trade and motor vehicle sales; Hotels and restaurants

Source: Statistical Office of the SR.

26 NFC loans and sales

Legend: Total sales - annual percentage change; Year-on-year growth in loans from domestic banks to non-financial corporations

Source: NBS, Statistical Office of the SR.
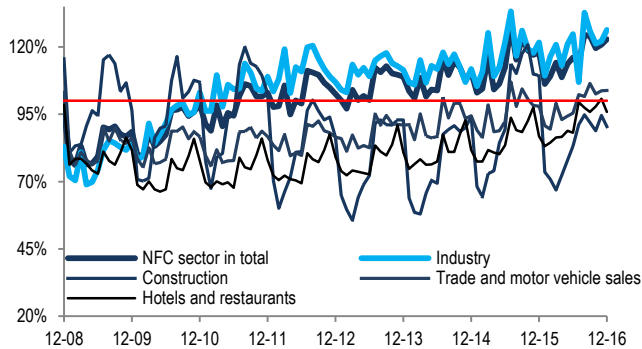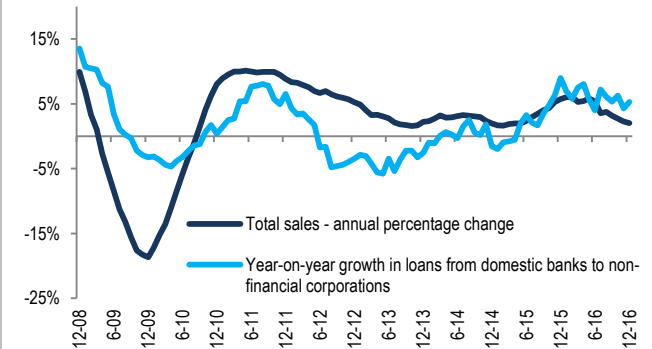
27 Interest rate spreads on new loans to NFCs

Legend: Euribor 1M; Loans of up to and including €0.25 million; Loans of more than €0.25 million, up to and including €1 million; Loans of more than €1 million

Source: NBS, European Banking Federation.
Note: The spread is defined as the difference between the monthly EURIBOR rate and the average rate on new loans in the respective category.
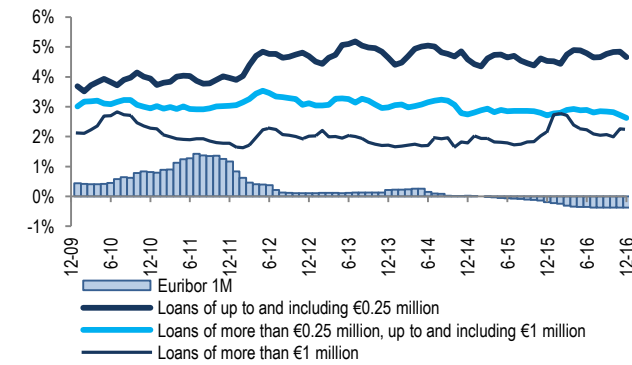
28 Non-performing loans and default rates

Legend: Change in the volume of NPL - m/m (right-hand scale); Default rate (volume of loans); Default rate (number of loans); NPL ratio

Source: NBS.
Notes: Default rates refer to ratio of the number/volume of loans re-categorised as defaulted to the number/volume of non-defaulted loans at the beginning of the period under review.
Data on the right-hand scale are in EUR mil.

29 Loans at risk

Legend: Average; Median

Source: NBS.
Note: The chart shows the interquartile range.

30 Debt-service burden and its components

Legend: Interest rate (left-hand scale); Loans (left-hand scale); Sales (left-hand scale); Debt-service burden - domestic loans - index; Debt-service burden at 2008 rates - domestic loans - index; Debt burden-service - total loans - index; Debt-service burden at 2008 rates - total loans - index

Source: NBS, SO SR.
Note: Data on the right-hand scale are in EUR mil.
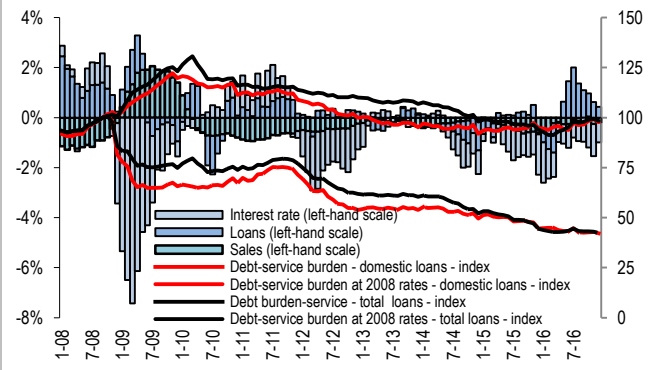
31 Commercial real estate: price and vacancy rates in the office segment

Price per m2 / month - inner centre
Price per m2 / month - outer centre
Price per m2 / month - outside centre
Office vacancy rate - inner centre (right-hand scale)
Office vacancy rate - outer centre (right-hand scale)
Office vacancy rate - outside centre (right-hand scale)
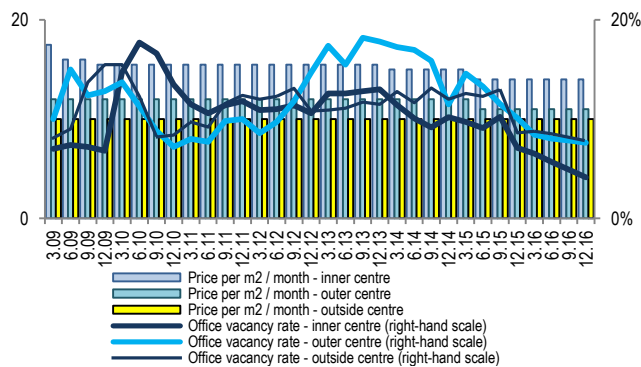
Source: CBRE, NBS.
Note: The chart shows prices and vacancy rates in Bratislava.

32 Commercial real estate: sales in the residential segment (new flats)

Number of flats whose sale fell through (left-hand scale)
Number of flats sold in a given quarter (left-hand scale)
Residential segment: Net sales of flats (left-hand scale)
Share of projects with positive net sales of flats (right-hand scale)
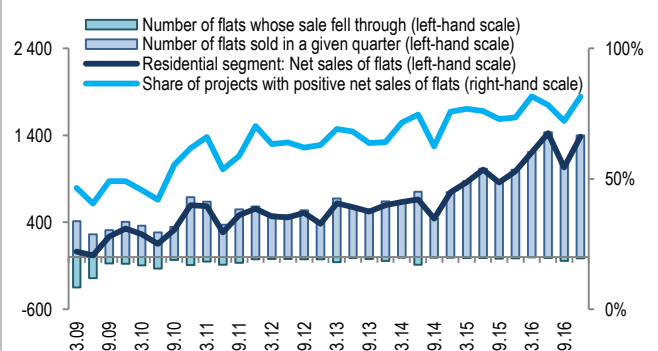
Source: Lexxus, NBS.
Note: The chart shows prices and vacancy rates in Bratislava.

33 Comparison of NFC balance sheets and sales

Ratio of domestic bank loans (excl. CRE loans) to annual sales
Ratio of domestic bank loans to annual sales
Ratio of external funding to annual sales
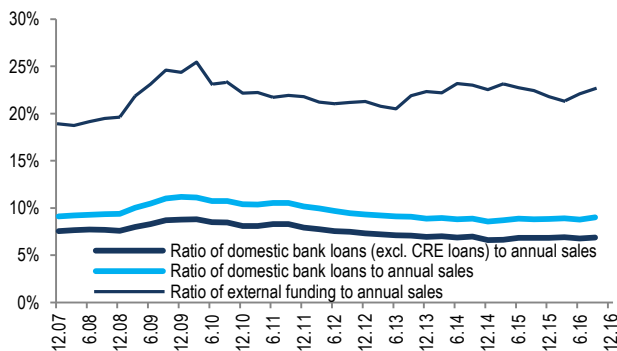
Source: NBS, Statistical Office of the SR.
Note: CRE- commercial rate estate.

34 Structure of NFC liabilities

External funding as a share of total NFC liabilities
Share of rest of the world sector in NFC liabilities
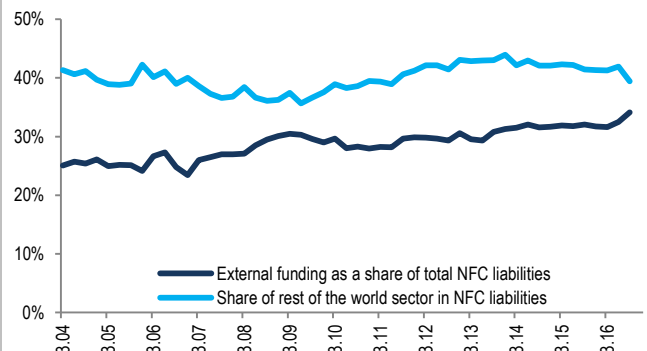
Source: NBS.

Household credit risk indicators

35 Stock of retail loans (year-on-year changes)

Consumer loans   Housing Loans

Absolute year-on-year change (right-hand scale)
Relative year-on-year change
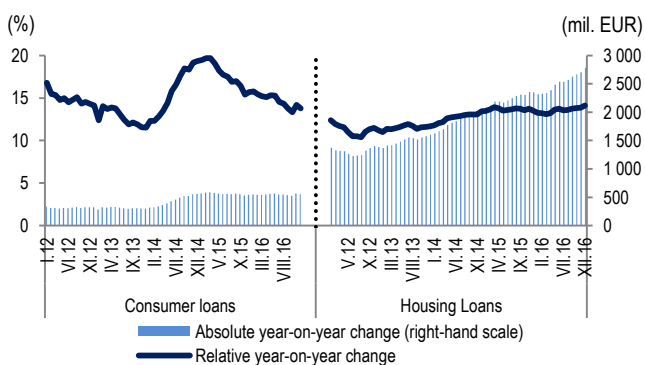
Source: NBS.

36 Household indebtedness in Slovakia and in selected countries (%)

Euro area 19   Slovakia
Visegrad Four   Baltic states
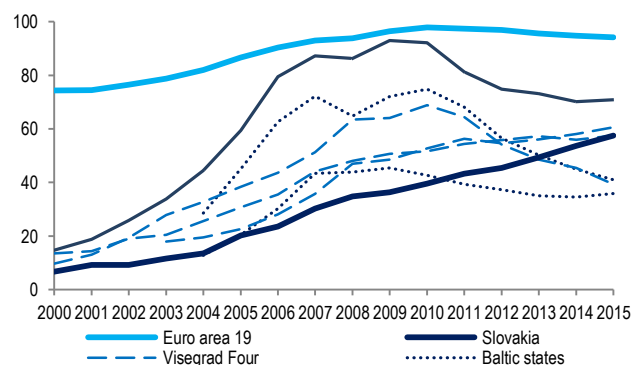
Source: Eurostat.
Note: The indicator is calculated as the ratio of households' total debt to their disposable income.

37 Changes in credit standards and credit demand according to the bank lending survey
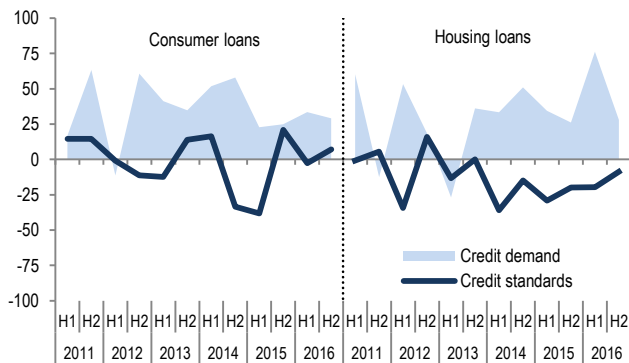
Sources: Bank Lending Survey, NBS.
Note: The data show net percentage shares, with positive values denoting an increase in demand or an easing of standards.

38 Loan-to-value (LTV) ratio for new loans (%)

Source: NBS.
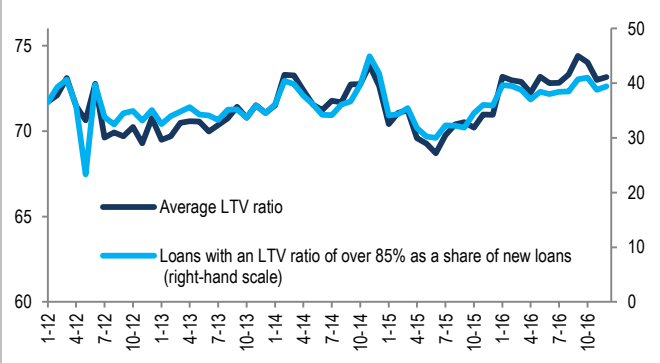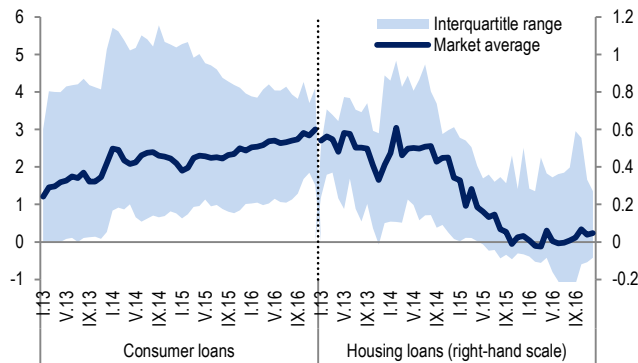Note: The indicator is defined in the section 'Glossary and abbreviations' of Analysis of Slovak Financial Sector 2016.

39 Net default rates on retail loans (%)

Source: SO SR.
Note: The net default rate denotes the net change in the amount of NPLs over a 12-month period as a share of the outstanding amount of loans at the beginning of the period. The numerator is adjusted for the effect of loan write-offs and sell-offs.

40 NPL ratios for retail loans (%)
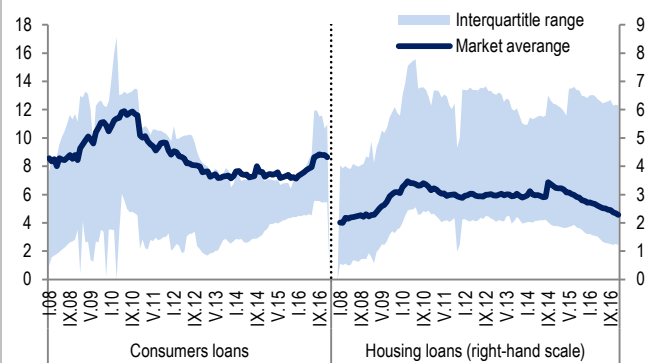
Source: NBS.

41 The consumer confidence index and its components
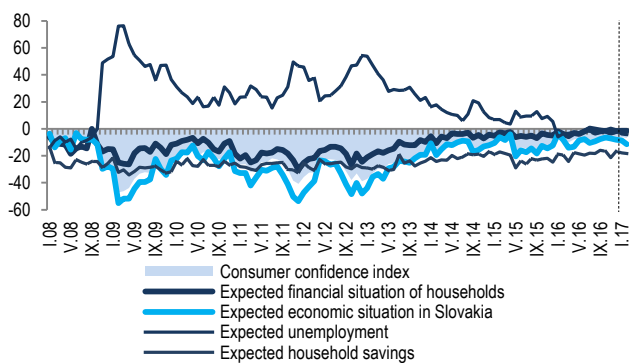
Source: Statistical Office of the SR.

42 Number of unemployed by income category
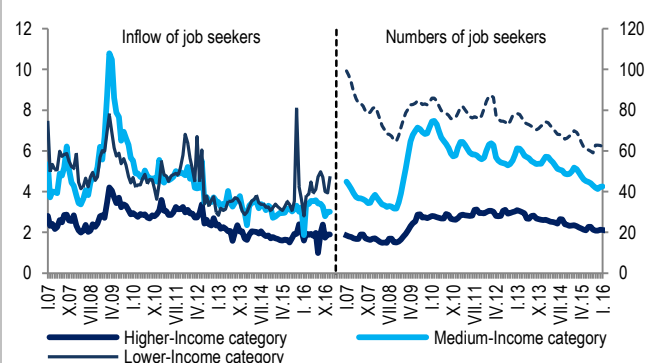
Source: Central Office of Labour, Social Affairs and Family of the Slovak Republic.
Notes: The left-hand and right-hand scales show numbers of job seekers in thousands.
The income categories are defined in the section 'Glossary and abbreviations' of Analysis of Slovak Financial Sector 2016.

43 Real wages in selected sectors – index

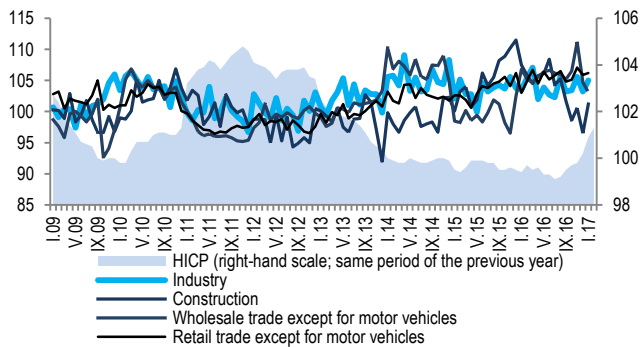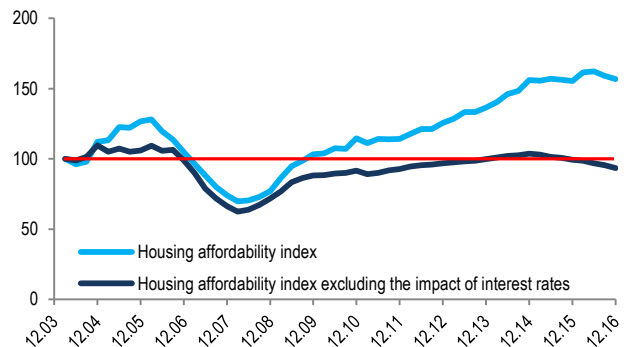HICP (right-hand scale; same period of the previous year)
Industry
Construction
Wholesale trade except for motor vehicles
Retail trade except for motor vehicles

Source: SO SR.

44 Housing affordability index (31 March 2004 = 100)

Housing affordability index
Housing affordability index excluding the impact of interest rates

Source: NBS, Statistical Office of the SR.
Notes: Housing affordability index is an index representing the ratio of disposable income to loan instalments. The calculation of disposable income takes into account the average wage and average expenditure of households; the calculation of the instalment amount takes into account the average apartment price, average interest rate, average maturity, and a constant LTV ratio (75%). The calculation methodology for the housing affordability index is set out in the following paper: Rychtárik, Š., Krčmár, M. (2011), "Vývoj na trhu úverov na bývanie a jeho interpretácia" (Developments in the housing loan market and their interpretation), Nehnuteľnosti a bývanie 2010 (Real Estate and Housing), Vol. No 2, Bratislava, 2010.

# Market risk and liquidity risk indicators

45 Value at Risk for investments in different types of financial instruments

Open position in USD
5-year euro-denominated bonds
Equity investments (EUROSTOXX index)
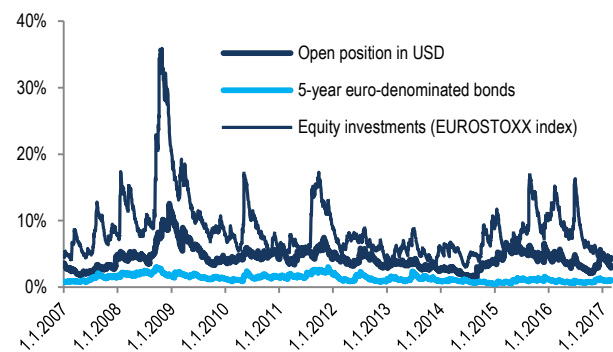
Source: Bloomberg, NBS.
Notes: The data represent the loss (as a percentage of the given investment) that should not be exceeded over a period of 10 days at a confidence level of 99%. This loss was determined on the basis of a risk factor volatility calculation, using exponentially weighted moving averages.
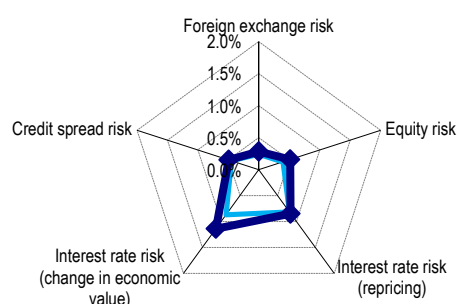
46 The sensitivity of the banking sector to different risk types
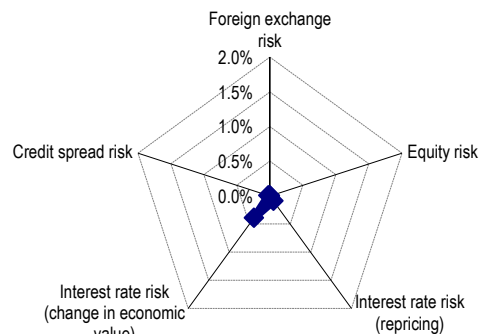
Source: Bloomberg, NBS.
Notes: The data represent the loss (as a percentage of NAV) under each scenario of the sensitivity analysis. Sensitivity analysis includes four scenarios as follows: share prices declining by 10%; other currencies weakening against the euro by 5%; interest rates increasing in parallel by 0.3 percentage point; and credit spreads on bonds issued by Greece, Portugal, Ireland, Spain and Italy widening by 2 percentage points. In the case of interest rate risk, the impact on the repricing of instruments valued at fair value is calculated, as is the impact on the economic value that represents the repricing of all financial instruments. Individual risk types include also indirect risks that institutions are exposed to by virtue of their investments in investment fund shares/units. The calculation of these indirect risks was based on the mapping of the different types of fund units/ shares into the set of risk factors. Light blue line represents data as at 31 December 2015, dark blue line represents data as at 31 December 2016.
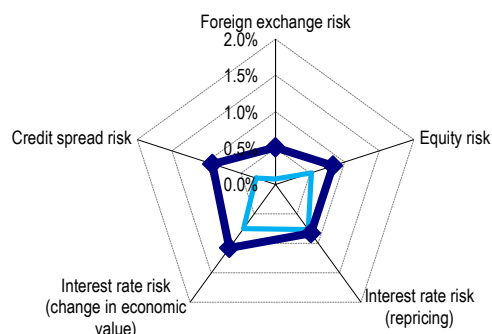
47 The sensitivity of PFMC-managed pension funds to different risk types

Sources: Bloomberg, NBS.   Notes:
The data represent the loss (as a percentage of NAV) under each scenario of the sensitivity analysis. The sensitivity analysis is described in more detail in glossary of Chart 46. Light blue line represents data as at 31 December 2015, dark blue line represents data as at 31 December 2016.
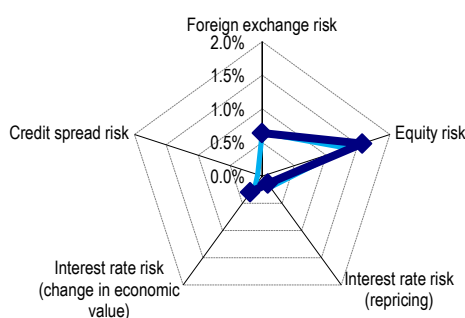
48 The sensitivity of SPMC-managed supplementary pension funds to different risk types

Sources: Bloomberg, NBS.
Notes: The data represent the loss (as a percentage of NAV) under each scenario of the sensitivity analysis. The sensitivity analysis is described in more detail in glossary of Chart 46. Light blue line represents data as at 31 December 2015, dark blue line represents data as at 31 December 2016.
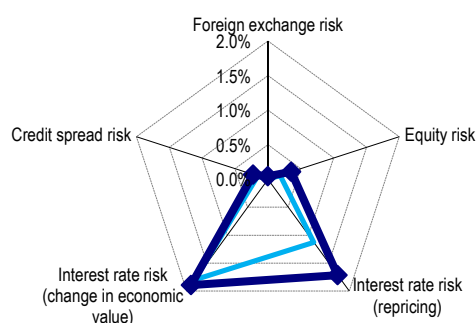
49 The sensitivity of collective investment funds to different risk types

Sources: Bloomberg, NBS.   Notes:
The data represent the loss (as a percentage of NAV) under each scenario of the sensitivity analysis. The sensitivity analysis is described in more detail in glossary of Chart 46. Light blue line represents data as at 31 December 2015, dark blue line represents data as at 31 December 2016.

50 The sensitivity of insurers' assets to different risk types
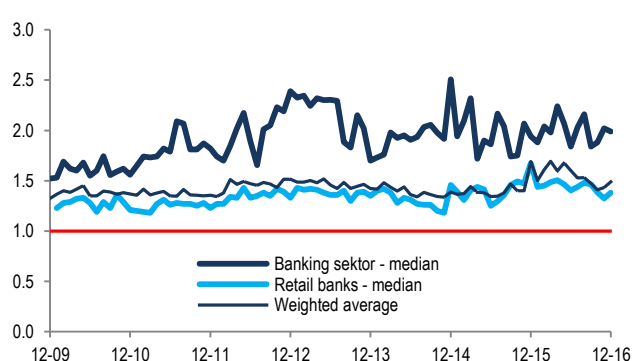

Sources: Bloomberg, NBS.
Notes: The data represent the loss (as a percentage of NAV) under each scenario of the sensitivity analysis. The sensitivity analysis is described in more detail in glossary of Chart 46. Light blue line represents data as at 31 December 2015, dark blue line represents data as at 31 December 2016.

51 Loan-to-deposit ratio
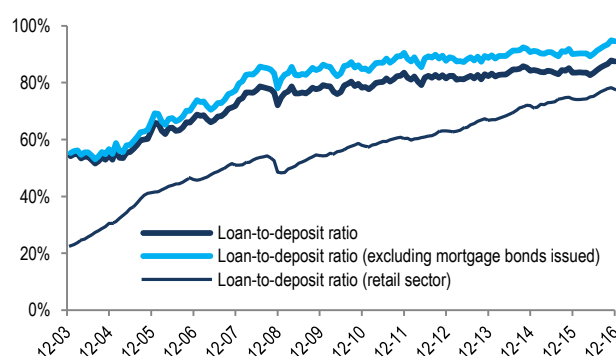
Source: NBS.

## 52 Liquid asset ratio

Source: NBS.

53 Impact of stress test scenarios on PFMC-managed pension funds

Scenario 1 — Scenario 2 — Baseline scenario

Sources: NBS, ECB, Bloomberg, internet.
Note: The vertical scale shows the average of the index of the current pension-point value weighted by the net asset value of individual funds.
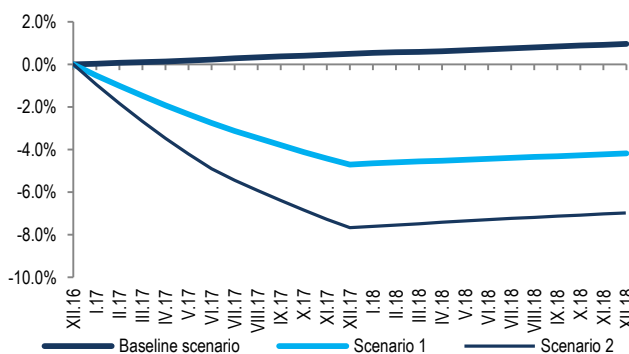
54 Impact of stress test scenarios on SPMC-managed distribution pension funds
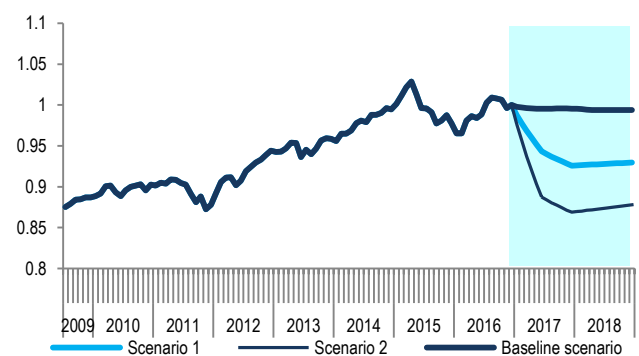
Scenario 1 — Scenario 2 — Baseline scenario

Sources: NBS, ECB, Bloomberg, internet.
Note: The vertical scale shows the average of the index of the current pension-point value weighted by the NAV of individual funds.
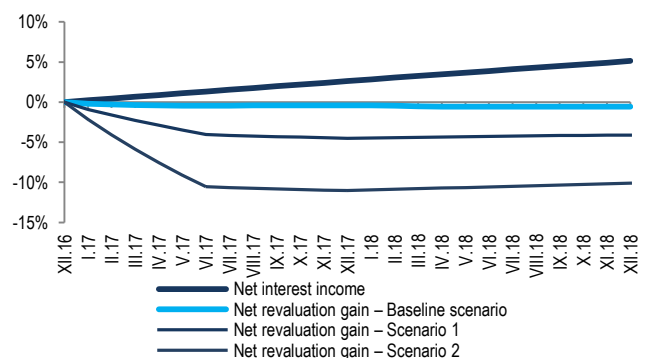
55 Impact of stress test scenarios on investment funds

Baseline scenario — Scenario 1 — Scenario 2

Sources: NBS, ECB, Bloomberg, internet.
Note: The vertical scale shows the estimated profit or loss as a share of the net asset value weighted by the NAV of individual funds.
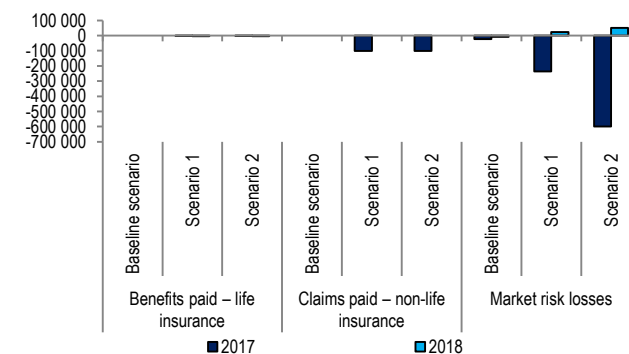
56 Impact of stress test scenarios on insurers' assets

Net interest income
Net revaluation gain – Baseline scenario
Net revaluation gain – Scenario 1
Net revaluation gain – Scenario 2
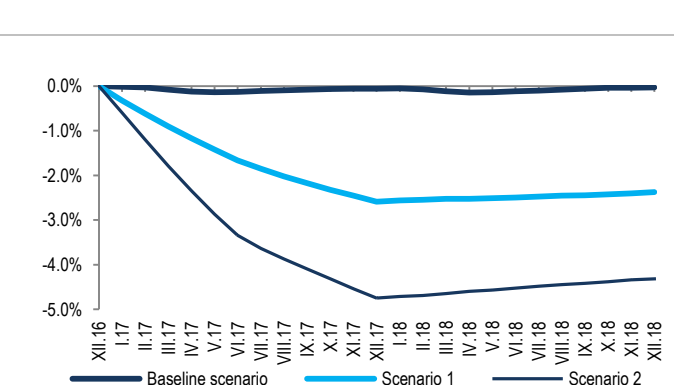
Sources: NBS, ECB, Bloomberg, internet.
Notes: The left-hand scale shows the estimated profit or loss as a share of assets (except for assets covering technical provisions in unit-linked insurance) weighted by assets of individual insurers. The impact of the stress test scenarios on the value of liabilities was not taken into account.

57 Additional expenses incurred by the insurance sector under the stress test scenarios (mil. €)

■2017 ■2018

Source: NBS.

58 Impact of stress test scenarios on unit-linked insurance assets

Baseline scenario — Scenario 1 — Scenario 2

Source: NBS, ECB, Bloomberg, internet.
Note: The left-hand scale shows the estimated profit or loss as a share of NAV weighted by the net value of assets covering unit-linked insurance in individual insurers.