



Ministry of Finance

Debt and Financial Assets  
Management Department

# THE CZECH REPUBLIC

## GOVERNMENT DEBT MANAGEMENT

### ANNUAL REPORT

# 2016



10 February 2017



# **Ministry of Finance**

**The Czech Republic Government Debt Management  
Annual Report for 2016**

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ISSN 2336-5862 (Print)  
ISSN 2336-5870 (On-line)

Issued once a year, free

Electronic archive  
[www.mfcz.cz/statedebt](http://www.mfcz.cz/statedebt)

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## List of Abbreviations

APEI	Aggregate Performance Evaluation Index
bn	Billion
CaR	Cost-at-Risk
CDCP	Central Securities Depository Prague
CHF	Swiss Franc currency code
CNB	Czech National Bank
CZK	Czech koruna currency code
CZSO	Czech Statistical Office
DETS	Designated Electronic Trading System
EA12	Euro area (12 countries)
EA19	Euro area (19 countries)
ECB	European Central Bank
EIB	European Investment Bank
ESA2010	European System of Accounts 2010
EU	European Union
EUR	Euro currency code
EURIBOR	Euro Interbank Offered Rate
FIX	Fixed-rate
FX	Foreign-exchange
GDP	Gross domestic product
ISIN	International Securities Identification Number
JCR	Japan Credit Rating Agency
MoF	Ministry of Finance
MTS	Mercato Telematico Secondario
OECD	Organization for Economic Co-operation and Development
p.a.	Per annum
p.p.	Percentage point
PRIBOR	Prague Interbank Offered Rate
R&I	Rating and Investment Information, Inc.
T-Bills	Treasury Bills
T-Bonds	Medium-term and long-term government bonds
VAR	Variable-rate

Published aggregate data in the tables and in the text may not correspond in the last decimal place to the sum of respective indicators due to rounding in some cases.

## Summary

The Ministry of Finance (hereinafter the „Ministry“ or „MoF“) presents to the public The Czech Republic Government Debt Management Annual Report for 2016 (hereinafter the „Report“) in accordance with the calendar of published information which involves the detailed summary of events related to the state debt management and the state treasury liquidity management, the evaluation of the issuance activity of the state and the situation on financial markets in the context of financing of the Czech Republic, the analysis of the dynamics of state debt and related state budget expenditure and revenue on the state debt service, the detailed evaluation of meeting the strategic targets set for the risk management of debt portfolio, and last but not least, the results of annual evaluation of the primary dealers in Czech government securities. The Report, which primarily deals with the events in 2016, also includes the detailed quantification of interest expenditure on the state debt service in 2017 and in the medium-term outlook performed by the Cost-at-Risk methodology.

Economic growth of the Czech Republic was slightly higher compared both to the Eurozone average and to the whole EU28 average in the last three years. According to existing official figures, real GDP grew in the period of Q1 – Q2 2016 by 2.6%, year-on-year. For the whole year 2016, the GDP growth of 2.5% is estimated. Economic growth was driven by both domestic and foreign demand. Positive economic development led to very favourable situation on labour market, when average unemployment rate (according to the Labour Force Survey methodology) reached the lowest value in the whole EU28 in 2016, particularly 4%. Year-on-year inflation rate was in all months between January and October 2016 in levels below 1%, only in November increased to 1.5% and in December to 2.0%, which is the target value specified by CNB when launching the intervention regime in November 2013. As regards external economic relations, a historically highest surplus of the current account of the balance of payments in relation to GDP is expected for 2016, at present estimated as 2.1% of GDP. Financial sector remains still in a stable position and capital adequacy measures sufficiently fulfil the European regulatory requirements.

A stable macroeconomic environment was supported also by a generally conservative performance of general government institutions and simultaneous active supporting of economic growth through government fiscal policy. In the cash methodology, the best result since founding of the independent Czech Republic was achieved in 2016. For the first time from 1995, a surplus of the state budget was reached in record-breaking amount of CZK 61.8 billion. The result is better by CZK 124.6 billion compared to

2015 and better by CZK 131.8 billion compared to the planned budgeted value in State budget Act for 2016. Performance of the whole general government sector according to the ESA2010 methodology ended with a record-breaking success according to available information for Q1 - Q3 2016 and a forecast for Q4 2016. Surplus of public finances amounting 0.5% of GDP is expected for the first time in history of the Czech Republic. The expected structural balance of the general government sector could reach 0.3% in 2016, resulting in fiscal effort of 0.9 percentage point. Structural balance is thus expected to have been approximately 1.3 percentage point above the level of the medium-term budgetary objective of the Czech Republic, which implies prudent management and sustainability of public finance. As regards the general government sector debt, according to the Notification published in October 2016 the debt decreased to 40.3% of GDP in 2015 and a further decrease of the debt to 37.4% of GDP is expected in 2016. For comparison, the average rate of the debt to GDP for the Eurozone countries reached 90.4% of GDP in 2015.

The state debt decreased by CZK 59.6 billion from CZK 1,673.0 billion to CZK 1,613.4 billion in 2016. It has been a historical highest year-on-year decrease of state debt since the foundation of the independent Czech Republic. When expressed as a share in GDP, the decrease amounted to 2.5 percentage points from 36.7% to 34.2% as at the end of 2016, representing a third significant year-on-year decrease of such expressed indebtedness of the Czech Republic, while in these three years, the share decreased by 6.9 percentage points. This was allowed by the more effective state treasury liquidity management and related involvement of its available resources into covering of state's financing needs, revival of the economy of the Czech Republic, as in 2014 to 2016 the GDP reported in current prices grew annually by 4.8% on average, and also by record-breaking state budget surplus in 2016 amounting to CZK 61.8 billion in comparison to budgeted deficit of CZK 70 billion approved by the State Budget Act of the Czech Republic for 2016, which was a reason of decrease of financing needs in this year. The financing needs in 2016 amounted to CZK 214.5 billion and was CZK 127.5 billion lower compared to the planned financing needs according to The Czech Republic Funding and Debt Management Strategy for 2016 (hereinafter the „Strategy“) and CZK 96.7 billion lower than in 2015.

The gross borrowing requirement decreased by CZK 51.2 billion to CZK 216.9 billion in comparison to the previous year, while the financing of the gross borrowing requirement in 2016 was carried out only

on domestic market almost exclusively through CZK-denominated government bonds issuance. The gross issue of medium-term and long-term government bonds amounted to CZK 211.6 billion, i.e. CZK 31.2 billion higher than in previous year. Its increase was given mainly by partial substitution of gross issue of state treasury bills for the issue of the zero-coupon medium-term government bonds in which the primary dealers showed unprecedented interest and which achieved record-breaking negative yields. This option was communicated with the public by the Ministry within the Strategy.

In 2016, the Ministry flexibly reacted on the situation on financial markets and utilized the environment with negative yields of CZK-denominated government bonds of the Czech Republic together with the unprecedented interest of investors in these government bonds and focused on issuing zero-coupon medium-term government bonds in greater extent. Within this issuance policy the Ministry issued two more issues of zero-coupon medium-term government bonds maturing in 2018 and 2019 in accordance with the Strategy. Together with the sell-off of the zero-coupon government bond maturing in 2017 from Ministry's asset account, zero-coupon medium-term government bonds in total nominal value of CZK 112.0 billion were sold in primary auctions, for which the Ministry received additional net revenue of state budget in the form of auction premiums amounting CZK 752.1 million.

During 2016, the state treasury bills were substituted for the zero-coupon medium-term government bonds maturing from 2017 to 2019 in accordance with the Strategy having positive impact on additional interest revenue of state budget and also the riskiness of state debt portfolio due to the prolonging of its average time to maturity and re-fixing. The total nominal value of state treasury bills outstanding decreased by CZK 80.2 billion from CZK 84.4 billion to CZK 4.2 billion in 2016. State treasury bills outstanding thus represented 0.3% of total state debt as at the end of 2016, which is the all-time lowest share and it also demonstrates the consistency of trend in decreasing the state treasury bills outstanding started in 2012. The Ministry sold state treasury bills in all maturities up to one year in total nominal value of CZK 30.8 billion during 2016 and always with a negative yield. The majority of state treasury bills issuance in 2016 was not carried out to cover financing needs, but to utilize the exceptionally favourable market conditions allowing an increase in state budget revenue in the form of auction premiums amounting to CZK 23.1 million in 2016.

Government bonds in total nominal value of CZK 145.7 billion were sold with a negative yield in 2016 and bringing the Ministry additional net revenue of state budget amounting CZK 803.2 million. Another

positive impact of selling government bonds with a negative yield was an increase in share of state debt which is and will not be connected with any interest expenditure or brings net interest revenue to Czech Republic from 5.8% of total state debt to 12.0% in 2016.

Effective as from 10 May 2016 there has been a key extension of the single treasury accounts given by the Act No. 128/2016 Coll., which amends the Act No. 218/2000 Coll. on budgetary rules and on amendment to some related laws (budgetary rules), as amended. The amendment to the budgetary rules brought an additional increase in available cash resources of the state treasury which is going to be managed more effectively according to the actual state's needs and will be also better valorised by the investments within the state treasury liquidity management. Moreover, the position of the Czech Republic on financial market will strengthen enabling additional streamlining of state's borrowing operations management and decrease in the interest expenditure of the state budget.

The revenue from state treasury cash resources investment amounted to CZK 120.5 million in 2016 which is CZK 13.2 million more than in previous year. Revenue amounting CZK 44.0 million comes from FX swaps concluded in December 2015 within the rationalization of available state treasury liquidity and interconnection of both single treasury accounts with the aim of lowering the risk of negative impact of negative interest rates imposed on euro accounts on state budget balance. The sum of revenue of state budget from investment operations, government bonds lending and from the negative yields of government bonds amounted to CZK 935.3 million in 2016 which is CZK 410.4 million more than in 2015.

The positive perception of the Czech Republic on the domestic and foreign markets was also in 2016 confirmed by the outstanding rating by all the main international rating agencies leaving a stable outlook and in case of Japan Credit Rating Agency even upgrading the outlook to positive. High investors' trust in Czech Republic's government bonds and the continuing easing of the monetary policy of the CNB and ECB in 2016 reflected in the additional drop in yields of government bonds in maturity segments up to six years.

The yields of Czech government bonds traded through electronic trading platform MTS Czech Republic achieved negative yields up to the time to maturity of 6 years during 2016 with the exception of the second quarter of 2016 which was accompanied by the uncertainty on financial markets due to the referendum of the United Kingdom to remain in the European Union. Only government bonds with time to maturity up to 3 years had negative

yield in this period. The domestic benchmark yield curve further flattened in the segment over 10 years. Based on the right timing of issuance activity and the flexible response to the development on the financial markets the Ministry was able to reduce the net expenditure on state debt service by CZK 4.7 billion. The total savings in interest expenditure on state debt service in last three years together with the savings in 2015 amounting to CZK 3.2 billion and savings in 2014 amounting to CZK 2.3 billion sums up to CZK 17.9 billion. The average weighted yield of CZK-denominated medium-term and long-term government bonds sold in primary auctions was 0.05% p.a., which is the all-time low and additional decrease compared to 0.24% p.a. achieved in 2015. The total state budget revenue from the sales of government bonds and state treasury bills with the negative yield amounted to CZK 1.2 billion from 2015 to the end of 2016.

Compared to 2015, the net issue of medium-term and long-term government bonds decreased by CZK 1.0 billion from CZK 67.4 billion to CZK 66.4 billion which demonstrates the stabilization of the increase in total nominal value of medium-term and long-term government bonds outstanding.

Three redemptions of domestic medium-term and long-term government bonds were carried out in 2016 amounting CZK 142.6 billion, additionally, medium-term and long-term government bonds maturing in 2017 and 2019 in total nominal value of CZK 2.7 billion were exchanged and also a redemption of government bonds denominated in Swiss franc in total nominal value of CHF 500 million was carried out. Even in 2016 the Ministry did not carry out any operation on foreign markets due to the large demand of investors for government bonds on domestic markets and higher costs of foreign issuance compared to domestic financing after taking into account the costs of the currency risk management.

Due to the decrease in yields of Czech Republic government bonds bearing an interest mainly on shorter end of yield curve and unprecedented interest of investors in this type of government bonds, the gross issue of government bonds in the segment of residual maturity up to five years dominated, which represented 56.5% of total gross issue. The next dominant segment of gross issue was the segment of residual time to maturity of 5 to 10 years with the share of 22.9%.

Fixed-rate and variable-rate government bonds were issued and sold mainly on domestic market through 43 primary auctions in total 16 auction days in 2016. The Ministry still registered ongoing strong and stable demand for government bonds sold in primary auctions in 2016, which is documented by the average ratio of total demand to satisfied demand

in competitive part of the auctions at average value of 2.2. The share of variable-rate government bonds in total gross issue amounted to 7.1% and decreased by 10.9 percentage points compared to 2015. The decrease of this share is consistent with the reaction of the Ministry to the significant decrease in yields of fixed-rate government bonds and primary dealers' demand for these government bonds.

The government bonds were additionally offered through electronic trading platform MTS Czech Republic mainly within the exchange operations of government bonds, which were launched into pilot operation during February 2016 and which additionally extended the Ministry's portfolio of offered operations available within the secondary market of government bonds. The main goals of these operations are to decrease the refinancing risk of state debt portfolio and management of interest expenditure of state budget. Within these operations, the Ministry offered medium-term and long-term government bonds with maturities along the whole yield curve in exchange for government bonds maturing mainly in 2016 and 2017. The success in implementation of government bonds exchange operations documents the fact that in 2016, government bonds in total nominal value of CZK 21.5 billion with average time to maturity of 0.4 years were exchanged for government bonds in total nominal value of CZK 16.2 billion with average time to maturity of 10.1 years.

The tap sales of medium-term and long-term government bonds from own asset account were in smaller extent carried out through the electronic trading platform MTS Czech Republic in the fourth quarter of 2016. They served as a sell-off of government bonds in situation when the primary dealers' interest in using these government bonds within lending facilities had dropped. The Ministry sold medium-term and long-term government bonds in total nominal value of CZK 3.6 billion within these operations.

The large and stable interest of primary dealers in lending facilities of medium-term and long-term government bonds in the form of repo operation and collateralized loans with positive impact on liquidity of secondary market of government bonds has continued also in 2016. The government bonds in total nominal value of CZK 71.3 billion were offered within lending facilities in the form of repo operations from Ministry's asset accounts in 2016 representing a year-on-year decrease of CZK 70.1 billion. It is given by more extensive use of lending facilities in the form of collateralized loans included among standard instruments offered to primary dealers by the Ministry to support secondary market within which government bonds from Ministry's asset accounts in total nominal value of CZK 60.1 billion were provided, representing year-on-year increase of CZK 49.7 billion.

# 1 – Macroeconomic Framework and Financial Markets

## Economic Development

The real GDP in Q1 2016 reached a quarter-on-quarter growth of 0.4%, followed by a quarter-on-quarter growth of 0.9% in Q2, 0.2% in Q3, and in Q4, acceleration of quarter-on-quarter growth to 0.7% is expected. For the whole year 2016, the GDP growth of 2.5% is estimated. Growth of the Czech GDP has been still slightly higher compared to the EU average and the majority of EU member states. High economic dynamics of 2015 had been supported by exceptional combination of growth factors, which did not repeat in 2016. Above all, investment activities co-financed from the EU funds assigned in the programming period 2007-2013 decreased. The significant factor had consisted also in extraordinary more than two-year slump of crude oil price, which decelerated in 2016, and a gradual growth is expected in 2017.

Economic growth was driven by both domestic and foreign demand in 2016. Household final consumption expenditure was supported by

the growth of wages and salaries and positive economic confidence. Mainly expenditures on durable goods increased, which suggests optimism of households regarding the future economic development. General government consumption grew due to increase in employment in state administration and higher spending on goods and services. On the other hand, gross fixed capital formation recorded a significant decrease, caused especially by the higher comparative basis in 2015 (besides investment co-financed from the EU funds also for other reasons, for example because of supersonic aircrafts lease). Foreign trade had a positive impact, mainly due to lower imports for investments. From the perspective of individual branches development, manufacturing contributed mainly to the growth (with the exception of the energy industry affected by downtime of nuclear and thermal power stations). On the contrary, construction recorded a decrease due to the reduction of infrastructure projects.

**Table 1: Main Macroeconomic Indicators of the Czech Republic**

	2010	2011	2012	2013	2014	2015	2016F
<b>Real GDP growth (%)</b>	2.3	2.0	-0.8	-0.5	2.7	4.5	2.5
<b>Household consumption growth (%)</b>	1.0	0.3	-1.3	0.5	1.8	3.1	2.7
<b>Government consumption growth (%)</b>	0.4	-2.2	-2.0	2.5	1.1	2.0	2.0
<b>Growth of gross fixed capital formation (%)</b>	1.3	0.9	-3.1	-2.5	3.9	9.0	-2.4
<b>Contribution of foreign trade to GDP growth (p.p.)</b>	0.5	1.8	1.3	0.1	-0.5	0.1	1.1
<b>Average inflation rate (%)</b>	1.5	1.9	3.3	1.4	0.4	0.3	0.7 <sup>2</sup>
<b>Unemployment rate (%)<sup>1</sup></b>	7.3	6.7	7.0	7.0	6.1	5.0	4.0
<b>Nominal wage and salary growth (%)</b>	0.6	2.3	2.6	0.5	3.6	4.4	5.6
<b>Current account balance on GDP (%)</b>	-3.6	-2.1	-1.6	-0.5	0.2	0.9	2.1
<b>EURCZK exchange rate</b>	25.3	24.6	25.1	26.0	27.5	27.3	27.0 <sup>2</sup>
<b>Real Eurozone GDP growth (%)<sup>2</sup></b>	2.1	1.5	-0.9	-0.3	1.2	2.0	1.6

<sup>1</sup> Unemployment rate based on the method of Labour Force Survey.

<sup>2</sup> Officially published figure.

<sup>3</sup> EA12.

Source: MoF, CZSO

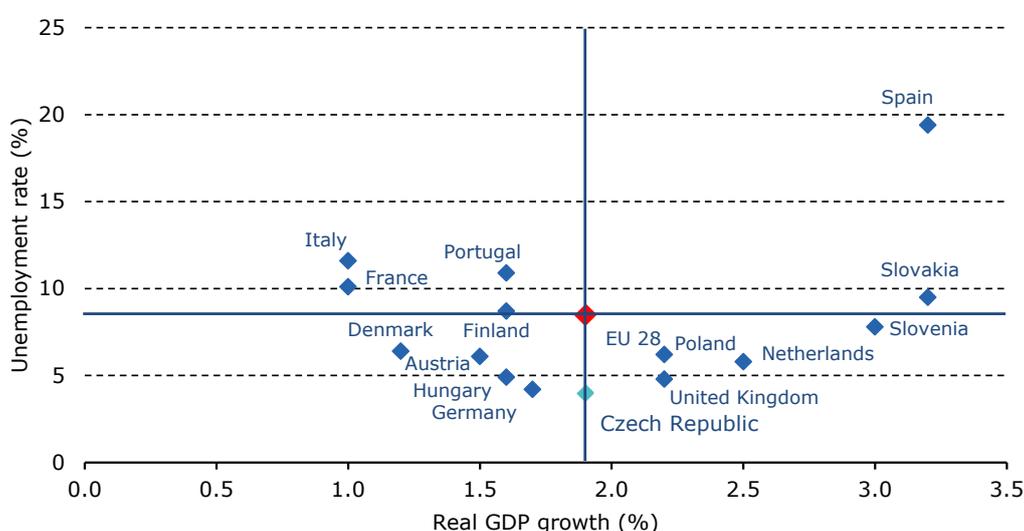
External economic relations were influenced by the extraordinary surplus of the current account in Q1 2016 (CZK 109.8 billion), mainly due to the above-average surplus of the goods and services balance. Usual seasonality, when surplus of the current account in Q1 is converted to deficit in subsequent quarters of year because of dividend outflow abroad, remained unchanged. Development of the capital account was significantly affected by resources drawn from the EU funds. Ongoing intervention regime of the Czech National Bank

was reflected in financial account, which recorded a surplus. Foreign investors's interest in Czech government bonds affected in the opposite direction. Year-on-year consumer price inflation rate reached significantly below the inflation target of the Czech National Bank in the level of 2% during the majority of the year 2016 despite eased monetary policy determined by the exchange rate floor %. Only in the end of the year inflation accelerated, when in November it increased to 1.5% and in December to 2.0%.

The labour market still enjoyed a favourable development. The brisk growth of the economy generated new work opportunities. The Czech Republic belongs to countries with the lowest unemployment rates in the last years. The unemployment rate (according to the Labour Force Survey methodology) decreased to 3.5% in December 2016 (after seasonal adjustment), which represented the lowest rate in the whole EU28. For comparison, the unemployment rate of the whole EU28 reached level of 8.2%. Higher employment in 2016 was mostly the credit of dynamically growing manufacturing. On the contrary, the other branches of the secondary sector were losing employees (mainly construction). Employment in services

was growing nearly across the whole spectrum, the dynamics however varied in individual branches. The most significant group of activities – trade, transportation, accommodation and restaurants thrived similarly to the last year. The dynamics of creation of new job positions accelerated in professional, scientific, technical and administrative activities. Information and communication activities, where the total employment strengthened the most since the end of recession also prospered. On the contrary, the quantities of employees increased by the slowest pace in the public administration, defence, education, health and social care in the last four years.

**Figure 1: Real GDP Growth and Unemployment Rate in Selected EU Countries in 2016**



Note: GDP expressed as a year-on-year growth in Q3 2016. Unemployment rate adjusted for seasonality in Q3 2016. Source: CZSO, Eurostat

A significant advantage of the Czech Republic is the stable financial sector and credible fiscal policy. There is a sufficient disposable liquidity in the banking system, which is additionally increased by direct interventions of the CNB on FX market. The profitability of banks has a positive impact on capital adequacy. Household indebtedness remains relatively low on an international comparison due to the moderate pace of their borrowing, and the share of non-performing loans on total loans is slightly decreasing, being 3.2% for households and 5.0% for non-financial corporations at the end

of December 2016. Consumer loans growth slightly slowed down in Q4 2016 in international comparison, but development of housing loans still shows a dynamic increase. The high volume of deposits by residents and sufficient liquidity in the banking system mean that the domestic banking sector is independent from foreign funding sources in the long term. Capital adequacy measured as Capital Adequacy Ratio Tier I reached 16.71% at the end of Q3 2016 and was highly above regulatory capital, which means that the banking sector sufficiently fulfils the new European regulatory requirements.

## General Government Sector Finances

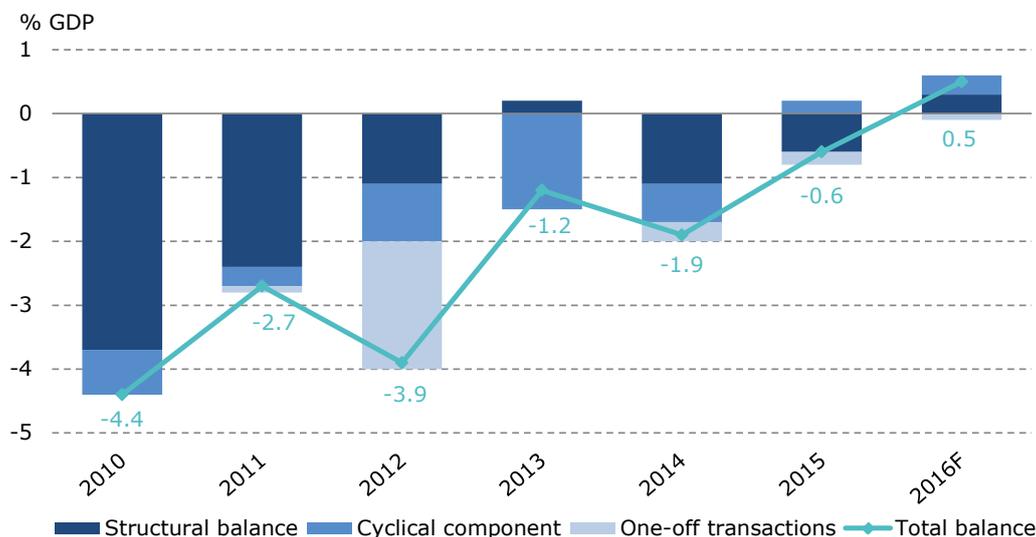
In response to the recession in years 2012 and 2013, the present government has realized a fiscal policy supporting a revival of domestic aggregate demand and simultaneous increasing of the effectiveness both on revenue and expenditure side. One of the main instruments for supporting the economy was a provision of a sufficiency of projects in order

to utilize the remaining allocation of the EU funds from the 2007–2013 programming period, which would have been lost otherwise. As a consequence of this strategy, the public finance balance improved by 1.3 percentage point to the value -0.6% of GDP in 2015. The first surplus of the general government sector in the history of the Czech Republic (0.5%)

is expected for year 2016. Since the economy is in the conditions of a slightly positive output gap, the expected structural balance of the general government sector could reach 0.3% in 2016, and the fiscal effort should have been 0.9 percentage point. Structural balance is thus expected to have been approximately 1.3 percentage point above

the level of the medium-term budgetary objective of the Czech Republic, which implies prudent management and sustainability of public finances. Fiscal space is sufficiently robust even in the event of unexpected circumstances, which is also confirmed by October ratings by Fitch and Moody's.

**Figure 2: The Czech Republic Government Sector Balance (ESA2010)**



Note: Structural balance based on the European Commission method. The source of data is Macroeconomic Forecast of the Czech Republic – January 2017. Source: MoF

In the cash methodology, the state budget ended in 2016 with an extraordinary surplus of CZK 61.8 billion, which is the result better by CZK 124.6 billion compared to 2015, and better by CZK 131.8 billion compared to the planned budgeted value in State budget Act of the Czech Republic for 2016. This was the best result of state budget performance since founding of the independent Czech Republic.

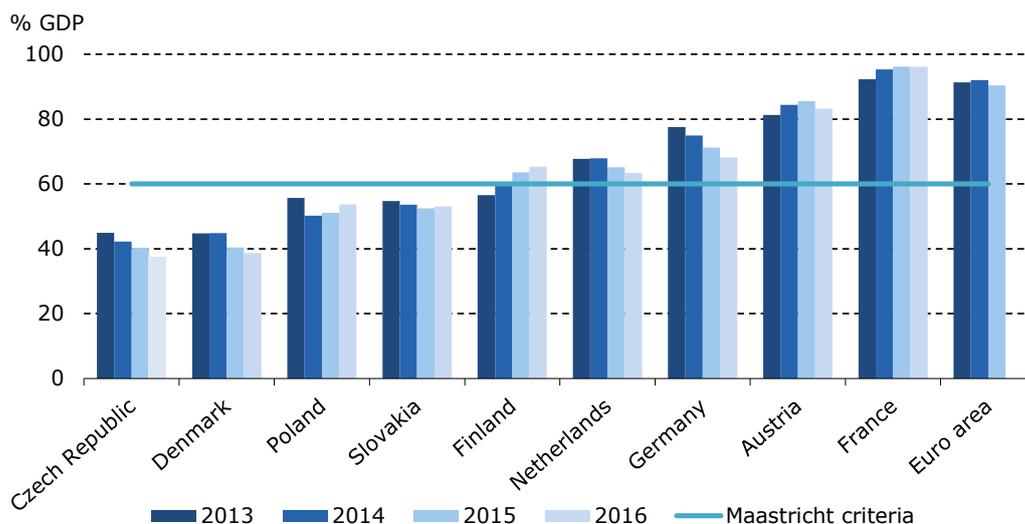
Total revenue of the state budget in 2016 reached CZK 1,281.6 billion, which implies year-on-year growth by CZK 47.1 billion and was thus compared to originally approved budget higher by CZK 100.8 billion. Its breach was caused mainly by higher than planned collection of tax revenue including social security premium by CZK 28.8 billion. The result was caused both by more effective tax collection and continuing economic growth accompanied by high employment and increasing salaries both in private and public sector. It is supported also by the collection of tax revenue (without social security premium

and public health insurance premium) which at the level of public budgets increased by 8.4%.

Total expenditure in 2016 reached the amount of CZK 1,219.8 billion, which represented a year-on-year decrease of CZK 77.5 billion. Compared to expenditure in the originally approved budget, the saving of expenditure in the amount of CZK 31.0 billion was reached, of which CZK 37.2 billion were current expenditure. Due to the surplus performance and low interest rates, the significant saving was achieved in the interest costs on state debt service compared to the approved budget, particularly CZK 11.4 billion.

According to the October Notification, the general government sector debt decreased by 1.9 percentage points to 40.3% of GDP in 2015. Further decrease of the debt by 2.9 percentage points to 37.4% of GDP is expected in 2016. In terms of meeting the Maastricht criteria and rules of the Stability and Growth Pact, the indicator is safely below the limit of 60%.

**Figure 3: Government Sector Debt in Selected EU Countries (ESA2010)**



Note: The Maastricht criterion is a part of the condition for EU members to join the single currency union. The value of the share of government sector debt to GDP should not exceed 60%. Eurozone is stated in conception comprising 19 countries. Data from 2013 to 2015 are taken from Macroeconomic Forecast – January 2017, in the case of Czech Republic it was used also for year 2016. Forecasts for the other countries for 2016 were taken from Fiscal Outlook – November 2016. Data for EA19 in 2016 are not available.  
Source: MoF

## Financial Markets

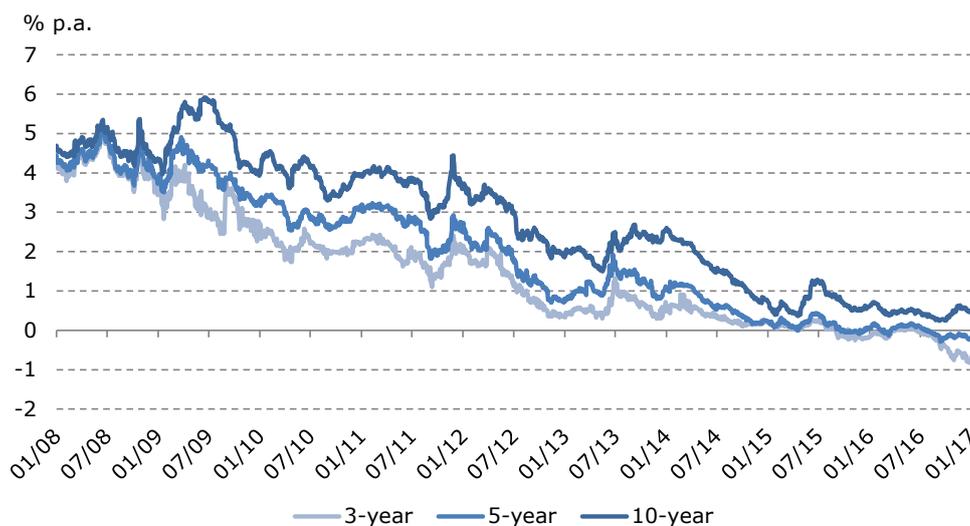
The Czech government bond yields continued in a long-term decreasing trend during 2016 in all segments of the yield curve. The Ministry utilized the extraordinary favourable financial market conditions and extended auctions of zero-coupon government bonds at the shorter end of the yield curve by the Government Bond of the Czech Republic, 2016–2018, 0.00 %, which was sold in total nominal value of CZK 40.8 billion, and the Government Bond of the Czech Republic, 2016–2019, 0.00 %, which was sold in total nominal value of CZK 60.8 billion. In total, the Ministry sold zero-coupon government bonds with maturity of up to 4 years in total nominal value CZK 112.0 billion, with all bonds placed on market with negative yield.

Longer end of the yield curve was also in 2016 to a certain extent correlated with the development of the most important bond markets in EU (especially in Germany). In the summer months of 2016, thus in the time after Brexit, investors preferred safe assets, which the Czech government bonds are regarded as, and the Czech 10-year government bonds were traded at historically minimal values below 0.3% during August and September.

The Czech government bond yields are in long-run lower than the EU average. Reasons consist in healthy macroeconomic fundamentals of the Czech Republic and effective management of public finances and state treasury liquidity. In the summer months, the lowest yield among European 10-year bonds provided German “bunds” (approximately -0.2%). On the contrary, creditors of Greece should achieve over 8%. A turnover came up during subsequent months and yields began to rise due to higher inflation expectations (caused among others by the turnover in crude oil price, which after almost two-year tumble began slightly growing).

Short term of the yield curve is significantly influenced by monetary policy decisions of the CNB. Yields in this segment were decreasing in most of last year. The highest decrease in case of 3-year bonds was achieved in last months of the last year. It was probably caused by the announcements of the CNB Bank Board members related to possible former termination of the intervention regime, which is now expected approximately in the middle of 2017.

**Figure 4: Development of Czech Government Bonds Yields**



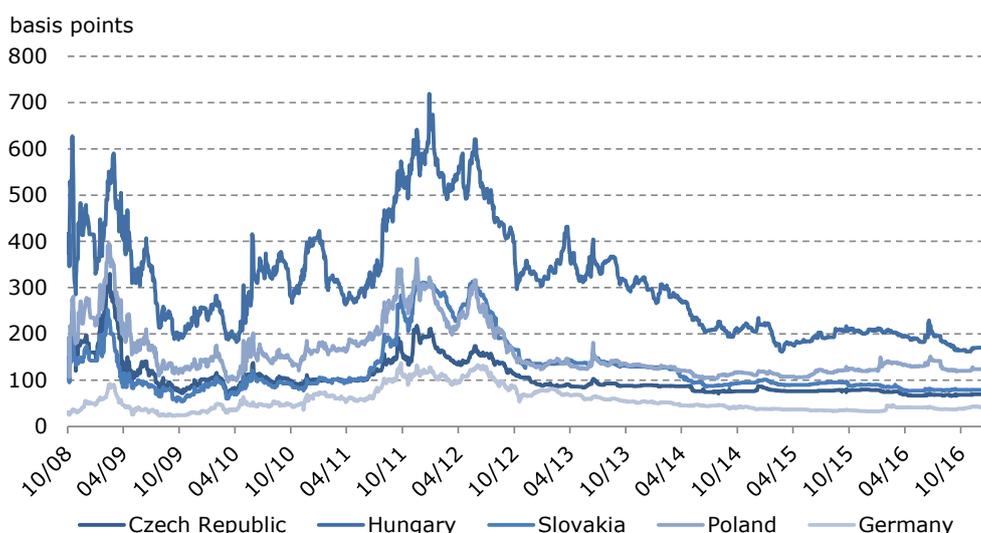
Source: Thomson Reuters

The important long-term factor in the decrease of government bond yields is a credible fiscal policy of the government and a conservative approach to government debt management with a positive impact on investors' trust, which is reflected in a high demand for medium-term and long-term government bonds in auctions. The wide offer of both fixed-rate and variable-rate debt instruments in individual segments of risk-free yield curve creates a sufficient range for investors to diversify the debt portfolio without the necessity to use interest rate swaps to optimize their positions. In contrast, flexible issuance strategy enables

the Ministry to respond quickly to constantly changing market conditions.

The perception of the Czech Republic on the international market as a reliable issuer of government bonds is illustrated by the situation on the credit default swaps (CDS) markets, where market participants pay the lowest risk premium compared to Poland, Hungary and Slovakia. In comparison with Germany, difference of risk premiums decreased by 18.9 basis points during year 2016.

**Figure 5: Premiums on Credit Default Swaps - Middle Europe (10-year)**

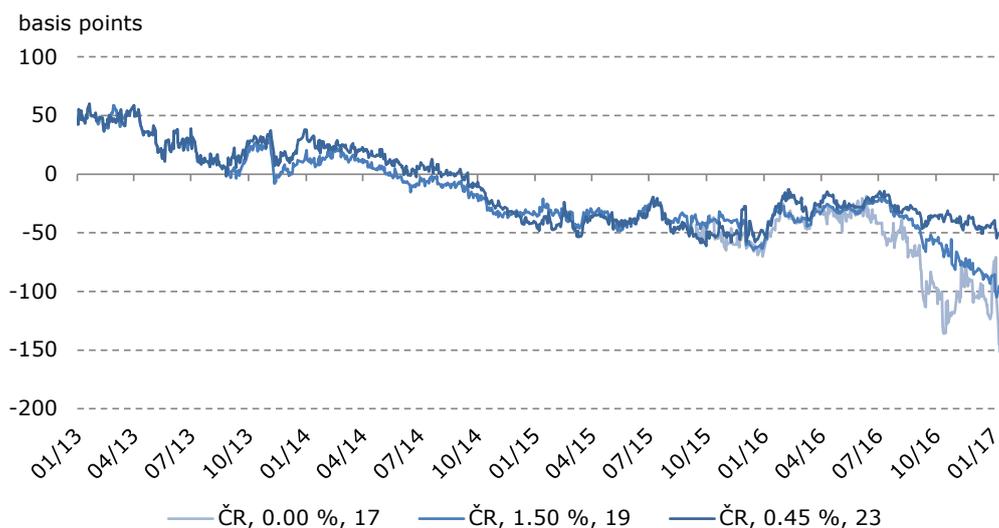


Source: Thomson Reuters

Likewise, the development of the risk premium measured using the spread to comparable swap rates ("asset swap spread") indicates a decrease

of the risk premium on Czech government bonds approximately since the half of 2016, mainly at the short end of the yield curve.

**Figure 6: "Asset Swap Spread" Risk Premium on Czech Government Bonds**



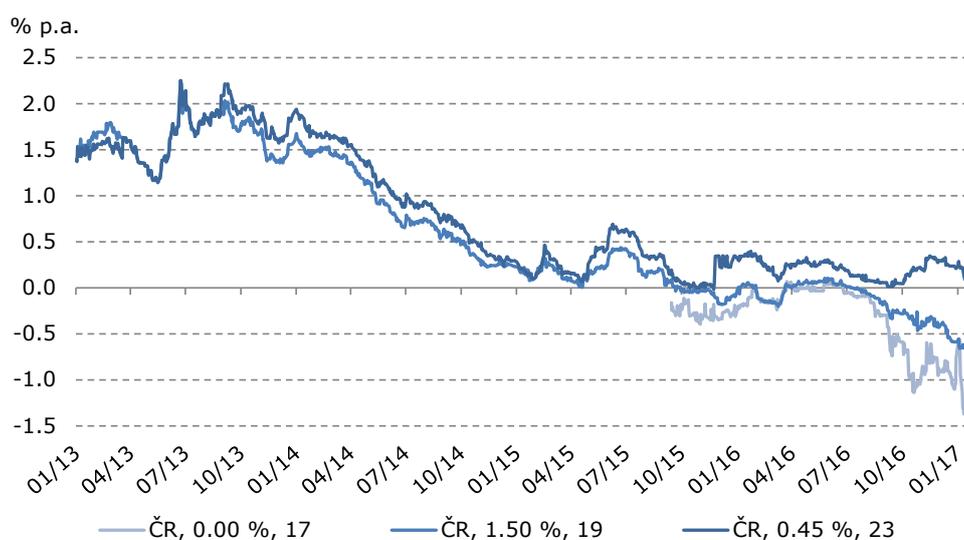
Source: Thomson Reuters

ECB's accommodative refinancing condition, expanding of the asset purchase programmes by sovereign bonds and supranational bonds from March 2015 and additional decrease of basic interest rates of ECB had a positive impact on the decrease of the Czech government bonds yields in 2016. In the middle of March 2016, deposit facility interest rate was lowered by 10 basis points from -0.30% p.a. to -0.40% p.a. The interest rate differential against CNB's 2W repo rate was further widened. The Governing Council of the ECB decided to prolong the quantitative easing programme on its meeting on 8 December 2016. While until March 2017 purchases of bonds remain in total nominal value EUR 80 billion, the value will be reduced to EUR 60 billion from April 2017 to December 2017, or beyond, if necessary. The limit per particular issue has been increased from 25% to 33% since November 2015 to enhance amount of acceptable bonds within quantitative easing. The effect of spill-over between national debt markets was also reflected in the decrease of the Czech government bond yields.

The decrease of government bond yields was also positively impacted by a reduction of the illiquidity premium, which is confirmed by the stable competitive spread particularly among bonds subjected to quoting obligation on the electronic trading platform MTS Czech Republic. Investors thus demand a lower illiquidity premium, if they can sell the government bonds on the functional secondary market without problems. This fact is subsequently reflected in the overall decrease of government bond yields with a positive impact on the reduction of the interest costs on state debt service.

In times of global surpluses of liquidity on the interbank markets, investors seek possibilities to valorize available liquidity or to avoid negative interest rates on the euro money market. Liquidity provided by the central banks on a long-term basis is illustrated in the flattening out of the whole risk-free yield curve. Government bonds provide an investment alternative at zero or negative interbank interest rates. Moreover, zero-coupon government bonds enable investors to deposit available liquidity on liquid markets with maturities exceeding the money market.

**Figure 7: Yields Development of Selected T-Bonds in Short-Term and Middle-Term Segment of the Yield Curve**



Source: Thomson Reuters

The decrease of Czech government bond yields may also have been positively affected by the alternative monetary policy instrument in the form of the CNB currency commitment. This lowered the currency risk and foreign investors could raise their investments into Czech medium-term and long-term government bonds without demanding a higher yield to cover significant fluctuations in terms of the depreciation of the FX rate. Unsterilized currency interventions

also contributed to the increase of the liquidity of the banking system in the Czech Republic, where financial institutions can subsequently place available liquidity into Czech government bonds.

In maturity segments of up to 1 year, auctions yields of all state treasury bills were in negative level in all auctions in 2016. The average state treasury bills auction yield in 2016 amounted to -0.16% p.a.

## Czech Republic's Sovereign Credit Rating

The Czech Republic belongs among the exceptionally reliable issuers and enjoys a considerable interest from domestic and foreign investors, as confirmed by its high credit rating with a stable or positive outlook from all the major credit rating agencies. The Czech Republic has the highest total rating of all the countries in Central and Eastern Europe and

has had a higher rating than the Eurozone countries average for several years.

In 2016, all internationally major credit rating agencies confirmed their ratings of the Czech Republic with a stable outlook, in the case of JCR an improvement of the outlook to positive occurred.

**Table 2: Czech Republic's Sovereign Credit Rating**

Rating Agency	Domestic long-term liabilities	Outlook	Foreign long-term liabilities	Outlook	Granted/affirmed
Moody's	A1	Stable	A1	Stable	14/10/2016
Standard & Poor's	AA	Stable	AA-	Stable	20/01/2017
Fitch Ratings	A+	Stable	A+	Stable	14/10/2016
JCR	AA-	Positive	A+	Positive	27/09/2016
R&I	AA-	Stable	A+	Stable	19/01/2016

Source: Moody's, Standard & Poor's, Fitch Ratings, JCR, R&I

## 2 - Borrowing Requirement and Development of State Debt

The borrowing requirement represents a key quantity in the system of public finances of a national economy, which definitely determines the value of financial sources that the government needs to acquire over the course of the respective calendar year through alternative borrowing operations primarily on financial markets, in order to ensure coverage of the total planned annual government financing needs as a necessary condition for a smooth realization of state budget and government economy policy.

Apart from the borrowing operations which are the main determinant of changes in the value of the state debt, the funding requirement may also be covered by the operations with state financial assets or by managing of other state assets within non-budgetary on-balance-sheet operations, or the involvement of available cash resources of the state treasury through refinancing mechanisms.

### Financing Needs and Sources

The financing needs are defined by standard components, which must be covered in the given year by cash resources, i.e. particularly the state budget cash deficit and all redemptions, and buy-backs and exchanges of nominal value (principals) of state debt, including the related derivatives.

Financing operations on the side of state financial assets and within state treasury single account are then carried out on the side of the available cash resources, which may be involved in covering the financing needs in parallel with the state's borrowing operations on financial markets.

**Table 3: Financing Needs and Sources**

CZK bn	2010	2011	2012	2013	2014	2015	2016
Primary balance of state budget	120.6	97.6	59.6	30.4	29.3	17.5	-102.4
Net expenditure on state debt <sup>1</sup>	35.8	45.1	41.4	50.9	48.5	45.3	40.7
T-Bonds redemptions <sup>2</sup>	83.0	104.1	121.7	107.9	143.7	123.9	157.8
Redemptions and early redemptions on savings government bonds	0.0	0.0	9.6	7.7	11.9	11.9	30.2
T-Bills redemptions <sup>3</sup>	88.2	113.3	162.6	189.1	120.9	107.6	84.4
Other money market instruments redemptions <sup>3</sup>	0.0	0.0	0.0	0.0	0.0	2.5	2.2
Repayments on credits and loans	1.1	1.1	5.3	2.8	11.1	2.5	1.7
<b>Total financing needs</b>	<b>328.7</b>	<b>361.3</b>	<b>400.2</b>	<b>388.8</b>	<b>365.3</b>	<b>311.2</b>	<b>214.5</b>
Gross T-Bills issue <sup>3,4</sup>	113.3	162.6	189.1	120.9	107.6	84.4	4.2
Other money market instruments <sup>3</sup>	0.0	0.0	0.0	0.0	2.5	2.2	0.0
Received collateral in cash	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gross issue of T-Bonds on domestic market <sup>4</sup>	167.4	180.3	164.6	145.6	153.3	180.4	211.6
Gross issue of T-Bonds on foreign markets <sup>4</sup>	49.7	0.9	69.0	0.0	0.0	0.0	0.0
Gross issue of savings government bonds <sup>5</sup>	0.0	20.4	45.4	39.1	2.1	1.0	1.0
Received credits and loans	10.4	5.3	4.0	4.3	0.0	0.0	0.0
Financial asset and liquidity management	-12.0	-8.2	-71.8	78.9	99.7	43.2	-2.3
<b>Total financing sources</b>	<b>328.7</b>	<b>361.3</b>	<b>400.2</b>	<b>388.8</b>	<b>365.3</b>	<b>311.2</b>	<b>214.5</b>
<b>Gross borrowing requirement</b>	<b>340.7</b>	<b>369.5</b>	<b>472.0</b>	<b>309.9</b>	<b>265.6</b>	<b>268.1</b>	<b>216.9</b>

<sup>1</sup> Balance of the budgetary chapter 396 – State Debt.

<sup>2</sup> Incl. effect of buy-backs and exchanges.

<sup>3</sup> Excl. T-Bills issued and redeemed within respective year, and roll-over of other money market instruments.

<sup>4</sup> Nominal value; premiums and discounts included in the net expenditure on state debt, i.e. they are included in the net borrowing requirement.

<sup>5</sup> Incl. the reinvestment of yields.

Source: MoF

In 2016 there was a decrease in financing needs by CZK 127.5 billion in comparison to the original plan published on 18 December 2015 within the Strategy. The main cause of this decrease was significantly better state budget performance, which for the first time since 1995, ended up with the surplus of

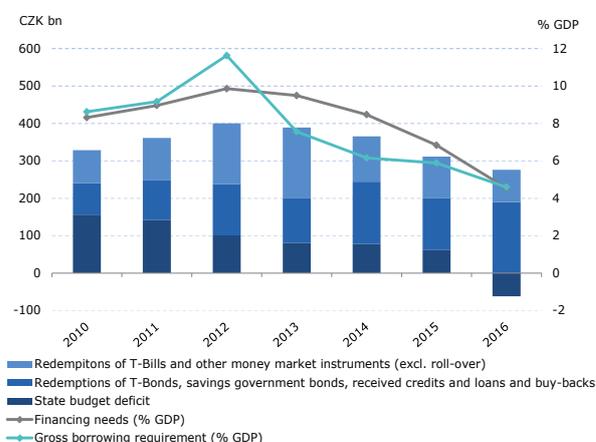
CZK 61.8 billion representing CZK 131.8 billion better result compared to its budgeted amount. The savings on state budget service which were CZK 11.7 billion lower than the budgeted amount also contributed to this exceptionally successful result.

The total financing needs are adjusted according to the recommended international OECD methodology for roll-over operations with state treasury bills and for re-financing operations with cash and other money market and deposit market instruments, which take place within the calendar year and thus do not affect the net change of these items in the course of the year related to the end of the respective years. The total annual financing needs in the given year thus take into account only the balances of these short-term instruments at the end of the previous year.

The following figure depicts the share of the financing needs and their components in GDP, including the balance of state treasury bills and other cash and money market and deposit market instruments outstanding at the end of the previous period, which also have to be re-financed in the current year, and the share of the gross borrowing requirement in GDP. The financing needs demonstrate a decreasing trend since 2012 in absolute figures and also expressed as a share in GDP. The decreasing trend

of the share in GDP is then emphasized in last two years as the year-on-year decrease compared to 2015 amounted to 2.3 p.p. and compared to 2014 to 3.9 p.p. to the level of 4.5%.

**Figure 8: Financing Needs**



Note: GDP in the ESA2010 methodology. The source of data for 2010 – 2015 is CZSO, for 2016 the Macroeconomic Forecast of the Czech Republic – January 2017. T-Bonds redemptions including effect of buy-backs and exchanges. Source: MoF, CZSO

## Financing of the Gross Borrowing Requirement

The gross borrowing requirement determines the part of the sources for the government's financing needs secured through borrowing operations, i.e. it stipulates

the value of cash resources that the government has to obtain primarily by issuing and selling government bonds and drawing credits and loans.

**Table 4: Financing of the Gross Borrowing Requirement**

CZK bn	2010	2011	2012	2013	2014	2015	2016
<b>Gross borrowing requirement</b>	<b>340.7</b>	<b>369.5</b>	<b>472.0</b>	<b>309.9</b>	<b>265.6</b>	<b>268.1</b>	<b>216.9</b>
Gross T-Bills issue <sup>1,2</sup>	113.3	162.6	189.1	120.9	107.6	84.4	4.2
Other money market instruments <sup>1</sup>	0.0	0.0	0.0	0.0	2.5	2.2	0.0
Received collateral in cash	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gross issue of T-Bonds on domestic market <sup>2</sup>	167.4	180.3	164.6	145.6	153.3	180.4	211.6
Gross issue of T-Bonds on domestic market up to 5 years <sup>2,3</sup>	63.4	45.3	31.4	37.8	37.3	100.0	119.6
Gross issue of T-Bonds on domestic market from 5 to 10 years <sup>2,3</sup>	61.2	73.6	93.3	79.6	50.0	23.3	48.4
Gross issue of T-Bonds on domestic market over 10 years <sup>2,3</sup>	42.8	61.4	39.9	28.3	65.9	57.1	43.7
Gross issue of T-Bonds on foreign markets <sup>2</sup>	49.7	0.9	69.0	0.0	0.0	0.0	0.0
Gross issue of savings government bonds <sup>4</sup>	0.0	20.4	45.4	39.1	2.1	1.0	1.0
Received credits and loans	10.4	5.3	4.0	4.3	0.0	0.0	0.0
<b>Total financing of gross borrowing requirement</b>	<b>340.7</b>	<b>369.5</b>	<b>472.0</b>	<b>309.9</b>	<b>265.6</b>	<b>268.1</b>	<b>216.9</b>

<sup>1</sup> Excl. T-Bills issued and redeemed within respective year, and roll-over of other money market instruments.

<sup>2</sup> Nominal value; premiums and discounts are included in net expenditure on state debt service, i.e. they are included in the net borrowing requirement.

<sup>3</sup> Remaining time to maturity at the transaction settlement date.

<sup>4</sup> Incl. reinvestment of yields.

Source: MoF

The resulting gross borrowing requirement is lower than total financing needs in respective period in case of involvement of financial assets or liquidity management operations as a financing source, which occurred in 2013 to 2015, or in the opposite case, when there is an accumulation of financial assets through state's borrowing operations, the gross borrowing

requirement is higher than the financing needs, which occurred e.g. in 2010 to 2012. The active use of refinancing mechanism of state treasury and more effective financial planning allowed the decrease in the extent of borrowing operations of the state and thereby further savings on interest expenditure of state budget and the decrease of state debt were achieved.

## Net Borrowing Requirement, Change and Structure of State Debt

The net borrowing requirement of the government is a key factor in the change in the nominal CZK-denominated value of the gross state debt and is determined by the difference between the gross borrowing requirement and total redemption on the nominal value (principals) of state debt, including the related derivatives. In the case of a zero net change in the state financial assets, including the cash reserve, the net borrowing requirement corresponds to the sum of the state budget deficit and potential extra-budgetary financing needs. Hence, the net borrowing requirement represents the value of cash

resources that the central government has to borrow in the current year beyond the resources already borrowed in previous years and due in the respective year.

The basic development trends of cash expenditure and accrued costs is largely based on the development of these indicators for medium-term and long-term government bonds issued on the domestic market, which constitute a dominant part of the state debt, and in 2016 accounted for almost three fourths of the total accrued costs on the state debt.

**Table 5: Net Borrowing Requirement**

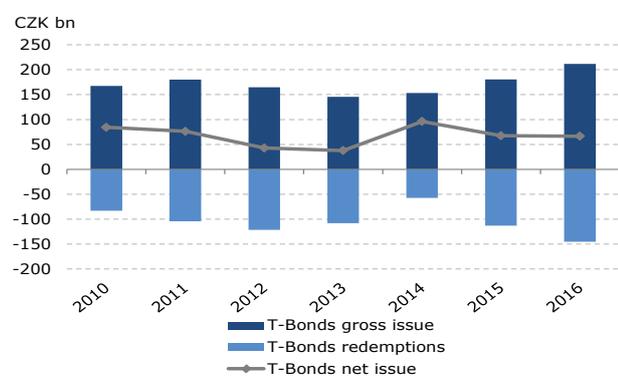
CZK bn	2010	2011	2012	2013	2014	2015	2016
<b>Gross borrowing requirement</b>	<b>340.7</b>	<b>369.5</b>	<b>472.0</b>	<b>309.9</b>	<b>265.6</b>	<b>268.1</b>	<b>216.9</b>
T-Bonds redemptions <sup>1</sup>	83.0	104.1	121.7	107.9	143.7	123.9	157.8
Redemptions and early redemptions on savings government bonds	0.0	0.0	9.6	7.7	11.9	11.9	30.2
T-Bills redemptions <sup>2</sup>	88.2	113.3	162.6	189.1	120.9	107.6	84.4
Other money market instruments redemptions <sup>2</sup>	0.0	0.0	0.0	0.0	0.0	2.5	2.2
Repayments on credits and loans	1.1	1.1	5.3	2.8	11.1	2.5	1.7
<b>Net borrowing requirement</b>	<b>168.5</b>	<b>151.0</b>	<b>172.8</b>	<b>2.3</b>	<b>-21.9</b>	<b>19.6</b>	<b>-59.4</b>

<sup>1</sup> Incl. effect of buy-backs and exchanges.

<sup>2</sup> Excl. T-Bills issued and redeemed within respective year, and roll-over of other money market instruments.

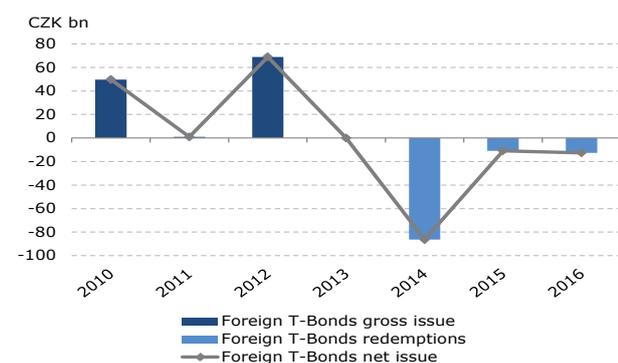
Source: MoF

**Figure 9: Net Issue of T-Bonds on the Domestic Market**



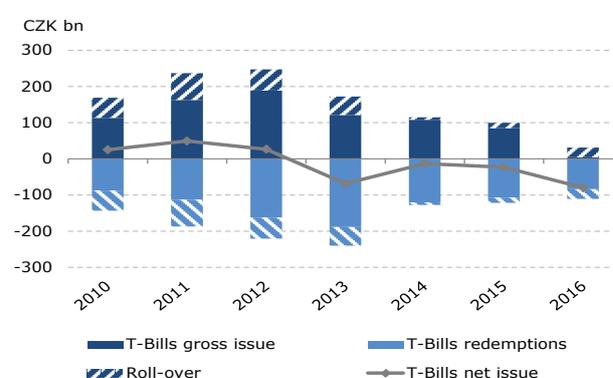
Source: MoF

**Figure 10: Net Issue of Foreign T-Bonds**



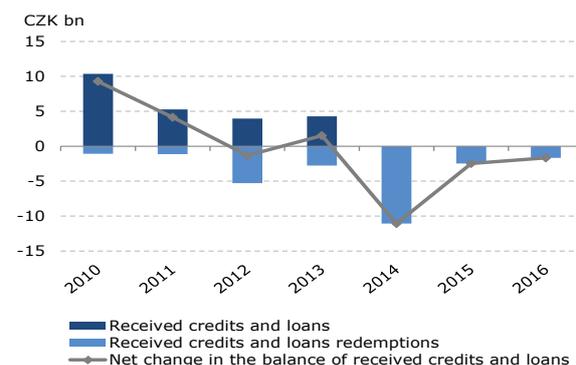
Source: MoF

**Figure 11: Net Issue of T-Bills on the Domestic Market**



Source: MoF

**Figure 12: Net Change in the Balance Received of Credits and Loans**



Source: MoF

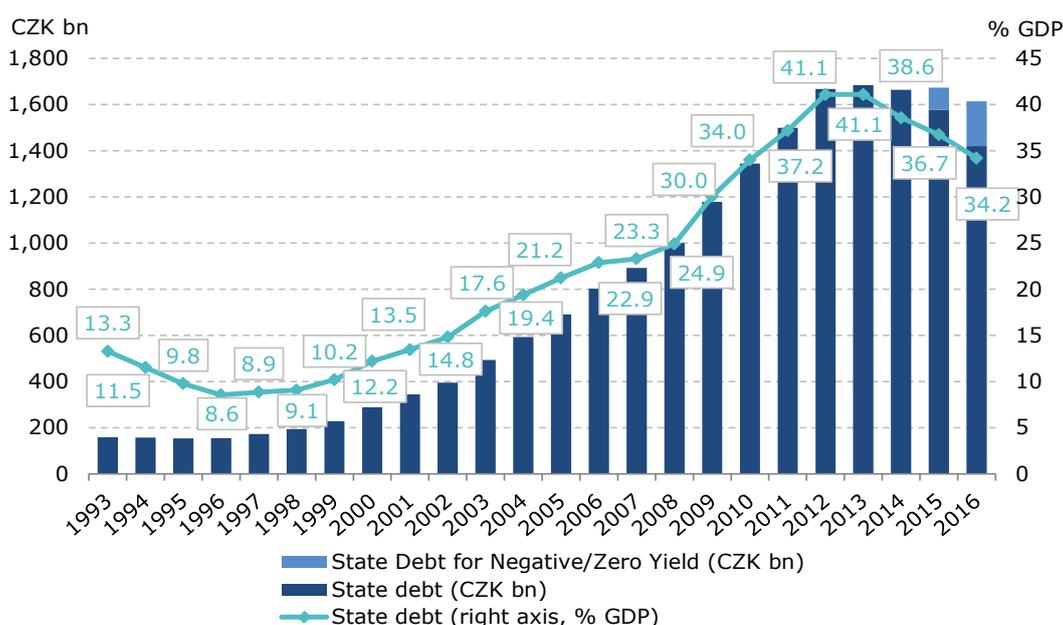
**Table 6: Net Borrowing Requirement and Change in State Debt**

CZK bn	2010	2011	2012	2013	2014	2015	2016
<b>Gross state debt as at 1 January</b>	<b>1,178.2</b>	<b>1,344.1</b>	<b>1,499.4</b>	<b>1,667.6</b>	<b>1,683.3</b>	<b>1,663.7</b>	<b>1,673.0</b>
Primary state budget balance	120.6	97.6	59.6	30.4	29.3	17.5	-102.4
Net expenditure on state debt service <sup>1</sup>	35.8	45.1	41.4	50.9	48.5	45.3	40.7
Financial asset and liquidity management operations	12.0	8.2	71.8	-78.9	-99.7	-43.2	2.3
<b>Net borrowing requirement</b>	<b>168.5</b>	<b>151.0</b>	<b>172.8</b>	<b>2.3</b>	<b>-21.9</b>	<b>19.6</b>	<b>-59.4</b>
T-Bills net issue	25.1	49.3	26.5	-68.2	-13.3	-23.2	-80.2
Net change in the balance of other money market instruments	0.0	0.0	0.0	0.0	2.5	-0.4	-2.2
T-Bonds net issue on domestic market	84.4	76.2	42.9	37.7	96.0	67.4	66.4
T-Bonds net issue on foreign markets	49.7	0.9	69.0	0.0	-86.4	-10.8	-12.6
Savings government bonds net issue	0.0	20.4	35.8	31.4	-9.7	-10.9	-29.2
Net change in balance of received credits and loans	9.3	4.1	-1.3	1.5	-11.1	-2.5	-1.7
<b>Financing of net borrowing requirement</b>	<b>168.5</b>	<b>151.0</b>	<b>172.8</b>	<b>2.3</b>	<b>-21.9</b>	<b>19.6</b>	<b>-59.4</b>
Revaluation of state debt <sup>2</sup>	-2.4	4.5	-4.4	13.4	2.3	-10.3	-0.2
Promissory notes net change	-0.3	-0.2	-0.1	0.0	0.0	0.0	0.0
<b>Gross state debt change</b>	<b>165.8</b>	<b>155.3</b>	<b>168.3</b>	<b>15.7</b>	<b>-19.7</b>	<b>9.3</b>	<b>-59.6</b>
<b>Gross state debt as at 31 December</b>	<b>1,344.1</b>	<b>1,499.4</b>	<b>1,667.6</b>	<b>1,683.3</b>	<b>1,663.7</b>	<b>1,673.0</b>	<b>1,613.4</b>
<b>Share of GDP (%)<sup>3</sup></b>	<b>34.0</b>	<b>37.2</b>	<b>41.1</b>	<b>41.1</b>	<b>38.6</b>	<b>36.7</b>	<b>34.2</b>

<sup>1</sup> Balance of budgetary chapter 396 – State debt.

<sup>2</sup> Incl. the revaluation of the debt denominated in foreign currencies based on the exchange rate difference and the consolidation of state debt from the bonds, which were at the moment of issuance registered on the asset account maintained by the Ministry in the respective record, for the period they were registered on such account, as well as the bonds acquired by the state as the issuer before their maturity date, and the cash resources received under the investment facilities provided from the nuclear investment portfolio.

<sup>3</sup> GDP in the ESA2010 methodology. The source of data for 2010 – 2015 is CZSO, for 2016 the Macroeconomic Forecast of the Czech Republic – January 2017. Source: MoF, CZSO

**Figure 13: Czech Republic's State Debt Development**

Note: GDP in the ESA2010 methodology. The source of data for 2010 – 2015 is CZSO, for 2016 the Macroeconomic Forecast of the Czech Republic – January 2017. Source: MoF, CZSO

**Table 7: Balance and Structure of the Net Debt Portfolio**

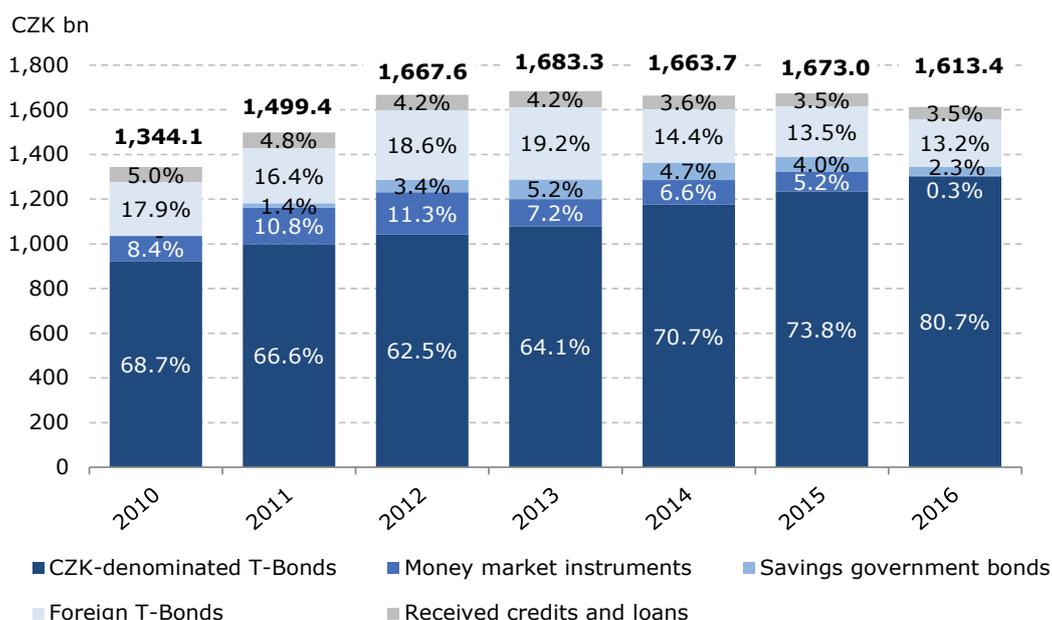
CZK bn	2010	2011	2012	2013	2014	2015	2016
<b>Gross state debt</b>	<b>1,344.1</b>	<b>1,499.4</b>	<b>1,667.6</b>	<b>1,683.3</b>	<b>1,663.7</b>	<b>1,673.0</b>	<b>1,613.4</b>
T-Bills	113.3	162.6	189.1	120.9	107.6	84.4	4.2
Other money market instruments	0.0	0.0	0.0	0.0	2.5	2.9	0.0
Received collateral in cash	0.0	0.0	0.0	0.0	0.0	0.0	0.0
T-Bonds issued on domestic market	923.0	999.1	1,042.0	1,079.7	1,175.7	1,235.2	1,301.6
T-Bonds issued on foreign markets	240.3	245.7	310.3	323.7	239.6	225.6	213.5
Savings government bonds	0.0	20.4	56.2	87.6	77.8	66.9	37.8
Received credits and loans	67.2	71.3	70.0	71.5	60.4	58.0	56.3
Promissory notes	0.3	0.1	0.0	0.0	0.0	0.0	0.0
<b>Liquid state financial assets</b>	<b>112.3</b>	<b>119.7</b>	<b>191.5</b>	<b>116.7</b>	<b>67.8</b>	<b>77.1</b>	<b>62.2</b>
Nuclear portfolio	15.1	16.6	18.5	20.7	22.7	24.5	25.6
Pension portfolio	21.6	22.0	22.4	22.6	22.7	22.9	23.0
Special-purpose state financial assets accounts	10.2	10.5	10.6	10.7	10.9	11.1	10.7
On-lending over 1 year <sup>1</sup>	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cash reserve <sup>2</sup>	65.4	70.6	139.9	62.7	11.5	18.6	2.9
<b>State financial assets</b>	<b>114.0</b>	<b>121.4</b>	<b>193.2</b>	<b>116.7</b>	<b>67.8</b>	<b>77.1</b>	<b>62.2</b>
Liquid state financial assets	112.3	119.7	191.5	116.7	67.8	77.1	62.2
On-lending <sup>3</sup>	1.7	1.7	1.7	0.0	0.0	0.0	0.0
<b>Net debt portfolio</b>	<b>1,230.1</b>	<b>1,378.0</b>	<b>1,474.4</b>	<b>1,566.7</b>	<b>1,595.8</b>	<b>1,595.9</b>	<b>1,551.2</b>

<sup>1</sup> Extra-budgetary loans with maturity of over 1 year and the estimated remaining time to maturity shorter than 12 months granted to other countries and domestic legal entities.

<sup>2</sup> Available cash resources created according to Section 35(4) of Act No. 218/2000 Coll. incl. the impact of exchange rate difference of the CZK value of the part of the cash reserve in foreign currencies.

<sup>3</sup> Extra-budgetary loans with maturity of over 1 year and the estimated remaining time to maturity longer than 12 months granted to other countries and domestic legal entities.

Source: MoF

**Figure 14: Structure of the Debt Portfolio**

Source: MoF

## State Treasury Liquidity Management

In the environment of extremely low and negative interest rates and in case of the Czech Republic also under the Czech National Bank's foreign exchange interventions regime that increased the liquidity in domestic banking sector, the Ministry focused on the significant rationalization of the available state treasury liquidity in 2016 in accordance with the most recent principles of the management of government finances. The cash reserve generated in previous years by the issuance activity with correlative increase in the gross state debt is thus replaced by the available cash resources of the central system of single treasury accounts management.

Effective as from 10 May 2016 there has been a key extension of the single treasury accounts given by the Act No. 128/2016 Coll., which amends the Act No. 218/2000 Coll. on budgetary rules and on amendment to some related laws (budgetary rules), as amended. The single treasury account was extended by the accounts of General Health Insurance Company of the Czech Republic including the special account of public health insurance, accounts of departmental, professional, corporate

and other health insurance companies, and the associations of health insurance companies, which thus became the mandatory clients of state treasury. Simultaneously, the Railway Infrastructure Administration state organisation transited from the non-mandatory regime to mandatory one. Together with the extension of single treasury account, the transitional period within which all mandatory clients have to establish accounts in the Czech National Bank and transfer their funds from previous accounts in banks or other payment service providers was reduced to 9 months from the effective date of this act.

The amendment to the budgetary rules brings an additional increase in available cash resources of the state treasury which is going to be managed more effectively according to the actual state's needs and will be also better valorised by the investments within the state treasury liquidity management. Moreover, the position of the Czech Republic on financial market will strengthen enabling additional streamlining of state's borrowing operations management and decrease in the interest expenditure of the state budget.

**Table 8: State and Structure of Resources and Investment Position of the State Treasury**

CZK bn, EUR bn	2014		2015		2016	
	CZK	EUR	CZK	EUR	CZK	EUR
<b>Liquid state financial assets</b>	<b>56.3</b>	<b>0.4</b>	<b>58.5</b>	<b>0.7</b>	<b>59.3</b>	<b>0.1</b>
Mandatory clients of state treasury <sup>1</sup>	99.3	1.8	114.3	2.0	156.6	0.1
Optional clients of state treasury	5.6	0.0	10.0	0.0	29.1	0.0
Liabilities to the state treasury (-)	-50.7	0.0	-81.8	-0.8	-82.9	-0.1
<b>Total liquidity position of the state treasury<sup>2</sup></b>	<b>110.5</b>	<b>2.2</b>	<b>101.0</b>	<b>1.9</b>	<b>162.2</b>	<b>0.1</b>
Reverse repo operations (T-bills collateral)	0.0	0.0	0.0	0.0	0.0	0.0
Reverse repo operations (T-bonds collateral)	0.0	0.8	0.0	0.4	0.0	0.0
Reverse repo operations (CNB bills collateral)	71.3	0.5	0.0	0.0	0.0	0.0
Reverse repo operations (foreign securities collateral)	0.0	0.0	0.0	0.0	0.0	0.0
Provided deposits and short-term borrowings and loans	22.1	0.8	0.0	1.4	0.0	0.0
On-lending <sup>3</sup>	0.0	0.0	0.0	0.0	0.0	0.0
Investment in securities	15.5	0.0	7.5	0.0	8.1	0.0
Provided collateral (in cash)	0.0	0.0	0.0	0.0	0.0	0.0
Cash resources in treasury single account <sup>4</sup>	1.7	0.0	93.5	0.0	154.1	0.0
Ministry's cash resources in commercial banks accounts <sup>5</sup>	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total investment position of the state treasury</b>	<b>110.5</b>	<b>2.2</b>	<b>101.0</b>	<b>1.9</b>	<b>162.2</b>	<b>0.1</b>

<sup>1</sup> Excl. quasi-clients of the state treasury (state debt and state financial assets).

<sup>2</sup> Available liquidity of the state treasury incl. investments outside state treasury liquidity management accounts.

<sup>3</sup> Extra-budgetary loans with maturity of over 1 year and the estimated remaining time to maturity shorter than 12 months granted to other countries and domestic legal entities.

<sup>4</sup> Until 31/3/2013 it is a part of the cash reserve denominated in EUR, as the CNB established the treasury single account in EUR for the Ministry on 2/4/2013.

<sup>5</sup> Incl. cash resources in transit.

Source: MoF

With regard to the reduction in interest rates, the yields from the investment operations on the money market within the state treasury liquidity management in 2016 were lower by CZK 30.7 million than in 2015. However, the decrease in yields was compensated by the revenue from the issuance activity based on the negative yields achieved in the primary auctions of the government bonds in the total amount of CZK 803.2 million, taking into account the future expenditure on interest payments related to the bonds, unless they were zero-coupon bonds. The Ministry did trade with 15 counterparts in 2016, with the domestic and also foreign banks.

Within the CZK-denominated state treasury liquidity management and the state financial assets investment operations in the nuclear portfolio, short-term investments with the use of the CNB bills, state treasury bills and medium-term and long-term government bonds as collateral in total nominal value of CZK 4,647.7 billion were carried out in 2016. The average interest rate achieved when investing with the use of this collateral was 0.05% p.a. Short-term investments in form of deposit operations in total nominal value of CZK 3,168.6 billion were carried out as well. The average interest rate achieved when investing in form of deposit operations was 0.04% p.a.

CZK 59.7 million of yields from operations with the CZK-denominated state treasury liquidity were transferred to the state budget.

Within the EUR-denominated state treasury liquidity management, short-term investments with the use of the medium-term and long-term government bonds as collateral in total nominal value of EUR 0.136 billion were carried out in 2016. The average interest rate achieved when investing with the use of medium-term and long-term government bonds as collateral was 0.01% p.a. Short-term investments in form of deposit operations in total nominal value of EUR 0.535 billion were carried out as well. The average interest rate achieved when investing in form of deposit operations was 0.06% p.a. In 2016 the Ministry carried out foreign exchange swaps with maturity in 2017 in the total nominal value of EUR 0.125 billion, and the average interest rate achieved in these operations was 0.8% p.a. CZK 16.9 million of yields from operations with the EUR-denominated state treasury liquidity were transferred to the state budget. The situation on the European deposit market is characterized by the gradually reduced interest rates, particularly due to the monetary policy of the European Central Bank.

**Table 9: State Budget Revenue from Investment and Issuance Operations with Negative Yields**

Revenues	2014	2015	2016	2015/2014	2016/2015
CZK operations	87.1	40.2	59.7	0.5	1.5
EUR operations (in CZK)	151.7	67.1	16.9	0.4	0.3
Lending facilities	1.9	3.9	11.6	2.0	3.0
FX swaps	0.0	0.0	44.0	-	-
Issuance with negative yield <sup>1</sup>	0.0	413.7	803.2	-	1.9
<b>Total</b>	<b>240.8</b>	<b>524.9</b>	<b>935.3</b>	<b>2.2</b>	<b>1.8</b>

<sup>1</sup> Adjusted for future the expenditure in the form of coupon payments until the maturity of these bonds, unless they were zero-coupon bonds.  
Source: MoF

### 3 - Funding Program and Issuance Activity

The funding program for the given year defines the space for borrowing operations and quantifies the value of cash resources acquired through borrowing operations on the financial market or from the international financial institutions in order to cover the financing needs. Its structure

consists of debt sources of the financing needs, which are used for financing of the gross borrowing requirement, i.e. issuance and sale of government bonds on domestic and foreign markets and acceptance of loans and credits from international financial institutions.

#### Implementation of the Funding Program

The regular quarterly evaluation of the actual structure of the debt portfolio in relation to the declared strategic objectives and limits that constitute the key parameters of the publicly defined strategic benchmark portfolio, communicated primarily through the Strategy and its potential revision, and the quarterly update of the gross borrowing requirement and funding program included

in the Debt Portfolio Management Quarterly Reports, are the Ministry's main instruments to support the credibility and transparency of the entire process of management of the state debt and the related state financial assets and the execution of borrowing operations on financial markets in accordance with best international practice and recommended standards.

#### Medium-Term and Long-Term Government Bonds

The medium-term and long-term government bonds issuance plan for 2016 was set at the minimum level of CZK 150 billion within the Strategy, while the actual gross issue of medium-term and long-term government bonds in 2016 amounted to CZK 211.6 billion. The Ministry utilized the favourable financial market conditions, as the yields of government bonds at the short end of the yield curve were still reaching negative values, and thus adjusted its issuance activity. The Ministry managed to place medium-term and long-term government bonds in total nominal value of CZK 114.9 billion on market with a negative yield and receive additional cash resources amounting CZK 780.0 million.

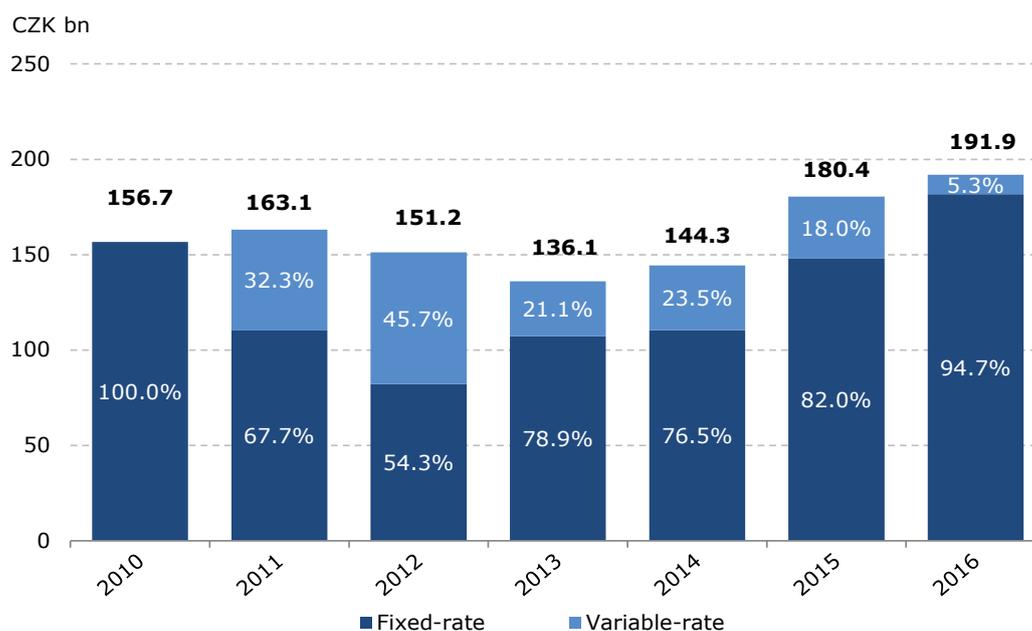
The ministry also stipulated scopes of gross issue of medium-term and long-term government bonds for the first and second half of 2016 within the Strategy and its update. For the first half of 2016, the limit was stipulated at maximum level of CZK 150 billion, while the actual gross issue of medium-term and long-term government bonds amounted to CZK 100.6 billion in the period. For the second half of 2016, the limit was stipulated at the minimum level of CZK 50 billion and this limit was also satisfied as the Ministry issued medium-term and long-term government bonds in total nominal value of CZK 111.1 billion in the second half of 2016.

The Ministry sold out zero-coupon medium-term government bonds maturing in 2017 from own

asset account and issued first tranches of new zero-coupon medium-term government bonds maturing in 2018 and 2019 on 13 and 20 January 2016 in order to maximally utilize the favourable market conditions to achieve additional financial resources in the form of auction premiums. The Ministry thus sold zero coupon medium-term government bonds in total nominal value of CZK 112.0 billion in 2016, while, in accordance with the Strategy and its update, the part of state treasury bills issues was substituted for these government bonds and due to this fact, there was a year-on-year decrease of state treasury bills outstanding from CZK 84.4 billion to CZK 4.2 billion as at the end of 2016 with a positive impact on riskiness of state debt portfolio and state budget performance.

43 primary auctions of medium-term and long-term government bonds in 16 auction days were carried out on the domestic market in 2016. Up to three instruments were offered in one auction day. In accordance with the Strategy the Ministry offered fixed-rate medium-term and long-term government bonds including the zero-coupon ones, the share of which amounted to 94.7%, and in the smaller extent, the variable-rate government bonds were offered, the share of which amounted to 5.3%. Fixed-rate government bonds including zero-coupon government bonds were offered mainly due to the decrease in yields on financial markets and investors' demand for these government bonds.

**Figure 15: Interest Structure of T-Bonds Sold in Auctions on Primary Market**



Source: MoF

The Ministry issued two benchmark issues in 2016, Government Bond of the Czech Republic, 2016–2019, 0.00 % in eleven tranches in total nominal value of CZK 60.8 billion and Government Bond of the Czech Republic, 2016–2018, 0.00 % in five tranches in total nominal value of CZK 40.8 billion.

With regard to the decrease in yields of Czech government bonds, particularly at the shorter end of the yield curve, and the unprecedented interest of the primary dealers in these bonds, the gross issue in the segment of time to maturity of up to 5 years dominated the issuance activity. Within this segment, the Ministry sold Government Bond of the Czech Republic, 2016–2019, 0.00 % in total nominal value of CZK 60.8 billion, Government Bond of the Czech Republic, 2016–2018, 0.00 % in total nominal value of CZK 40.8 billion, and Czech Republic Government Bond 2015-2017, 0.00 % in total nominal value of CZK 10.3 billion. The segment of up to 5 years thus constitutes 59.8% of total gross issue on primary market representing an increase by 4.4 p.p. compared to 2015. The increase of issuance in this segment is compensated by significant decrease of state treasury bills outstanding.

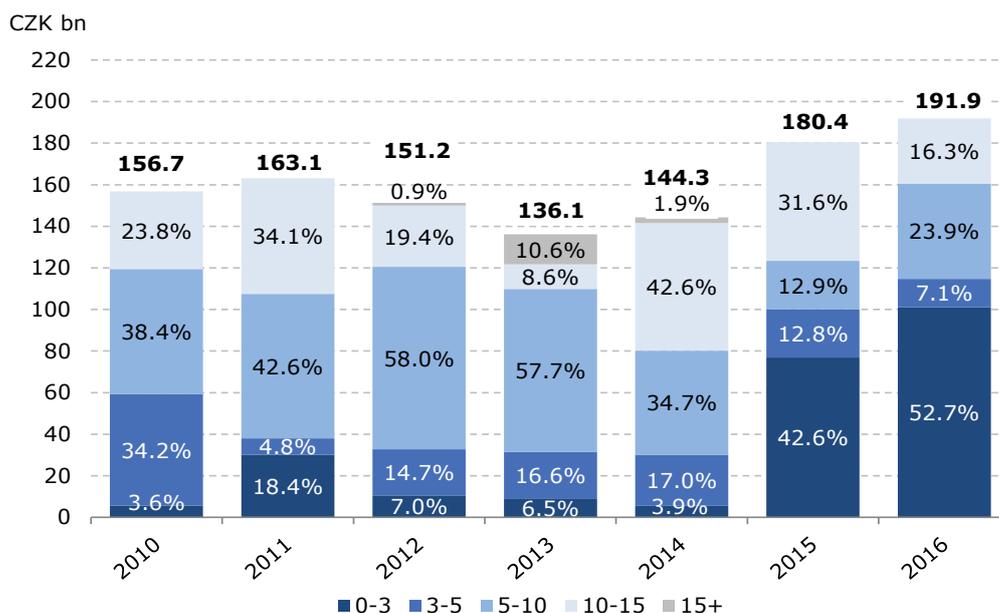
Roughly one quarter of medium-term and long-term government bonds was sold by the Ministry on primary market in the segment of residual time to maturity of 5 to 10 years, mainly Czech Republic Government Bond, 2014–2025, 2.40 % in total nominal value of CZK 17.4 billion, Government Bond of the Czech Republic, 2015–2026, 1.00 % in total nominal value of CZK 14.6 billion, and Government Bond of the Czech Republic, 2015–2023, 0.45 % in total nominal value of CZK 13.8 billion. The total

nominal value of government bonds sold within this maturity segment amounted to CZK 45.8 billion representing an increase by 11.0 p.p. to 23.9% in comparison with 2015.

The residual maturity segment of 10 to 15 years reached a share of 16.3% in total gross issue on primary market, i.e. 15.3 p.p. lower than in previous year. Within this segment, Government Bond of the Czech Republic, 2015–2030, 0.95 % in total nominal value of CZK 12.5 billion, Czech Republic Government Bond, 2014–2027, VAR % in total nominal value of CZK 7.3 billion, and Czech Republic Government Bond, 2013–2028, 2.50 % in total nominal value of CZK 7.0 billion was sold. This segment includes also the auction of Government Bond of the Czech Republic, 2015–2026, 1.00 % from 13 January 2016 in total nominal value of CZK 4.4 billion, but the other tranches fall within the segment of 5 to 10 years.

Medium-term and long-term government bonds in total nominal value of CZK 191.9 billion were placed on primary market in 2016, being CZK 11.5 billion or 6.4% more than in 2015. The reason behind this increase is mainly the substitution of state treasury bills for zero-coupon government bonds and the Ministry's effort to satisfy the primary dealers' demand and maximally utilize the exceptionally favourable conditions on domestic medium-term and long-term government bonds market. The Ministry thus complied with the framework issuance plan define in the Strategy and its update and issued medium-term and long-term government bonds in accordance with the announced limits for refinancing risk.

**Figure 16: Maturity Structure of T-Bonds Sold in Auctions on Primary Market**

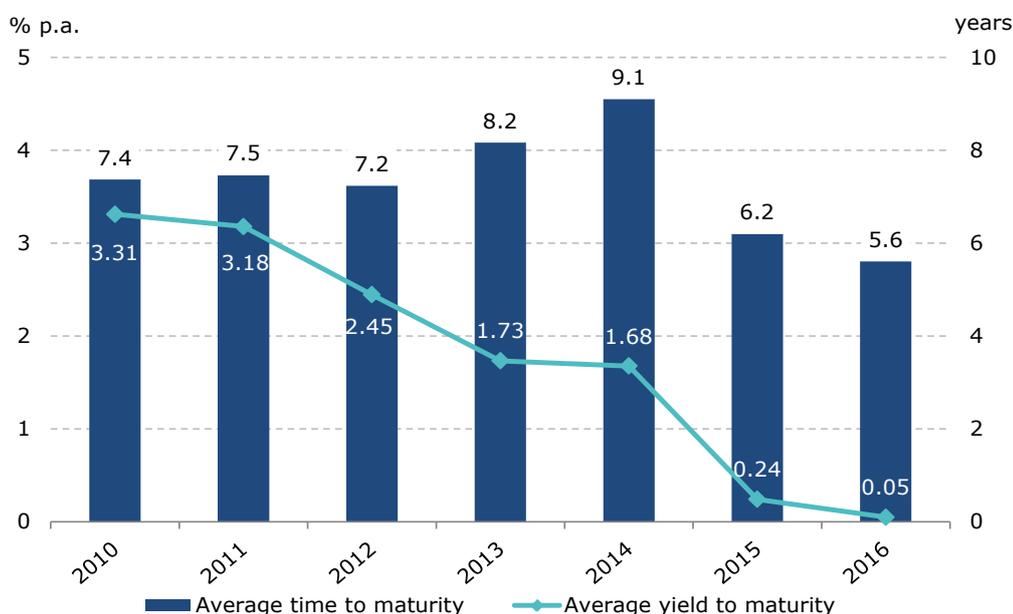


Source: MoF

The average yield of medium-term and long-term government bonds sold in primary auctions in 2016 was 0.05% p.a. It is based on the drop in yields of Czech government bonds as well as the decrease in the average time to maturity of medium-term and long-term government bonds

sold in primary auctions by 0.6 years in comparison to 2015 to 5.6 years. The decrease in the average time to maturity is based on the flexible response to the development on financial markets and on the demand from the primary dealers for the bonds at the shorter end of the yield curve.

**Figure 17: Average Yield and Time to Maturity of T-Bonds in Auctions on Primary Market**



Note: Average time to maturity is related to the issue date.  
Source: MoF

The stable demand for CZK-denominated medium-term and long-term government bonds persisted in 2016, which is illustrated by the Bid-to-Cover Ratio. The average Bid-to-Cover Ratio at a value of 2.2 signals a very high demand in auctions

for medium-term and long-term government bonds on the domestic market. Compared to 2015 this indicator remains at same value, which documents investor's stable interest in government bonds.

**Figure 18: T-Bonds Auctions on Primary Market in 2016**



Source: MoF, CNB

In 2016 the Ministry launched the exchange operations programme on secondary market through the electronic trading platform MTS Czech Republic. The exchange operations of medium-term and long-term government bonds was successfully implemented during the first quarter of 2016 as pilot operation was launched in February. The Ministry additionally extended the portfolio of offered operations available within the secondary market of government bonds and thus joined other countries such as Germany, Sweden, Denmark, France or Austria, which carry out this type of operations. The Ministry usually buys back medium-term and long-term government bonds with relatively short time to maturity and relatively high coupon rate and sell medium-term and long-term government bonds with relatively long time to maturity and relatively low coupon rate within these operations. The Ministry thus decreases refinancing risk due to the decrease of future redemptions. These operations also prolong the average time to maturity and re-fixing of debt portfolio. This operation also has a positive impact on state budget in term of savings due to the non-realization of future coupon payments. In the run of 2016, the Ministry could also pre-finance the redemption of Czech Republic Treasury Bond, 2008-2016, VAR which was carried out on 27 October 2016 as before the regular redemption date, the Ministry bought back CZK 18.2 billion within these operations. The Ministry exchanged government bonds maturing in 2016, 2017 and in smaller extent in 2019 with average residual time to maturity of 0.4 year in total nominal value of CZK 21.5 billion for government bonds with average residual time to maturity of 10.1 years in total nominal value of CZK 16.2 billion.

In the fourth quarter of 2016 the Ministry commenced also the tap sales of medium-term and long-term government bonds through the electronic trading platform MTS Czech Republic, as it sold government bonds in total nominal value of CZK 3.6 billion with maturity from 2018 to 2028. The Ministry thus utilized a wide range of operation on primary and secondary market in order to satisfy primary dealers' demand and maximally utilize favourable market conditions with positive impact on riskiness of debt portfolio and state budget performance. The additional financial resources received within the operations on secondary market due to selling government bonds with negative yield amounted to CZK 27.9 million.

In 2016, three regular redemptions of CZK-denominated medium-term and long-term government bonds were carried out which evenly distributed during the year. Czech Republic Treasury Bond, 2001 - 2016, 6.95 % in total nominal value of CZK 34.6 billion maturing in January, Czech Republic Government Bond, 2013-2016, 0.50 % in total nominal value of CZK 27.4 billion maturing in July, and Czech Republic Treasury Bond, 2008-2016, VAR in total nominal value of CZK 61.8 billion maturing in October were redeemed. The total nominal value of redemptions of CZK-denominated medium-term and long-term government bonds including operations on secondary market amounted to CZK 145.2 billion in 2016. The total nominal value of net issue of CZK-denominated medium-term and long-term government bonds amounted to CZK 66.4 billion which is CZK 1.0 billion lower than in previous year and documents stable increase in CZK-denominated medium-term and long-term government bonds outstanding. No buy-backs of

CZK-denominated medium-term and long-term government bonds were carried out in 2016.

In the area of foreign issuance activity, the Ministry did not execute any borrowing operations in 2016 because of the high interest of the primary dealers in the government bonds on the domestic market and higher costs of the foreign issue in comparison to the domestic funding after taking into account the expenditure of hedging against currency risk. In November 2016, the foreign issue of CHF-denominated government bond was redeemed in the total nominal value of CHF 500 million.

## Money Market Instruments

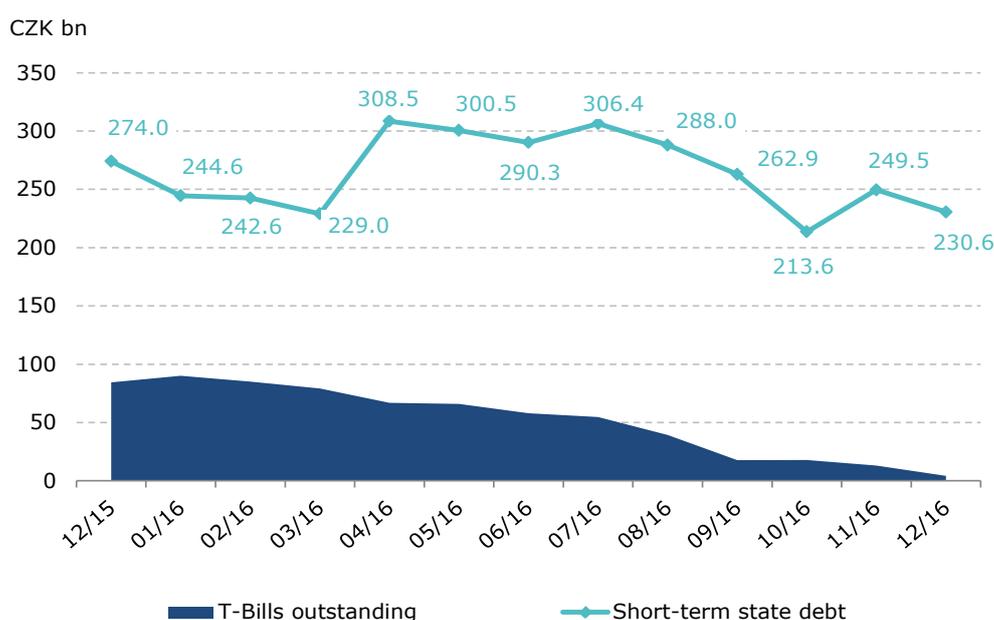
In 2016, the total nominal value of the gross issue of money market instruments excl. roll-over was CZK 4.2 billion and was constituted solely by issued state treasury bills. The total nominal value of the net issue of state treasury bills amounted to CZK -80.2 billion. The decrease in state treasury bills outstanding is given mainly by their gradual substitution for zero-coupon medium-term government bonds which was communicated with the public within the Strategy and its update. The Ministry proceeded to take these steps with respect to positive impact on the risk indicators of the debt portfolio, state budget performance a last but not least with respect to the increased demand from primary dealers for zero-coupon medium-term government bonds.

The Ministry carried out 23 auctions total in 23 auction day. The gross issue of state treasury

In 2016 the Ministry continued in the regime of publishing the issuance calendars for the following month reserving the option to announce alternative bonds in addition to the bond in the respective auction and choose the particular bond for the auction one working day before the competitive part of the auction at the latest. The Ministry keeps additional space for a flexible response to the market condition, the demand from the primary dealers, and financing needs development. The current setting has proved to be useful in practise many times when the Ministry decided to include alternative government bond into an auction.

bills incl. the roll-over amounted to CZK 30.8 billion with total demand from primary dealers amounting CZK 295.1 billion. The average auction yield of state treasury bills in 2016 amounted to -0.16% p.a. The Ministry sold state treasury bills in all maturities up to one year and all state treasury bills issued in 2016 were placed on market with negative yield. The issuance of state treasury bills issued and redeemed in 2016 was not carried out in order to cover the financing needs of the government but to take the full advantage of the exceptionally favourable market conditions, which enabled to increase the state budget revenue in the form of auction premiums. Thanks to the efficient timing of the issuance activity and the selection of suitable maturities the sale of state treasury bills with the negative auction yield brought additional state budget revenue of CZK 23.1 million.

**Figure 19: Short-term state debt and T-Bills Outstanding in 2016**



Source: MoF

Also in 2016, the primary dealers in Czech government bonds continued to use the lending facilities in the form of repo operations, as medium-term and long-term government bonds in total nominal value of CZK 71.3 billion were provided from the Ministry's asset account against cash resources amounting to CZK 80.7 billion which were additionally invested on the money market under the state treasury liquidity management and under the investment operations of state financial assets management within the nuclear portfolio. The average yield achieved in the lending facilities in form of repo operations amounted to -0.10% p.a. in 2016. The Ministry used lending facilities of this type in smaller extent than in 2015 when it provided medium-term and long-term government bonds to primary dealers in total nominal value of CZK 141.4 billion, i.e. CZK 70.1 billion more.

Within an additional support of the secondary market of medium-term and long-term government bonds

the Ministry used the lending facilities in the form of collateralized loans with respect to the demand from the primary dealers, which were successfully implemented in December 2015 under which the Ministry provides the Czech government bonds for the short period of time from its own asset account against other Czech government bonds or a CNB treasury bills for a fee. The facility could be used for the period of up to 90 days. The aim of these operations was to increase the liquidity of the government bonds on the secondary market, especially in case of short-term excess of demand over supply related to the respective bond. Within these operations the Ministry provided medium-term and long-term government bonds in the total nominal value of CZK 60.1 billion, what represents increase by CZK 49.7 billion compared to 2015. The average fee achieved within lending facilities in the form of collateralized loans amounted to -0.15% p.a. in 2016.

## Other Debt Instruments

In 2016, no tranches of the loans from the European Investment Bank were drawn. In the course of the year, the planned repayments of EIB loans tranches in a total amount of CZK 1.7 billion were carried out.

In the area of savings government bonds, the total nominal value of the gross issue of savings government bonds amounted to CZK 1.0 billion issued solely in the form of reinvestment of yields.

Regular redemption of the Czech Republic Premium Savings Government Bond, 2013 – 2016, FIX % in a total nominal value of CZK 7.4 billion in June, regular redemption of the Czech Republic Reinvestment Savings Government Bond, 2011 – 2016, VAR % in a total nominal value of CZK 9.7 billion and the Czech Republic Coupon Savings Government Bond, 2011 – 2016, VAR % in a total nominal value of CZK 1.9 billion both in November, and regular redemption of the Czech Republic Premium Savings Government Bond, 2013 – 2016 II, FIX % in a total nominal value of CZK 11.0 billion in December were carried out.

The issuance terms and conditions of savings government bonds allow the owners to request their redemption before the maturity date. However, the actual development of early redemption in 2016 indicates that the share of early redemptions is not significant and the owners of savings government bonds rarely request this service. Within all periods for submitting requests for early redemption in 2016, such early redemption was requested for a total nominal value of CZK 149.3 million, which is 0.2% of the total nominal value of savings government bonds outstanding as at the end of 2015. The total nominal value of regular redemptions of savings government bonds and redemptions of savings government bonds before the redemption date amounted to CZK 30.2 billion in 2016.

At the end of 2016, the total nominal value of savings government bonds outstanding amounted to CZK 37.8 billion representing a decrease of CZK 29.2 billion compared to the end of 2015. The share of savings government bonds amounts to 2.3% of the total state debt and 2.8% of CZK-denominated government bonds.

**Table 10: Issues and Redemptions on Savings Government Bonds**

CZK bn	2012	2013	2014	2015	2016
<b>Total nominal value of savings government bonds issued</b>	45.3	38.8	1.4	0.0	0.0
<b>Reinvestment of yields</b>	0.1	0.3	0.7	1.0	1.0
<b>Early redemptions</b>	0.1	0.2	0.3	0.4	0.1
<b>Early redemptions (% savings government bonds outstanding as at the end of the previous year)</b>	0.4	0.4	0.4	0.5	0.2
<b>Regular redemptions</b>	9.5	7.5	11.6	11.5	30.0
<b>Total redemptions</b>	9.6	7.7	11.9	11.9	30.2
<b>Savings government bonds outstanding</b>	56.2	87.6	77.8	66.9	37.8

Source: MoF

## 4 - Risk Management and Portfolio Strategy

Public definition of the strategy benchmark debt portfolio through the declaration of strategic goals is the main tool for increasing the transparency of the Ministry's debt policy in line with the best international practice. The objectives have been set up based on the requirements stemming from the cautious approach to the management of financial and credit risks while minimizing economic costs over the long term. The main risks to which the debt portfolio is subjected over the long term are refinancing, interest and currency risks. All of the objectives and limits defined below are being applied to the portfolio of the state debt as a whole, including derivative operations.

In connection with the sufficient liquidity of single treasury accounts and relatively stable balances of the accounts owners mandatorily included into single treasury accounts, improvement of the efficiency and modernization of state treasury liquidity management, the Ministry approached new concept of risk management starting from 2016, as strategic targets and limits of refinancing and interest risk are published in medium-term horizon. This concept allows the Ministry to flexibly react on short-term market conditions and interest of investors for instruments in particular segment of time to maturity or re-fixing.

Short-term deviation from established strategic medium-term limits and targets for risk parameters of debt portfolio for refinancing and interest risk is possible. However, the issuance in medium-term horizon will be planned so that the targets and limits

defined in this Strategy will be fulfilled in medium-term horizon. The additional effect of this step may be the decrease in total net expenditure on state debt service with positive impact on state budget deficit and, in the end, the level of state debt.

Starting from 2016, the Ministry changed the concept of refinancing risk management through the average time to maturity of state debt indicator and interest risk management through the average time to re-fixing of the state debt indicator, as it abandoned the target band and established a medium-term target value of this indicator with a possibility of a short-term deviation from this value instead. The reason is the actual market condition, when the Ministry achieves additional savings on state debt service and thus it is desirable to utilize this situation at maximally acceptable level. Maintaining a fixed target band would run counter to this intention. The Ministry will monitor and evaluate the financial market conditions intensively.

Medium-term targets and limits in the area of refinancing and interest risks are evaluated against a 12-month moving average of the particular indicator starting from 2016. For the purpose of determining these averages, the values of these risk parameters as of the end of each calendar month are recorded. Indicators constructed in this way smooth out the fluctuations of the values of these indicators caused for example by the short-term fluctuations of markets or large redemption of medium-term and long-term government bonds in particular month.

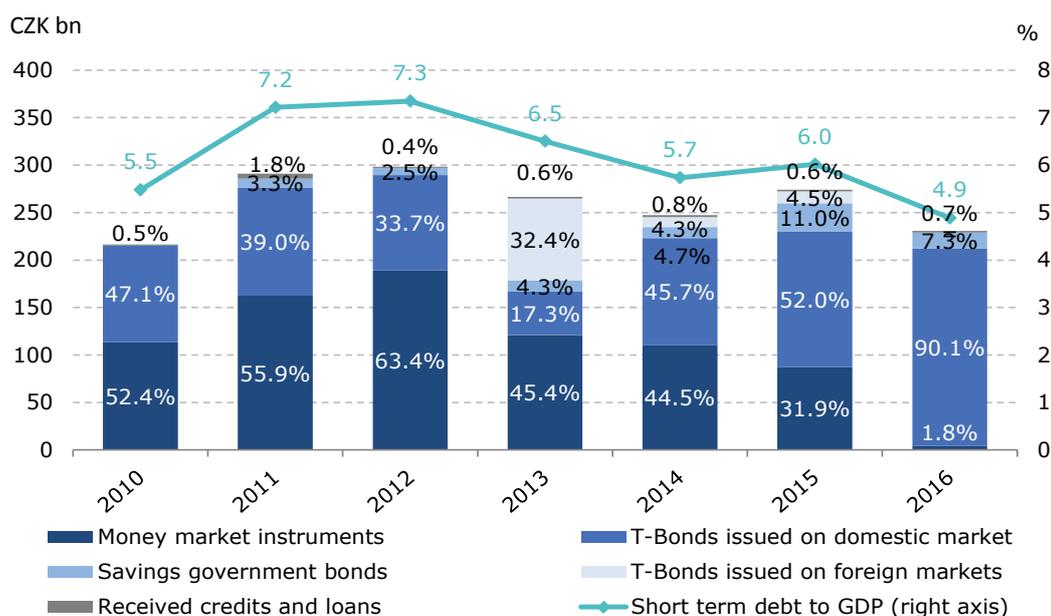
### Refinancing Risk

Refinancing risk is managed by a system of four indicators: share of short-term state debt, share of medium-term state debt, average time to maturity and the maturity profile. These four indicators must be considered as a self-contained system, whereas focussing on only one of them may pose a risk.

The share of short-term state debt (i.e. the share of debt due within one year out of the total state debt) is a key indicator of refinancing risk in the short-term horizon. The limit for the share of the short-

term debt is stipulated at 20.0% of the total state debt for the medium-term horizon. The share of the short-term state debt as at the end of 2016 amounted to 14.3% of the total state debt, which represents a decrease of 2.1 p.p. compared to the end of 2015. The average monthly value of the share of the short-term state debt in 2016 amounted to 15.7% of the total state debt. Compared to 2015, the average monthly value of this indicator increased by 0.8 p.p. in 2016.

**Figure 20: Structure of Short-Term State Debt by Instrument**



Note: As at the end of particular year. The source for GDP for 2010 to 2015 is the CZSO, for 2016 the Macroeconomic Forecast of the Czech Republic – January 2017  
Source: MoF, CZSO

The absolute value of short-term state debt has decreased by CZK 43.4 billion during 2016. Compared to 2015 there has been a change of structure of short-term state debt due to the decrease of the share of money market instruments which amounted 1.8% of short-term state debt and has thus decreased by 30.0 p.p. compared to 2015. The share of money market instruments in total state debt as at the end of 2016 amounted to 0.3% and decreased by 5.0 p.p. compared to the end of 2015. In both cases the decrease is given mainly by substitution of majority of state treasury bills outstanding for issues of zero-coupon government bonds maturing in 2017 to 2019 with a positive impact on refinancing and interest risk.

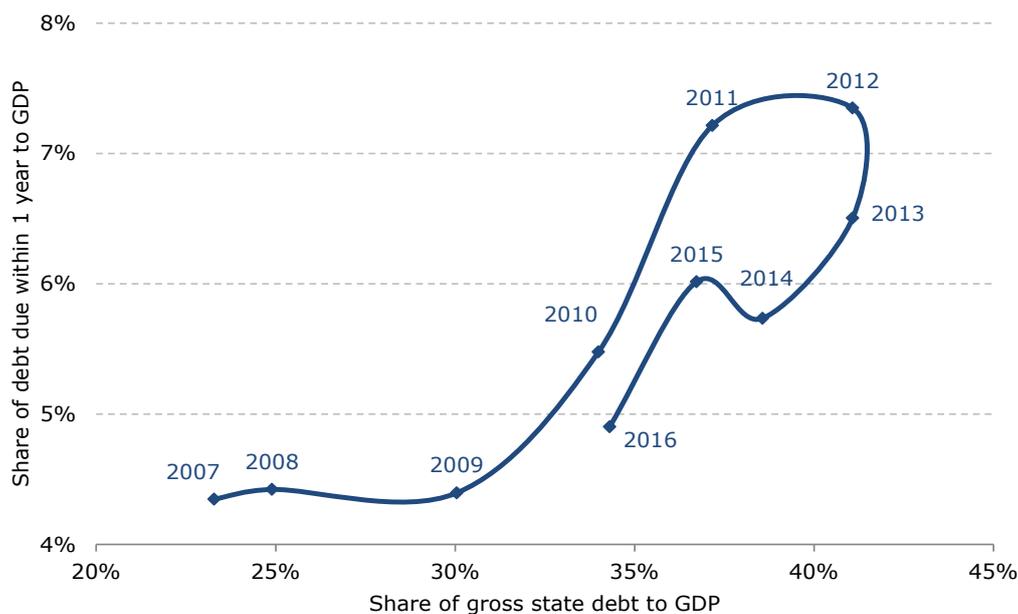
Even at the end of 2016, it applies that the balance of medium-term and long-term government bonds issued on the domestic and foreign markets including savings government bonds due within one year, exceeds the balance of money market instruments outstanding.

Regarding the CZK-denominated medium-term and long-term government bonds due within one year, there has been an increase by 38.1 p.p. due to the redemption of three issues of medium-term and long-term government bonds in the total nominal value of CZK 207.9 billion in 2017 compared to the redemptions of three issues of

medium-term and long-term government bonds in the total nominal value of CZK 142.6 billion in 2016. Regarding the savings government bonds due within one year, there was a decrease by 3.7 p.p. due to the four regular redemptions of issues of savings government bonds in the total nominal value of CZK 16.8 billion in 2017 compared to the regular redemption of four issues of savings government bonds in the total nominal value of CZK 30.0 billion in 2016. Regarding the foreign issues due within one year, there has been a year-on-year decrease by 4.5 p.p. primarily due to the redemption of a foreign issue in the total nominal value of CHF 500.0 million in 2016 and none in 2017. Due to the lower absolute value of short-term state debt in 2016 compared to 2015 and similar regular repayments on loans from EIB in 2016 and 2017 there has been an increase of share of received credits and loans in short-term state debt by 0.1 p.p.

Compared to 2015, the share of short-term state debt in GDP decreased by 1.1 p.p. to 4.9%. The share of the short-term state debt to GDP has decreased since the end of 2012 with the exception of 2015. The share of short-term state debt in GDP decreased by 2.5 p.p. since 2012 to 2016. The share of total state debt in GDP also decreased from 41.1% in 2012 to 34.2% in 2016, i.e. by 6.9 p.p.

**Figure 21: Gross State Debt and State Debt Due within One Year**



Note: As at the end of each year. The source for GDP for 2007 to 2015 is the CZSO, for 2016 the Macroeconomic Forecast of the Czech Republic – January 2017. Source: MoF, CZSO

In connection with refinancing risk, it is also necessary to mention the early redemption of savings government bonds, the value of which is not yet significant in 2016, and thus does not represent any significant increase in refinancing risk, given that the total nominal value of early-redeemed savings government bonds in 2016 amounted to CZK 0.1 billion. Since the pilot series of issues in 2011 until the end of 2016, the redemption of savings government bonds before maturity has amounted to CZK 1.2 billion, which is 1.1% of all issued savings government bonds in this period, including the reinvestment of yields. The Ministry monitors the situation, but at present does not expect any significant rise in the redemption of savings government bonds before maturity, among other because of the higher yields from these bonds compared to the current situation on bond markets.

In 2016, the Ministry also used a lending facility for providing loans of medium-term and long-term government bonds in the form of repo operations, in which the collateral consists of medium-term and long-term government bonds provided from the Ministry's asset account. Although the primary goal of these operations is to increase the liquidity of government bonds on secondary market, especially in case of the short-term excess of demand over the supply of the particular bond, due to the very low repo rates, the Ministry considers these operations as a preferred source in the segment of short-term financing. These operations thereby also contribute to savings on net interest expenditure on the state debt – but at the same time they increase refinancing risk and interest risk. Given the relatively low share of state treasury bills in

total state debt and relatively low refinancing and interest risk of state debt, the lending facilities do not pose a significant risk for the state debt portfolio. The total value of repo operations carried out over the course of 2016 amounted to CZK 80.7 billion. Within the framework of lending facilities, collateral for a total nominal value of CZK 71.3 billion was provided in 2016. As at the end of 2016, all financial resources received within lending facilities carried out in 2016 were repaid.

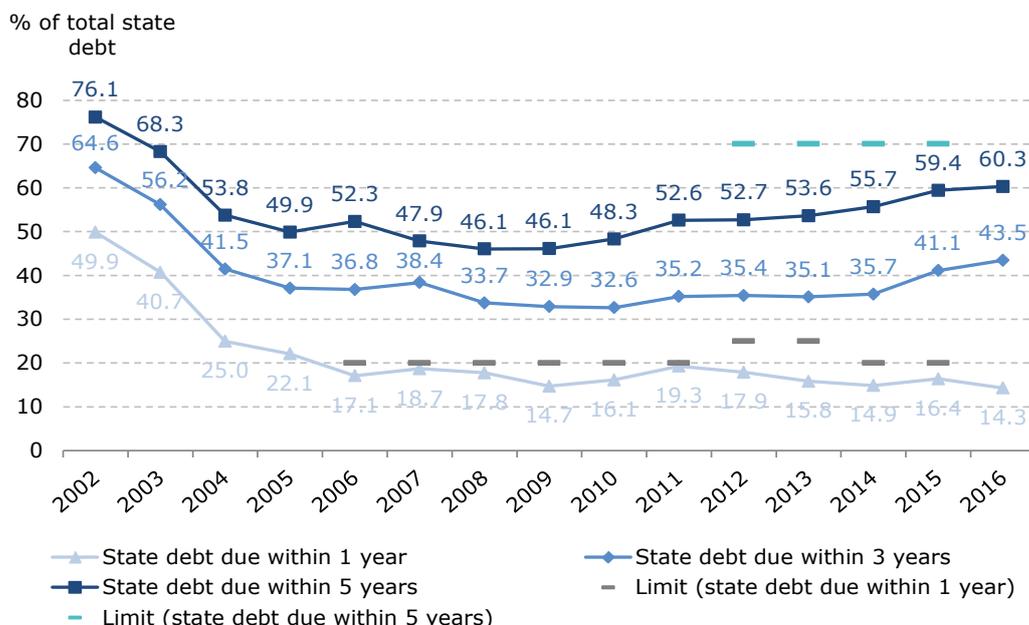
Within the additional support of secondary market of medium-term and long-term government bonds, the Ministry has started to utilize the lending facilities in the form of collateralized loans since the fourth quarter of 2015 with the respect to the primary dealers' demand, when the Ministry provided government bonds of the Czech Republic from its asset account against another government bond of the Czech Republic or the CNB bill for a short period of time for a fee. In comparison with the lending facility in the form of repo operations, the collateralized loans do not affect the level of the gross state debt and thereby the refinancing and interest risk indicators of state debt portfolio. However, the Ministry monitors and evaluates these operations intensively. The Ministry used the lending facilities in the form of collateralized loans in greater extent in 2016 and provided a collateral in a total nominal value of CZK 60.1 billion in 2016 compared to CZK 10.4 billion provided in 2015.

In terms of medium-term refinancing risk, the Ministry monitors and manages the share of debt due within three and five years. The debt due within five years is managed using the share of

medium-term debt to total state debt indicator, for which the Ministry has been setting explicit limits at 70.0% of total state debt for the medium-term horizon. The value of the share of medium-term debt in total state debt as at the end of 2016 amounted to 60.3% and compared to the end of 2015 represents an increase of 0.9 p.p. The average monthly value of the share of the medium-term state debt in 2016

amounted to 60.3% of the total state debt. Despite the indicator's value increased by 4.2 p.p. compared to 2015 it is still safely below the stipulated limit. The share of state debt due within three years as at the end of 2016 amounted to 43.5%, which represents an increase in this indicator's value by 2.4 p.p. compared to the end of 2015.

**Figure 22: State Debt by Maturity Baskets**



Note: As at the end of each year.  
Source: MoF

Another indicator used in managing of the refinancing risk is the average time to maturity of the state debt. The target value for the average time to maturity of the state debt is stipulated at 6.0 year with the possibility of deviation of 0.25 years for the medium-term horizon. Maintaining the average time to maturity and a smooth maturity profile of the debt portfolio are among the fundamental indicators that determine the time and volume structure of government bond issues on the domestic and foreign market, and the setting of repayment schedules for drawn EIB loans.

The average time to maturity of the state debt as at the end of 2016 amounted to 5.1 years, which is the same as in 2015. The average monthly value of the average time to maturity of the state debt in 2016 amounted to 5.0 years and decreased by 0.3 years compared to the value of this indicator for 2015.

The stabilization of the average time to maturity of the state debt is caused mainly by the decrease

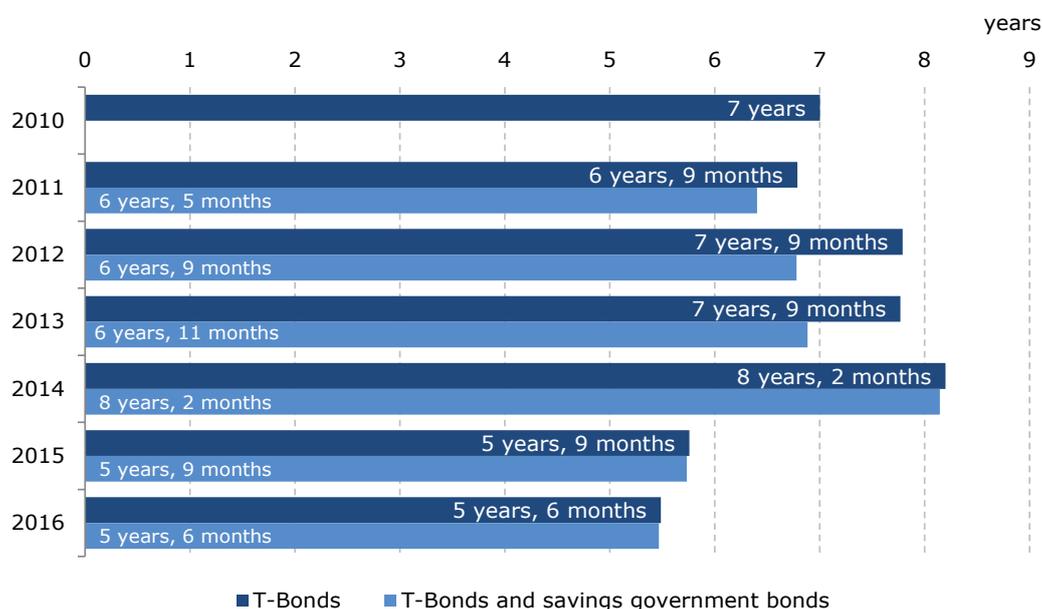
in the average time to maturity of the gross issue of medium-term and long-term government bonds in 2016 by 3 months compared to 2015 (relative to the end of the year) as a flexible reaction of the Ministry to market conditions and increased issuance of medium-term and long-term government bonds on the shorter end of the yield curve and also by substituting of the part of the state treasury bills issuance for the medium-term government bonds issuance. The substitution of state treasury bills compensated another factor affecting the average time to maturity, which is given by the fact that average maturity of the part of the state debt that was not due in 2016, totalling approximately CZK 1.4 trillion, decreased by 1 year, and is compensated by the gross issue of medium-term government bonds in the total nominal value of approximately CZK 212 billion, i.e. about one seventh of the lasting debt portfolio, with an average maturity of 5.5 years, i.e. 5 years and 6 months relative to the end of the year.

**Figure 23: Average Maturity of State Debt and Declared Goals**



Note: As at the end of each year.  
Source: MoF

**Figure 24: Average Time to Maturity of CZK-Denominated T-Bonds and Savings Government Bonds on the Domestic Market**



Note: Average time to maturity of sold CZK-denominated medium-term and long-term government bonds and savings government bonds during the respective calendar year calculated relative to the end of the year.  
Source: MoF

The Ministry monitors not only the average time to maturity of the total state debt portfolio, but also the average time to maturity of its individual components. The average time to maturity of money market instruments stabilized at 0.4 years since 2009, but in 2016 it decreased by 0.3 years to 0.1 year. The average time to maturity of foreign issues as at the end of 2016 decreased by 0.7 year to 4.3 years compared to the end of 2015, as the Ministry did not carry out any

borrowing operations on foreign markets during 2016. The average time to maturity of savings government bonds as at the end of 2016 decreased by 0.3 year to a value of 1.5 years compared to the end of 2015, as no new series of issues of savings government bonds were carried out during 2016, the gross issue of saving government bonds in total nominal value of CZK 1.0 billion was carried out solely in the form of reinvestment of the yields. The average time to maturity of the non-

marketable state debt decreased by 0.7 year as no new EIB loan tranches were drawn in 2016, and due to the repayments during the year. The average time to maturity of CZK-denominated medium-term and long-term government bonds as at the end of 2016 decreased by 0.3 year to a value of 5.2 years compared to the end of 2015. The reason is in particular the discrepancy described above

between the total nominal value of the existing portfolio of CZK-denominated medium-term and long-term government bonds and the total nominal value of newly sold CZK-denominated medium-term and long-term government bonds, of which average time to maturity relative to the end of the year 2016 amounted to 5.5 years.

**Table 11: Average Time to Maturity of Individual Components of the State Debt**

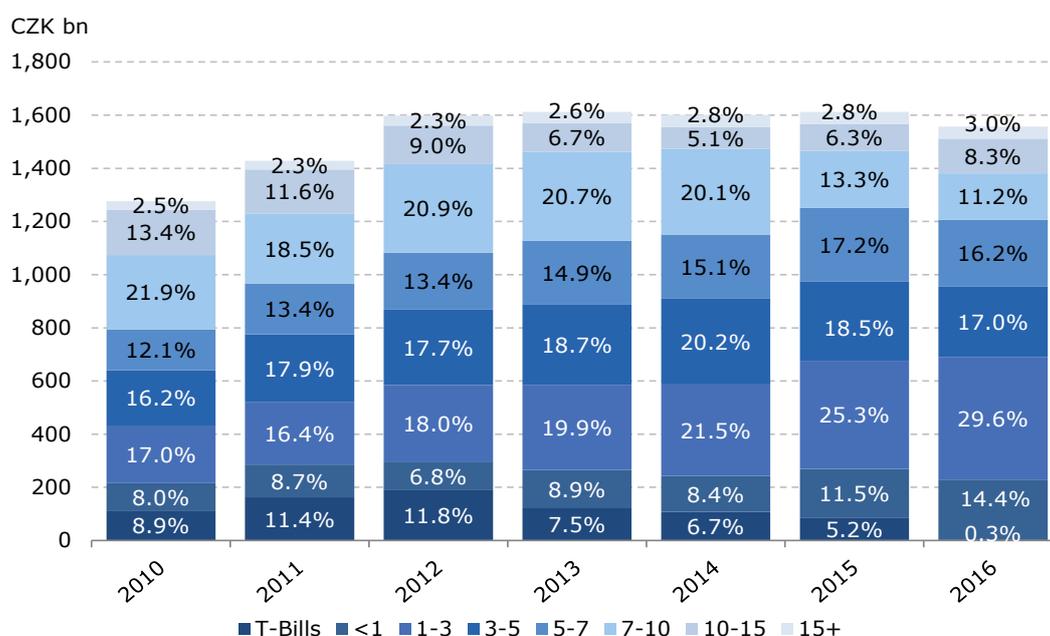
years	2010	2011	2012	2013	2014	2015	2016
<b>T-Bonds issued on domestic market</b>	6.3	6.2	6.3	6.2	5.8	5.5	5.2
<b>Savings government bonds</b>	-	3.0	3.3	3.1	2.5	1.7	1.5
<b>T-Bonds issued on foreign markets</b>	7.1	6.2	6.1	5.1	5.8	5.0	4.3
<b>Money market instruments</b>	0.4	0.4	0.4	0.4	0.4	0.4	0.1
<b>Non-marketable state debt</b>	12.5	11.5	11.8	11.4	10.4	9.8	9.1

Note: As at the end of each year. Non-marketable state debt does not include savings government bonds.  
Source: MoF

In 2016, the decreasing trend in the average time to maturity of government bonds lasting since 2013 is partly caused by the increase of the total nominal value of government bonds in the segment with a residual maturity of up to 3 years, of which the share on total nominal value of all government bonds outstanding as at the end of 2016 amounted to 44.3% and thus increased by 2.3 p.p. compared to the end of 2015. The share of government bonds in the segments of residual time to maturity of 3 to 5 years, 5 to 7 years and 7 to

10 years decreased compared to 2015. The share of government bonds in the segment of residual time to maturity of 3 to 10 years amounted 44.4% of total government bonds outstanding in 2016 and decreased by 4.5 p.p. compared to the end of 2015. In the segment of residual time to maturity of 10 and more years, the total nominal value of government bonds outstanding increased and also the share in total nominal value of government bonds outstanding increased by 2.2 p.p. to 11.3% compared to 2015.

**Figure 25: Structure of Government Bonds by Time to Maturity**

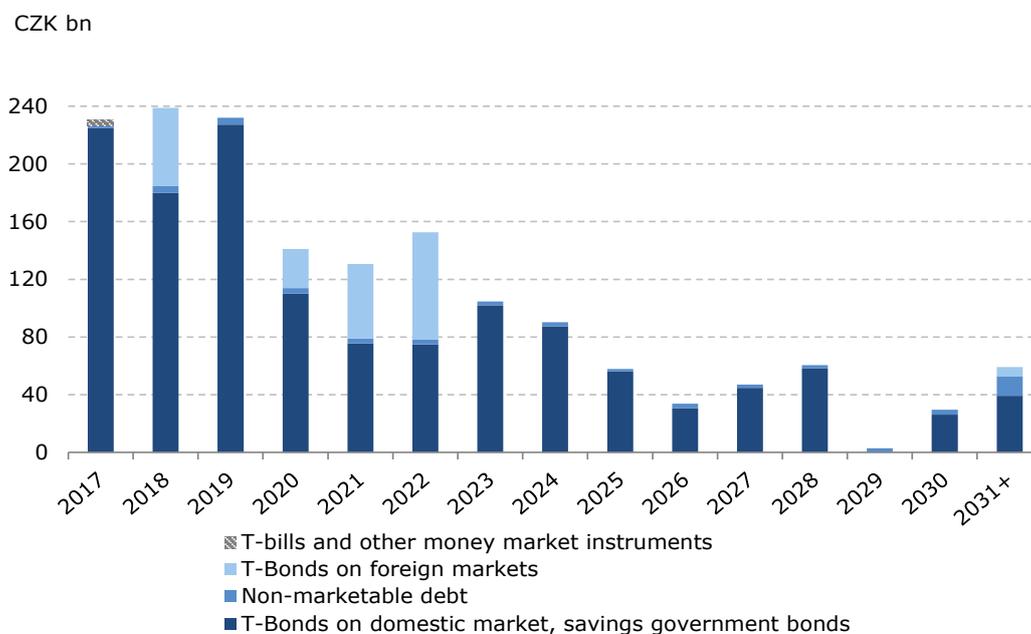


Note: As at the end of each year. Includes T-Bonds issued on domestic and foreign markets, savings government bonds and T-bills.  
Source: MoF

Issuance calendars of government bonds, sales of government bonds on the secondary market, possible foreign issues, and drawing of long-term loans from EIB will continue to be managed in accordance with the fulfilment of another key goal, namely the stabilisation and smoothing of the maturity profile of the state debt over time. The medium-term outlook shows the maximum

annual redemption on the current debt portfolio, without taking into account the impact of planned buy-backs or exchanges and not considering redemptions of money market instruments, at the level of CZK 240 billion, namely in 2018. Due to the planned state budget deficit in this year, no significant increase of financing needs in 2018 compared to 2015 is expected.

**Figure 26: Maturity Profile of State Debt as at the End of 2016**

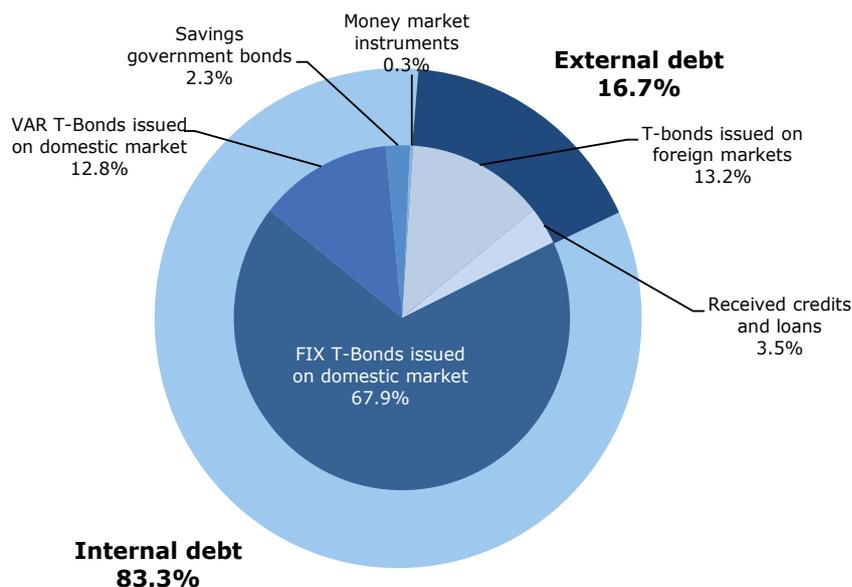


Note: Non-marketable state debt does not include savings government bonds.  
Source: MoF

With regard to refinancing risk, the Ministry monitors the structure of the debt portfolio according to the individual instruments. Over the long term, fixed-rate CZK-denominated medium-term and long-term government bonds including zero-coupon bonds account for the greatest share, with a share of 67.9% of total state debt as at the end of 2016, which represents an increase of 10.4 p.p. compared to the end of 2015. The share of variable-rate CZK-denominated medium-term and long-term government bonds in state debt as at the end of 2016 is 12.8%, which represents a decrease of 3.6 p.p. compared to the end of 2015.

The total nominal value of foreign issues including hedging of principal in total state debt as at the end of 2016 equals 13.2%, which represents a decrease of 0.3 p.p. compared to the end of 2015. This decrease was caused by the redemption of a foreign issue of medium-term and long-term government bonds denominated in Swiss franc in the total nominal value of CHF 500 million and no foreign issue carried out in 2016. The share of money market instruments in the total state debt as at the end of 2016 is 0.3% of the total state debt, which represents a decrease of 5.0 p.p. compared to the end of 2015. The share of savings government bonds in total debt as at the end of 2016 is 2.3%, which represents a decrease of 1.7 p.p. compared to the end of 2015.

**Figure 27: Structure of State Debt by Instrument at the End of 2016**



Source: MoF

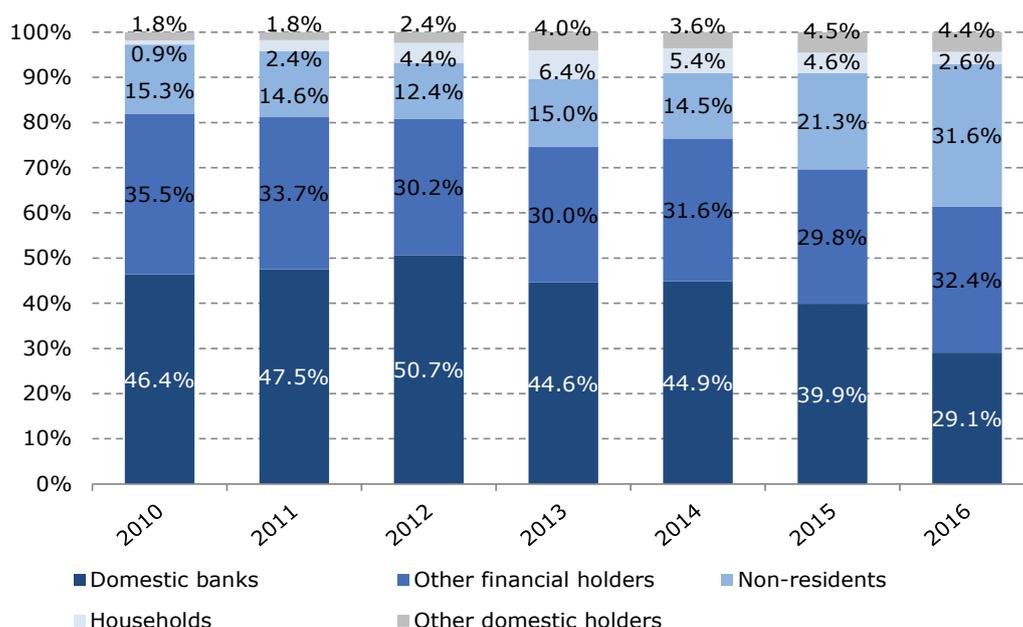
The structure of holders of CZK-denominated government bonds has been relatively stable in recent years with a mild trend in decreasing domestic banks holdings and increasing non-residents holdings. The share of non-residents in holding of domestic government bonds as at the end of 2016 amounted to 31.6% having increased by 10.3 p.p. compared to 2015; the share of domestic banks in holding of domestic government bonds as at the end of 2016 amounted to 29.1% having decreased by 10.8 p.p. compared to 2015. This fact is given mainly by the higher attractiveness of short-term government bonds of the Czech Republic for the investors, in particular the Government Bond of the Czech Republic, 2015–2017, 0.00 %, the Government Bond of the Czech Republic, 2016–2018, 0.00 %, and the Government Bond of the Czech Republic, 2016–2019, 0.00 %. The Ministry decided to accept this increased demand and adjust its issuance and gradually substituted state treasury bills for these government bonds having positive impact on average time to maturity of state debt portfolio due to the short time to maturity of state treasury bills. However, it is necessary to point out the fact, that the non-residential holding of CZK-denominated government bonds increased, but at the same

time the external state debt decreased due to the redemptions of government bonds denominated in foreign currency and the absence of new foreign-currency issues since 2013. Since 2014, foreign-currency government bonds in CZK equivalent of CZK 105 billion have been redeemed. The share of external state debt in total state debt decreased from 23.5% in 2013 to 16.7% as at the end of 2016, i.e. by 6.8 p.p. In this period, the share of non-residents holding CZK-denominated government bonds in total state debt increased from 11.5% to 26.3%, i.e. by 14.8 p.p.

In the course of 2016, the decreasing trend of the share of households in holding of government bonds continued, declining by 1.9 p.p. as no issuance of savings government bonds was carried out in 2016, but reinvestment of the yields and redemptions. In the medium term, the Ministry expects gradual decrease of non-residential holders as zero-coupon government bonds are going to be redeemed.

Substitution of state treasury bills caused a change in the structure of its holders. As at the end of 2016, all state treasury bills in total nominal value of CZK 4.2 billion were held by domestic banks.

**Figure 28: Structure of CZK-Denominated Government Bonds by Holder Type**

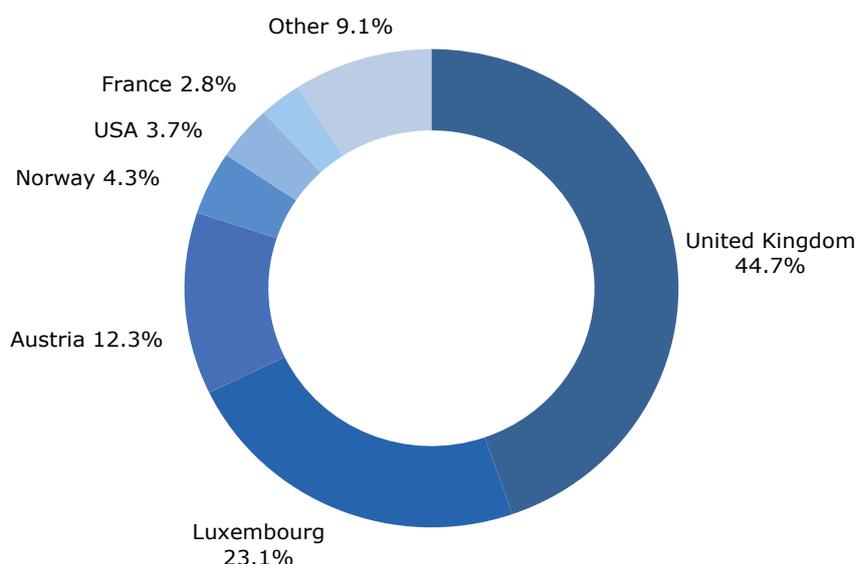


Note: As at the end of each year.  
Source: MoF, CDCP

In terms of geographical structure of non-residents holding domestic government bonds, non-residents from United Kingdom and Luxembourg dominate, accounting for more than 70% of all non-resident holders of domestic government bonds. As at the end of 2016, 89.7% of domestic government bonds

held by the non-residents were non-residents from European Union member country, being 3 p.p. more than in 2015, non-resident from European countries that are not members of European Union represent 5.4% and non-residents from other countries not lying in Europe represent 4.9% of non-residents.

**Figure 29: Structure of Non-Resident Holders of CZK-Denominated Government Bonds at the End of 2016**



Note: Excl. T-Bills.  
Source: MoF, CDCP

## Interest Rate Risk

Interest rate risk remains the most important market risk affecting the management of state debt. The Ministry manages interest rate risk using the strategic indicator - average time to re-fixing of state debt. Starting in 2016, the Ministry stipulates the medium-term target value of average time to re-fixing at 4.0 years in accordance with the new concept of interest rate risk management.

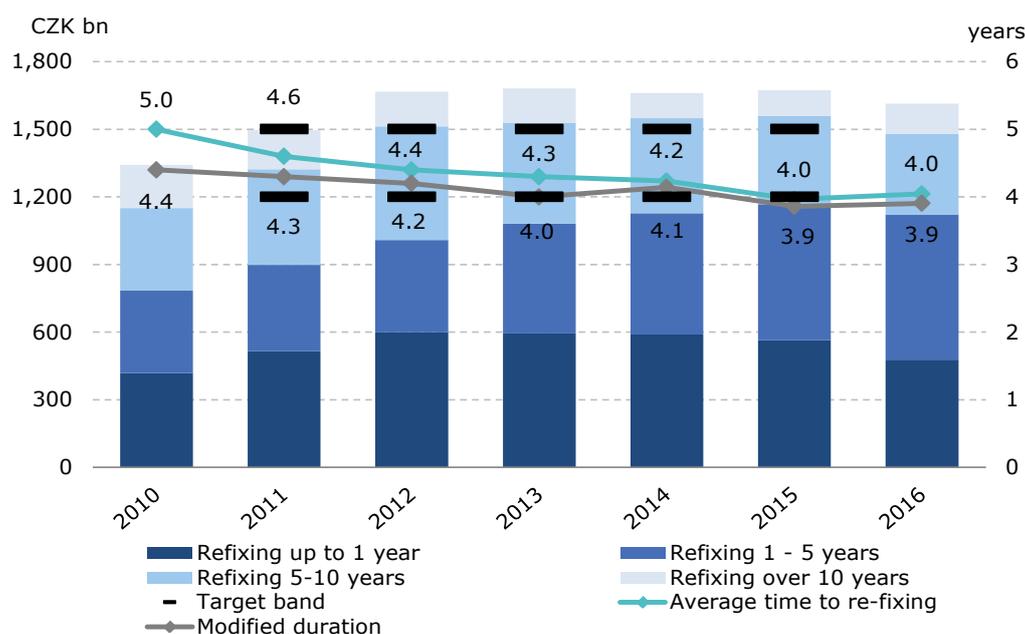
The average time to re-fixing of state debt as at the end of 2016 amounted to 4.0 years, and is thus at the target value for medium-term horizon. Compared to the end of 2015, there was an increase in this indicator by 0.1 year. The average monthly value of the average time to re-fixing of the state debt in 2016 amounted to 3.9 years and decreased by 0.2 year compared to 2015. In the area of interest re-fixing of state debt the Ministry managed to maintain such structure of debt portfolio in 2016 which corresponds approximately with the target value of the indicator.

In the segment of instruments bearing an interest at the short end of the yield curve, variable-rate medium-term and long-term government bonds were issued on primary and secondary market in a total nominal value of CZK 15.1 billion in 2016, which represents 7.1% of the total gross issue of CZK-denominated medium-term and long-term government bonds in 2016. The share of newly issued variable-rate medium-term and long-term government bonds in the total gross issue in 2015 decreased by 10.9 p.p. compared to 2015, when this share was 18.0%. In the segment of instruments bearing an interest at the short end of the yield curve, fixed-rate medium-term and long-term government bonds and zero-coupon medium-term government bonds due within 3 years were issued on the primary market in a total nominal value of CZK 103.2 billion in 2016, which represents 48.8% of the total gross issue of CZK-denominated medium-term and long-term government bonds in 2016. The share of fixed-

rate medium-term and long-term government bonds and zero-coupon medium-term government bonds due within 3 years in the total gross issue of CZK-denominated medium-term and long-term government bonds in 2016 increased by 6.2 p.p. compared to 2015, when this share amounted to 42.6%. The share of state treasury bills outstanding in the total state debt as at the end of 2016 amounted to 0.3%, having decreased by 4.8 p.p. from 5.0% compared to the end of 2015. The share of money market instruments in the total state debt as at the end of 2016 amounted to 0.3% and thus decreased by 5.0 p.p. from 5.2% as at the end of 2015.

The decrease of average time to re-fixing of state debt causes the interest expenditure of state debt to be generated on average on the shorter end of the yield curve, which should result in savings in interest expenditure in medium term. The price of this possibility to generate these savings is a higher risk of interest rates increase which could lead to achieving negative savings in coming years. In case of issuance of variable-rate medium-term and long-term government bonds in 2008 to 2016, the accrual savings in interest costs of approx. CZK 23 billion were achieved. To express realized savings, it is necessary to know the coupon payments, i.e. expressing the realized savings by issuing particular variable-rate note government bond is possible after the last coupon payment has been fixed. Total realized savings in state budget expenditure can be expressed only in connection with already redeemed issues of government bonds and in comparison to the situation, when fixed-rate government bond with equal time to maturity was issued instead of this variable-rate government bond. In case of Czech Republic Treasury Bond, 2009-2012, VAR %, the savings amounted to CZK 1.0 billion and in case of Czech Republic Treasury Bond, 2008-2016, VAR, the savings amounted to CZK 12.1 billion.

**Figure 30: Interest Re-fixing of State Debt**



Note: As at the end of each year.  
Source: MoF

Another indicator monitored by the Ministry in connection with interest rate risk management, for which the Ministry also sets a strategic goal, is the interest re-fixing of the debt portfolio within one year, this being the share of debt that is sensitive to fluctuations in interest rates on the financial market in the following year. For medium term horizon, the target band for this indicator has been set at 30.0 to 40.0% of the total state debt. This goal is in line with the average time to re-fixing medium-term target value of 4.0 years. As at the end of 2016, the share of interest re-fixing within one year in the total state debt amounted to 29.6%; it decreased by 4.1 p.p. compared to the end of 2015. The average monthly value of the interest re-fixing of the debt portfolio within one year in 2016 amounted to 32.0% and remains thus within the medium-term target band. Compared to 2015, the average monthly value of the interest re-fixing of the debt portfolio within one year decreased by 3.4 p.p. in 2016. Even in case of this indicator, the Ministry maintained such structure of the state debt portfolio in 2016 which would be in accordance with the stipulated target band.

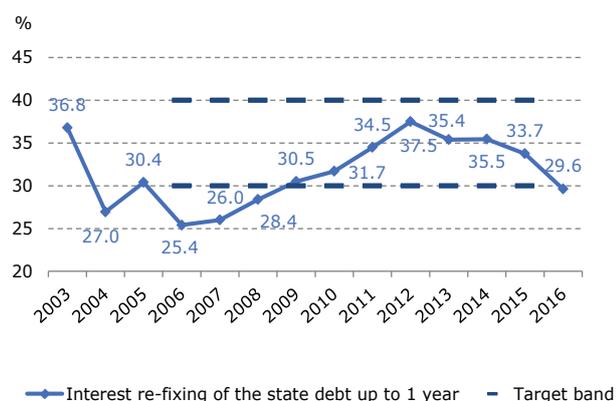
The structure of interest re-fixing of the debt portfolio within one year is important not only for the expression of short-term interest rate risk, but also affects long-term interest rate risk expressed by the indicator average time to re-fixing. The debt portfolio sensitive to interest rate fluctuation in the financial market in 2017 consists mainly of CZK-denominated variable-rate medium-term and long-term government bonds (43.2%) and CZK-denominated fixed-rate medium-term and long-term government bonds and zero-coupon medium-term government

bonds (33.5%). Received credits and loans account for 9.6% of this portfolio, government bonds issued on foreign markets including hedging account for 8.4%, savings government bonds account for 4.4% and state treasury bills and other money market instruments account for 0.9%.

Compared to 2015 there was a change in the structure of interest re-fixing of state debt, particularly in CZK-denominated fixed-rate medium-term and long-term government bonds and zero-coupon medium-term government bonds, where the share increased by 22.5 p.p. due to the single redemption of CZK-denominated fixed-rate medium-term and long-term government bonds and single redemption of zero-coupon medium-term government bond in total nominal value of CZK 160.3 billion in 2017 compared to two redemptions of CZK-denominated fixed-rate medium-term and long-term government bonds in total nominal value of CZK 62.6 billion in 2016. Medium-term and long-term variable-rate government bonds redemptions in total nominal value CZK 82.4 bn in 2016 in comparison to the gross issue of variable-rate medium-term and long-term government bonds on primary and secondary market in total nominal value of CZK 15.1 billion caused a decrease in the share of variable-rate medium-term and long-term government in interest re-fixing of the debt portfolio within one year by 5.3 p.p. compared to the end of 2015. Regarding the savings government bonds there was a decrease by 1.7 p.p. due to four regular redemptions in the total nominal value of CZK 16.8 billion in 2017 compared to four regular redemptions in the total nominal value of CZK 30.0 billion in 2016. The decrease of the share of money market

instruments in the interest re-fixing of state debt within one year is consistent with the decrease of their nominal value outstanding at the end of 2016, and is equal to 14.6 p.p. compared to the end of 2015. Regarding the government bonds issued on foreign markets, there was an decrease of 0.9 p.p. mainly due to the redemption of single foreign issue in the total nominal value of CHF 500.0 million in 2016 compared to no redemption of foreign issue in 2017. Regarding the EIB loans, there has been no change in the share of received credit and loans in interest re-fixing of the debt portfolio within one year.

**Figure 31: Interest Re-fixing of State Debt within 1 Year**

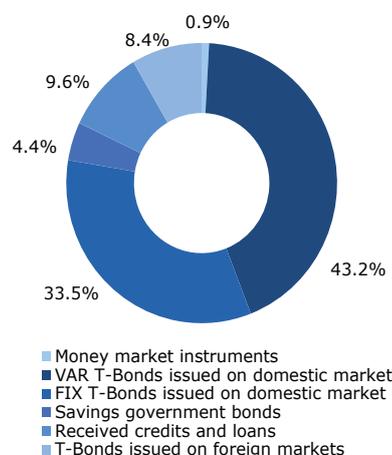


Note: As at the end of each year.  
Source: MoF

The Ministry also monitors the structure of CZK-denominated medium-term and long-term government bonds based on the current time to maturity, the original time to maturity and coupon rate. Thus constructed structure of bonds allows a detailed breakdown of interest expenditure on state debt service generated by CZK-denominated fixed-rate medium-term and long-term government bonds and zero-coupon medium-term government bonds. As at the end of 2016, these bonds have an average coupon rate of 2.96% p.a. These government bonds maturing in 2017 have an average coupon rate of 2.25% p.a. In the segment of original maturity of 2 to 4 years these government bonds have an average coupon rate of 0.19% p.a., in the segment of original maturity of 4 to 6 years there is no such

government bond outstanding, in the segment of original maturity of 6 to 8 years these government bonds have an average coupon rate of 1.50% p.a., in the segment of original maturity of 8 to 10 years these government bonds have an average coupon rate of 3.33% p.a., in the segment of original maturity of 10 to 15 years these government bonds have an average coupon rate of 3.97% p.a., and in the segment of original maturity over 15 years these government bonds have an average coupon rate of 3.88% p.a.

**Figure 32: Structure of Interest Re-fixing of State Debt within 1 Year**



Note: Balance as at the end of 2016.  
Source: MoF

The discount on state treasury bills and discounted savings bonds is expenditure for the state budget at the moment of the sale of the bond, and therefore does not affect interest expenditure on state debt service in future years. In 2016 the Ministry opened two new benchmark issues of CZK-denominated zero-coupon medium-term government bonds maturing in 2018 and 2019, the gross issue of which accounted for approximately 48.0% of the total gross issue of CZK-denominated medium-term and long-term government bonds on the primary and secondary market in 2016. Given the fact, that this new issue does not bear any interest, the indicator of average coupon rate for maturity in 2018 decreased by 0.78 p.p and in 2019 by 0.92 p.p.

**Table 12: Average Coupon Rates and Costs of T-Bonds Issued on Domestic Market by Year of Maturity**

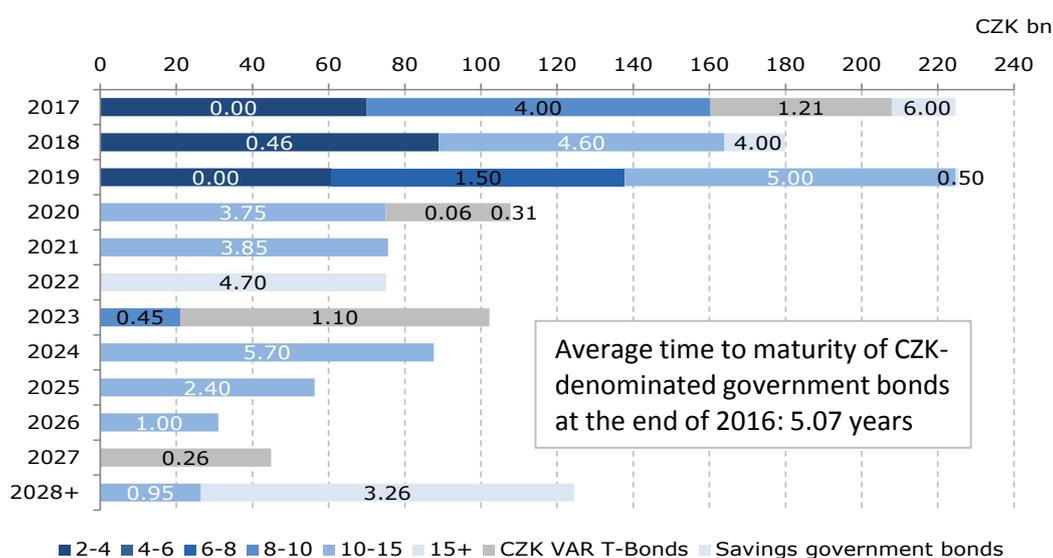
% p.a.	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027+	Average
<b>Average coupon rate<sup>1</sup></b>	2.25	2.35	2.45	3.75	3.85	4.70	0.45	5.70	2.40	1.00	2.77	2.96
<b>Average costs<sup>1</sup></b>	2.13	1.86	2.19	3.76	3.08	4.34	0.23	4.50	1.18	0.63	2.46	2.53

<sup>1</sup> Incl. only fixed-rate medium-term and long-term government bonds and medium-term zero-coupon government bonds.  
Note: Balance as at the end of 2016.  
Source: MoF

The Ministry also monitors the structure of CZK-denominated fixed-rate medium-term and long-term government bonds and CZK-denominated zero-coupon medium-term government bonds based on the current time to maturity, time to maturity at the moment of the sale of the bonds and achieved yield to maturity at the moment of sale. Thus constructed structure of bonds indicates the average annual costs of these bonds in the individual segments of the current time to maturity and time to maturity at the moment of the bond sale. As at the end of 2016 the average annual costs of the CZK-denominated fixed-rate medium-term and long-term government

bonds and CZK-denominated zero-coupon medium-term government bonds amount to 2.53% p.a. In 2017, government bonds with average annual costs of 2.13% p.a. will mature in the following structure: bonds issued as 0- to 2-year bonds with average annual costs of -0.28% p.a., bonds issued as 2- to 4-year bonds with average annual costs of -0.25% p.a., bonds issued as 4- to 6-year bonds with average annual costs of 3.02% p.a., bonds issued as 6- to 8-year bonds with average annual costs of 3.60% p.a., and bonds issued as 8- to 10-year bonds with average annual costs of 4.47% p.a.

**Figure 33: Maturity Profile of CZK-Denominated Government Bonds by Time to Maturity and Coupon Rate**



Average time to maturity of CZK-denominated government bonds at the end of 2016: 5.07 years

Note: Maturity profile as at the end of 2016. Segments represent original maturity. Data in individual segments represents the average coupon rate in % p.a. Excl. inflation-linked savings government bonds and T-Bills. Source: MoF

The decreasing yields achieved in auctions of medium-term and long-term government bonds in 2016 across the maturity profile caused the decrease of the average annual costs in all maturities in comparison to the average annual costs as at the end of 2015. The average annual costs decreased the most for medium-term and long-term government bonds maturing in 2019 (decrease of 0.97 p.p.) due to the achieved negative yields to maturity during the sale of the Government Bond of the Czech Republic, 2016–2019, 0.00 %.

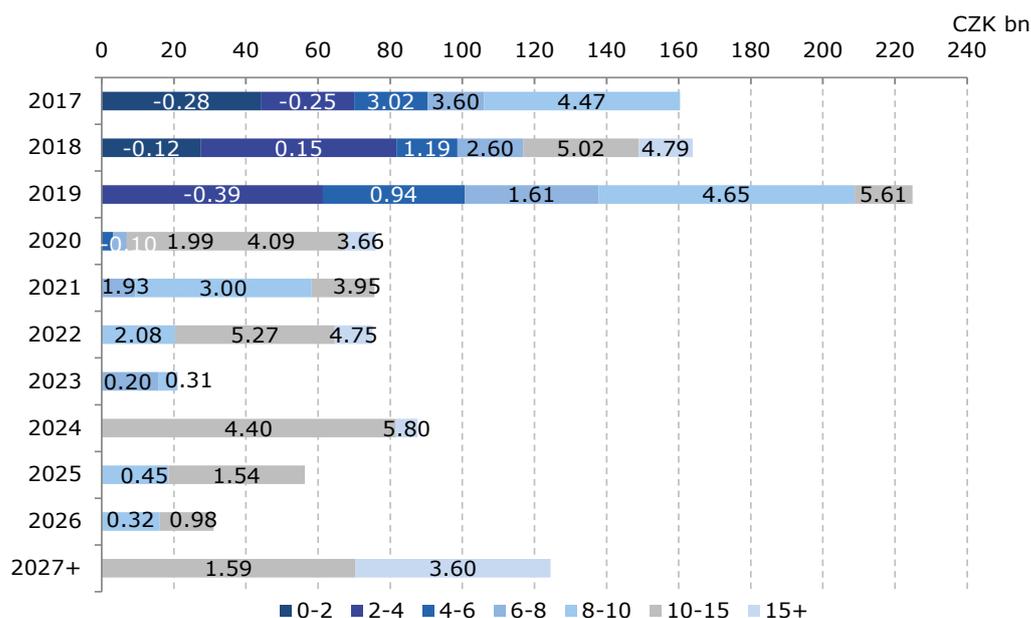
The average annual costs of medium-term and long-term government bonds maturing in 2018 decreased by 0.70 p.p. due to the achieved negative yields to maturity mostly during the sale of the Government Bond of the Czech Republic, 2016–2018, 0.00 %.

Due to the re-opening of the Government Bond of the Czech Republic, 2015–2017, 0.00 % achieving negative yields, the average annual costs of medium-

term and long-term government bonds maturing in 2017 decreased by 0.15 p.p.

Relatively low yields to maturity were achieved during the re-openings of fixed-rate government bonds with time to maturity over 5 year - Czech Republic Government Bond, 2015–2023, 0.45 %, Czech Republic Government Bond, 2014–2025, 2.40 %, Czech Republic Government Bond, 2015 - 2026, 1.00 %, Czech Republic Government Bond, 2013 - 2028, 2.50 % and Czech Republic Government Bond, 2015 - 2030, 0.95 % resulting in the decrease of average annual costs of medium-term and long-term government bonds maturing in 2023 by 0.07 p.p., decrease of average annual costs of medium-term and long-term government bonds maturing in 2025 by 0.36 p.p., decrease of average annual costs of medium-term and long-term government bonds maturing in 2026 by 0.48 p.p., and decrease of average annual costs of medium-term and long-term government bonds maturing in 2027 and later by 0.51 p.p.

**Figure 34: Maturity Profile of CZK-Denominated T-Bonds By Achieved Yield to Maturity**



Note: Maturity profile of CZK-denominated fixed-rate T-Bonds by time to maturity at the moment of sale as of the end 2016. Data in the individual segments represents the average yield to maturity at the moment of the sale of the medium-term and long-term government bonds in % p.a.  
Source: MoF

## Currency Risk

Currency risk is another market risk to which the state debt portfolio is exposed. In connection to currency risk, the Ministry monitors the development of the net foreign-currency exposure that measures the market risk to which the foreign-currency state debt is exposed in term of foreign-currency exchange rate movement after being adjusted for the foreign-currency exposure of state financial assets, where the foreign-currency debt represents the total nominal value of the debt portfolio denominated in the foreign currency. The Ministry also distinguishes between net foreign-currency exposure of state debt with the impact on state debt level and net foreign-currency exposure with the impact on the level of interest expenditure on state debt service. The value of net foreign-currency exposure of the state debt is affected also by derivative operations, which hedge a part of the foreign-currency debt against the negative development of currency exchange rates. The key indicator implemented in connection to managing currency risk is the share of net foreign-currency exposure of state debt with the impact on state debt level to the total state debt, for which a strategic limit of 15% + 2 p.p. was stipulated for 2016 and the share of net foreign-currency exposure of state debt with the impact on the level of interest expenditure on state debt service with a stipulated strategic limit of 15% + 2 p.p. for 2016 whereas it applies that the long-term exceeding of the 15% limit is not possible; overstepping by 2 p.p. serves only for the short-term overcoming of unexpected depreciation of the domestic currency. The level of thus stipulated limits is subjected to persisting

situation on FX market in situation that there will be no significant depreciation of Czech crown to Euro against current commitment of the CNB close to the level of 27 EURCZK, compared to the average development in November 2013, which did not happen.

At the end of 2016, the value of the share of net foreign-currency exposure to state debt with the impact on state debt level amounted to 11.5% and is therefore safely below the limit. Compared to the end of 2015, there was an increase in the indicator by 0.6 p.p. The value of the share of net foreign-currency exposure to state debt with the impact on the level of interest expenditure on state debt amounted to 11.5% at the end of 2016 and is therefore safely below the limit. Compared to the end of 2015, there was an increase in the indicator by 1.3 p.p. The increase of both indicator of net foreign-currency exposure is consistent with the decrease in state debt in 2016.

The sensitivity of the interest expenditure on state debt to the change in foreign-currency exchange rate is relatively low even in comparison with the sensitivity of the interest expenditure on the shift of the yield curve. As at the end of 2016, the net foreign-currency exposure of the state debt with the impact on state debt service is denominated solely in EUR. If the EURCZK foreign-currency exchange rate depreciated at the beginning of 2017 by 1% against the value as of the end of 2016, i.e. from 27.020 to 27.290, and this rate would remain

the same during 2017, the expected net interest expenditure on state debt service would increase by CZK 85 million. More information is contained in chapter Cost-at-Risk of State Debt. The dominant part of net foreign-currency exposure is comprised of EUR currency in the long term.

The share of foreign-currency state debt in total state debt as at the end of 2016 is 13.4%, where compared to the end of 2015 there was a decrease of the indicator by 0.2 p.p. due to the redemption of foreign issue of medium-term and long-term government bonds

## Benchmark Portfolio

In order to assess the structure of issuance calendars and the ability to profit from the development of government bond yields during the year and the shape of the yield curve, the Ministry created the synthetic benchmark portfolio consisting of the fixed-rate CZK-denominated bonds only.

The bonds contained in the benchmark portfolio are always issued on the auction day at the same nominal value as the real issued bonds. All bonds within the benchmark portfolio are issued with the same time to maturity, whereas this time to maturity guarantees the same average time to maturity of the synthetic portfolio of state debt containing the benchmark portfolio as the average time to maturity of the real portfolio as of at the end of the year. The average time to maturity of the state debt as of at the end of 2016 is 5.1 years. Provided the real issuance of CZK-denominated medium-term and long-term government bonds is substituted by the fixed-rate benchmark portfolio bonds with maturity of 5.6 years at the time of auction, the required average maturity of the synthetic portfolio of state debt will be 5.1 years as at the end of 2016.

The average weighted yield of the portfolio of CZK-denominated medium-term and long-term government bonds sold at auctions during 2016 using the average auction yield to maturity in case

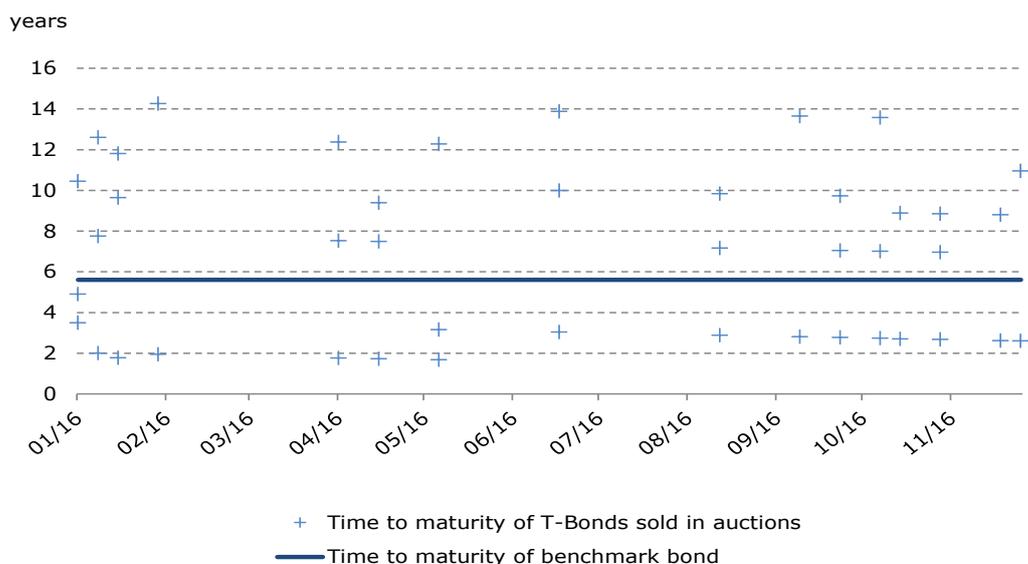
of the Czech Republic denominated in the Swiss franc in a total nominal value of CHF 500 million. In 2016, the Ministry did not carry out any foreign issues on foreign financial markets due to the relatively low gross borrowing requirement, relatively big interest in CZK-denominated government bonds on domestic market and also higher expenditure related to issuing government bonds on the foreign market, as compared to a similar issue of government bonds on the domestic market after taking into account the expenditure of hedging against currency risk.

of fixed-rate government bonds and average spread to reference interest rate achieved in auctions and respective forward values of PRIBOR reference interest rate in case of variable-rate government bonds amounted to 0.02% p.a. The average weighted yield to maturity of benchmark portfolio achieved in 2016 amounted to 0.04% p.a., i.e. is 2 basis points higher, then the yield of the real portfolio.

To assess the actual savings achieved in 2016, it is essential to express accrued interest costs of each issued bonds in the real and benchmark portfolio and then compare these two total accrued costs. Total annual accrued costs on all actually sold CZK-denominated medium-term and long-term government bonds in auctions during 2016 amounted to CZK 0.0 billion. Total annual accrued costs generated in benchmark portfolio amounted to CZK 0.1 billion.

It is necessary to point out that the achieved savings of CZK 0.1 billion on accrual basis is generated solely by the adjustment of issuance calendar and is given by the shape of the yield curve. It is also necessary to note, that the savings are expressed based on forward values of PRIBOR reference interest rate, the actual achieved savings can be calculated based on the actual future values of PRIBOR reference interest rate.

**Figure 35: Time to Maturity of T-Bonds Sold in Auctions in 2016 and Benchmark Bond**

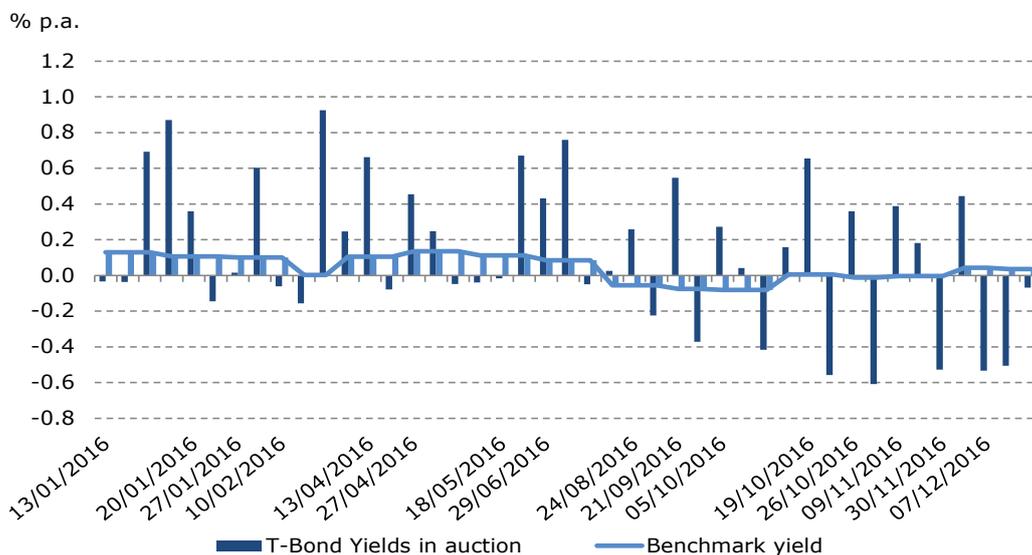


Source: MoF

Over the course of 2016, 40 auctions of fixed-rate CZK-denominated medium-term and long-term government bonds including zero-coupon medium-term government bonds at the total nominal value of CZK 181.7 billion and 3 auctions with variable-rate CZK-denominated medium-term and long-term government bonds at the total nominal

value of CZK 10.2 billion were held on the primary market. The average weighted time to maturity of all CZK-denominated medium-term and long-term government bonds sold at auctions on the primary market in 2016 reached 5.6 years and is identical to the time to maturity of the benchmark bond.

**Figure 36: Yields of CZK-Denominated T-Bonds Achieved in Auctions and Yields of Benchmark Bond in 2016**



Source: MoF

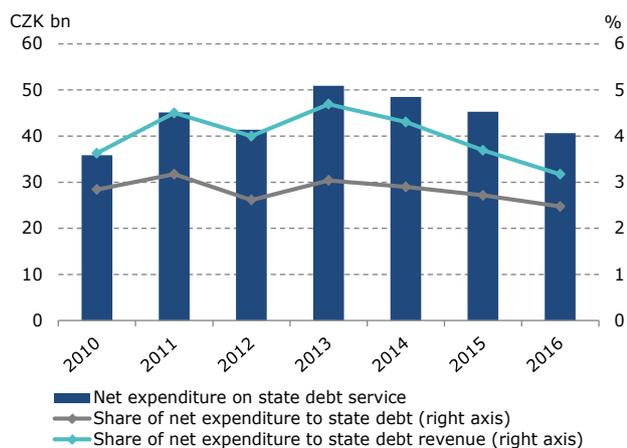
## 5 – State Debt Service Expenditure

### Cash and Accrued Expression

The net expenditure on state debt service are represented by the difference of gross expenditure on state debt service and revenue, which are cash-based (like the entire state budget); hence, it is not accrued according to the ESA2010 methodology, which takes place while preparing data for

the notification. The share of net expenditure on state debt service in revenue of state budget, in state debt and also in the GDP has been relatively stable over the past years and since 2014, there has been an apparent downward trend.

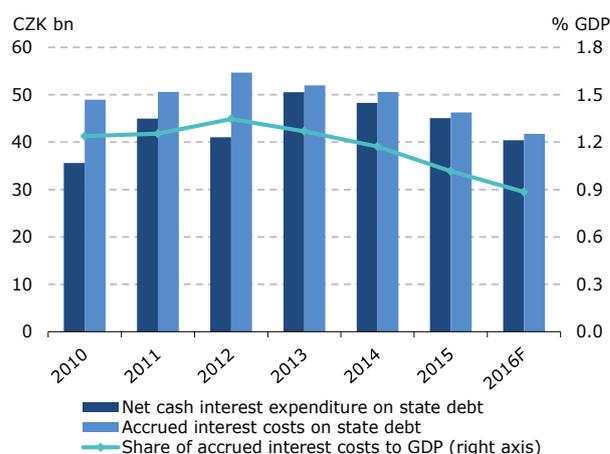
**Figure 37: Net Expenditure on State Debt Service**



Note: The revenue of state budget is adjusted of the revenue of chapter 396 – State Debt.  
Source: MoF

Monitoring the development of revenue and expenditure, or net expenditure on state debt service, does not always provide accurate information on which costs are really associated with state debt in the given period. For these purposes, the accrued-based expression of costs, based on the accumulation of interest costs on a daily basis, is more appropriate. The development of accrued interest costs has a tendency to show much lower volatility than the development of interest on a cash basis, because it is not influenced by time disproportions between the time of creation of given interest costs and the date of realization of related expenditure or revenue. Until 2012, accrued costs grew continuously and their share in GDP developed similarly. The decrease of accrued costs in 2013 to 2016 is due to the concurrence of decrease in the state debt and a decrease of yields of government bonds.

**Figure 38: Net Cash Expenditure and Accrued Costs on State Debt Service**



Note: The source of GDP in the ESA 2010 methodology in 2010 to 2015 is the CZSO, for 2016 the Macroeconomic Forecast of the Czech Republic – January 2017.  
Source: MoF, CZSO

The development of the balance of individual debt instruments is one of the factors affecting the relation between cash expenditure and accrued costs. When the balance increases, at first, the interest payments paid at the end of calculation period (i.e. mainly coupon of domestic and foreign medium-term and long-term government bonds, EIB loans interest, and swap interest) have an impact on costs on accrued basis, and then on cash basis at the end of this period. When the state debt increases, the accrued costs in the given period outweighs cash expenditure for this reason. On the contrary, for discounted instruments, interest is settled with the state budget on the issue date, i.e. at first, discounts have an impact on expenditure on cash basis, and then have gradual impact on costs on accrued basis throughout the duration of the instrument. A similar principle applies to discounts and premiums on medium-term and long-term government bonds.

A key role in the proportion between cash expenditure and accrued costs is also played by the development of interest rates. In case of their growth, there is a prevalence of accrued costs over cash expenditure for payments made at the end of the calculation period, and in the case of interest expenditure at the beginning of the instrument's duration, cash expenditure prevails over accrued costs. The similar principles apply in opposite sense in case of the interest rates decline.

Similarly, there may be a significant disproportion between cash expenditure and accrued costs in the given period, if an instrument with a high interest rate is due in the period, which is fully projected in cash interest but only partly in accrued interest, and is replaced with an instrument with a low interest rate, whose accrued costs starts being continually accounted from the issue or acceptance date, which may not be reflected in cash interest at all in the given period.

**Table 13: Cash Premiums and Discounts and Difference Between Cash Expenditure and Accrued Costs of T-Bonds**

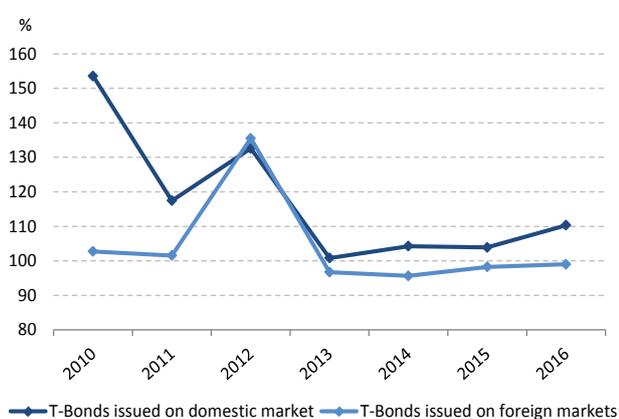
CZK bn	2010	2011	2012	2013	2014	2015	2016
<b>T-Bonds cash premiums</b>	9.4	7.4	11.8	5.8	6.0	7.1	8.6
<b>T-Bonds cash discounts</b>	0.0	0.7	0.8	1.4	1.3	0.6	0.0
<b>Difference between T-Bonds cash discounts and premiums</b>	-9.3	-6.8	-11.0	-4.4	-4.7	-6.5	-8.6
<b>Difference between T-Bonds cash expenditure and accrued costs</b>	-13.1	-5.7	-9.7	-0.3	-1.5	-1.3	-2.8

Note: T-Bonds issued on the domestic market.  
Source: MoF

The basic development trends of cash expenditure and accrued costs is largely based on the development of these indicators for medium-term and long-term government bonds issued on the domestic market, which constitute a dominant part of the state debt, and in 2016 accounted for almost three fourths of the total accrued costs on the state debt. The accrued costs on medium-term and long-term government bonds issued on the domestic market are higher than cash expenditure in 2016. In the case of medium-term and long-term government bonds issued on the foreign market, which accounted for more than one fifth of total accrued costs in 2016, the ratio

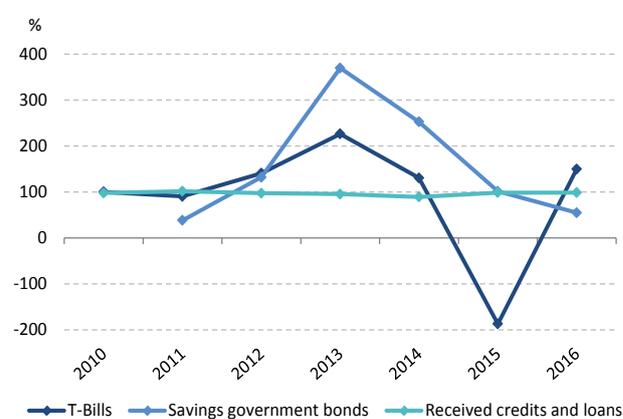
between accrual costs and cash expenditure is approximately balanced. In case of the state treasury bills, there was a strong prevalence of cash expenditure over accrued costs, or rather accrued revenue over cash revenue. With regard to the short maturity period of most provided loans in a form of lending facilities, the difference between cash and accrued interest is not very significant. The same applies to short-term loans received, and with regard to the usually short period of re-fixing, in most cases also loans received from the European Investment Bank. Regarding the savings government bonds, the cash expenditure prevail over accrued costs.

**Figure 39: Percentage Share of Accrued Costs in Net Cash Interest Expenditure of T-Bonds**



Source: MoF

**Figure 40: Percentage Share of Accrued Costs in Net Cash Interest Expenditure of Other Components of State Debt**



Source: MoF

## Budget for the Chapter 396 – State Debt in 2016

The budget for the Chapter 396 – State debt is composed annually based on Cost-at-Risk analysis. The budgeted net interest expenditure on state debt service for 2016 are between 95% and 99% percentile of CaR indicator, which means that these expenditure will not be exceeded with more than 95% probability.

The expected net expenditure amounted to CZK 44.8 billion. The actual net expenditure on the Chapter in 2016 amounted to CZK 40.7 billion, i.e. about 0.9% of GDP and 3.2% of total state budget revenue excluding the revenue of the Chapter 396 – State debt. The difference between real expenditure compared to the originally approved budget of CZK 52.3 billion

was CZK 11.7 billion, which partially contributed to the better-than-expected general government sector performance in 2016. The difference between the real and budgeted net expenditure is mainly due to the lower expenditure, while the revenue achieved slightly higher level than the approved budget. Compared to 2015, there was a decrease of net interest expenditure of about 10.2%.

In the course of 2016, a total of CZK 10.9 billion was transferred to other budget chapters from the State debt chapter via budgetary transfers. The resulting difference in actual net expenditure adjusted for the budgetary transfers compared to the final budget was CZK 0.8 billion.

**Table 14: Budget Expenditure and Revenue of the State Debt Chapter in 2016**

CZK mil.	Actual 2015	Budget 2016		Actual 2016	% Execution	Index 2016/2015 (%)
		Approved	After changes			
<b>1. Total interest expenditure and revenue</b>	52,995 (-) 7,914	51,766 -	40,878 -	40,383 -	98.8 -	76.2 -
<b>Internal debt</b>	42,779 (-) 7,900	40,331 -	30,861 -	30,512 -	98.9 -	71.3 -
Money market instruments	18 (-) 146	(-) 44 -	(-) 109 -	(-) 155 -	142.3 -	- 841.5 -
Savings government bonds	2,111	3,142	3,073	3,072	100.0	145.6
T-Bonds on domestic market	40,649 (-) 7,753	37,232 -	27,897 -	27,595 -	98.9 -	67.9 -
<b>External debt</b>	10,216 (-) 14	11,430 -	10,013 -	9,871 -	98.6 -	96.6 -
T-Bonds on foreign markets	9,822 (-) 14	10,450 -	9,601 -	9,513 -	99.1 -	96.8 -
Received credits and loans	394	979	412	357	86.8	90.8
<b>Bank accounts</b>	- 0	5 -	5 -	0 -	-4.4 -	- -
Revenue (-) and expenditure (+) from account deposits	- 0	5 -	5 -	0 -	-4.4 -	- -
<b>2. Fees</b>	<b>199</b> <b>0</b>	<b>550</b> <b>-</b>	<b>550</b> <b>-</b>	<b>271</b> <b>0</b>	<b>49.3</b> <b>-</b>	<b>136.4</b> <b>94.2</b>
<b>Total chapter balance</b>	<b>45,280</b>	<b>52,316</b>	<b>41,428</b>	<b>40,654</b>	<b>98.1</b>	<b>89.8</b>

Note: (-) means revenue (gains).  
Source: MoF

The difference between actual and budgeted expenditure is given by several factors. The main factor is particularly the character of chapter's budgeted expenditure construction. The budgeted expenditure represents a boundary of expenditure, which will be exceeded with certain probability. This probability is usually between 1% and 5%. Thanks to higher budgeted expenditure compared to expected expenditure it is possible to hold a part of the state debt in the form of variable-rate instruments, which bear interest usually lower than fixed-interest government bonds on average, and thus achieve savings on state budget expenditure. The next factor is then significant and during preparation of state budget for 2016 unexpected decrease in yields of government bonds to new historical lows particularly in the second half of 2016, while the yields of government bonds bearing an interest on short end of the yield curve reached negative values during whole year 2016. The Ministry reacted flexibly to this situation and sold out zero-coupon government bond of the Czech Republic with maturity in November 2017 in the total nominal value of CZK 10.3 billion and issued two new issued of zero-coupon government bonds maturing in January 2018 and July 2019 in total nominal value of CZK 101.6 billion. The total extra revenue of the state budget due to the issuance of government bonds and state treasury bills with a negative yield to maturity amounted to CZK 803.2 million.

The total savings on state budget due to the sales of variable-rate government bonds instead of selling fixed-rate government bonds with equal time

to maturity, i.e. maintaining equal refinancing risk, between 2008 and 2016 amounted to approximately CZK 23 billion. In order to express the realized savings, it is necessary to know the values of all coupon payments, i.e. the realized savings as a result of issuing particular variable-rate government bond is possible to express after the fixing of the last coupon rate. The realized savings on state budget expenditure so far can be expressed only in connection with already redeemed government bonds compared to situation, when the fixed-rated government bond with equal time to maturity would have been sold. The savings connected to issuance of Czech Republic Treasury Bond, 2009-2012, VAR % amounted to approximately CZK 1.0 billion and savings connected to issuance of Czech Republic Treasury Bond, 2008-2016, VAR amounted to approx. CZK 12.1 billion.

The interest costs on state debt service in 2016 in accrued expression reached CZK 41.7 billion, of which net interest costs for state debt issued in 2016 account for approximately CZK 0.1 billion. The total nominal value of state debt issued in 2016 is CZK 242.4 billion including state treasury bills roll-over. Due to the time heterogeneity of individual borrowing operations in 2016, the accrued costs on this debt will gradually increase to CZK 0.3 billion in 2019 due to the achieved negative yields in state treasury bills auctions and medium-term and long-term government bonds with relatively short time to maturity, as the individual instruments, which are parts of this debt issued in 2016, will be redeemed.

**Table 15: Interest Expenditure and Accrued Costs of the Newly Issued State Debt**

CZK bn	Nominal value	Net interest expenditure / accrued costs			
		2016	2017F	2018F	2019F
<b>Cash basis expression</b>	242.4	-8.5	1.3	1.3	1.2
<b>Accrued basis expression</b>	242.4	0.1	0.1	0.2	0.3
<b>Gross issuance of T-Bonds</b>	211.6	0.2	0.1	0.2	0.3
<b>Gross issuance of state treasury bills</b>	30.8	0.0	0.0	-	-

Source: MoF

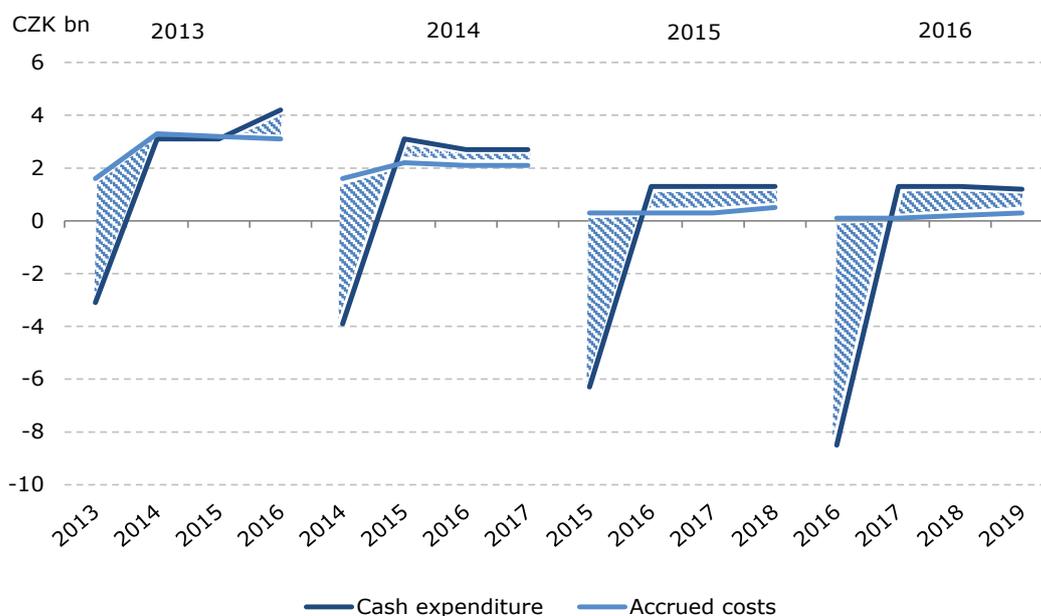
The completely different development of net expenditure on the same debt can be seen when expressed in cash basis, where the value of these expenditure in 2016 is CZK -8.5 billion. In 2017 to 2019 the net interest expenditure on newly issued state debt are expected to amount to approx. CZK 1.3 billion and CZK 1.2 billion. Newly generated state debt in 2016 brought state budget cash revenue in total amount of CZK 8.5 billion due to the re-openings of issues with high coupon rate, which together with low market yields generated auction premiums in 2016. State budget revenue

from state debt issued in 2016 will be compensated in the following years by higher cash expenditure compared to accrued costs. It applies, that the net cash expenditure and accrued costs on the new state debt are equal for the whole existence of this debt. The following figure shows that in 2013 to 2016 the debt issued in each of those years generated cash revenue in the year of issue, which was mainly caused by the consistent decrease in market yields. If new issues of government bonds with market coupon rates were issued in each year and the coupon payments were made at the end of

the year, the accrued costs and cash expenditure would be identical in the year of issue. For this reason, the accrued expression of costs on state debt is more accurate and revealing, since it is not affected by the re-opening of issues with other than market coupon rate, which, however, cannot be avoided in the real world, because small volumes of government bond issues cause illiquidity of these

bonds and ultimately may cause an increase in costs due to the illiquidity premium. The figure below shows the further decrease in current accrued interest costs for newly issued state debt, which is related firstly to the reduction of the total issue of debt instruments and secondly to the lasting decrease of yields from government bonds.

**Figure 41: Net Cash Interest Expenditure and Accrued Interest Costs of Newly Issued Debt**

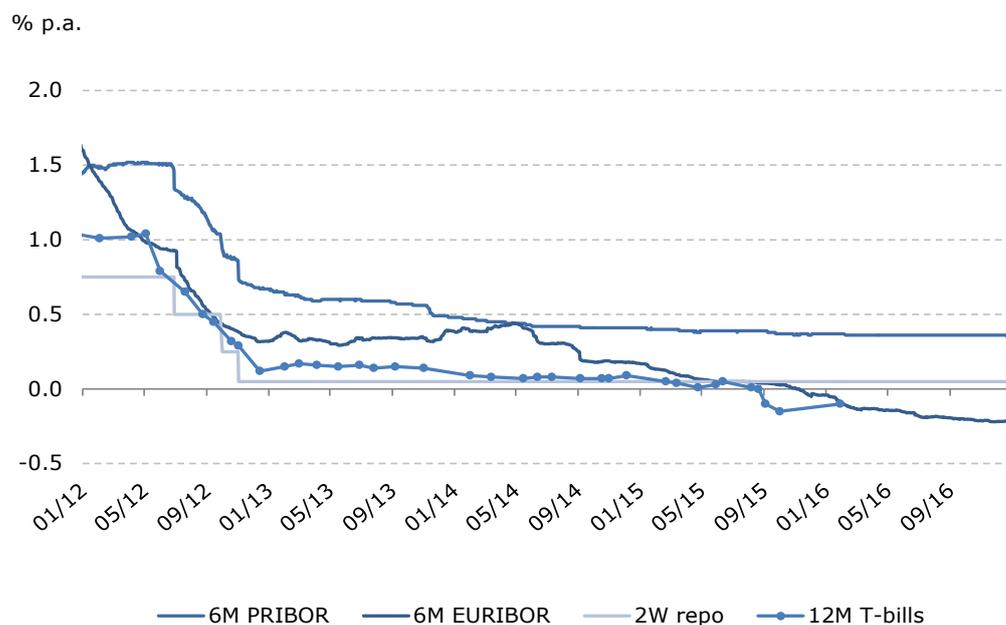


Source: MoF

In 2016, the additional decrease of yield curves on the CZK and EUR money market was observed. The 6-month PRIBOR rate continued to decrease in 2016 with very low volatility. 6-month EURIBOR rate

has decreased too, but showed significantly higher volatility in 2016. The Czech National Bank kept the basic interest rate (2-week repo rate) at a historical low at 0.05% p.a. during the whole 2016.

**Figure 42: Development of Rates: 6M PRIBOR, 6M EURIBOR and 2W Repo and 12M T-Bills Yields**

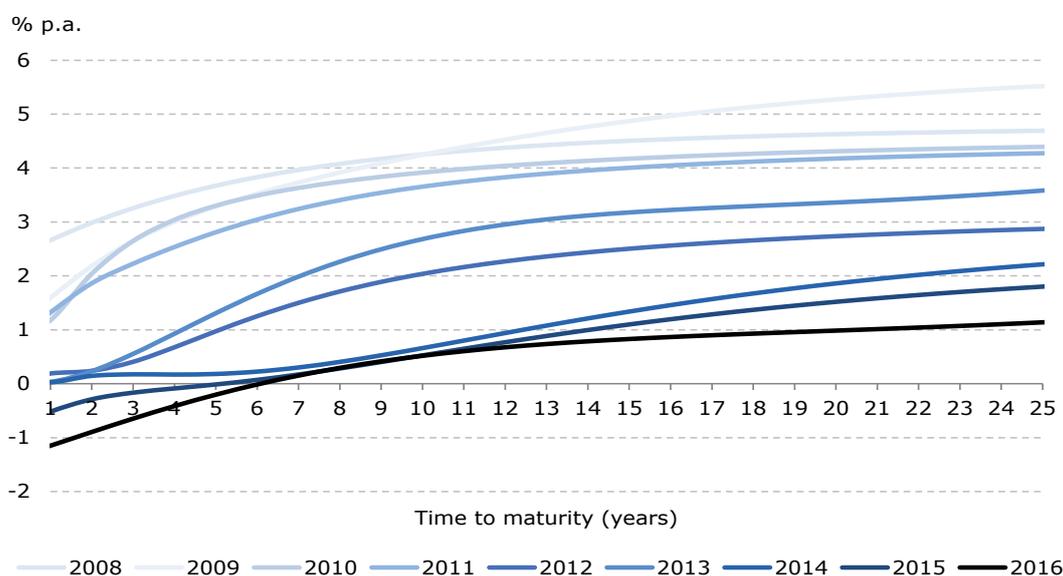


Source: Bloomberg, CNB

At first, the yields of CZK-denominated government bonds slowly increased during the first quarter of 2016 across the whole yield curve, then they slightly decreased, and from the end of the first quarter of 2016 they began to slightly increase. They began to slightly decrease in the beginning of June, the yields of CZK-denominated government bonds with time to maturity over 5 years decreased to their historical lows by the end of the third quarter of 2016. During the last quarter of 2016 the yields of CZK-denominated government bonds slightly increased and then gradually decreased. For the whole second half of 2016 the yields of CZK-denominated government bonds with relatively short time to maturity of 5 years were negative, while during the whole second half of 2016 the yields of CZK-denominated government

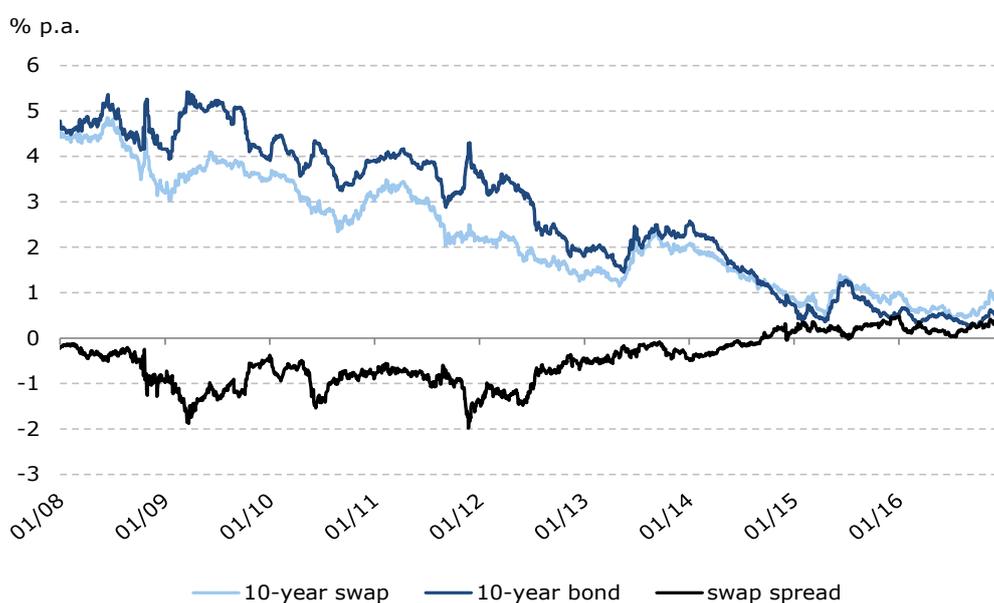
bonds with time to maturity of 3 years decreased to its new historical lows by the end of 2016. The difference between swap rate and yield of government bonds, i.e. the swap spread, was positive during 2016 for the 10-year maturity. The positive values of swap spread confirms the attractiveness of the Czech Republic as an issuer of government bonds for investors and concurrently confirms the correctness of Ministry's decision to model risk premium of government bonds in less conservative manner. The value of swap spread was approx. 50 basis points at the beginning of 2016 in case of 10-year maturity; at the end of December 2016 it reached the value of 40 basis points. The average value of swap spread in case of 10-year swap was approx. 20 basis points in 2016.

**Figure 43: Yield Curve of CZK-Denominated Government Bond**



Note: "Par" yield curve of CZK-denominated fixed-rate government bonds is constructed on the basis the extended Nelson-Siegel model, called Svensson model.  
Source: MoF, Bloomberg, MTS

**Figure 44: Swap Rate, Yield to Maturity of CZK and Swap Spread**



Source: MoF, Bloomberg

## Cost-at-Risk of State Debt

In measuring and managing interest rate risk, the Ministry applies a sophisticated model framework known as Cost-at-risk (CaR) for measuring and managing interest risk since 2005, which is based on Value-at-Risk methodology and simulates future expected and maximum interest expenditure for a particular degree of risk, which is derived from the volatility of the time structure of interest rates. The stochastic element of the CaR model is the yield curve, and the deterministic element is the dynamic structure of the state debt portfolio, which is based on the basic scenario of the funding program while respecting the set strategic goals for managing financial risks.

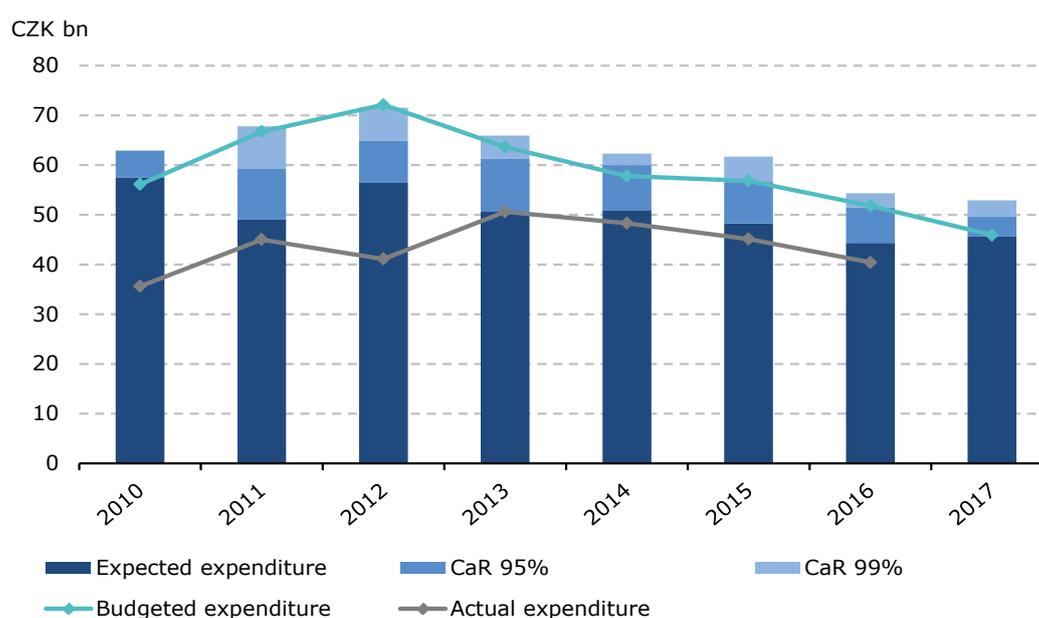
The primary goal of the model is to determine the maximum interest expenditure on state debt, which with 95% or 99% probability will not be exceeded (CaR 95% and CaR 99%). The secondary goal of the model is to estimate the actual interest expenditure on state debt. The outcomes of

the applied CaR analysis are not just the values of CaR 95% and CaR 99% percentiles, but also whole probabilistic distributions of interest expenditure in any moment of time, which makes this analysis a powerful tool for analysis of state budget expenditure in relation to the issuance and the financial market conditions.

The simulation framework operates separately with interest expenditure and interest revenue. The outcome of aggregation of interest expenditure and interest revenue is the net interest expenditure on state debt. Interest expenditure do not include fees related to state debt service, which are of a deterministic nature.

Over all the years in which the CaR methodology has been applied, the model has fulfilled the primary goal, since the predicted maximum interest expenditure was not exceeded in any of those years.

**Figure 45: Net Interest Expenditure and Cost-at-Risk**



Note: In 2010 through 2016 original budgeted net interest expenditure, in 2017 budgeted net interest expenditure included in the State Budget Act of the Czech Republic for 2017.

Source: MoF

**Table 16: Net Interest Expenditure and Cost-at-Risk**

CZK bn	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Budgeted expenditure<sup>1</sup></b>	56.1	66.7	72.1	63.6	57.8	56.8	51.8	45.9	50.8	52.1
<b>Actual expenditure</b>	35.6	45.0	41.1	50.6	48.3	45.1	40.4			
<b>Expected expenditure</b>	57.5	49.1	56.4	50.6	50.9	48.2	44.3	45.6	48.0	49.8
<b>CaR 95%</b>	62.9	59.2	64.9	61.3	60.0	56.6	51.4	49.6	53.8	57.0
<b>CaR 99%</b>	-	67.8	71.5	65.9	62.3	61.7	54.3	52.9	56.4	61.6

<sup>1</sup> In 2010 through 2016, the original budgeted net interest expenditure. In 2017 budgeted net interest expenditure included in the State Budget Act of the Czech Republic for 2017. In 2018 and 2019 medium-term outlook.

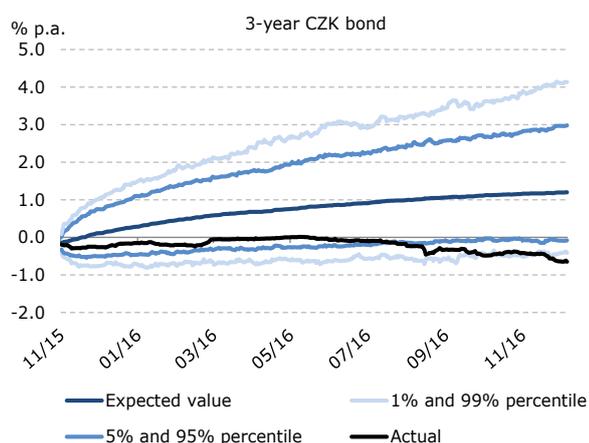
Source: MoF

## Cost-at-Risk for 2016

In The Czech Republic Government Debt Management Annual Report 2015, the Cost-at-Risk of state debt for 2016 was published. Calculation of the CaR indicator is based on simulations of the time structure of interest rates as at 25 November 2015.

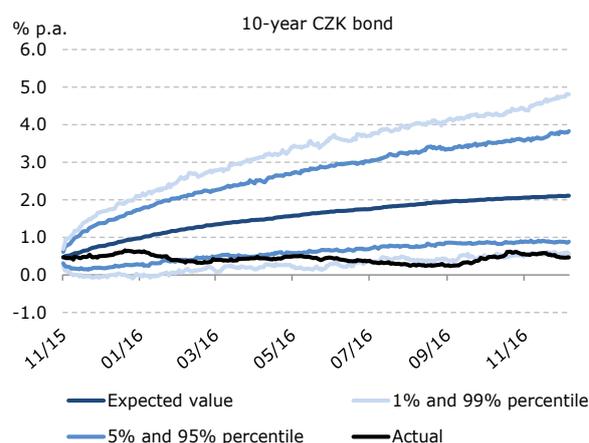
A comparison of the real development of the three- and ten-year government bonds interest rates with their simulations for the period from 25 November 2015 to 31 December 2016 is shown in the following figures.

**Figure 46: Actual vs. Simulated 3-Year CZK-Denominated T-Bonds Yield**



Source: MoF

**Figure 47: Actual vs. Simulated 10-Year CZK-Denominated T-Bonds Yield**



Source: MoF

A comparison of the actual net interest expenditure on state debt service with the simulated values of expected expenditure (simulation average) and interest expenditure in CaR (95% and 99% percentile of simulations) in 2015 and 2016 is

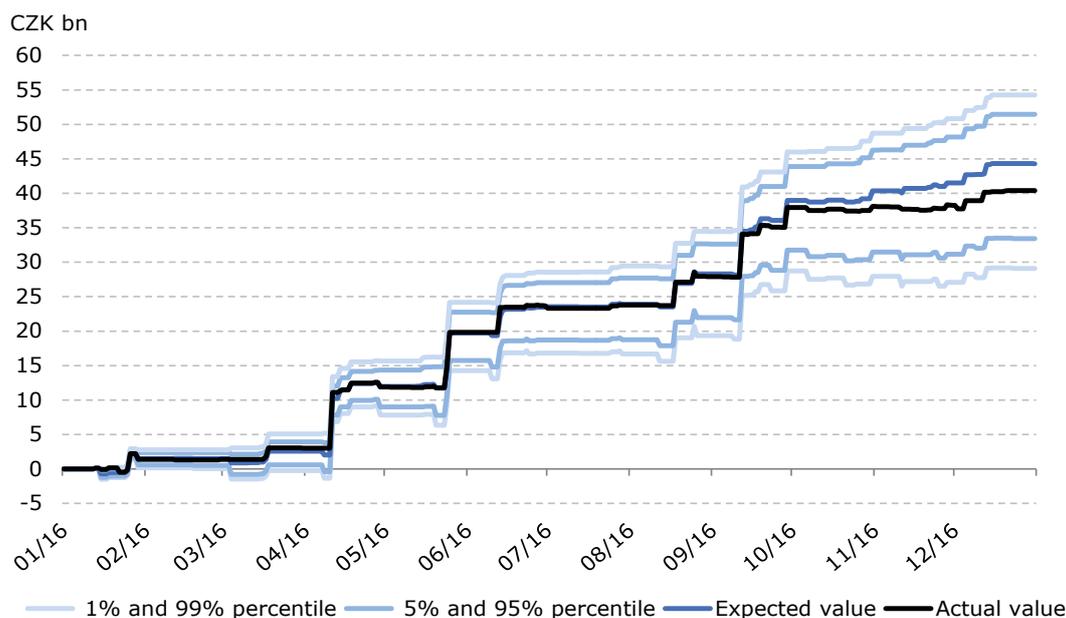
shown in the following table. In 2016 the net interest expenditure amounted to CZK 40.4 billion, the expected net interest expenditure in 2016 predicted by the model amounted to CZK 44.3 billion.

**Table 17: Expected vs. Actual Net Interest Expenditure in 2015 and 2016**

CZK bn	2015	2016
<b>Actual expenditure</b>	45.1	40.4
<b>Expected expenditure</b>	48.2	44.3
<b>CaR 95%</b>	56.6	51.4
<b>CaR 99%</b>	61.7	54.3
<b>Difference between expectation and reality</b>	3.1	3.9

Source: MoF

**Figure 48: Actual vs. Simulated Net Interest Expenditure in 2016**



Note: Interest expenditure are calculated using the cash principle according to the current state budget methodology.  
Source: MoF

The net interest expenditure in 2016 remained below the CaR 95% and CaR 99% level, having been estimated at CZK 51.4 billion and CZK 54.3 billion, respectively. The primary goal of the model was thus achieved, as the actual interest expenditure on the state debt remained below the CaR 99% level and the fulfilment of the state budget balance for 2016 approved by the Chamber of Deputies from the title of State debt chapter budget was not jeopardized. The expected net interest expenditure predicted by the model are CZK 3.9 billion higher compared to the actuality.

The difference in expected net interest expenditure is given primarily by the decrease of yields of CZK-denominated medium-term and long-term government bonds compared to the model-given expectations, which latest practically throughout whole 2016. In particular, the yields of government bonds bearing an interest on the long end of yield curve reached their historically lows in the third quarter of 2016, while the yields of government

bonds bearing an interest on the short end of the yield curve reached negative values during almost whole year 2016 and from the beginning of the second quarter of 2016 they decreased to their new historical lows by the end of 2016. The Ministry flexibly reacted to the situation on financial market and increased the issuance on short end of the yield curve. The difference stemming from this reaction amounted to CZK 2.6 billion and is given by the change in the structure of issuance calendar of medium-term and long-term government bonds. The difference of approx. CZK 0.3 billion is caused by the lower-than-expected yields of state treasury bills, as they were also negative in the whole 2016. Total additional revenue of state budget in term of issuance of government bonds and state treasury bills with negative yield to maturity amounted CZK 0.8 billion. The next significant factors were the lower levels of PRIBOR and EURIBOR reference interest rates. The difference amounted to approx. CZK 0.9 billion due to the lower-than-expected values of reference rate.

### Cost-at-Risk for 2017 to 2019

Due to the relative stabilisation of the financial and economic situation in the Eurozone and EU, the government's rational fiscal policy and the CNB's zero interest rate policy, it was possible to reduce the budgeted expenditure on state debt service for 2017 by CZK 6.0 billion compared to the approved budget for 2016, and compared to medium-term outlook for the state budget for 2017 and 2018, which the Strategy operated with, by CZK 7.3 billion in both years.

The net interest expenditure in 2017 expected by the model amounts to CZK 45.6 billion. Net interest expenditure at risk, i.e. CaR 99% amounts to CZK 52.9 billion (CaR 95% CZK 49.6 billion). The actual net interest expenditure in 2017 will not be more than CZK 7.3 billion higher compared to expected expenditure with 99% probability. The budgeted net interest expenditure of the state debt service in 2017 are CZK 45.9 billion and are thus CZK 0.3 billion above the expected net

interest expenditure and CZK 3.7 billion below the 95% percentile of CaR indicator.

The following table shows in detail the development of cumulative net interest

expenditure on state debt in 2017 predicted by the model always at the end of the month. It also contains the respective critical values of CaR 95% and CaR 99%.

**Table 18: Monthly Development of Cumulative Net Interest Expenditure in 2017**

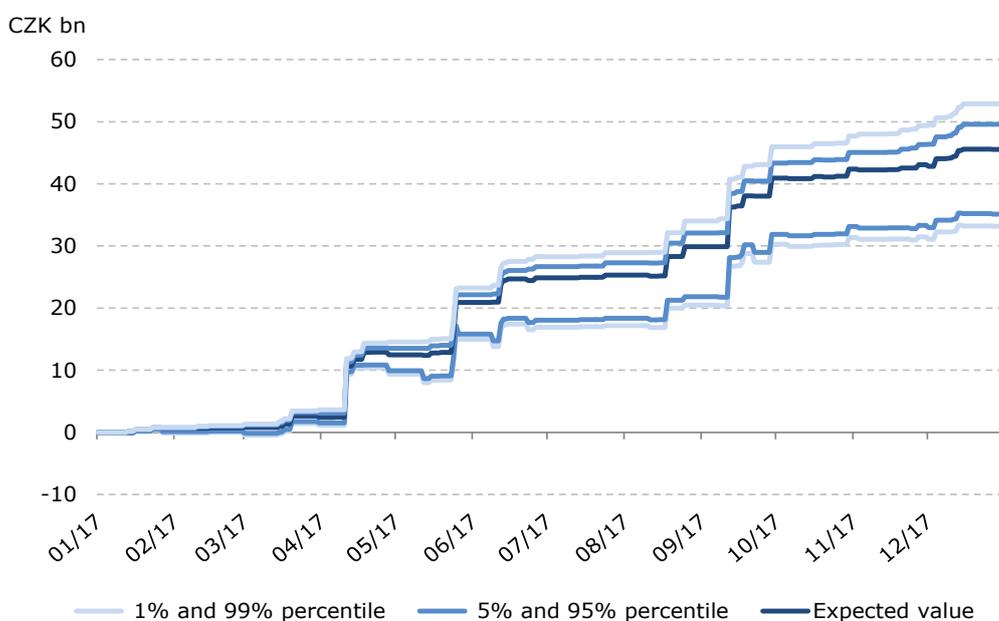
CZK bn	1	2	3	4	5	6	7	8	9	10	11	12
<b>Expected expenditure</b>	0.6	0.8	2.4	12.5	20.9	24.9	25.3	29.9	40.9	42.4	43.1	45.6
<b>CaR 95%</b>	0.7	1.0	3.1	13.5	22.1	26.7	27.3	32.1	43.4	45.1	46.3	49.6
<b>CaR 99%</b>	0.8	1.1	3.6	14.5	23.2	28.3	28.9	34.0	46.0	47.7	49.3	52.9

Source: MoF

The graphic presentation of simulations of cumulative net interest expenditure on the state debt service in 2017 stipulated on a daily basis is shown in the following figure. The figure also

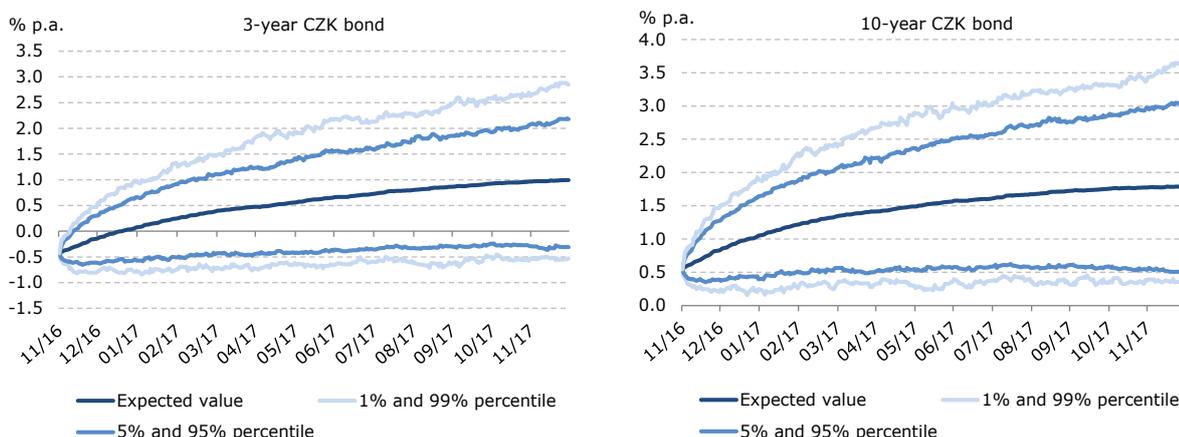
shows the expected values of net expenditure and the respective 5% and 95%, 1% and 99% percentiles of simulated values.

**Figure 49: Simulation of Net Interest Expenditure of State Debt During 2017**



Note: Development of net interest expenditure on a daily basis.  
Source: MoF

**Figure 50: Simulation of CZK-Denominated Interest Rates 2017**



Source: MoF

The Ministry is also concerned with the problem of interest rates hikes, which could occur e.g. via a sharp increase in the Czech National Bank basic rate, sudden deterioration of the economic situation in the euro area, a sharp increase of the risk premium for the Czech Republic, etc. The Ministry strives to quantify the impact of these circumstances on net interest expenditure on the state debt service. Each economic event has an effect on a certain part of the yield curve, which is why it is important for

the Ministry to observe the shift in the individual parts of the yield curves separately. The following table quantifies the consequences of a potential increase in interest rates at the short end of the yield curve, at the long end of the yield curve and along the entire curve evenly, all over the course of 2017. This analysis also enables the uneven shifting of the short and long end of the yield curve and arbitrary selection of the date of this shift.

**Table 19: Development of Net Interest Expenditure in Case of Sudden Interest Hikes**

CZK bn	Current model	Shift of rates at the short end of the yield curve		Shift of rates at the long end of the yield curve		Shift of the whole yield curve	
		by 1 p.p.	by 5 p.p.	by 1 p.p.	by 5 p.p.	by 1 p.p.	by 5 p.p.
<b>Expected expenditure</b>	45.6	46.9	52.3	48.9	59.7	50.2	66.5
<b>CaR 95%</b>	49.6	50.9	56.2	52.7	62.4	54.0	69.1
<b>CaR 99%</b>	52.9	54.2	59.5	55.9	65.1	57.2	71.8

Note: The shock in the form of a one-time shift in the yield curve will occur at the start of 2017.  
Source: MoF

The shift of the yield curve for CZK-denominated government bonds at the short end by 1 p.p. upwards in 2017 would bring an increase in the expected net interest expenditure by CZK 1.3 billion. If the rates increased at the long end of the yield curve by 1 p.p., the expected net interest expenditure would increase by CZK 3.3 billion. The shift of the entire yield curve of CZK-denominated government bonds by 1 p.p. upwards would result in an increase in expected net interest expenditure by approximately CZK 4.6 billion.

The Ministry also quantifies the sensitivity of net interest expenditure on the state debt service in connection with the change of FX rate of Czech crown. This sensitivity is relatively low even in comparison with the sensitivity of interest expenditure in connection with the shift of the yield curve. As at the end of 2016, the net foreign-currency exposure of the state debt with the impact on the state debt service is denominated solely in EUR.

**Table 20: The Increase of Net Interest Expenditure in Case of EURCZK FX Rate Hike**

CZK bn	EURCZK FX rate shift	
	by 1%	by 10%
<b>Expected expenditure</b>	0.085	0.853
<b>CaR 95%</b>	0.086	0.864
<b>CaR 99%</b>	0.087	0.868

Note: The shock in form of a one-off depreciation of CZK FX rate will occur in the beginning of 2017.  
Source: MoF

If the EURCZK FX rate depreciated by 1% at the beginning of 2017 compared to the level as at the end of 2016, i.e. from 27.020 to 27.290 and remained during the whole 2017, then the expected net interest expenditure on state debt service would increase approx. by CZK 85 million.

The Ministry also quantifies the impact of an unplanned increase of the state budget deficit on the interest expenditure on the state debt service. If the state budget deficit of the Czech Republic were to increase by CZK 10.0 billion in 2017, and assuming the financing of this increase by means of the equal increase of nominal values of medium-term and long-term government bonds sold in auctions according to the current issue calendar, this change would result in a decrease of expected net interest expenditure on the state debt service by CZK 0.1 billion, but in following years the net state budget expenditure would amount to approximately CZK 0.1 billion. The impact on the state budget on a cash basis is very sensitive to selected methods of financing the deficit increase. If a bond with a premium is issued, the increased gross issue may not be reflected in a growth of net expenditure with regard to the cash principle, and will cause a reduction of net interest expenditure, the expense will be apparent only in later years in the form of increased coupon payments. If the accrued approach is applied, the increase of the gross issue would be apparent immediately.

Within three-year simulation horizon, the Ministry also constructs CaR indicators for 2018 and 2019. The expected value of net interest expenditure is CZK 48.0 billion in 2018 and CZK 49.8 billion in 2019, which is due primarily to the use of a less conservative

model for the risk premium of government bonds and the current historically lowest yields of government bonds.

In the medium-term outlook of the Czech Republic's budget for 2018 and 2019, the expenditure frameworks for the chapter 396 - State debt are under CaR 95% percentile. For 2018, the expenditure framework is CZK 50.8 billion and is CZK 3.0 billion below 95% percentile of interest expenditure. For 2019, the expenditure framework is CZK 52.1 billion and is CZK 4.8 billion below 95% percentile of interest expenditure. The rising trend of medium-term outlook for budgeted and predicted interest expenditure is due mainly to the volatility of interest rates, which increases with the rising scope of the prediction. Given that the state budget is always compiled only for the following year, the prediction horizon of interest rates when compiling the budget

for the following year will be shorter, and assuming that market conditions remain unchanged, it may be expected that the value of CaR 95% and CaR 99% indicators will decline due to the lower volatility of the interest rate prediction.

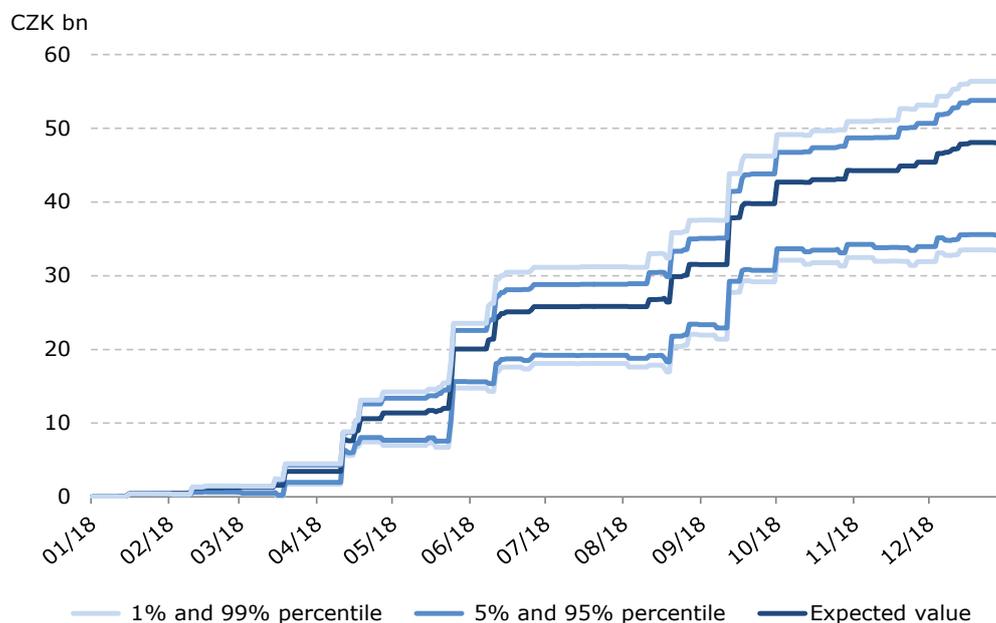
The expected net interest expenditure on state debt in 2018 predicted by the model amounts to CZK 48.0 billion. The following table shows in detail the development of cumulative net interest expenditure on state debt in 2018 predicted by the model always at the end of the month. It also contains the respective critical values of CaR 95% and CaR 99% indicators. The difference between the CaR 99% indicator and expected costs in 2018 is higher than the same difference in 2017. The reason for this difference is higher uncertainty with longer yield curve prediction horizon, which increases the volatility of rates.

**Table 21: Monthly Development of Cumulative Net Interest Expenditure in 2018**

CZK bn	1	2	3	4	5	6	7	8	9	10	11	12
<b>Expected expenditure</b>	0.4	1.3	3.5	11.4	20.1	25.8	25.8	31.5	39.8	44.3	45.4	48.0
<b>CaR 95%</b>	0.4	1.4	4.3	13.4	22.6	28.8	28.8	35.1	43.8	48.7	50.7	53.8
<b>CaR 99%</b>	0.4	1.5	4.5	14.3	23.5	31.2	31.2	37.6	46.2	50.9	53.1	56.4

Source: MoF

**Figure 51: Simulation of Net Interest Expenditure on State Debt during 2018**



Note: Development of net interest expenditure on a daily basis.  
Source: MoF

Expected net interest expenditure on state debt in 2019 predicted by the model amount to CZK 49.8 billion. The following table shows in detail the development of cumulative net interest expenditure on state debt in 2019 predicted by the model always at the end of the month. It also contains the respective critical values of CaR 95%

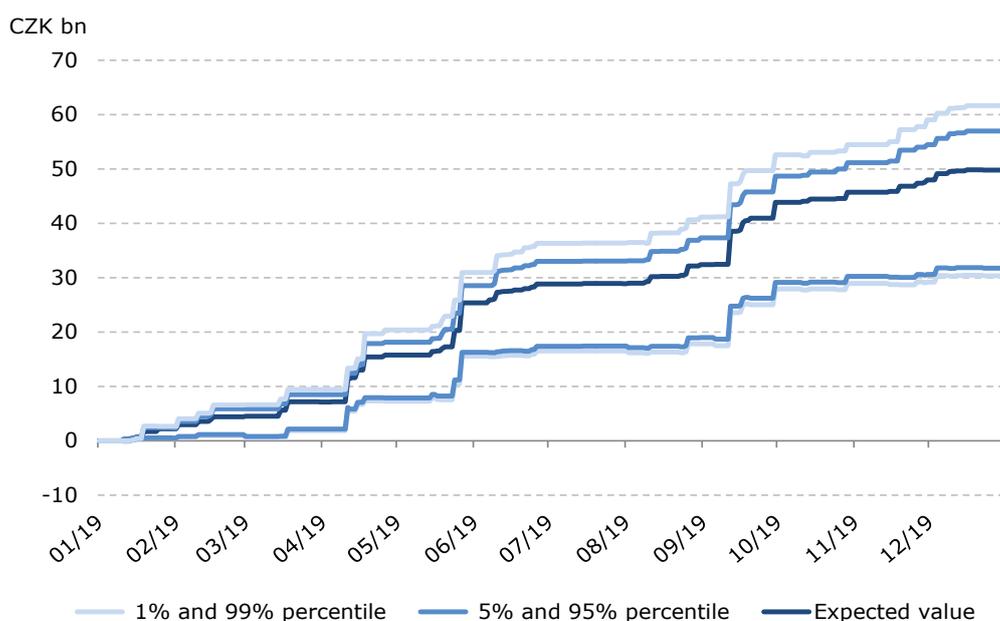
and CaR 99%. The difference between the CaR 99% indicator and expected expenditure in 2019 is higher than the same difference in 2017 and 2018. The reason for this difference is higher uncertainty with longer yield curve prediction horizon, which increases the volatility of rates.

**Table 22: Monthly Development of Cumulative Net Interest Expenditure in 2019**

CZK bn	1	2	3	4	5	6	7	8	9	10	11	12
<b>Expected expenditure</b>	2.2	4.4	7.2	15.8	25.4	28.9	28.9	32.4	43.9	45.7	48.0	49.8
<b>CaR 95%</b>	2.4	5.9	8.5	18.1	28.5	33.0	33.1	37.3	48.7	51.1	54.5	57.0
<b>CaR 99%</b>	2.7	6.6	9.4	20.4	31.0	36.3	36.4	41.2	52.6	54.5	59.0	61.6

Source: MoF

**Figure 52: Simulation of Net Interest Expenditure on State Debt during 2019**



Note: Development of net interest expenditure on a daily basis.  
Source: MoF

## Efficient Frontier and Alternative Debt Portfolios

The Ministry's primary goal is always the problem-free financing of the gross borrowing requirement at minimal costs related to the specific level of risk. Due to the fact that the gross borrowing requirement in 2017 consists mainly of government bonds, it is crucial to issue bonds with parameters that will satisfy investors' demand. Another important factor that the Ministry must monitor is the liquidity of the secondary bond market. To maintain a certain level of liquidity of the secondary government bond market, it is necessary to ensure a relatively high total nominal value outstanding for every bond issue. According to the portfolio theory, situations may occur where the issuance of bonds according to the issuance calendar so as to satisfy investor demands and guarantee the liquidity of the secondary government bond market may create certain inefficiency in the management of the debt portfolio. This inefficiency may theoretically be eliminated by concluding swap operations, but this involves additional costs and the need to manage credit risk. To compare the real funding strategy with other alternative strategies in terms of costs and risks, the Ministry has conducted

an analysis based on the CaR method as from 2012, the aim of which is the construction of an efficient frontier.

In classic portfolio management, the yields and risks of individual potential investments within the given portfolio are compared directly among each other. On the contrary, the main factor influencing the portfolio structure in debt portfolio management is the time to maturity of the individual instruments. Fluctuations in yield curves and the need for refinancing (re-fixing) cause every refinancing (re-fixing) bear the risk of increased costs. Portfolios with a higher share of instruments bearing an interest at the short end of the yield curve are exposed to the risk of higher costs compared to portfolios with a higher share of instruments that bear an interest at the long end of the yield curve.

The efficient frontier depicts a curve that combines the risk and expected costs of alternative debt portfolios, which contain only bonds with one specific constant time to maturity. The bonds in this

portfolio are issued always with a constant time to maturity, i.e. re-openings are not considered, and on its maturity date it is replaced with a bond with the same constant time to maturity. The efficient frontier represents a frontier of risk and expected costs combinations, which cannot be exceeded by any alternative debt portfolio. Hence, there is no debt portfolio that would enable the reduction of risk and simultaneously expected costs below the risk and expected costs of the portfolios containing only bonds with a constant time to maturity.

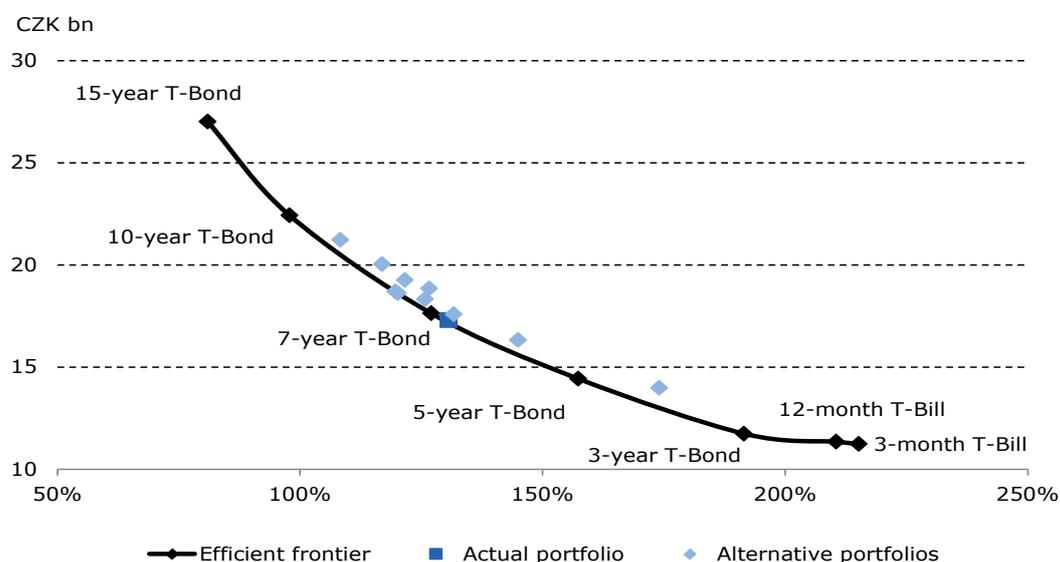
For all alternative debt portfolios in the conducted analysis, all financing of gross borrowing requirement in following years is carried out on the dates of actually planned auctions using only the bonds according to the definition of alternative portfolio (without considered reopening of the issue). The efficient frontier consists of seven alternative debt portfolios containing only newly issued bonds with a constant time until maturity. These bonds are: 3-month and 12-month state treasury bills and 3-year, 5-year, 7-year, 10-year and 15-year medium-term and long-term government bonds. Compared to the efficient frontier constructed in the previous year, there is an evident decrease of yields of government bonds in three-year simulation horizon, which is reflected in the decrease of expected costs in coming years. Furthermore, very low yields at the short end of the yield curve are apparent, where the expected costs in the case of the issue of 3-year government bonds do not differ significantly from the expected costs in the case of state treasury bills.

In addition to the seven alternative portfolios lying on the efficient frontier, the Ministry also analysed ten more alternative portfolios with instruments, which correspond more to the real demand of

investors. These ten alternative portfolios are created analogically as portfolios lying on the efficient frontier, a mix of government bonds with various maturities, through which the gross borrowing requirement in forthcoming years is funded.

Two alternative portfolios consider zero net issue of state treasury bills in all years, whereas in the first portfolio government bonds with a maturity of 3, 5, 7, 10 and 15 years are equally issued. In the second portfolio, bonds with various times to maturity are also issued, whereas the average time to maturity of the entire debt portfolio is secured at 6.0 years in medium-term horizon. A third to sixth alternative portfolios finance the gross borrowing requirement evenly always with two instruments; these are 15-year government bonds and 3-month state treasury bills; 10-year government bonds and 12-month state treasury bills; 10-year government bonds and 3-month treasury bills; 5-year government bonds and 12-month state treasury bills. The seventh and eighth alternative portfolios are consider evenly issuing state treasury bills with a maturity of 3 and 12 months and government bonds with a maturity of 10 and 15 years, whereas the chosen instruments are issued equally in case of the former alternative portfolio and the time to maturity of 5.5 year of the whole newly issued debt is maintained at the end of each year in the latter alternative portfolio. The ninth and tenth alternative portfolios consider issuing 3-, 5-, 7-, 10- and 15-year government bonds and 3- and 12-month state treasury bills, whereas the debt instruments are issued equally in one strategy and in the other, one half consists of issuing state treasury bills and the other half of issuing medium-term and long-term government bonds, whereas the proportion of maturities within the individual groups is equal.

**Figure 53: Efficient Frontier and Alternative Debt Portfolios**



Source: MoF

The expected costs of the individual debt portfolios are represented by the cumulated expected costs of state debt service in 2017 to 2019. In all cases, the costs are expressed on an accrued basis. Thereby the comparable position of each alternative portfolio is achieved. In the case of the real portfolio, this results in the clearing of impacts of reopened issues, which in the short-term simulation scope lead to over-valuation of the risk and expected cost. To determine the degree of risk of the individual debt portfolios, the cumulative CaR 99% indicator is used in 2017 to 2019; particularly, the horizontal axis shows the maximum possible percentage change of expected costs, at which the cumulative CaR 99% indicator is achieved.

The figure shows that no alternative or actual debt portfolio, which includes the mix of government bonds with various times to maturity, lies on the efficient frontier. The actual debt portfolio containing the current actual gross borrowing requirement funding strategy and alternative portfolios calculating with zero net issue of state treasury bills are very close to the efficient frontier. The actual debt portfolio lies near a cluster of alternative portfolios, which consist of the mix of government bonds with similar average time to

maturity. The cumulated expected accrued costs of newly issued debt according to the actual issue calendars amount to CZK 17.3 billion with a risk of approximately 131%. There is therefore a risk that the actual realized costs for next 3 years will exceed the expected costs by 131%, or in absolute terms by CZK 22.6 billion. Compared to the previous year expected costs decreased significantly and the risk decreased. If the average time to maturity of the newly issued actual debt decreased, the position of the real portfolio would be closer to the x-axis and move away from y-axis, i.e. the expected interest costs would decrease and the risk that they would be exceeded, would increase.

In the context of the efficient frontier analysis, it should be noted that there is no optimal portfolio that can be obtained by quantitative optimization. In the real world, where it's not possible to issue only new issues of government bonds in each auction and not take into account the needs of investors, only the portfolios approaching the efficient frontier can be chosen. The choice of the part of the efficient frontier, where this approach of the portfolio to the efficient frontier occurs, primarily depends on the risk preference or aversion of the management.

## 6 - Primary and Secondary Market for Government Bonds

### Primary Dealers of Czech Government Bonds

The status of a primary dealer in Czech government bonds was contractually formalised on 1 October 2011, when the Primary Dealer Agreement for Czech Republic Government Securities (hereinafter the Agreement), became valid. According to best international practice, the Agreement specifies the rights and obligations of individual members of the group of primary dealers, and provides an institutional framework for cooperation between the Ministry and financial institutions in funding and state debt management. Only a primary dealer who has entered into this Agreement with the Ministry has the right as of 1 January 2012 to participate in auctions according to the currently valid Rules for the Primary Sale of Government Securities Organized by the Czech National Bank (official notification of CNB as of 18th December 2015 regarding 2nd version of the Primary Sale of Government Securities Organized by the Czech National Bank).

A Primary Dealer is granted exclusive access to primary auctions of government bonds and the Ministry's operations on the secondary market, such as buybacks and exchanges of government bonds, tap sales, lending facilities (in the form of repo operations and since December 2015 also in the form of collateralized loans of medium-term and long-term government bonds) or reverse repo operations. Primary dealers are also the Ministry's counterparts for foreign issues, private placements and other state's financial operations. Primary dealers also have an exclusive right to participate in regular meetings with the representatives of the Ministry, at least twice a year, and to be

involved among others in the preparation of issuance calendars for government bonds as well as to propose alternative instruments for financing the borrowing requirement, including follow-up operations for risk management.

A primary dealer's obligation is to purchase at least 3% of the total nominal value of medium-term and long-term government bonds sold in the primary auctions (including non-competitive parts) during four consecutive quarters. Another important obligation is for the participant to fulfil the quoting obligations on a secondary market through the Designated Electronic Trading System (DETS) with the aim of achieving a highly liquid secondary market of government bonds. For 2016 and 2017, MTS Czech Republic was chosen as such platform once again based on the decision taken by the Primary Dealers Committee on 16 October 2015. The system of notifications sent in the case of failure to meet one of the two basic obligations has proven to be useful also during 2016 and the Ministry will continue to apply this practice.

The group of primary dealers of Czech government bonds is confirmed by the Ministry for every calendar year. In 2016, the Czech Republic had a total of 12 primary dealers. In comparison to 2015 there is one primary dealer who left the group of primary dealers. All privileges and obligations of Barclays Bank PLC arising from the Agreement are not in force as of 1st January 2016. System of primary dealership ran smoothly in 2016 and Ministry did not receive any proposals to amend the current institutional arrangement of the market.

**Table 23: List of Primary Dealers of Czech Government Bonds in 2016**

Year 2016	
Citibank Europe plc	ING Bank N. V.
Erste Group Bank AG / Česká spořitelna, a.s.	J. P. Morgan Securities plc
KBC Bank NV / Československá obchodní banka, a. s.	Morgan Stanley & Co International PLC
Deutsche Bank AG	PPF banka, a.s.
Goldman Sachs International	Société Générale / Komerční banka, a.s.
HSBC Bank plc	UniCredit Bank Czech Republic and Slovakia, a.s.

Source: MoF

## Evaluation Results of the Primary Dealers for 2016

The modification of evaluation of the primary dealers maintains two primary evaluation criteria and their weights; one focused on the primary market another on the secondary market. The importance of a functional and liquid secondary market is demonstrated by the allocation of high weight to the latter criterion, which allows the appraisal of active market-makers in relation to their performance in government bond auctions on the primary market. The maximum evaluation of each primary dealer is 100 points, calculated on a relative basis.

The method of evaluating primary dealers is described in detail in the appendix to this document. The activity of the primary dealers is thus evaluated every quarter based on the Aggregate Performance Evaluation Index (APEI) defined in Annex I to the Agreement, always for four consecutive evaluation periods. The evaluation period according to Article 1 of the Agreement is every calendar quarter.

**Table 24: Overall Evaluation of Primary Dealers in 2016**

Ranking	Primary Dealer	Points
1.	<b>KBC Bank NV / Československá obchodní banka, a.s.</b>	<b>68.1</b>
2.	PPF banka a.s.	64.9
3.	Citibank Europe plc	59.7
4.	Erste Group Bank AG / Česká spořitelna, a.s.	48.1
5.	J.P. Morgan Securities plc	45.0
6.	Société Générale / Komerční banka, a.s.	41.6
7.	UniCredit Bank Czech Republic and Slovakia, a.s.	34.1

*Note: Maximum possible number of points in overall evaluation is 100.  
Source: MoF*

**Table 25: Primary Market in 2016**

Ranking	Primary Dealer	Points
1.	<b>PPF banka a.s.</b>	<b>37.4</b>
2.	KBC Bank NV / Československá obchodní banka, a.s.	32.2
3.	Erste Group Bank AG / Česká spořitelna, a.s.	30.6
4.	Citibank Europe plc	29.0
5.	J.P. Morgan Securities plc	25.7
6.	Société Générale / Komerční banka, a.s.	23.9
7.	UniCredit Bank Czech Republic and Slovakia, a.s.	18.7

*Note: Maximum possible number of points in this criterion is 55.  
Source: MoF*

**Table 26: Secondary Market in 2016**

Ranking	Primary Dealer	Points
1.	<b>KBC Bank NV / Československá obchodní banka, a.s.</b>	<b>35.9</b>
2.	Citibank Europe plc	30.7
3.	PPF banka a.s.	27.5
4.	J.P. Morgan Securities plc	19.3
5.	Société Générale / Komerční banka, a.s.	17.7
6.	Erste Group Bank AG / Česká spořitelna, a.s.	17.5
7.	UniCredit Bank Czech Republic and Slovakia, a.s.	15.4

*Note: Maximum possible number of points in this criterion is 45.  
Source: MoF*

## MTS Czech Republic and Secondary Government Bond Market

One of the long-term objectives for state debt management is to support the maximum possible liquidity of issues of Czech government bonds on the secondary market, which the Czech Republic aimed to fulfil through the implementation of the MTS Czech Republic electronic trading platform for the secondary market of CZK-denominated government bonds. Pilot operation was launched on 11 July 2011, continuing with live operation after three months. To support the secondary market liquidity the Ministry may consider executing secondary market operations such as tap sales, exchanges of illiquid bonds for benchmark bonds

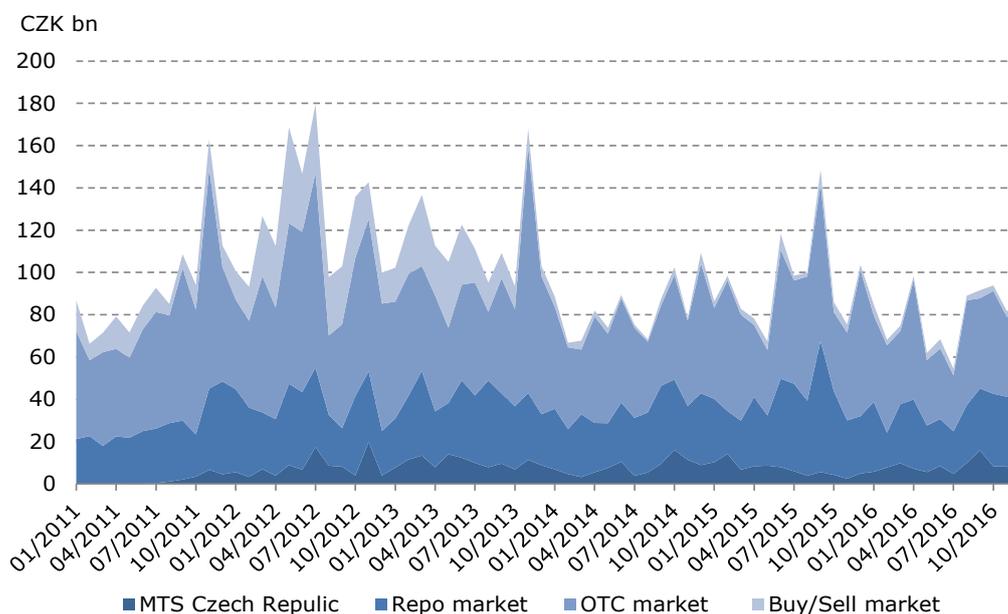
and buy-backs of illiquid bonds with short time to maturity.

The MTS Czech Republic electronic trading platform also enables monitoring of the behaviour of market participants and compliance with the set rules in real time as a basis for the subsequent evaluation of their performance and point awarding. Implementation of this platform also enabled expansion of the group of primary dealers by new foreign market-makers of the domestic market. The MTS Czech Republic electronic trading platform became an integrated part of the whole secondary

market for CZK-denominated Czech government bonds. Market participants are provided with transparent information on price development

of the Czech government bonds and with the continual access to the offer of Czech government bonds.

**Figure 54: Nominal Value of Trades Carried out on Secondary Market**



*Note: Expressed in nominal value of traded government bonds in individual segments of secondary market; repo market and buy/sell market adjusted for double-counting of transactions. Including Ministry's operations on MTS Czech Republic and repo market.  
Source: MoF, CDCP, MTS*

An effective secondary market in terms of minimising transaction costs and maintaining market depth and price stability is a necessary condition for the issuance activity of the state and smooth and cost-effective funding over the long term. Liquid and deep secondary market also helps to absorb potential shocks on financial markets. In order to meet this task, the Ministry gradually expanded the list of benchmark issues from 1 January 2016, based on a previous discussion with primary dealers at the Primary Dealer Committee, as well as the MTS Czech Republic Committee (composed of the representatives of the Ministry and the primary dealers), by the government bonds with maturity in 2023, 2026 and 2030 issued in 2015, whose nominal value outstanding was sufficient to allow the fulfilment of quoting obligations of the market maker. Further, the issue maturing in 2036 was removed from the list based on the agreement with the primary dealers, due to the significant shortage

of bonds available for trading, which did not allow primary dealers to cover short positions. The issue of government bonds with maturity in 2036 was replaced by the issue with maturity in 2030 that still enables the Ministry to construct the long end of the yield curve of Czech Republic government bonds.

From 1 January 2017, Czech Republic Government Bonds, 2007-2017, 4.00 % and 2014-2018, 0.85 % were removed from the list of benchmark issues due to the time to maturity of less than 1.25 years in accordance with the Agreement. On the other side, Czech Republic Government Bond, 2014-2020, VAR % has been added to the list of benchmark issues with the aim to cover a loophole between the time to maturity of 3 and 5 year. As a result of the changes in benchmark issues the total number of bonds subject to quoting obligation decreased to 12.

**Table 27: Benchmark Issues of Government Bonds as at 1 January 2017**

Issue No.	Issue	ISIN	Coupon	Maturity Date	Maturity Basket
41 <sup>st</sup> issue	ČR, 4.60 %, 18	CZ0001000822	4.60%	18/8/2018	A
56 <sup>th</sup> issue	ČR, 5.00 %, 19	CZ0001002471	5.00%	11/4/2019	A
76 <sup>th</sup> issue	ČR, 1.50 %, 19	CZ0001003834	1.50%	29/10/2019	A
<b>91<sup>st</sup> issue<sup>1</sup></b>	<b>ČR, VAR %, 20</b>	<b>CZ0001004113</b>	<b>VAR</b>	<b>9/12/2020</b>	<b>B</b>
61 <sup>st</sup> issue	ČR, 3.85 %, 21	CZ0001002851	3.75%	29/9/2021	B
52 <sup>nd</sup> issue	ČR, 4.70 %, 22	CZ0001001945	4.70%	12/9/2022	B
97 <sup>th</sup> issue <sup>2</sup>	ČR, 0.45 %, 23	CZ0001004600	0.45%	25/10/2023	C
58 <sup>th</sup> issue	ČR, 5.70 %, 24	CZ0001002547	5.70%	25/5/2024	C
89 <sup>th</sup> issue	ČR, 2.40 %, 25	CZ0001004253	2.40%	17/9/2025	C
95 <sup>th</sup> issue <sup>2</sup>	ČR, 1.00 %, 26	CZ0001004469	1.00%	26/6/2026	C
78 <sup>th</sup> issue	ČR, 2.50 %, 28	CZ0001003859	2.50%	25/8/2028	C
94 <sup>th</sup> issue <sup>2</sup>	ČR, 0.95 %, 30	CZ0001004477	0.95%	15/5/2030	C

<sup>1</sup> Issue was included among benchmark issues from 1 January 2017

<sup>2</sup> Issue was included among benchmark issues from 1 January 2016

Source: MoF

The primary dealer who fulfils the role of market-maker on the secondary market quotes the bid and offer prices for all bonds subject to quoting obligations in the minimum quoted total nominal

value, which varies depending on the time to maturity, and at least 5 hours during a single trading day.

**Table 28: Maturity Baskets Based on the Minimum Traded Volume on the MTS Czech Republic**

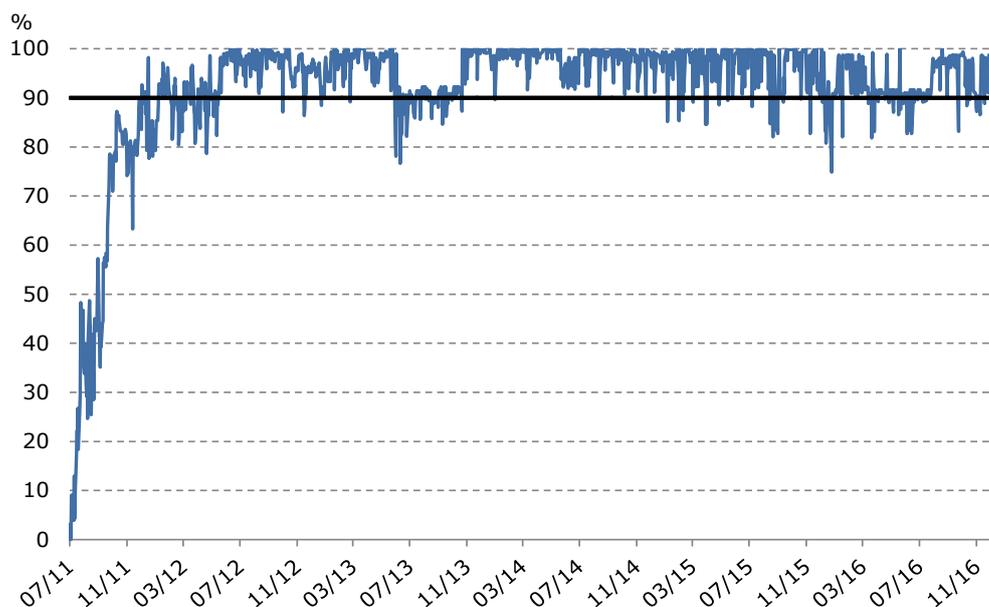
<b>A</b>	<b>Bonds maturing within 1.25 to 3.5 years</b>	CZK 50 million
<b>B</b>	<b>Bonds maturing within 3.5 to 6.5 years</b>	CZK 50 million
<b>C</b>	<b>Bonds maturing within 6.5 to 13.5 years</b>	CZK 40 million
<b>D</b>	<b>Bonds maturing within 13.5 years and more</b>	CZK 30 million

Source: MoF

However, the quoted prices must be within the competitive spread, which is set on a daily basis for each government bond subject to quoting obligations as the weighted average of the quoted spreads of all primary dealers multiplied by the coefficient of  $k = 1.5$ . This method and the quantitative criteria were set up following mutual discussion in the MTS Czech Republic Committee, and the respective calculations are available to all participants in the system. The Ministry monitors compliance with quoting obligation on a daily basis, the evaluation of the performance and activity of participants takes place on a monthly basis. In 2016, primary dealers successfully managed to fulfil their quoting obligations on average. Daily compliance ratio slightly decreased between March and July, but in average the 90% limit was fulfilled. In the course of 2016 return to historical levels was recorded. The average compliance ratio and the nominal traded value on the MTS Czech Republic were highly correlated in 2016.

Following the growth of the nominal value of trades with CZK-denominated government bonds in the first three quarters of 2013 on the domestic secondary market carried out between primary dealers through the MTS Czech Republic electronic trading platform, there was an overall decrease of the traded nominal value from November 2013 to March 2014. From March 2014, the traded nominal value began to rise substantially, reaching its peak in June at CZK 9.275 billion. In 2014, the traded nominal value stabilised at an average monthly value of CZK 5.5 billion. In February 2015 the traded nominal value reached its historic high since the launch of MTS Czech Republic in July 2011 of CZK 11.552 billion. In 2016 average traded nominal value was below the 2015 level, when the monthly average traded was nearly CZK 4.0 billion. In the second quarter of 2016 very low activity of primary dealers was recorded, when the historically lowest monthly nominal traded volume of CZK 970 million was reached in May.

**Figure 55: Average Daily Compliance Ratio on MTS Czech Republic**

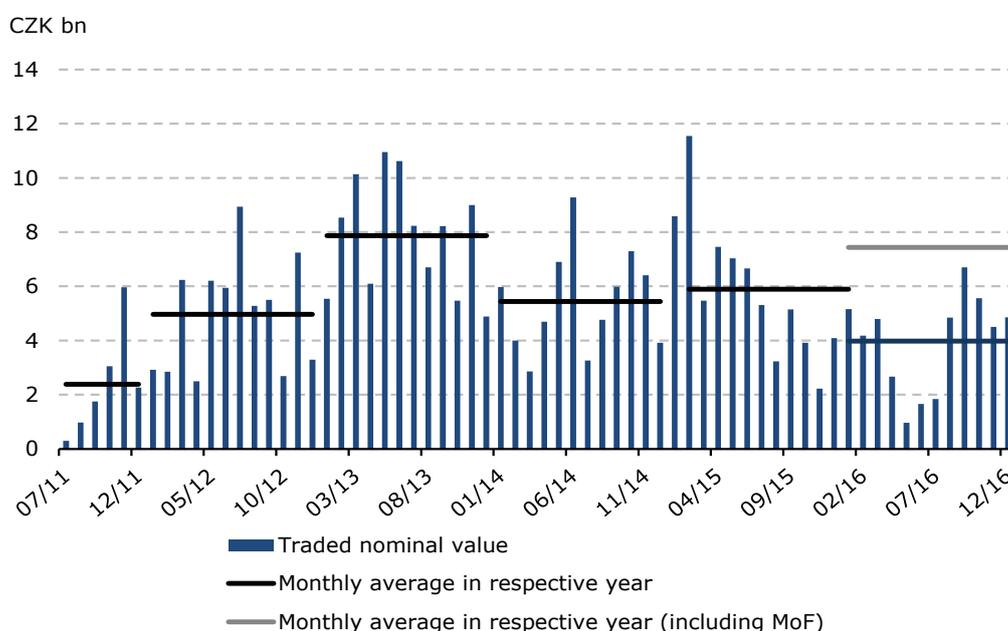


Source: MoF, MTS

One of the reasons for the entrance of Ministry to exchange operations and taps sales on the MTS Czech Republic was the active support of the liquidity of the Czech government bonds and the activity of primary dealers. In 2016, traded

nominal value including Ministry's operations on the MTS Czech Republic reached monthly average of CZK 7.4 billion which is CZK 3.5 billion higher than without including the Ministry's operations.

**Figure 56: Traded Nominal Value on MTS Czech Republic**



Note: Excl. trades of the Ministry on the secondary market.  
Source: MoF, MTS

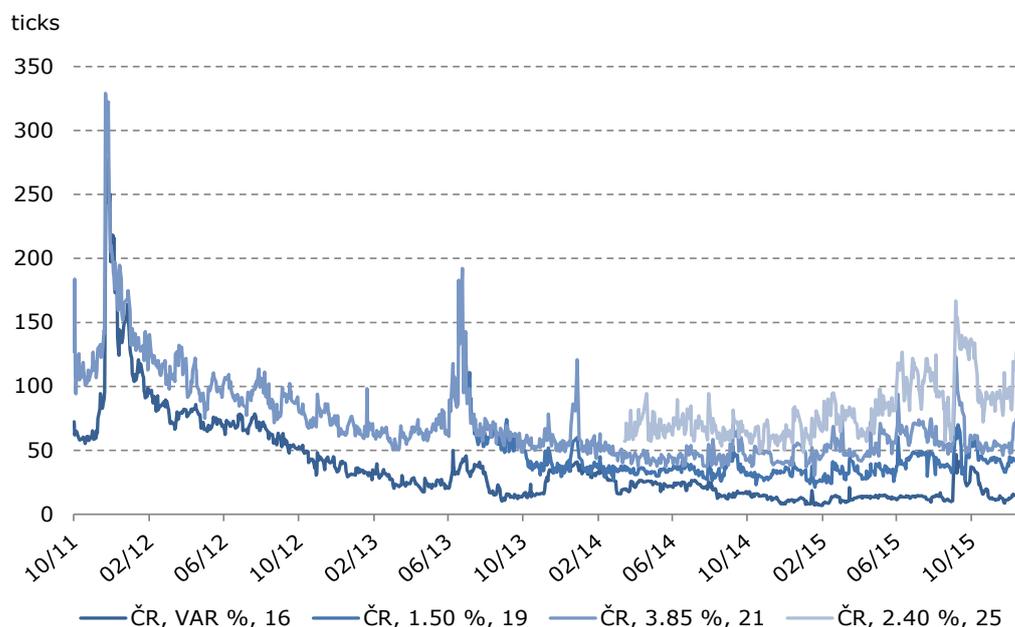
The bid-offer spreads went through an unstable and volatile period with the local peak in January, particularly as concerns higher maturities. Consequently, due to the decreasing uncertainty on financial markets, the spread started a declining trend except for one exception, when the global

bond market was influenced by the United Kingdom's referendum in favour of leaving the European Union. In the last quarter of 2016, the spread widened again due to excess of demand over primary dealer's stockpiles on balance sheets. This is confirmed by the significant quarterly nominal volume of

Ministry's lending facilities in the last quarter of 2016 amounting to CZK 72.4 billion. Market stabilization and the long-term low levels of price spreads are also supported by the fact that the mandatory bid-offer spread is built on a relative basis compared

to the market average of all primary dealers. This enables significant flexibility and adaptation to the continually changing and poorly predictable market environment as opposed to the fixed spreads.

**Figure 57: Bid-Offer Spreads of Selected Bonds Quoted on MTS Czech Republic**



Source: MoF, MTS

The strategy in relation to the development of the secondary market via MTS Czech Republic primarily focuses on the flexible use of all available MTS Czech Republic electronic platform instruments and smooth running of the system. The Ministry considers the developments related to the fulfilment of quoting obligations very promising, particularly with regard to the significant volatility on the financial markets,

regulatory impacts on the market-makers' balance sheets, decreasing traded nominal volume and due to the limited auction offer of government bonds subject to quoting in 2016. Lending facilities in the form of repo operations and now also in the form of collateralized loans will continue to be the tools actively used by the Ministry for its direct impact on the secondary market liquidity in 2017.

## Operations on the Secondary Market

Since December 2011, the Ministry has been operating actively on the secondary market, primarily through the MTS Czech Republic electronic trading platform. In order to ensure maximum transparency, the Ministry informs all primary dealers about the intention to conduct a buyback, exchange or a tap sale on the secondary market (type of transaction, government bond, the maximum nominal value of transactions, time limit, the conversion rate for exchanges, settlement date, contact person) at least one business day prior to the date on which the transaction is to occur. The Ministry publishes the result of the transactions (total nominal value of the transactions carried out within one buyback or tap sale, number of transactions and weighted average price) on its website on the settlement date of the transactions.

All operations on the secondary market are executed flexibly depending on the Ministry's needs and the situation on the financial markets. In the course of 2016, due to the financial market conditions on the short end of the yield curve, the Ministry did not carry out any buybacks on the secondary market. Tap sales were executed towards the end of the year in October and November. During this period the Ministry sold from the own portfolio Czech Republic Government Bond 2014 – 2018, 0.85 % in the total nominal value CZK 100 million, Czech Republic Treasury Bond, 2003 - 2018, 4.60 % in total nominal value CZK 400 million, Czech Republic Government Bond 2013 – 2019, 1.50 % in total nominal value CZK 200 million, Czech Republic Government Bond 2014 – 2020, VAR % in total nominal value CZK 100 million, Czech Republic Government

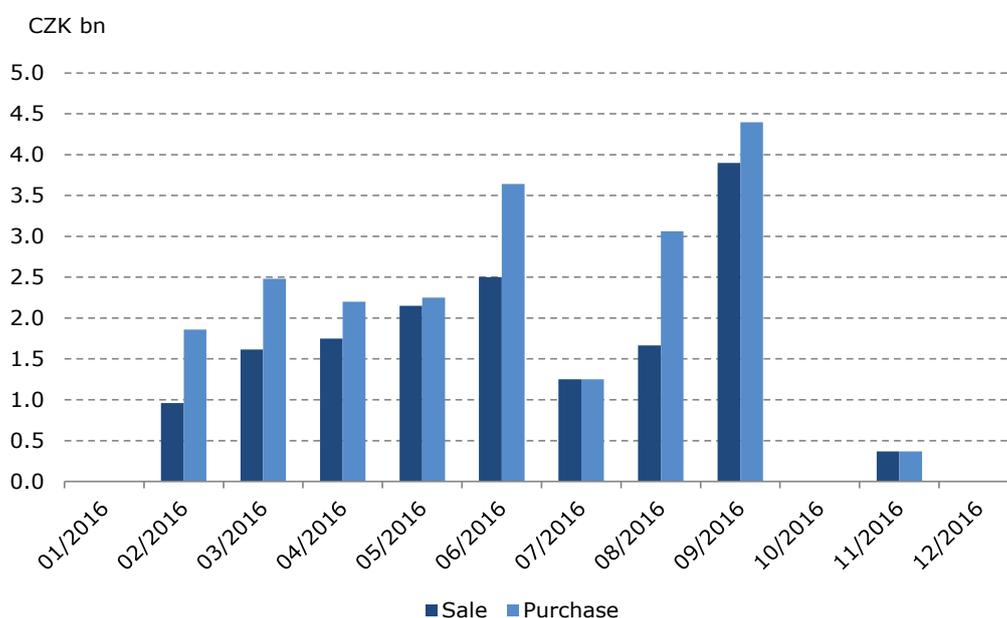
Bond 2014 – 2025, 2.40 % in total nominal value CZK 100 million, Czech Republic Government Bond 2014 – 2027, VAR % in total nominal value CZK 500 million and Czech Republic Government Bond 2013 – 2028, 2.50 % in total nominal value CZK 2.2 billion. Total nominal value of executed taps sales in 2016 was CZK 3.6 billion.

In the course of February 2016 the Ministry carried out successfully exchange operations of medium-term and long-term government bonds on the secondary market through the transparent electronic platform MTS Czech Republic. This meant a further completion of the Ministry's secondary operations available in the secondary government bond

market. The Ministry's very first exchange operation was carried out on 12 February 2016. During 2016, the exchange of government bonds has become an integral part of the state funding operations and a tool for the risk management of the state debt portfolio. Within exchange operations the Ministry replaced government bonds of a total nominal value of CZK 21.51 billion by the government bonds of a total nominal value of CZK 16.15 billion.

In exchanges the Ministry focused primarily on Czech Republic Treasury Bond, 2008 – 2016, VAR % with maturity on 27 October 2016 and managed to reduce outstanding nominal value of this bond by CZK 18.24 billion.

**Figure 58: Nominal Value of Exchange Operations Carried out in 2016**



Source: MoF, MTS

The Ministry continued executing extensively the short-term lending facilities of medium-term and long-term government bonds for primary dealers in the form of repo operations and since December 2015 also in the form of loans of securities. Loans of securities, which are standard financial instrument in the world, will be supported by the Ministry also in the next period. Similar to repo operations a primary dealer may borrow securities from Ministry's asset accounts for a fee for a period of 90 days against the non-cash collateral in the form of state treasury bills, CNB bills or medium-term and long-term government bonds. The advantage of loans of securities is the bidirectional support of liquidity on the secondary market with no impact on the gross borrowing requirement of the Ministry and the debt portfolio's risk indicators.

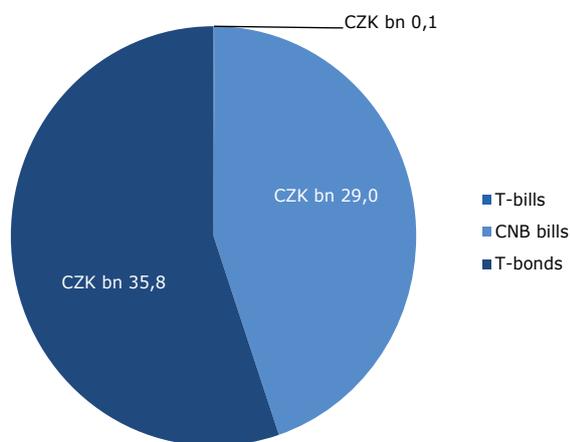
Parallel market in the form of loans of securities has its importance when the repo market freezes or CNB introduces negative rates, which could result in

an increase in bid-offer spreads. Loans of securities are fully covered by the standard contractual documentation, i.e. the Master agreement for financial transactions and the international Global Master Securities Lending Agreement. Loans of securities also help primary dealers to optimize their business portfolio irrespective of their liquidity position as well as significantly reduce their dependence on the repo market.

In October 2016, the total volume of the lending facility (in the form of repo operations) expressed as the nominal value of provided collateral reached CZK 15.9 billion. This is the second highest volume of government bonds in the form of repo operations since their introduction. In December 2016 total provided nominal value of lending facilities rose to a level of over CZK 38.3 billion. This was influenced by the strong demand of primary dealers, who accumulated significant short position during 2016. Due to limited supply of government bonds

in primary auctions relative to overall demand, Ministry's lending facilities have allowed smooth operating of the secondary market without any price distortions. In December the Ministry provided bonds in the total nominal value of CZK 22.7 billion in the form of loans of securities. At the same time the Ministry accepted collateral in the nominal value of CZK 23.73 billion. The important change in collateral structure in favour of CNB bills occurred compared to last year. The main cause was decreasing outstanding amount of T-bills in the course of 2016.

**Figure 59: Received Collateral within Collateralized Loans of Securities in 2016**



Source: MoF

Interest in the short-term lending facilities in 2016 was high despite the long-term declines in yields of government bonds and the volatility on financial markets. The total amount of received cash resources from short-term lending facilities in 2016 compared to 2015 decreased by CZK 92.1 billion. This was due to higher demand for loans of securities during the whole year, for which year-on-year increase in nominal value was CZK 49.71 billion and total nominal value was CZK 60.1 billion. Overall in 2016, Ministry executed 303 transactions in the form of repo operations and 168 in the form of loans of securities.

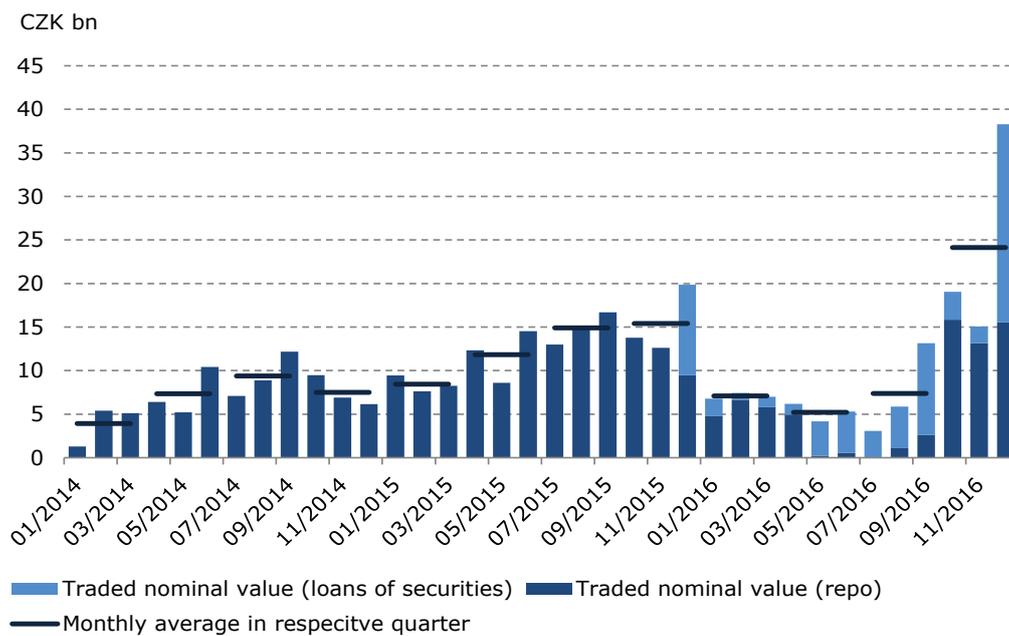
From the primary dealers' point of view, the Ministry's short-term lending facilities enable to cover their short positions and thus contribute

to the smooth fulfilment of quoting obligations, maintaining sufficient depth of market and liquidity of government bonds even at times of unusual fluctuations on financial markets. The difference between the nominal value of trades on the MTS Czech Republic electronic trading platform and demand of primary dealers for government bonds may be filled through short-term lending facilities. Lending facilities thus form an important alternative for obtaining government bonds in the case of worsened conditions on the secondary market and contribute significantly to the business activity of primary dealers. It enables stabilisation of the market spread of quoted bonds, which is directly reflected in the reduction of the illiquidity premium as well as the end-investors' demand for Czech government bonds.

Although the primary goal of these operations is to increase the liquidity of government bonds on secondary market, especially in case of the short-term excess of demand over the supply of the particular bond, income from lending facilities has a positive impact on increasing revenue of the state budget. The funds obtained from the repo operations are invested for higher return on the money market within the efficient state treasury liquidity management. This enables further increase in the investment income of the Ministry. In 2016, the contribution of the lending facilities to the total revenue from the investment activity amounted CZK 11.64 million.

In connection with the lending facilities, the Ministry actively manages the balance of government bonds in its asset accounts with respect to the demand of primary dealers. In 2016, the largest part of lending facilities in terms of nominal value of the provided bond was comprised of Czech Republic Government Bond, 2016–2018, 0.00 % (CZK 22.6 billion), Czech Republic Government Bond, 2006-2036, 4.20 % (CZK 16.4 billion), Czech Republic Government Bond, 2014-2020, VAR % (CZK 12.7 billion), Czech Republic Government Bond, 2010-2021, 3.85 % (CZK 12.4 billion) and Czech Republic Government Bond, 2015-2030, 0.95 % (CZK 10.8 billion). For other bonds, the demand was evenly distributed along the entire yield curve.

**Figure 60: Nominal Value of Executed Lending Facilities**



Note: The medium-term and long-term government bonds lending facilities are stated in the nominal value of collateral provided from the Ministry's asset account.  
Source: MoF

## Appendix I

### Evaluation Methodology for Primary Dealers Valid for 2016

As part of criterion A. Evaluation of activities on the primary market, the share of the particular primary dealer in the primary market of government bonds, meaning the share of accepted bids at auctions of government bonds for the evaluated period, is monitored. Using the ratio of the accepted bids to the total nominal value of the submitted bids, the Ministry monitors the willingness of investors to hold medium-term and long-term government bonds. The important aspects of evaluating participation on the primary market include the auction pricing strategy, in which the Ministry evaluates the willingness of primary dealers to pay the highest price weighted by the nominal value of a government bond auction. In another sub-criterion, a Primary Dealer is evaluated with more points should that dealer be a regular participant at auctions, regardless of the evaluation period. The maximum number of points in the final sub-criterion is received by the Primary Dealer who subscribes the largest share of state treasury bills sold by the Ministry during the particular period.

The quantitative evaluation within criterion B. Secondary market and liquidity operations, which is primarily based on available statistics and the monitoring tools of the MTS Czech Republic electronic trading platform, focuses on quotation activity, its quality, traded volumes and transactions with the Ministry. The evaluation of the fulfilment

of the quoting obligations also forms the subject of the first sub-criterion. The quality of quotation activity is understood as an evaluation of the average quoted spread weighed by time and total nominal value, which is further taken into account in the time to maturity of the given bond. Similarly also in relation to other sub-criterion, the traded volumes are weighted based on the time to maturity of the bond.

For the next sub-criterion, Primary Dealer is evaluated based on the share of total nominal value of executed trades with relevant instruments within the given group, when the primary dealer acted as a counterparty, in total nominal value of all executed trades with relevant instruments within given group executed with all primary dealers. Total evaluation for given sub-criterion is then determined by the weighted average of these shares for all three distinguished groups.

The fifth sub-criterion evaluates the willingness of a Primary Dealer to pay the highest price or obtain the lowest price weighted by the nominal value and duration within tap sales, buy-backs of government bonds or exchanges of government bonds on the secondary market.

This methodology of primary dealers evaluation valid for 2016 remains unchanged for 2017.

**Table 29: Criteria for Evaluation of Primary Dealers Valid for 2016 and 2017**

A. Primary market	55 p	B. Secondary market and liquidity operations	45 p
A.1. Share on the primary T-Bonds market	30 p	B.1. Quoting obligations on DETS	10 p
A.2. Dependability of auction demand	5 p	B.2. Qualitative of quoting performance on DETS	10 p
A.3. Auction pricing strategy	5 p	B.3. Traded Volume on DETS	10 p
A.4. Regularity of auction participation	5 p	B.4. Ministry of Finance's operations on the secondary market and liquidity operations	10 p
A.5. Share on the primary T-Bills market	10 p	B.5. Pricing strategy for tap sales, buy-backs and exchanges	5 p

Source: MoF

**Table 30: Groups of Instrument Types Evaluated within Sub-Criterion B.4.**

Group	Types of Instruments Included in Given Group	Weight of Given Group
1	Depo, repo, reverse repo operation within liquidity management, and FX swaps	70%
2	Lending facilities	15%
3	Tap sales, buy-backs and Exchanges of T-Bonds	15%

Source: MoF

## Appendix II

**Table 31: State Debt and Liquid State Financial Assets Parameters**

	31/12/ 2015	31/3/ 2016	30/6/ 2016	30/9/ 2016	31/12/ 2016
<b>Total state debt (CZK bn)</b>	<b>1,673.0</b>	<b>1,694.7</b>	<b>1,691.3</b>	<b>1,660.1</b>	<b>1,613.4</b>
Market value of state debt (CZK bn) <sup>1</sup>	1,913.5	1,940.5	1,920.4	1,888.3	1,831.1
Short-term state debt (%)	16.4	13.5	17.2	15.8	14.3
Medium-term state debt (%)	59.4	58.5	60.6	63.1	60.3
State treasury bills (%)	5.0	4.7	3.4	1.1	0.3
Other money market instruments (%)	0.2	0.1	0.0	0.1	0.0
Average time to maturity (years)	5.1	5.1	5.0	5.0	5.1
Interest rate re-fixing up to 1 year (%)	33.7	30.9	34.7	30.7	29.6
Average time to re-fixing (years)	4.0	3.9	3.9	3.9	4.0
Variable-rate state debt (%)	19.9	19.7	19.4	19.2	15.9
Modified duration (years)	3.9	3.9	3.9	3.9	3.9
State debt level net foreign currency exposure (%)	10.9	10.9	11.1	11.2	11.5
Interest expenditure on state debt net foreign currency exposure (%)	10.2	10.2	10.3	10.4	11.5
Foreign currency state debt (%)	13.6	13.5	13.6	13.8	13.4
Share of € in state debt level net foreign currency exposure (%)	89.8	89.9	89.5	89.5	96.5
Share of € in interest expenditure on state debt net foreign currency exposure (%)	100.0	100.0	100.0	100.0	100.0
Non-marketable state debt (%) <sup>2</sup>	3.5	3.4	3.4	3.4	3.4
Share of savings government bonds in state debt (%)	4.0	3.9	3.5	3.6	3.6
<b>Marketable state debt (CZK bn)</b>	<b>1,548.1</b>	<b>1,570.2</b>	<b>1,574.0</b>	<b>1,543.8</b>	<b>1,519.3</b>
Market value of marketable state debt (CZK bn) <sup>1</sup>	1,782.2	1,809.4	1,797.3	1,766.2	1,733.9
Short-term marketable state debt (%)	15.7	12.6	16.4	15.0	14.0
Medium-term marketable state debt (%)	58.8	57.8	60.1	62.8	60.3
State treasury bills (%)	5.5	5.0	3.7	1.1	0.3
Other money market instruments (%)	0.2	0.1	0.0	0.1	0.0
Average time to maturity (years)	5.1	5.0	4.9	5.0	5.0
Interest rate re-fixing up to 1 year (%)	30.8	27.9	31.8	27.6	27.1
Average time to re-fixing (years)	4.2	4.1	4.1	4.1	4.2
Variable-rate marketable state debt (%)	17.7	17.7	17.3	17.1	13.6
Modified duration (years)	4.1	4.0	4.1	4.1	4.0
Marketable state debt level net foreign currency exposure (%)	11.8	11.8	11.9	12.0	12.2
Interest expenditure on marketable state debt net foreign currency exposure (%)	11.0	11.0	11.1	11.2	12.2
Foreign-currency marketable state debt (%)	14.7	14.5	14.6	14.8	14.2
Share of € in marketable state debt level net foreign currency exposure (%)	89.8	89.9	89.5	89.5	96.5
Share of € in interest expenditure on marketable state debt net foreign currency exposure (%)	100.0	100.0	100.0	100.0	100.0
<b>Investment portfolios (CZK bn)</b>	<b>47.4</b>	<b>47.6</b>	<b>48.2</b>	<b>48.5</b>	<b>48.6</b>
Share of assets up to one year on total state debt (%)	2.4	2.3	2.6	2.6	2.7
Average yield (%)	0.8	0.7	0.7	0.7	0.7
Average time to maturity (years)	0.6	0.7	0.6	0.6	0.5
Modified duration (years)	0.4	0.5	0.5	0.4	0.4

<sup>1</sup> Incl. derivatives.

<sup>2</sup> Excl. savings government bonds.

Source: MoF

**Table 32: Medium-Term and Long-Term Government Bonds Issued on Domestic Market as at 31/12/2016**

Issue name	Issue no.	ISIN	Maturity date	Nominal value outstanding	Nominal value booked on MoF's asset accounts
ČR, 4.00 %, 17	51	CZ0001001903	11/4/2017	90,300,000,000	3,700,000,000
ČR, VAR %, 17	67	CZ0001003438	23/7/2017	47,603,000,000	467,000,000
ČR, 0.00 %, 17	96	CZ0001004592	9/11/2017	70,000,000,000	0
ČR, 0.00 %, 18	99	CZ0001004709	22/1/2018	40,799,050,000	19,200,950,000
ČR, 0.85 %, 18	88	CZ0001004246	17/3/2018	48,136,220,000	1,863,780,000
ČR, 4.60 %, 18	41	CZ0001000822	18/8/2018	75,000,000,000	0
ČR, 5.00 %, 19	56	CZ0001002471	11/4/2019	86,960,000,000	2,140,000,000
ČR, 0.00 %, 19	98	CZ0001004717	17/7/2019	60,830,200,000	9,169,800,000
ČR, 1.50 %, 19	76	CZ0001003834	29/10/2019	76,931,370,000	3,068,630,000
ČR, 3.75 %, 20	46	CZ0001001317	12/9/2020	75,000,000,000	0
ČR, VAR %, 20	91	CZ0001004113	9/12/2020	32,798,770,000	2,200,000,000
ČR, 3.85 %, 21	61	CZ0001002851	29/9/2021	75,635,000,000	2,000,000,000
ČR, 4.70 %, 22	52	CZ0001001945	12/9/2022	75,116,740,000	2,000,000,000
ČR, VAR %, 23	63	CZ0001003123	18/4/2023	81,207,870,000	5,792,130,000
ČR, 0.45 %, 23	97	CZ0001004600	25/10/2023	21,007,750,000	1,000,000,000
ČR, 5.70 %, 24	58	CZ0001002547	25/5/2024	87,600,000,000	2,400,000,000
ČR, 2.40 %, 25	89	CZ0001004253	17/9/2025	56,299,870,000	850,000,000
ČR, 1.00 %, 26	95	CZ0001004469	26/6/2026	31,035,150,000	1,233,000,000
ČR, VAR %, 27	90	CZ0001004105	19/11/2027	44,872,420,000	2,870,000,000
ČR, 2.50 %, 28	78	CZ0001003859	25/8/2028	58,589,640,000	2,120,000,000
ČR, 0.95 %, 30	94	CZ0001004477	15/5/2030	26,444,530,000	2,931,000,000
ČR, 4.20 %, 36	49	CZ0001001796	4/12/2036	28,428,970,000	1,417,620,000
ČR, 4.85 %, 57	53	CZ0001002059	26/11/2057	11,020,000,000	6,980,000,000
<b>Total</b>				<b>1,301,616,550,000</b>	<b>73,403,910,000</b>

Note: Excl. nominal values of government bonds provided and/or received by the Ministry as collateral when realizing repo operations under treasury single accounts liquidity management and/or under lending facilities.  
Source: MoF

**Table 33: Medium-Term and Long-Term Government Bonds Issued on Foreign Markets as at 31/12/2016**

ISIN	Currency	Maturity date	Nominal value outstanding	Nominal value booked on MoF's asset accounts
XS0368800073	EUR	11/6/2018	2,000,000,000	0
XS0215153296	EUR	18/3/2020	1,000,000,000	0
XS0541140793	EUR	14/4/2021	2,000,000,000	0
XS0750894577	EUR	24/5/2022	2,750,000,000	0
XS0240954361	JPY	16/1/2036	30,000,000,000	0
<b>Total EUR</b>			<b>7,750,000,000</b>	<b>0</b>
<b>Total JPY</b>			<b>30,000,000,000</b>	<b>0</b>

Note: Excl. nominal values of government bonds provided and/or received by the Ministry as collateral when realizing repo operations under treasury single accounts liquidity management and/or under lending facilities.  
Source: MoF

**Table 34: Issued State Treasury Bills as at 31/12/2016**

Issue no.	Maturity (weeks)	ISIN	Maturity date	Nominal value outstanding	Nominal value booked on MoF's asset accounts
727	52	CZ0001004758	27/1/2017	3,000,000,000	0
746	13	CZ0001004956	3/2/2017	1,220,000,000	0
<b>Total</b>				<b>4,220,000,000</b>	<b>0</b>

Note: Excl. nominal values of government bonds provided and/or received by the Ministry as collateral when realizing repo operations under treasury single accounts liquidity management and/or under lending facilities.  
Source: MoF

**Table 35: Issued Savings Government Bonds as at 31/12/2016**

Bond	Issue no.	ISIN	Maturity date	Nominal value outstanding	Nominal value booked on MoF's asset accounts
Coupon savings government bond	68	CZ0001003560	12/6/2017	1,126,219,732	0
Reinvestment savings government bond	69	CZ0001003578	12/6/2017	5,859,166,659	0
Coupon savings government bond	74	CZ0001003784	12/12/2017	1,760,937,241	0
Reinvestment savings government bond	75	CZ0001003792	12/12/2017	8,073,085,198	0
Coupon savings government bond	81	CZ0001004014	12/6/2018	817,096,434	0
Reinvestment savings government bond	82	CZ0001004006	12/6/2018	5,932,399,081	0
Coupon savings government bond	85	CZ0001004188	12/12/2018	1,355,641,518	0
Reinvestment savings government bond	86	CZ0001004196	12/12/2018	7,797,587,844	0
Inflation-linked savings government bond	70	CZ0001003586	12/6/2019	1,863,104,124	0
Reinvestment savings government bond	92	CZ0001004303	12/6/2019	737,224,214	0
Inflation-linked savings government bond	83	CZ0001003990	12/6/2020	379,606,730	0
Inflation-linked savings government bond	87	CZ0001004204	12/12/2020	2,024,930,724	0
Variable-rate savings government bond	93	CZ0001004311	12/12/2020	30,374,241	0
<b>Total</b>				<b>37,757,373,740</b>	<b>0</b>

Source: MoF

**Table 36a: Medium-Term and Long-Term Government Bonds Issued in 2016**

Issue name	Issue/ tranche no.	Auction date	Settlement date	Maturity date	CCY	Max. nominal value offered in the competitive part of auction	Total nominal value sold	
ČR, 0.00 %, 19	98	1	13/1	15/1	17/7/2019	CZK	10,000,000,000	3,433,270,000
ČR, 1.00 %, 26	95	4	13/1	15/1	26/6/2026	CZK	5,000,000,000	4,430,030,000
ČR, VAR %, 20	91	6	13/1	15/1	9/12/2020	CZK	5,000,000,000	2,840,020,000
ČR, 0.00 %, 18	99	1	20/1	22/1	22/1/2018	CZK	15,000,000,000	15,150,000,000
ČR, 0.45 %, 23	97	4	20/1	22/1	25/10/2023	CZK	4,000,000,000	4,109,250,000
ČR, 2.50 %, 28	78	14	20/1	22/1	25/8/2028	CZK	3,000,000,000	2,689,000,000
ČR, VAR %, 27	90	8	27/1	29/1	19/11/2027	CZK	5,000,000,000	4,080,000,000
ČR, 2.40 %, 25	89	7	27/1	29/1	17/9/2025	CZK	4,000,000,000	4,000,000,000
ČR, 0.00 %, 17	96	6	27/1	29/1	9/11/2017	CZK	10,000,000,000	10,329,460,000
ČR, 0.00 %, 18	99	2	10/2	12/2	22/1/2018	CZK	8,000,000,000	9,237,210,000
ČR, 0.95 %, 30	94	4	10/2	12/2	15/5/2030	CZK	4,000,000,000	4,619,060,000
ČR, 0.00 %, 18	99	3	13/4	15/4	22/1/2018	CZK	6,000,000,000	6,100,000,000
ČR, 0.45 %, 23	97	5	13/4	15/4	25/10/2023	CZK	2,000,000,000	1,061,650,000
ČR, 2.50 %, 28	78	15	13/4	15/4	25/8/2028	CZK	3,000,000,000	3,323,100,000
ČR, 0.00 %, 18	99	4	27/4	29/4	22/1/2018	CZK	6,000,000,000	6,611,840,000
ČR, 0.45 %, 23	97	6	27/4	29/4	25/10/2023	CZK	1,000,000,000	536,010,000
ČR, 2.40 %, 25	89	8	27/4	29/4	17/9/2025	CZK	3,000,000,000	3,435,420,000
ČR, 2.50 %, 28	78	16	18/5	20/5	25/8/2028	CZK	2,000,000,000	1,001,000,000
ČR, 0.00 %, 18	99	5	18/5	20/5	22/1/2018	CZK	4,000,000,000	3,700,000,000
ČR, 0.00 %, 19	98	2	18/5	20/5	17/7/2019	CZK	1,000,000,000	900,000,000
ČR, 0.00 %, 19	98	3	29/6	1/7	17/7/2019	CZK	6,000,000,000	6,542,400,000
ČR, 1.00 %, 26	95	5	29/6	1/7	26/6/2026	CZK	4,000,000,000	4,181,320,000
ČR, 0.95 %, 30	94	5	29/6	1/7	15/5/2030	CZK	3,000,000,000	3,313,580,000
ČR, 0.00 %, 19	98	4	24/8	26/8	17/7/2019	CZK	6,000,000,000	6,813,440,000
ČR, 0.45 %, 23	97	7	24/8	26/8	25/10/2023	CZK	4,000,000,000	2,017,930,000
ČR, 1.00 %, 26	95	6	24/8	26/8	26/6/2026	CZK	6,000,000,000	6,520,290,000
ČR, 0.00 %, 19	98	5	21/9	23/9	17/7/2019	CZK	6,000,000,000	6,469,670,000
ČR, 0.95 %, 30	94	6	21/9	23/9	15/5/2030	CZK	5,000,000,000	2,751,950,000
ČR, 0.00 %, 19	98	6	5/10	7/10	17/7/2019	CZK	7,000,000,000	7,392,170,000
ČR, 0.45 %, 23	97	8	5/10	7/10	25/10/2023	CZK	4,000,000,000	2,275,940,000
ČR, 1.00 %, 26	95	7	5/10	7/10	26/6/2026	CZK	7,000,000,000	3,942,750,000
ČR, 0.00 %, 19	98	7	19/10	21/10	17/7/2019	CZK	8,000,000,000	8,963,520,000
ČR, 0.45 %, 23	97	9	19/10	21/10	25/10/2023	CZK	3,000,000,000	2,304,520,000
ČR, 0.95 %, 30	94	7	19/10	21/10	15/5/2030	CZK	5,000,000,000	1,800,000,000
ČR, 0.00 %, 19	98	8	26/10	31/10	17/7/2019	CZK	8,000,000,000	6,220,000,000
ČR, 2.40 %, 25	89	9	26/10	31/10	17/9/2025	CZK	3,000,000,000	2,456,480,000
ČR, 0.00 %, 19	98	9	9/11	11/11	17/7/2019	CZK	5,000,000,000	5,000,000,000
ČR, 0.45 %, 23	97	10	9/11	11/11	25/10/2023	CZK	2,000,000,000	1,505,000,000
ČR, 2.40 %, 25	89	10	9/11	11/11	17/9/2025	CZK	5,000,000,000	5,000,000,000
ČR, 0.00 %, 19	98	10	30/11	2/12	17/7/2019	CZK	5,000,000,000	6,013,190,000
ČR, 2.40 %, 25	89	11	30/11	2/12	17/9/2025	CZK	5,000,000,000	2,500,000,000
ČR, 0.00 %, 19	98	11	7/12	9/12	17/7/2019	CZK	3,000,000,000	3,082,540,000
ČR, VAR %, 27	90	9	7/12	9/12	19/11/2027	CZK	3,000,000,000	3,242,870,000
<b>Total</b>							<b>191,895,880,000</b>	

Source: MoF

**Table 36b: Medium-Term and Long-Term Government Bonds Issued in 2016**

Issue name	Issue / Tranche no.	Coupon	Average net price	Average yield to maturity (% p. a.)	Bid-to-cover ratio	Sold in competitive part of the auction / max. nominal value offered (%)	Sold in the non-competitive part of the auction / max. nominal value offered (%)	
ČR, 0.00 %, 19	98	1	0.00 %	100.130	-0.037	4.95	28.20	6.13
ČR, 1.00 %, 26	95	4	1.00 %	103.081	0.693	1.26	78.55	10.05
ČR, VAR %, 20	91	6	VAR %	100.425	-38.627 <sup>1</sup>	2.29	45.80	11.00
ČR, 0.00 %, 18	99	1	0.00 %	100.290	-0.145	1.59	101.00	0.00
ČR, 0.45 %, 23	97	4	0.45 %	100.692	0.359	1.22	99.00	3.73
ČR, 2.50 %, 28	78	14	2.50 %	119.346	0.871	1.16	88.33	1.30
ČR, VAR %, 27	90	8	VAR %	102.837	-33.737 <sup>1</sup>	1.17	81.60	0.00
ČR, 2.40 %, 25	89	7	2.40 %	116.771	0.603	1.39	100.00	0.00
ČR, 0.00 %, 17	96	6	0.00 %	100.108	-0.061	1.27	103.29	0.00
ČR, 0.00 %, 18	99	2	0.00 %	100.303	-0.156	3.79	100.00	15.47
ČR, 0.95 %, 30	94	4	0.95 %	100.326	0.925	2.04	100.00	15.48
ČR, 0.00 %, 18	99	3	0.00 %	100.140	-0.079	2.50	100.00	1.67
ČR, 0.45 %, 23	97	5	0.45 %	101.509	0.247	4.25	50.00	3.08
ČR, 2.50 %, 28	78	15	2.50 %	121.737	0.663	1.88	100.00	10.77
ČR, 0.00 %, 18	99	4	0.00 %	100.084	-0.048	2.74	100.00	10.20
ČR, 0.45 %, 23	97	6	0.45 %	101.498	0.248	4.31	50.00	3.60
ČR, 2.40 %, 25	89	8	2.40 %	117.831	0.455	1.74	100.00	14.51
ČR, 2.50 %, 28	78	16	2.50 %	121.467	0.671	3.59	50.05	0.00
ČR, 0.00 %, 18	99	5	0.00 %	100.065	-0.039	3.11	92.50	0.00
ČR, 0.00 %, 19	98	2	0.00 %	100.051	-0.016	3.82	90.00	0.00
ČR, 0.00 %, 19	98	3	0.00 %	100.150	-0.049	1.07	100.00	9.04
ČR, 1.00 %, 26	95	5	1.00 %	105.547	0.431	1.26	100.00	4.53
ČR, 0.95 %, 30	94	5	0.95 %	102.504	0.759	2.09	100.00	10.45
ČR, 0.00 %, 19	98	4	0.00 %	100.650	-0.224	3.26	100.00	13.56
ČR, 0.45 %, 23	97	7	0.45 %	103.039	0.025	1.28	45.50	4.95
ČR, 1.00 %, 26	95	6	1.00 %	107.192	0.258	1.81	100.50	8.17
ČR, 0.00 %, 19	98	5	0.00 %	101.052	-0.371	3.11	100.00	7.83
ČR, 0.95 %, 30	94	6	0.95 %	105.290	0.547	1.77	46.90	8.14
ČR, 0.00 %, 19	98	6	0.00 %	101.165	-0.416	2.35	100.00	5.60
ČR, 0.45 %, 23	97	8	0.45 %	102.877	0.041	1.25	55.00	1.90
ČR, 1.00 %, 26	95	7	1.00 %	106.976	0.272	1.06	54.94	1.39
ČR, 0.00 %, 19	98	7	0.00 %	101.544	-0.558	2.61	100.00	12.04
ČR, 0.45 %, 23	97	9	0.45 %	102.037	0.158	1.19	74.38	2.43
ČR, 0.95 %, 30	94	7	0.95 %	103.811	0.655	1.09	36.00	0.00
ČR, 0.00 %, 19	98	8	0.00 %	101.667	-0.608	1.00	77.75	0.00
ČR, 2.40 %, 25	89	9	2.40 %	117.803	0.359	2.07	80.00	1.88
ČR, 0.00 %, 19	98	9	0.00 %	101.428	-0.528	1.91	100.00	0.00
ČR, 0.45 %, 23	97	10	0.45 %	101.858	0.181	1.45	75.25	0.00
ČR, 2.40 %, 25	89	10	2.40 %	117.466	0.388	2.14	100.00	0.00
ČR, 0.00 %, 19	98	10	0.00 %	101.410	-0.533	2.32	100.00	20.26
ČR, 2.40 %, 25	89	11	2.40 %	116.814	0.445	2.06	50.00	0.00
ČR, 0.00 %, 19	98	11	0.00 %	101.329	-0.506	3.20	100.00	2.75
ČR, VAR %, 27	90	9	VAR %	103.502	-41.449 <sup>1</sup>	1.86	100.00	8.10
<b>Average</b>					<b>2.17</b>	<b>82.66</b>	<b>5.35</b>	

<sup>1</sup> Average spread to PRIBOR in basis points (discount margin)  
Source: MoF, CNB

**Table 37: State Treasury Bills Issued in 2016**

Issue No.	Maturity (Weeks)	Auction Date	Issue Date	Maturity Date	Max. Offered Nominal Amount	Total Placed Nominal Amount	Yield to Maturity (% p.a.)
724	8	7/1	8/1	4/3/2016	10,000,000,000	600,000,000	-0.10
725	26	14/1	15/1	15/7/2016	10,000,000,000	1,750,000,000	-0.20
726	8	21/1	22/1	18/3/2016	10,000,000,000	300,000,000	-0.05
727	52	28/1	29/1	27/1/2017	8,000,000,000	3,000,000,000	-0.10
728	39	4/2	5/2	4/11/2016	10,000,000,000	2,000,000,000	-0.10
729	26	11/2	12/2	12/8/2016	10,000,000,000	1,500,000,000	-0.20
730	39	18/2	19/2	18/11/2016	10,000,000,000	4,000,000,000	-0.11
731	26	25/2	26/2	26/8/2016	10,000,000,000	1,500,000,000	-0.15
732	4	3/3	4/3	1/4/2016	10,000,000,000	2,500,000,000	-0.10
733	3	10/3	11/3	1/4/2016	10,000,000,000	505,000,000	-0.05
734	13	7/4	8/4	8/7/2016	5,000,000,000	1,510,000,000	-0.05
735	35	14/4	15/4	16/12/2016	5,000,000,000	2,600,000,000	-0.10
736	23	21/4	22/4	30/9/2016	5,000,000,000	510,000,000	-0.11
737	35	28/4	29/4	30/12/2016	5,000,000,000	2,080,000,000	-0.10
738	21	5/5	6/5	30/9/2016	5,000,000,000	1,025,000,000	-0.10
739	33	12/5	13/5	30/12/2016	5,000,000,000	2,000,000,000	-0.10
740	19	19/5	20/5	30/09/2016	3,000,000,000	20,000,000	-0.10
741	31	26/5	27/5	30/12/2016	3,000,000,000	2,010,000,000	-0.09
742	28	16/6	17/6	30/12/2016	3,000,000,000	15,000,000	-0.10
743	26	30/6	1/7	30/12/2016	5,000,000,000	0	-
744	12	6/10	7/10	30/12/2016	5,000,000,000	80,000,000	-0.10
745	11	13/10	14/10	30/12/2016	5,000,000,000	50,000,000	-0.02
746	13	3/11	4/11	3/2/2017	7,000,000,000	1,220,000,000	-1.30
<b>Total</b>					<b>159,000,000,000</b>	<b>30,775,000,000</b>	<b>-0.16<sup>1</sup></b>

<sup>1</sup> Average weighted yield to maturity of state treasury bills issued in 2016.  
Source: MoF

**Table 38: Issues of Savings Government Bonds in 2016**

Bond	Issue no.	Settlement date	Maturity date	Original maturity (years)	Nominal value
Reinvestment savings government bond <sup>1</sup>	69	12/6	12/06/2017	5	252,603,906
Inflation-linked savings government bond <sup>1</sup>	70	12/6	12/06/2019	7	12,083,265
Reinvestment savings government bond <sup>1</sup>	82	12/6	12/06/2018	5	151,350,538
Inflation-linked savings government bond <sup>1</sup>	83	12/6	12/06/2020	7	2,903,294
Inflation-linked savings government bond <sup>1</sup>	87	12/6	12/12/2020	7	15,610,333
Reinvestment savings government bond <sup>1</sup>	92	12/6	12/06/2019	5	1,567,813
Variable-rate savings government bond <sup>1</sup>	93	12/6	12/12/2020	6.5	28,652
Inflation-linked savings government bond <sup>1</sup>	70	12/12	12/06/2019	7	2,992,150
Reinvestment savings government bond <sup>1</sup>	75	12/12	12/12/2017	5.0	347,728,732
Inflation-linked savings government bond <sup>1</sup>	83	12/12	12/6/2020	7.0	1,333,326
Reinvestment savings government bond <sup>1</sup>	86	12/12	12/12/2018	5.0	194,738,746
Inflation-linked savings government bond <sup>1</sup>	87	12/12	12/12/2020	7.0	7,169,090
Variable-rate savings government bond <sup>1</sup>	93	12/12	12/12/2020	6.5	34,545
<b>Total</b>					<b>990,144,390</b>

<sup>1</sup> Incl. tranches issued in the form of reinvestment of yields.  
Source: MoF

**Table 39a: Realized Lending Facilities in the Form of Repo Operations in 2016**

Issue name	ISIN	Collateral amount	Financial resources received	Financial resources paid <sup>1</sup>
ČR, VAR %, 16	CZ0001002331	1,052,000,000	1,054,462,160.00	1,054,452,576.58
ČR, 4.00 %, 17	CZ0001001903	2,497,000,000	2,616,788,222.22	2,616,722,324.08
ČR, 0.00 %, 18	CZ0001004709	11,300,000,000	11,440,310,000.00	11,439,762,968.22
ČR, 0.85 %, 18	CZ0001004246	1,170,000,000	1,200,991,838.09	1,200,956,932.50
ČR, 4.60 %, 18	CZ0001000822	375,000,000	422,513,166.67	422,505,256.38
ČR, 1.50 %, 19	CZ0001003834	3,858,000,000	4,096,801,291.66	4,096,690,165.91
ČR, 5.00 %, 19	CZ0001002471	740,000,000	873,637,944.45	873,620,191.20
ČR, 0.00 %, 19	CZ0001004717	3,930,000,000	3,982,180,000.00	3,982,105,681.69
ČR, 3.75 %, 20	CZ0001001317	80,000,000	95,013,250.00	95,010,131.88
ČR, VAR %, 20	CZ0001004113	6,546,000,000	6,649,910,993.33	6,649,740,451.91
ČR, 3.85 %, 21	CZ0001002851	7,556,000,000	9,228,064,302.78	9,227,833,955.30
ČR, 4.70 %, 22	CZ0001001945	1,280,000,000	1,666,060,416.67	1,666,019,052.71
ČR, VAR %, 23	CZ0001003123	4,220,000,000	4,609,638,000.01	4,609,503,386.20
ČR, 0.45 %, 23	CZ0001004600	1,438,000,000	1,470,615,671.76	1,470,595,829.39
ČR, 5.70 %, 24	CZ0001002547	3,367,000,000	4,977,604,566.67	4,977,464,735.56
ČR, 2.40 %, 25	CZ0001004253	1,165,000,000	1,391,669,991.80	1,391,638,430.43
ČR, 1.00 %, 26	CZ0001004469	4,355,000,000	4,605,308,718.00	4,605,137,318.66
ČR, VAR %, 27	CZ0001004105	1,430,000,000	1,477,512,780.55	1,477,452,392.03
ČR, 2.50 %, 28	CZ0001003859	349,350,000	437,327,004.58	437,325,182.38
ČR, 0.95 %, 30	CZ0001004477	8,210,000,000	8,403,926,497.82	8,403,662,317.47
ČR, 4.20 %, 36	CZ0001001796	6,383,000,000	10,011,920,283.35	10,009,736,715.93
<b>Total</b>		<b>71,301,350,000</b>	<b>80,712,257,100.41</b>	<b>80,707,935,996.41</b>

<sup>1</sup> Incl. financial resources from lending facilities realized in 2016, which has not been paid during this period.

Note: The average interest rate achieved under lending facilities during 2016 amounted to -0.10% p.a.

Source: MoF

**Table 39b: Realized Lending Facilities of Government Bonds in the Form of Collateralized Loans of Securities in 2016**

Issue name	ISIN	Nominal value	Revenue <sup>1</sup>
ČR, VAR %, 16	CZ0001002331	700,000,000	13,643.10
ČR, 4.00 %, 17	CZ0001001903	4,260,000,000	989,467.32
ČR, 0.00 %, 18	CZ0001004709	11,335,000,000	624,619.56
ČR, 0.85 %, 18	CZ0001004246	1,223,260,000	171,615.86
ČR, 4.60 %, 18	CZ0001000822	250,000,000	66,340.44
ČR, 1.50 %, 19	CZ0001003834	1,200,000,000	199,673.78
ČR, 0.00 %, 19	CZ0001004717	2,213,000,000	482,015.49
ČR, 3.75 %, 20	CZ0001001317	190,000,000	14,074.51
ČR, VAR %, 20	CZ0001004113	6,122,650,000	819,622.54
ČR, 3.85 %, 21	CZ0001002851	4,881,060,000	1,067,783.43
ČR, 4.70 %, 22	CZ0001001945	1,448,650,000	291,668.95
ČR, VAR %, 23	CZ0001003123	2,610,000,000	231,809.70
ČR, 0.45 %, 23	CZ0001004600	470,000,000	40,014.66
ČR, 5.70 %, 24	CZ0001002547	2,337,000,000	610,847.48
ČR, 1.00 %, 26	CZ0001004469	3,943,000,000	573,004.75
ČR, VAR %, 27	CZ0001004105	4,303,000,000	204,153.66
ČR, 0.95 %, 30	CZ0001004477	2,568,000,000	347,364.81
ČR, 4.20 %, 36	CZ0001001796	10,030,000,000	839,503.82
<b>Total</b>		<b>60,084,620,000</b>	<b>7,587,223.86</b>

Source: MoF

**Table 40: Realized Exchange Operations of Government Bonds in 2016**

Settlement date	Sale			Purchase		
	Issue name	Nominal value	Average price	Issue name	Nominal value	Average price
16/2/2016	ČR, VAR %, 20	100,000,000	100.500	ČR, VAR %, 16	100,000,000	100.250
17/2/2016	ČR, VAR %, 20	100,000,000	100.330	ČR, VAR %, 16	200,000,000	100.250
25/2/2016	ČR, VAR %, 27	200,000,000	102.720	ČR, VAR %, 16	400,000,000	100.240
26/2/2016	ČR, 0.95 %, 30	200,000,000	101.635	ČR, VAR %, 16	400,000,000	100.240
29/2/2016	ČR, 0.95 %, 30	200,000,000	101.800	ČR, VAR %, 16	600,000,000	100.240
29/2/2016	ČR, 1.50 %, 19	160,000,000	105.960	ČR, 5.00 %, 19	160,000,000	115.990
3/3/2016	ČR, VAR %, 27	30,000,000	102.550	ČR, VAR %, 16	90,000,000	100.230
3/3/2016	ČR, 0.95 %, 30	200,000,000	102.200	ČR, VAR %, 16	600,000,000	100.230
4/3/2016	ČR, 0.95 %, 30	100,000,000	102.050	ČR, VAR %, 16	300,000,000	100.230
7/3/2016	ČR, 0.95 %, 30	50,000,000	102.050	ČR, VAR %, 16	150,000,000	100.230
17/3/2016	ČR, 0.95 %, 30	105,000,000	102.450	ČR, VAR %, 16	210,000,000	100.220
29/3/2016	ČR, 0.95 %, 30	230,000,000	101.722	ČR, VAR %, 16	230,000,000	100.210
30/3/2016	ČR, 0.95 %, 30	100,000,000	101.700	ČR, VAR %, 16	100,000,000	100.210
31/3/2016	ČR, 0.95 %, 30	200,000,000	101.950	ČR, VAR %, 16	200,000,000	100.200
1/4/2016	ČR, 0.95 %, 30	400,000,000	102.100	ČR, VAR %, 16	400,000,000	100.200
4/4/2016	ČR, 0.95 %, 30	200,000,000	101.950	ČR, VAR %, 16	200,000,000	100.200
5/4/2016	ČR, 0.95 %, 30	50,000,000	102.100	ČR, VAR %, 16	50,000,000	100.200
8/4/2016	ČR, 0.95 %, 30	100,000,000	102.000	ČR, VAR %, 16	100,000,000	100.200
11/4/2016	ČR, 0.95 %, 30	200,000,000	102.160	ČR, VAR %, 16	200,000,000	100.190
12/4/2016	ČR, 0.95 %, 30	200,000,000	102.150	ČR, VAR %, 16	200,000,000	100.190
20/4/2016	ČR, 0.95 %, 30	250,000,000	102.324	ČR, VAR %, 16	500,000,000	100.180
21/4/2016	ČR, VAR %, 27	200,000,000	102.400	ČR, VAR %, 17	200,000,000	101.520
28/4/2016	ČR, 1.00 %, 26	150,000,000	105.150	ČR, 0.50 %, 16	150,000,000	100.120
2/5/2016	ČR, 0.95 %, 30	200,000,000	102.060	ČR, 0.50 %, 16	200,000,000	100.110
2/5/2016	ČR, VAR %, 27	200,000,000	102.390	ČR, VAR %, 17	200,000,000	101.490
3/5/2016	ČR, 0.95 %, 30	200,000,000	102.020	ČR, VAR %, 16	400,000,000	100.170
4/5/2016	ČR, VAR %, 27	200,000,000	102.390	ČR, VAR %, 17	200,000,000	101.480
5/5/2016	ČR, VAR %, 27	200,000,000	102.400	ČR, VAR %, 16	200,000,000	100.170
6/5/2016	ČR, 0.95 %, 30	50,000,000	102.150	ČR, VAR %, 16	150,000,000	100.170
6/5/2016	ČR, VAR %, 27	200,000,000	102.400	ČR, VAR %, 16	200,000,000	100.170
9/5/2016	ČR, VAR %, 27	200,000,000	102.400	ČR, VAR %, 16	200,000,000	100.160
10/5/2016	ČR, VAR %, 27	200,000,000	102.400	ČR, VAR %, 16	200,000,000	100.160
11/5/2016	ČR, 1.00 %, 26	200,000,000	105.510	ČR, VAR %, 16	200,000,000	100.160
11/5/2016	ČR, VAR %, 27	200,000,000	102.340	ČR, VAR %, 17	200,000,000	101.460
12/5/2016	ČR, VAR %, 27	200,000,000	102.300	ČR, VAR %, 16	200,000,000	100.160
12/5/2016	ČR, 0.95 %, 30	200,000,000	102.000	ČR, VAR %, 16	200,000,000	100.160
12/5/2016	ČR, 0.95 %, 30	100,000,000	102.000	ČR, VAR %, 17	100,000,000	101.450
16/5/2016	ČR, VAR %, 27	200,000,000	102.350	ČR, VAR %, 16	200,000,000	100.160
6/6/2016	ČR, VAR %, 20	200,000,000	100.300	ČR, VAR %, 16	400,000,000	100.140
6/6/2016	ČR, 0.95 %, 30	70,000,000	101.400	ČR, 0.50 %, 16	210,000,000	100.070
15/6/2016	ČR, 2.50 %, 28	200,000,000	121.610	ČR, VAR %, 17	200,000,000	101.340
16/6/2016	ČR, 2.50 %, 28	100,000,000	122.200	ČR, VAR %, 16	100,000,000	100.130
22/6/2016	ČR, VAR %, 20	200,000,000	100.350	ČR, VAR %, 16	400,000,000	100.110
24/6/2016	ČR, VAR %, 20	200,000,000	100.330	ČR, VAR %, 16	400,000,000	100.110
24/6/2016	ČR, 2.40 %, 25	200,000,000	117.810	ČR, VAR %, 17	200,000,000	101.270
24/6/2016	ČR, 2.40 %, 25	50,000,000	117.800	ČR, 0.50 %, 16	50,000,000	100.043

Settlement date	Sale			Purchase		
	Issue name	Nominal value	Average price	Issue name	Nominal value	Average price
27/6/2016	ČR, VAR %, 20	200,000,000	100.325	ČR, VAR %, 16	400,000,000	100.105
27/6/2016	ČR, 2.40 %, 25	300,000,000	117.800	ČR, VAR %, 17	300,000,000	101.253
28/6/2016	ČR, VAR %, 20	200,000,000	100.325	ČR, VAR %, 16	400,000,000	100.104
28/6/2016	ČR, 2.50 %, 28	200,000,000	121.950	ČR, VAR %, 16	200,000,000	100.104
28/6/2016	ČR, 2.50 %, 28	180,000,000	121.950	ČR, VAR %, 17	180,000,000	101.250
30/6/2016	ČR, 2.40 %, 25	200,000,000	118.250	ČR, VAR %, 16	200,000,000	100.102
13/7/2016	ČR, 0.95 %, 30	200,000,000	103.550	ČR, VAR %, 16	200,000,000	100.090
21/7/2016	ČR, 0.95 %, 30	200,000,000	103.550	ČR, VAR %, 16	200,000,000	100.083
22/7/2016	ČR, 1.00 %, 26	150,000,000	106.000	ČR, VAR %, 17	150,000,000	101.166
25/7/2016	ČR, 0.95 %, 30	200,000,000	103.450	ČR, VAR %, 16	200,000,000	100.079
28/7/2016	ČR, 2.40 %, 25	100,000,000	119.050	ČR, VAR %, 16	100,000,000	100.077
1/8/2016	ČR, VAR %, 20	100,000,000	100.400	ČR, VAR %, 16	100,000,000	100.074
1/8/2016	ČR, 1.00 %, 26	100,000,000	106.350	ČR, VAR %, 16	100,000,000	100.074
2/8/2016	ČR, 0.95 %, 30	200,000,000	104.150	ČR, VAR %, 16	200,000,000	100.073
4/8/2016	ČR, 0.95 %, 30	200,000,000	104.330	ČR, VAR %, 16	200,000,000	100.071
11/8/2016	ČR, 0.95 %, 30	64,000,000	104.300	ČR, VAR %, 16	64,000,000	100.065
12/8/2016	ČR, 2.40 %, 25	200,000,000	119.110	ČR, VAR %, 16	200,000,000	100.064
22/8/2016	ČR, 0.95 %, 30	200,000,000	104.750	ČR, VAR %, 17	200,000,000	101.060
30/8/2016	ČR, VAR %, 20	400,000,000	100.860	ČR, VAR %, 16	1,200,000,000	100.049
30/8/2016	ČR, 0.95 %, 30	200,000,000	105.200	ČR, VAR %, 16	600,000,000	100.049
2/9/2016	ČR, 0.95 %, 30	200,000,000	105.060	ČR, VAR %, 16	400,000,000	100.046
2/9/2016	ČR, 0.85 %, 18	200,000,000	101.780	ČR, VAR %, 16	200,000,000	100.046
5/9/2016	ČR, 3.75 %, 20	200,000,000	115.670	ČR, VAR %, 16	200,000,000	100.043
5/9/2016	ČR, 0.85 %, 18	200,000,000	101.780	ČR, VAR %, 16	200,000,000	100.043
7/9/2016	ČR, 0.85 %, 18	400,000,000	101.780	ČR, VAR %, 16	400,000,000	100.041
8/9/2016	ČR, 3.75 %, 20	100,000,000	115.712	ČR, VAR %, 16	100,000,000	100.040
8/9/2016	ČR, 0.95 %, 30	100,000,000	105.080	ČR, VAR %, 16	200,000,000	100.040
12/9/2016	ČR, 3.75 %, 20	297,960,000	115.940	ČR, VAR %, 16	297,960,000	100.037
12/9/2016	ČR, 0.95 %, 30	300,000,000	105.520	ČR, VAR %, 16	600,000,000	100.037
13/9/2016	ČR, 0.95 %, 30	200,000,000	105.520	ČR, VAR %, 16	400,000,000	100.036
13/9/2016	ČR, 4.60 %, 18	200,000,000	109.900	ČR, VAR %, 16	200,000,000	100.036
14/9/2016	ČR, 1.50 %, 19	100,000,000	105.740	ČR, VAR %, 16	100,000,000	100.035
14/9/2016	ČR, 1.00 %, 26	200,000,000	107.070	ČR, VAR %, 16	400,000,000	100.035
15/9/2016	ČR, 0.95 %, 30	200,000,000	105.520	ČR, VAR %, 16	400,000,000	100.034
21/9/2016	ČR, 4.60 %, 18	200,000,000	109.950	ČR, VAR %, 16	200,000,000	100.029
22/9/2016	ČR, 4.60 %, 18	200,000,000	109.950	ČR, VAR %, 16	200,000,000	100.028
27/9/2016	ČR, VAR %, 27	400,000,000	103.110	ČR, VAR %, 16	200,000,000	100.024
27/9/2016	ČR, 1.00 %, 26	600,000,000	107.207	ČR, VAR %, 16	300,000,000	100.024
28/11/2016	ČR, 1.00 %, 26	67,000,000	104.000	ČR, VAR %, 17	67,000,000	100.745
30/11/2016	ČR, 1.00 %, 26	200,000,000	104.050	ČR, VAR %, 17	200,000,000	100.740
1/12/2016	ČR, 1.00 %, 26	100,000,000	104.130	ČR, 4.00 %, 17	100,000,000	101.430
<b>Total</b>		<b>16,153,960,000</b>			<b>21,508,960,000</b>	

Source: MoF

**Table 41: Tap Sales of Government Bonds in 2016**

Issue name	Issue no.	Settlement date	Maturity date	Original maturity (years)	Average price	Nominal value
ČR, VAR %, 20	91	12/10/2016	9/12/2020	6.5	101.525	100,000,000
ČR, VAR %, 27	90	12/10/2016	19/11/2027	13.5	103.400	100,000,000
ČR, VAR %, 27	90	13/10/2016	19/11/2027	13.5	103.420	100,000,000
ČR, 2.40 %, 25	89	13/10/2016	17/9/2025	11.5	118.700	100,000,000
ČR, VAR %, 27	90	18/10/2016	19/11/2027	13.5	103.450	300,000,000
ČR, 2.50 %, 28	78	25/10/2016	25/8/2028	15.5	121.650	400,000,000
ČR, 4.60 %, 18	41	25/10/2016	18/8/2018	15.0	109.930	200,000,000
ČR, 4.60 %, 18	41	26/10/2016	18/8/2018	15.0	110.110	200,000,000
ČR, 0.85 %, 18	88	2/11/2016	17/3/2018	4.0	102.660	100,000,000
ČR, 2.50 %, 28	78	2/11/2016	25/8/2028	15.5	121.060	100,000,000
ČR, 2.50 %, 28	78	7/11/2016	25/8/2028	15.5	121.400	200,000,000
ČR, 2.50 %, 28	78	9/11/2016	25/8/2028	15.5	121.050	100,000,000
ČR, 2.50 %, 28	78	15/11/2016	25/8/2028	15.5	119.750	150,000,000
ČR, 2.50 %, 28	78	18/11/2016	25/8/2028	15.5	119.410	650,000,000
ČR, 2.50 %, 28	78	23/11/2016	25/8/2028	15.5	119.410	100,000,000
ČR, 2.50 %, 28	78	24/11/2016	25/8/2028	15.5	119.820	200,000,000
ČR, 2.50 %, 28	78	25/11/2016	25/8/2028	15.5	120.250	100,000,000
ČR, 1.50 %, 19	76	29/11/2016	29/10/2019	6.8	105.710	200,000,000
ČR, 2.50 %, 28	78	30/11/2016	25/8/2028	15.5	120.290	200,000,000
<b>Total</b>						<b>3,600,000,000</b>

Source: MoF

## Key Information 2016

- Year-on-year state debt decrease by CZK 59.6 bn to CZK 1,613.4 bn
- Year-on-year state debt to GDP decrease by 2.5 p.p. to 34.2%
- Share of the state debt, which is not connected to any net interest expenditure: 12.0%
- State budget surplus: CZK 61.8 bn
- Financing needs: CZK 214.5 bn
- Gross borrowing requirement: CZK 216.9 bn
- Gross issue of T-Bonds on domestic market: CZK 211.6 bn
- Gross issue of T-Bonds on foreign markets: CZK 0.0
- Gross issue of T-Bills incl. roll-over: CZK 30.8 bn
- Gross issue of savings government bonds: CZK 1.0 bn
- CZK-denominated T-Bonds and savings government bonds redemptions: CZK 175.4 bn
- Foreign-currency T-Bonds redemptions: CHF 500 mil.
- Year-on-year decrease in net cash expenditure on state debt service: CZK 4.7 bn
- Average time to maturity of CZK-denominated T-Bonds sold on primary and secondary market: 6.0 years
- Average yield to maturity of CZK-denominated T-Bonds sold on primary and secondary market: 0.08 % p.a.
- Average weighted yield to maturity of T-Bills sold on primary market: -0.16% p.a.
- Gross issue of T-Bonds incl. T-Bills incl. roll-over for zero or negative yield: CZK 145.7 bn
- Revenue of state budget from investment operations and issuance with negative yield: CZK 935.3 mil.
- Average time to maturity of state debt: 5.1 years
- Short-term state debt: 14.3%
- Average time to re-fixing of state debt: 4.0 years
- Interest re-fixing of the debt portfolio within 1 year: 29.6%

## Contacts

### Debt and Financial Assets Management Department



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The publication was prepared based on the information available 10 February 2017  
and is available also on the following website:

[www.mfcr.cz/statedebt](http://www.mfcr.cz/statedebt)

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