

# Macprudential indicators

December 2017

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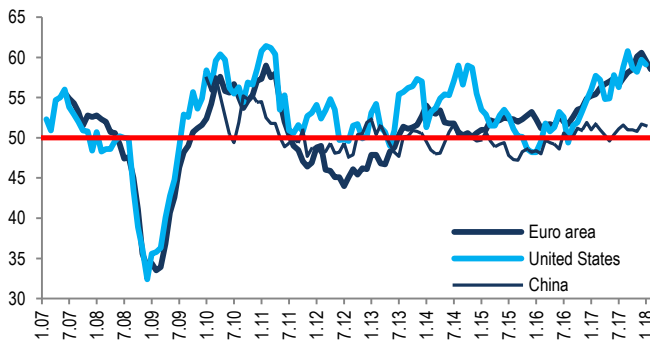
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### **General note:**

'Index: 31 December 2016 = 1' means that the given index was normalized so that its value on the specified date (31 December 2016) was equal to 1.

## Macroeconomic risk indicators

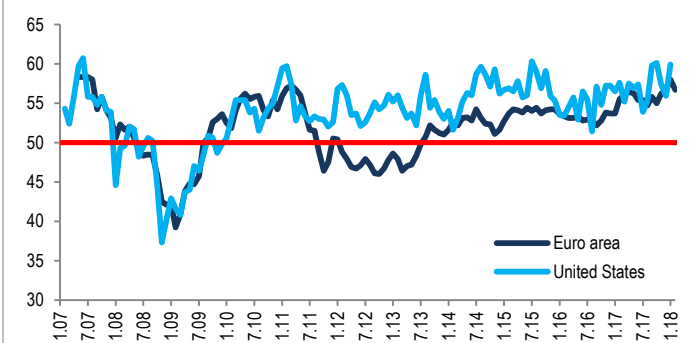
### 1 Manufacturing Purchasing Managers' Index (PMI) in selected economies



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.

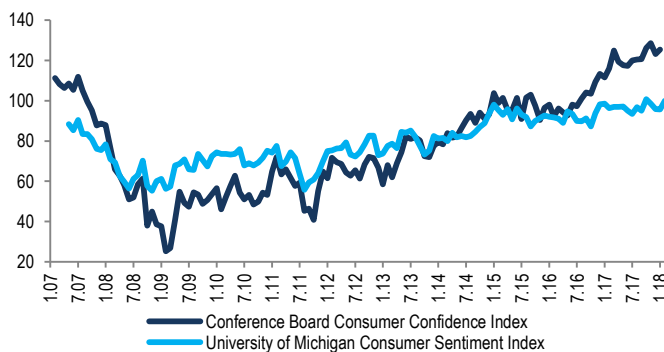
### 2 Services Purchasing Managers' Index (PMI) in selected economies



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.

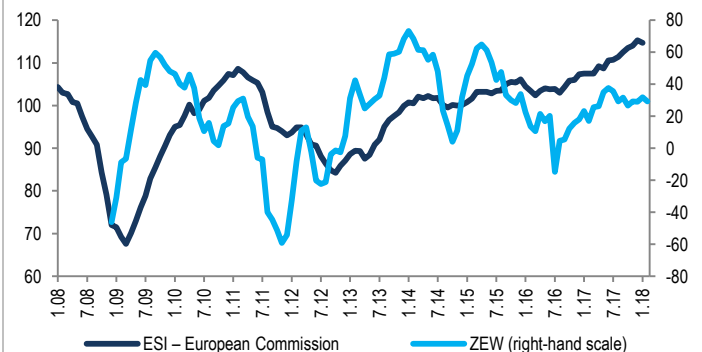
### 3 Consumer confidence indicators in the United States



Source: Bloomberg.

Note: The chart refers to US consumer confidence indices produced by two different institutions.

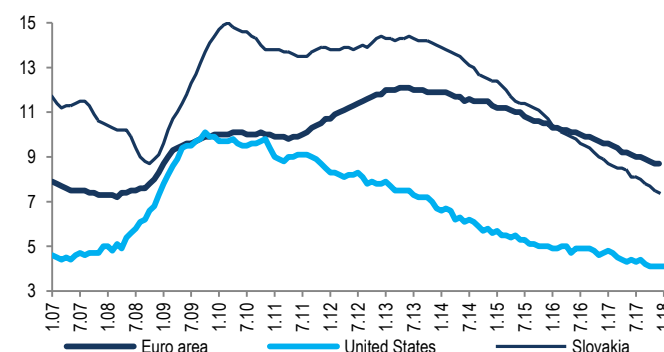
### 4 Economic sentiment indicators in the euro area



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).

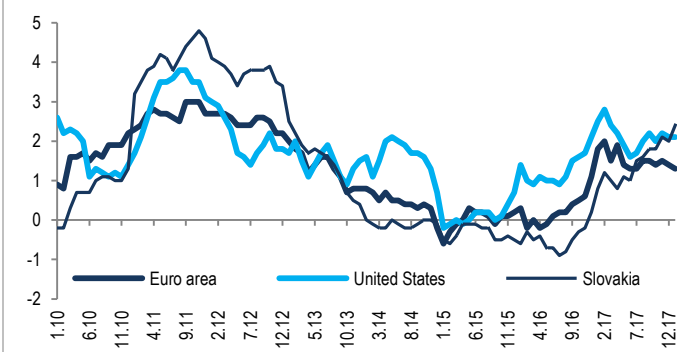
### 5 Unemployment rates in selected economies (percentages)



Source: Eurostat, Bureau of Labor Statistics.

Note: Seasonally adjusted.

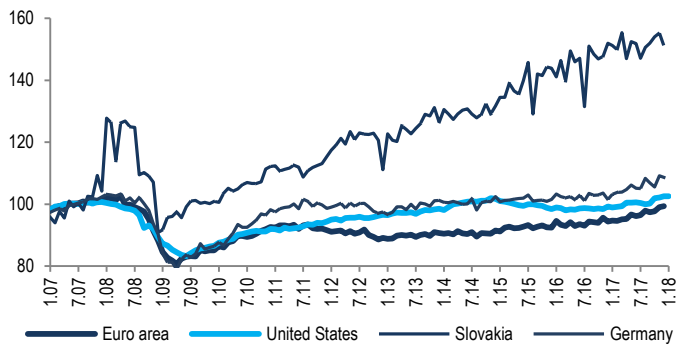
### 6 Consumer price inflation in selected economies (annual percentage changes)



Source: Eurostat, Bureau of Labor Statistics.

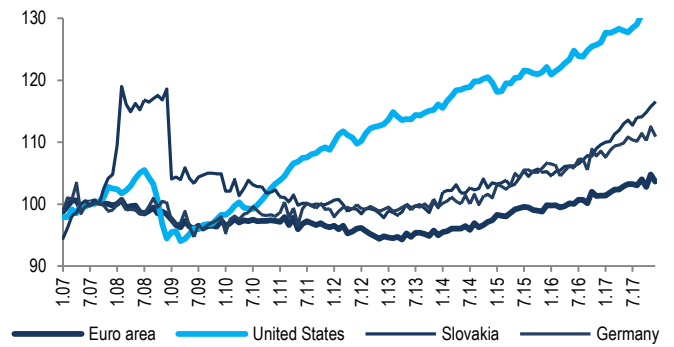
Note: Year-on-year percentage changes in the consumer price indices.

## 7 Industrial production indices in selected economies



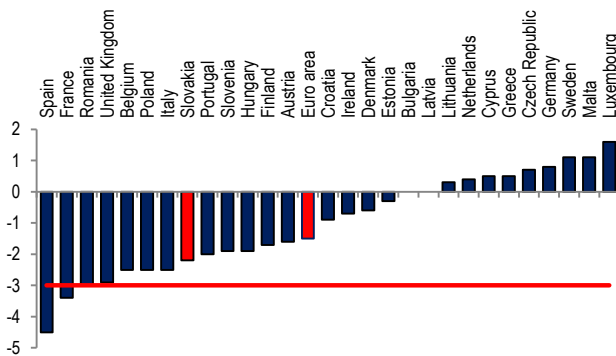
Source: Eurostat, US Federal Reserve.  
Notes: Rebalanced (average 2007 = 100).  
Seasonally adjusted.

## 8 Retail sales indices in selected economies



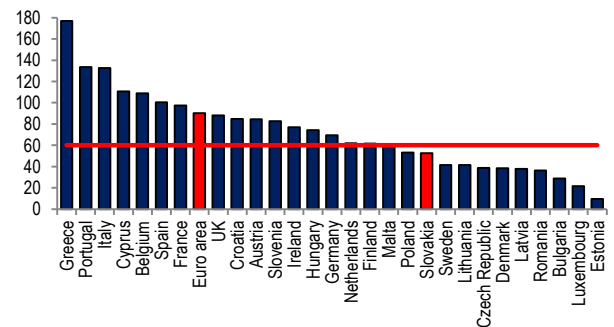
Source: Eurostat, US Department of Commerce.  
Notes: Rebalanced (average 2007 = 100).  
Seasonally adjusted.

## 9 General government balances of EU countries in 2016 (percentages of GDP)



Source: Eurostat.  
Note: Balance is expressed as a percentage of GDP.

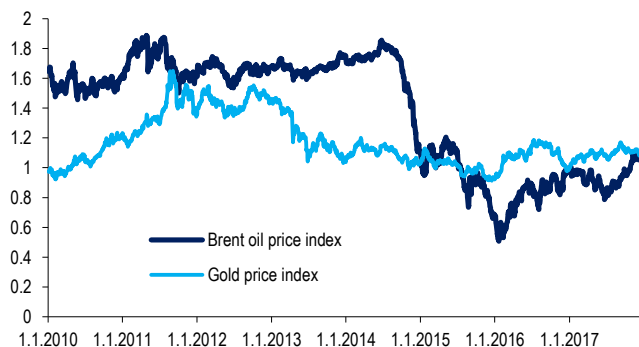
## 10 Gross government debt of EU countries in the third quarter of 2017



Source: Eurostat.  
Note: Gross government debt is expressed as a percentage of shares of GDP.

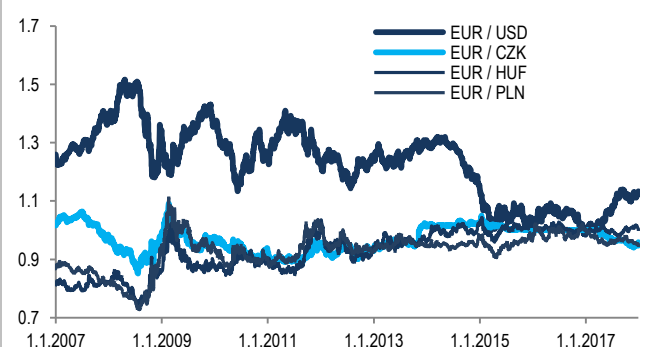
## Financial market risk indicators

### 11 Price commodity indices (31 December 2016 = 1)



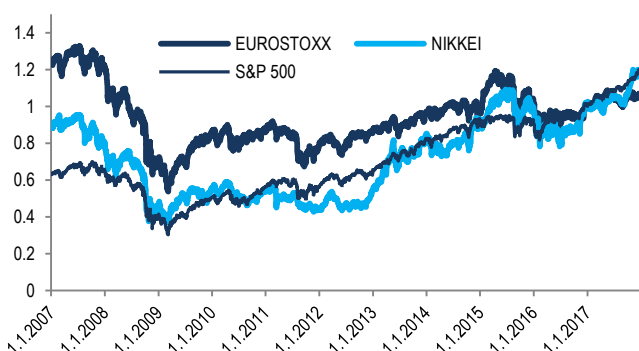
Source: Bloomberg, NBS.

### 12 Exchange rate indices (31 December 2016 = 1)



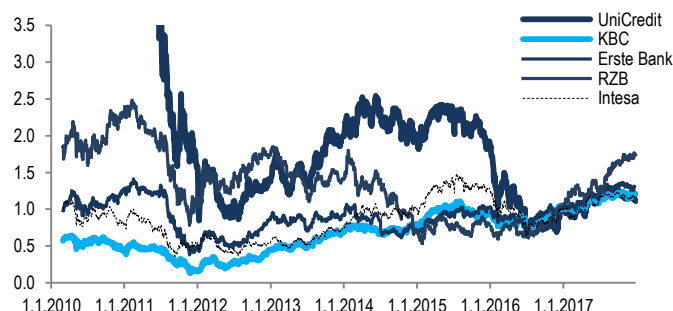
Source: Bloomberg, NBS.

### 13 Equity indices (31 December 2016 = 1)



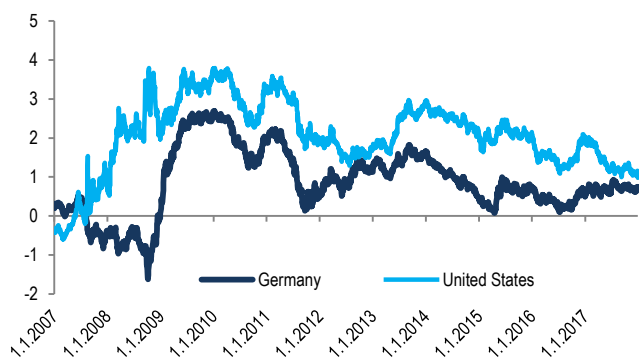
Source: Bloomberg, NBS.

### 14 Share price indices of the parent institutions of the five largest domestic banks (31 December 2016 = 1)



Source: Bloomberg, NBS.

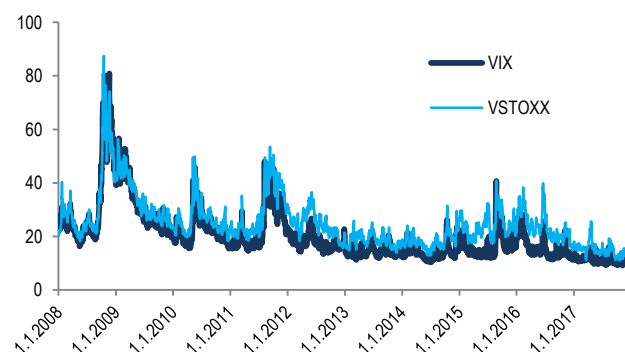
### 15 Yield curve slope in selected economies (percentage points)



Source: Bloomberg, NBS.

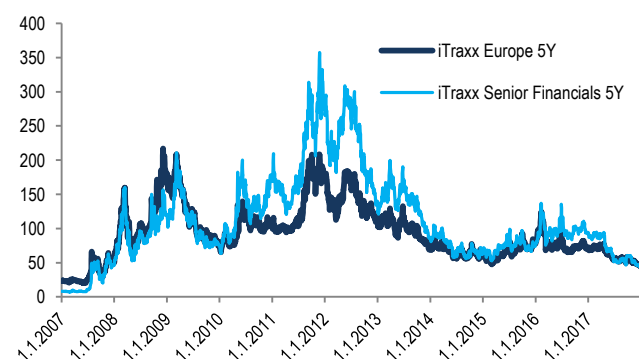
Notes: The yield curve slope is expressed as the difference between the yield to maturity on 10-year and 3-month government bonds.  
p. p. – percentage points

### 16 Volatility of equity indices



Source: Bloomberg.

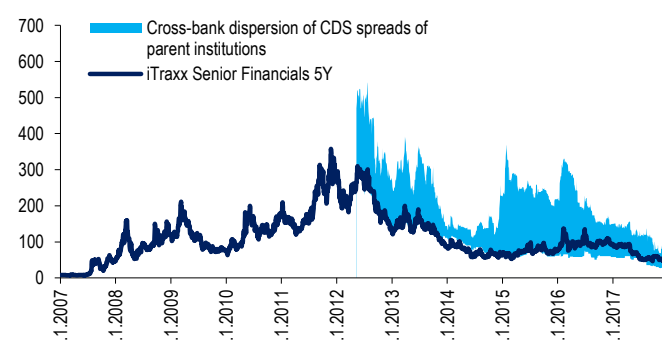
### 17 CDS spread indices (basis points)



Source: Bloomberg, NBS.

Note: b. p. – basis points

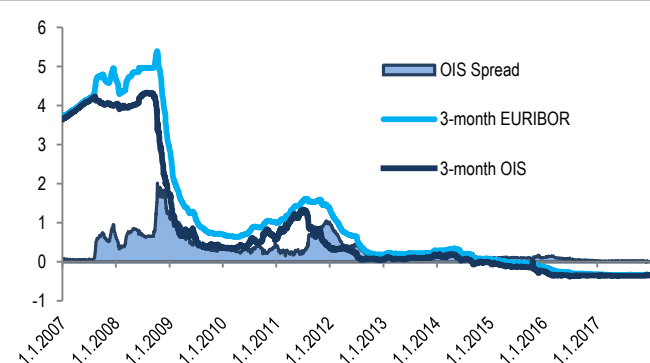
### 18 CDSs of the parent institutions of the largest Slovak banks (basis points)



Source: Bloomberg, NBS.

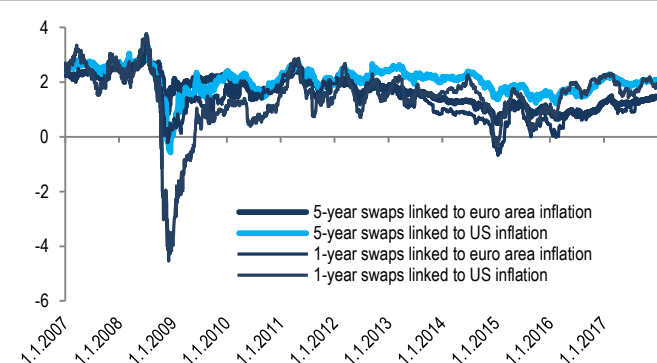
Note: b. p. – basis points

## 19 Three-month rates and the OIS spread (percentages; percentage points)



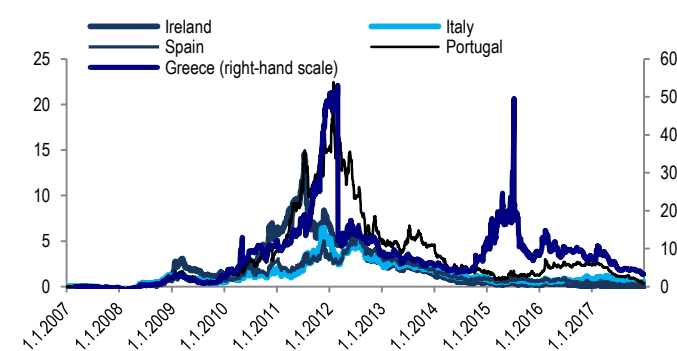
Source: Bloomberg, NBS.  
Note: p.p. – percentage points.

## 20 Inflation-linked swap prices (p. p.)



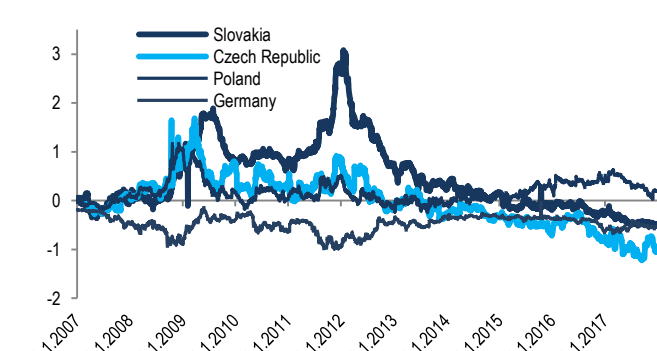
Source: Bloomberg, NBS.  
Notes: Inflation-linked swaps are swap transactions in which one counterparty pays a fixed rate (a swap price) and the other pays a rate corresponding to the return on a selected price index. The inflation-linked swap price is calculated on a non-coupon basis.  
p.p. – percentage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

## 21 Credit spreads on 5-year government bonds issued by lower-rated countries (percentage points)



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.

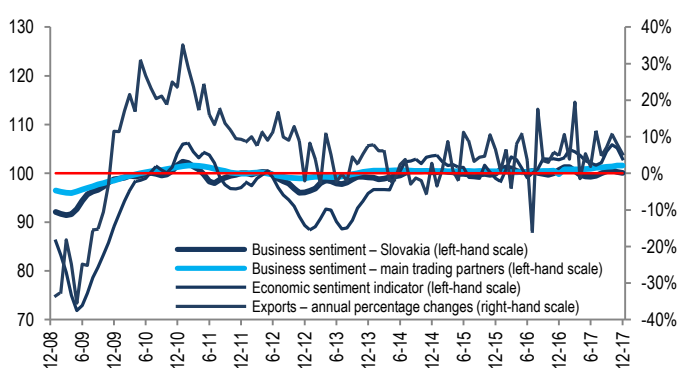
## 22 Credit spreads on 5-year government bonds issued by selected central European countries and Germany (percentage points)



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.

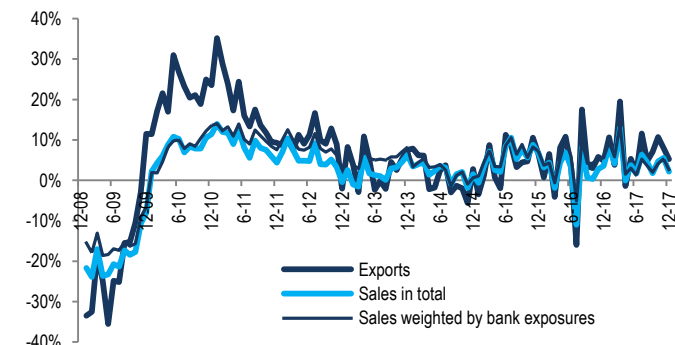
## Corporate credit risk indicators

### 23 Exports and the business environment



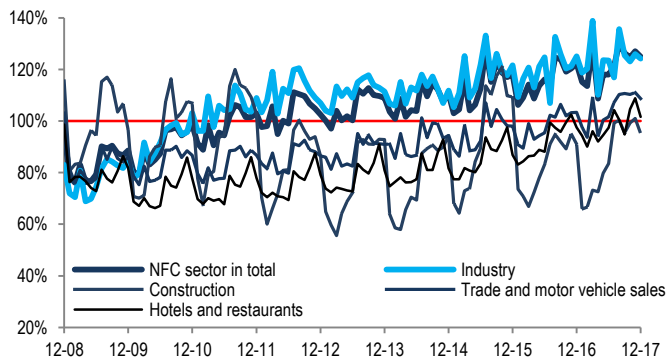
Source: NBS, OECD, Statistical Office of the SR.

### 24 NFC exports and sales (annual percentage changes)



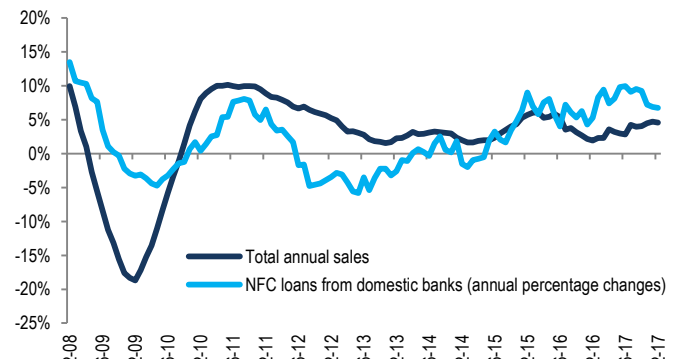
Source: Ministry of Economy of the Slovak Republic, NBS, Statistical Office of the SR.

## 25 Sales in selected sectors compared with their level for the period June 2007 to June 2008 (percentages)



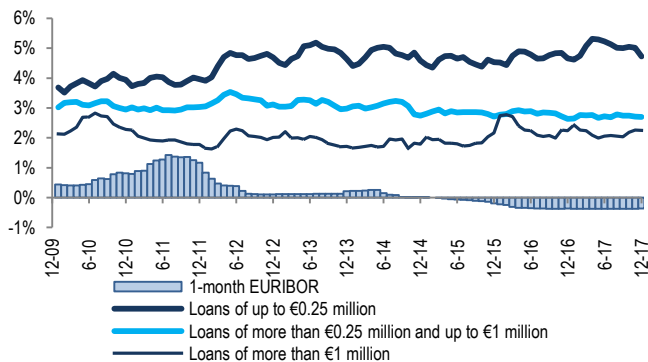
Source: Statistical Office of the SR.

## 26 NFC loans and sales (annual percentage changes)



Source: NBS, Statistical Office of the SR.

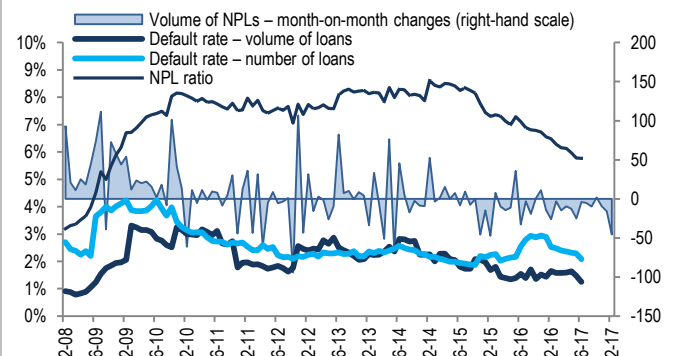
## 27 Interest rate spreads on new loans to NFCs (percentages)



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.

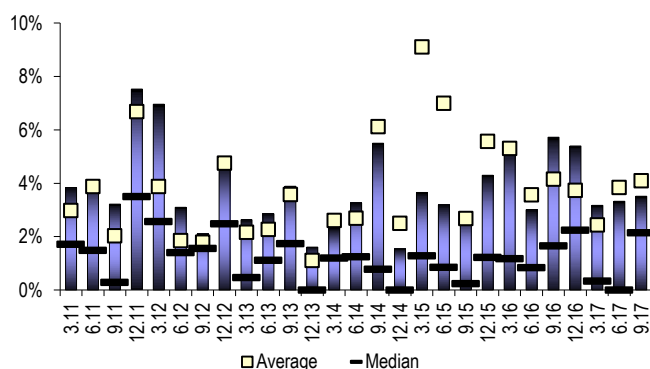
## 28 Non-performing loans (NPLs) and default rates



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.

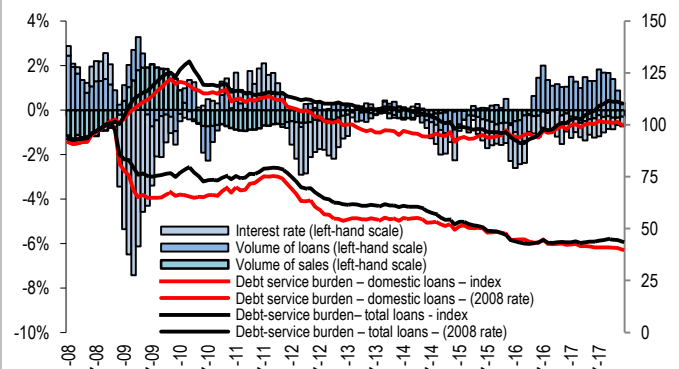
## 29 Loans at risk (percentages)



Source: NBS.

Note: The chart shows the interquartile range.

## 30 Debt-service burden and its components

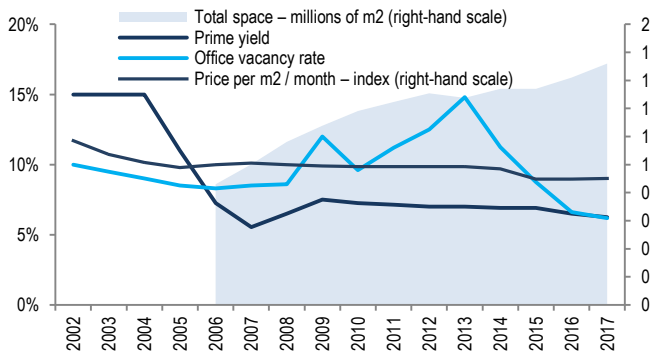


Source: NBS, SO SR.

Note: Data on the right-hand scale are in EUR mil.

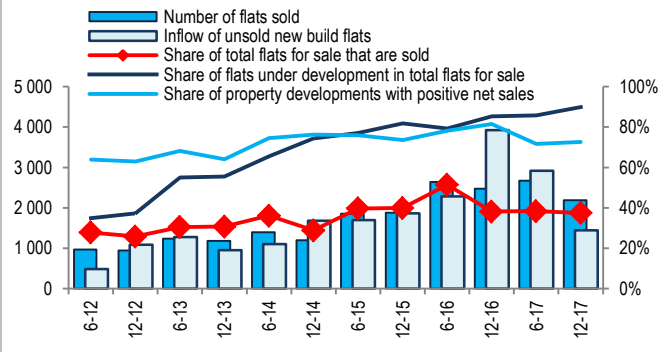


### 31 Commercial real estate: developments in the office segment



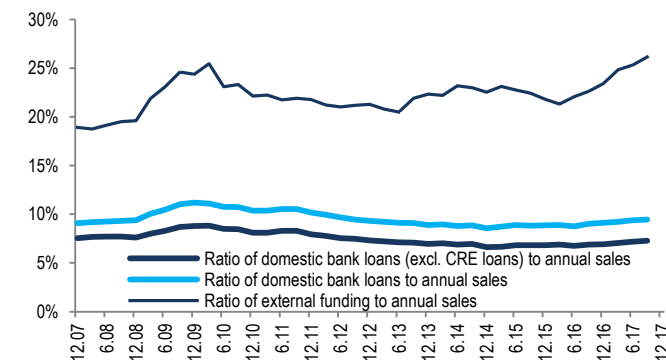
Source: CBRE, JLL, NBS.  
Note: The chart shows prices and vacancy rates in Bratislava.

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



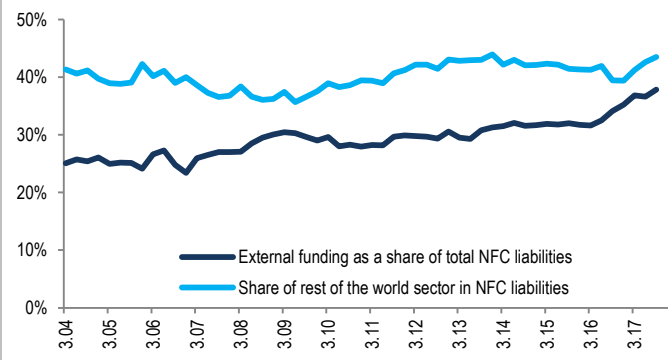
Source: Lexxus, NBS.  
Note: The chart shows prices and vacancy rates in Bratislava.

### 33 Comparison of the NFC sector's balance sheet and sales (percentages)



Source: NBS, Statistical Office of the SR.  
Note: CRE- commercial rate estate.

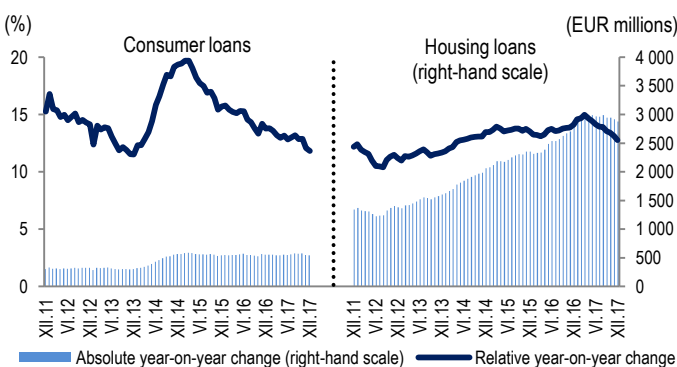
### 34 Structure of NFC liabilities (percentages)



Source: NBS.

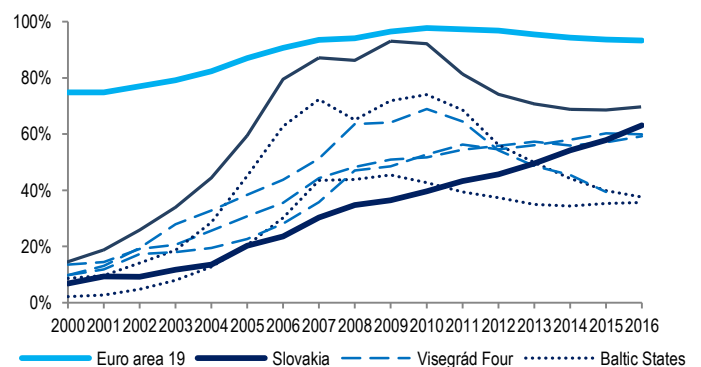
## Household credit risk indicators

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



Source: NBS.

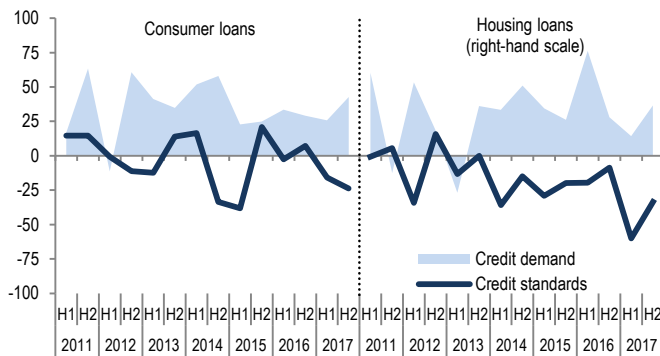
### 36 Household indebtedness in Slovakia and in selected countries (percentages)



Source: Eurostat.  
Note: The indicator is calculated as the ratio of households' total debt to their disposable income. Euro area 19 = average for the 19 euro area countries.

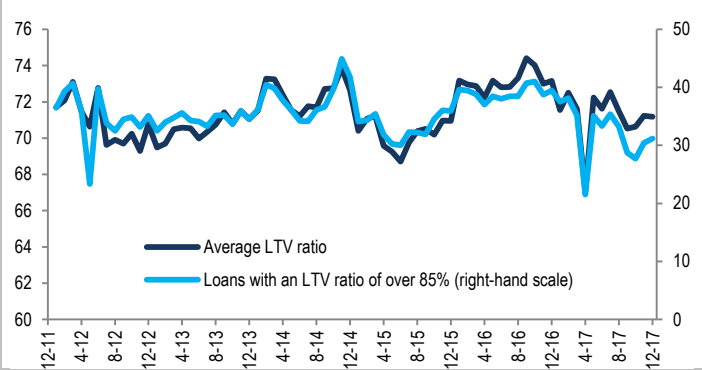


### 37 Changes in credit standards and credit demand according to the bank lending survey



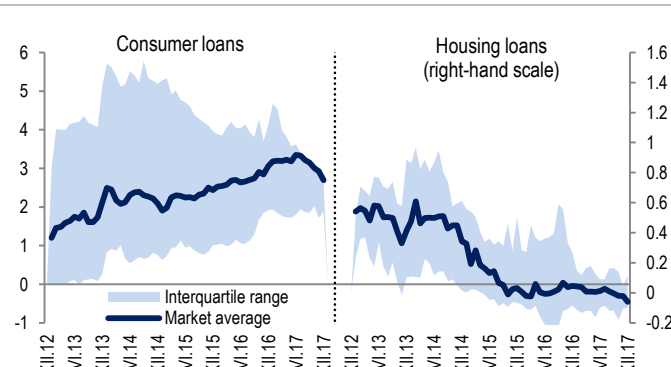
Sources: Bank Lending Survey, NBS.  
Note: The data show net percentage shares, with positive values denoting an increase in demand or an easing of standards.

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



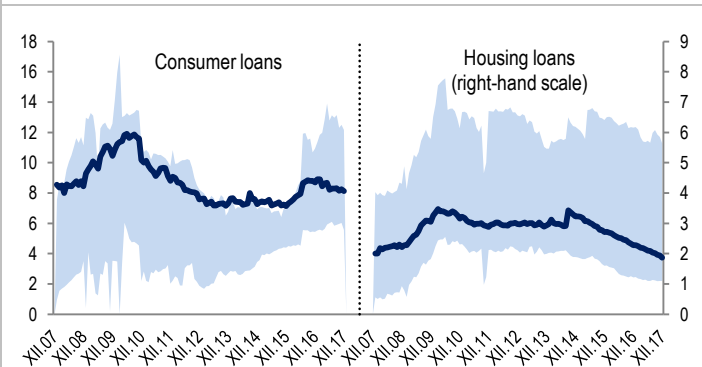
Source: NBS.  
Note: The indicator is defined in the section 'Glossary and abbreviations' of Analysis of Slovak Financial Sector 2017.

### 39 Net default rates for retail loans (percentages)



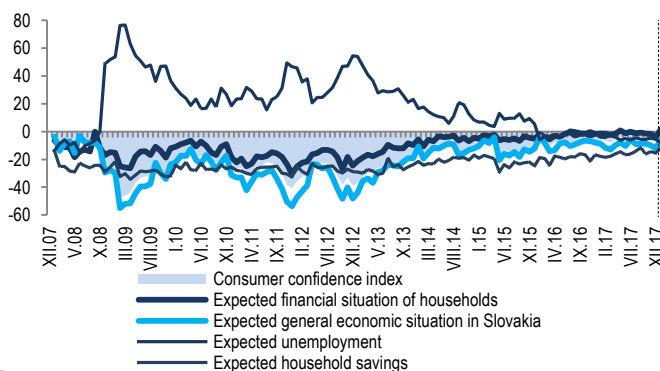
Source: SO SR.  
Note: The net default rate denotes the net change in the amount of NPLs over a 12-month period as a share of the outstanding amount of loans at the beginning of the period. The numerator is adjusted for the effect of loan write-offs and sell-offs.

### 40 NPL ratios for retail loans (percentages)



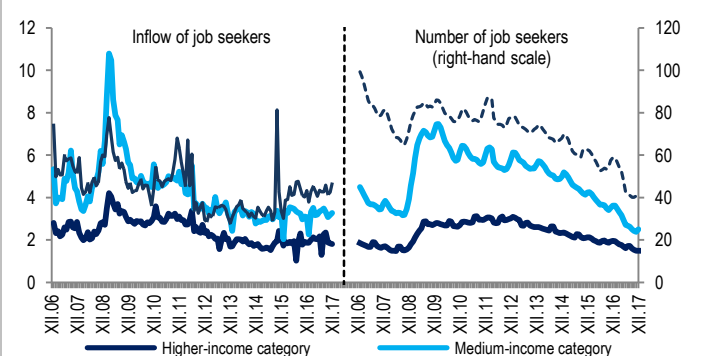
Source: NBS.

### 41 The consumer confidence index and its components



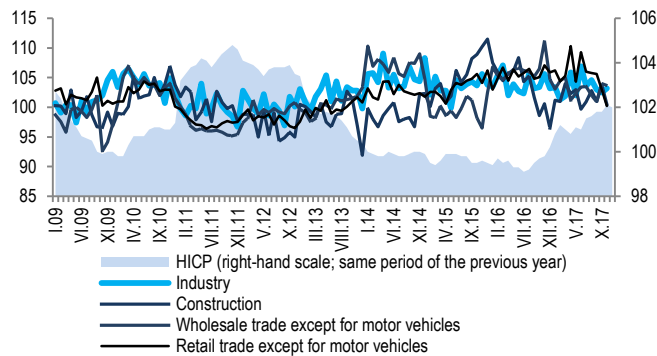
Source: Statistical Office of the SR.

### 42 Number and inflow of unemployed by income category



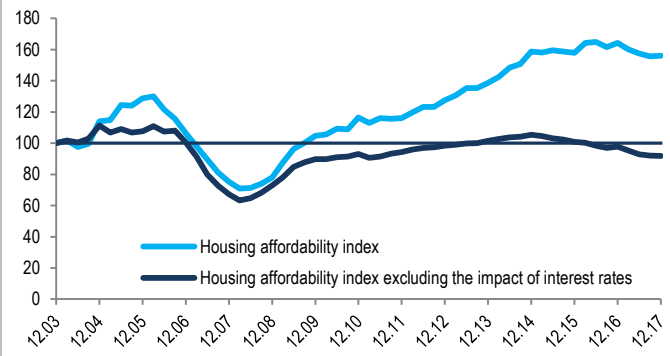
Source: Central Office of Labour, Social Affairs and Family of the Slovak Republic.  
Notes: The left-hand and right-hand scales show numbers of job seekers in thousands. The income categories are defined in the section 'Glossary and abbreviations' of Analysis of Slovak Financial Sector 2017.

### 43 Real wages in selected sectors – index



Source: SO SR.

### 44 Housing affordability index (31 March 2004 = 100)

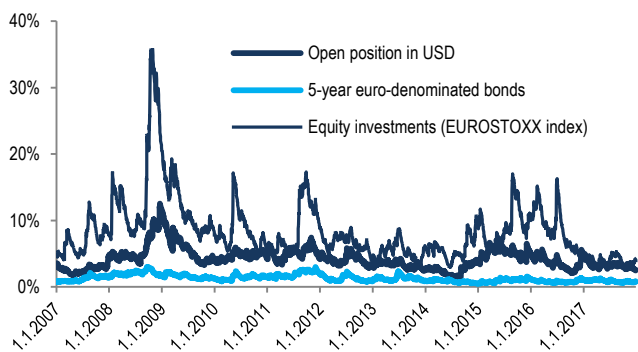


Source: NBS, Statistical Office of the SR.

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

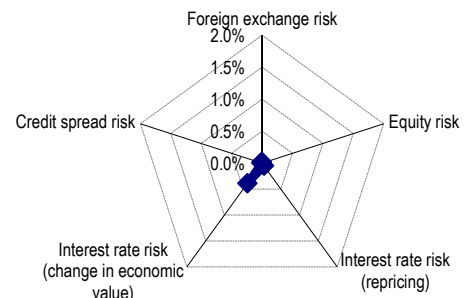
### 45 Value at Risk for investments in different types of financial instruments (percentages)



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.

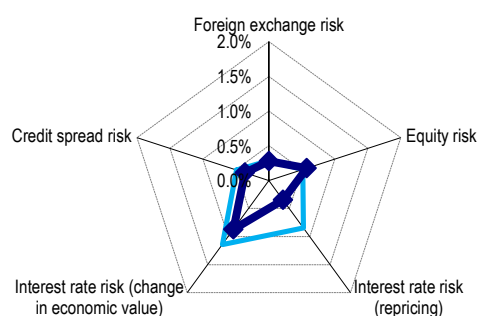
### 46 The sensitivity of the banking sector to different risk types



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 2016, dark blue line represents data as at 31 December 2017.

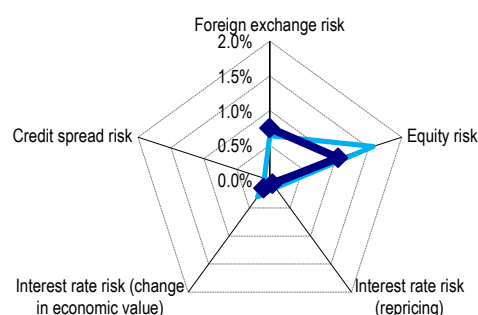
## 47 The sensitivity of PFMC-managed pension funds to different risk types



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 2016, dark blue line represents data as at 31 December 2017.

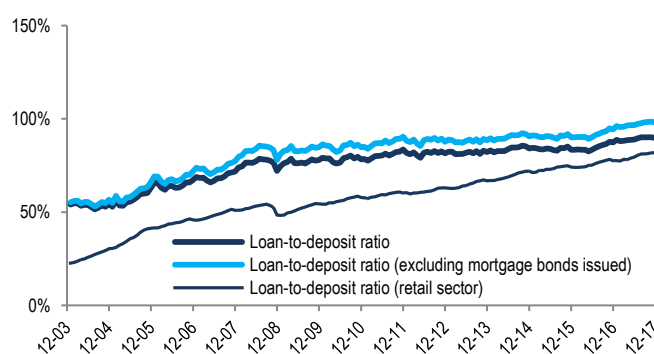
## 49 The sensitivity of collective investment funds to different risk types



Sources: Bloomberg, NBS.

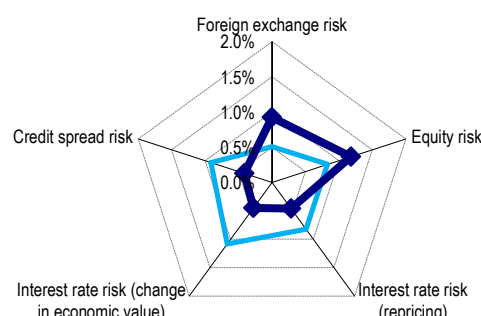
Notes: The data represent the loss (as a percentage of NAV) under each scenario of the sensitivity analysis. The sensitivity analysis is described in more detail in glossary of Chart 46. Light blue line represents data as at 31 December 2016, dark blue line represents data as at 31 December 2017.

## 51 Loan-to-deposit ratio



Source: NBS.

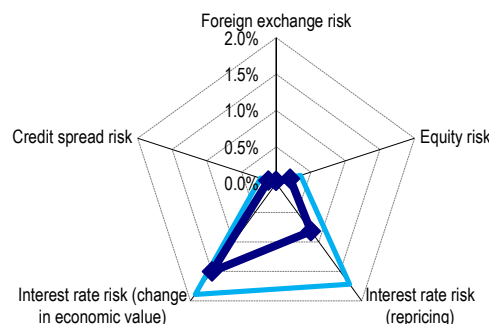
## 48 The sensitivity of SPMC-managed supplementary pension funds to different risk types



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 2016, dark blue line represents data as at 31 December 2017.

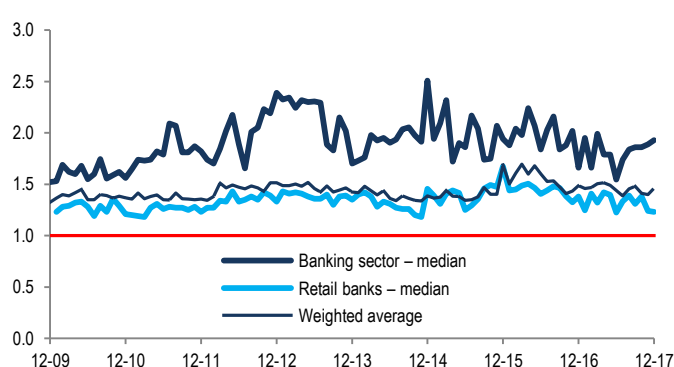
## 50 The sensitivity of insurers' assets to different risk types



Sources: Bloomberg, NBS.

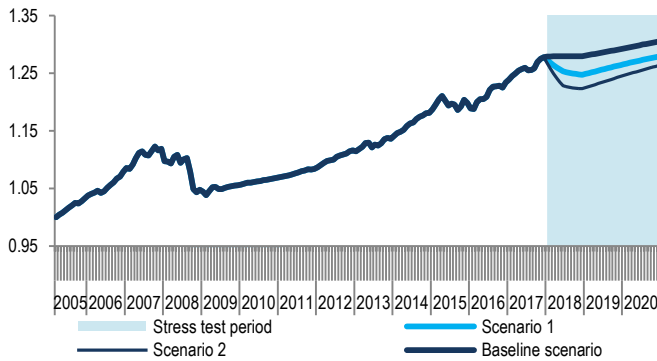
Notes: The data represent the loss (as a percentage of NAV) under each scenario of the sensitivity analysis. The sensitivity analysis is described in more detail in glossary of Chart 46. Light blue line represents data as at 31 December 2016, dark blue line represents data as at 31 December 2017.

## 52 Liquid asset ratio



Source: NBS.

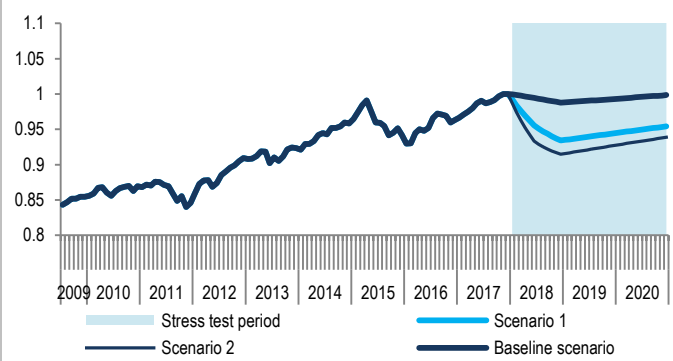
### 53 Impact of stress test scenarios on PPMC-managed pension funds



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.

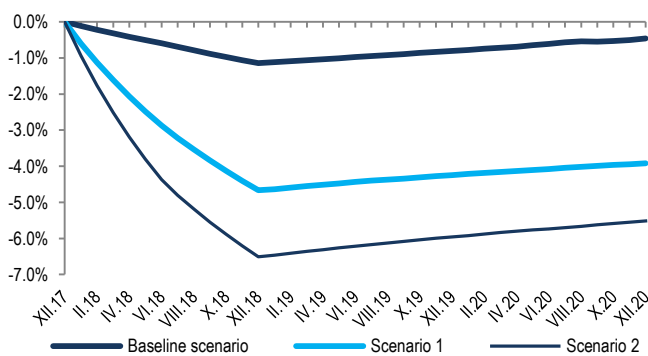
### 54 Impact of stress test scenarios on SPMC-managed distribution pension funds



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.

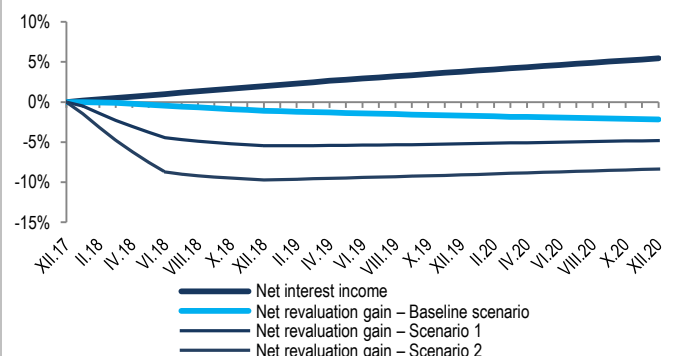
### 55 Impact of stress test scenarios on investment funds



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.

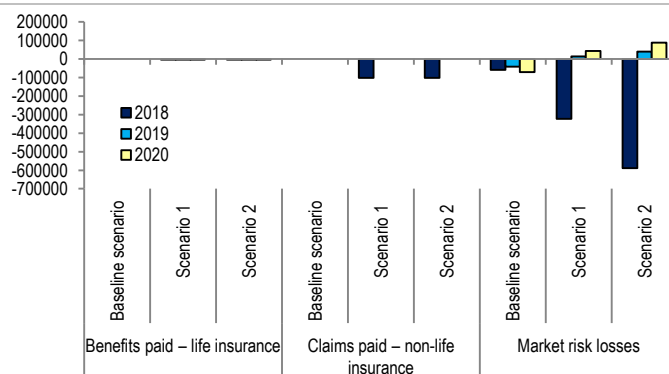
### 56 Impact of stress test scenarios on insurers' assets



Sources: NBS, ECB, Bloomberg, internet.

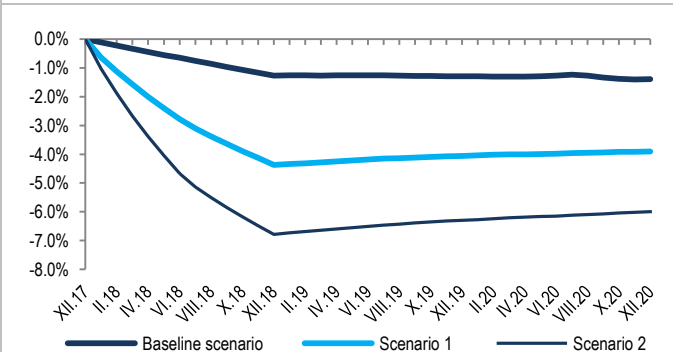
Notes: The left-hand scale shows the estimated profit or loss as a share of assets (except for assets covering technical provisions in unit-linked insurance) weighted by assets of individual insurers. The impact of the stress test scenarios on the value of liabilities was not taken into account.

### 57 Additional expenses incurred by the insurance sector under the stress test scenarios (EUR millions)



Source: NBS.

### 58 Impact of stress test scenarios on unit-linked insurance assets (percentages)



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.