



### Debt Portfolio Management Quarterly Review

DECEMBER 2008

The Ministry of Finance submits the sixteenth *Debt Portfolio Management Quarterly Review* to present the underlying debt portfolio risk management measures and performance with respect to the planned annual financing programme and achieving the medium-term strategic targets of debt management policy. For the year 2008, these targets were quantified by the *Financing and Debt Management Strategy for 2008* released on 3 December 2007 and based on the Finance Minister's decision. The Strategy specifies operating space of the asset and liability management through issuance activity, financial investment and active operations on secondary market of government bonds and financial derivatives. Appendix presents brief hindsight as for origins of quantitative modeling of market risk to improve the Czech debt management process.

#### I. Review of Strategic Targets for 2008

The 2008 state debt management policy is guided by the set of quantitative targets and criteria approved by the Minister of Finance for issuance activities and the active management of debt portfolio as summarized in the following table.

##### Financing programme and strategic targets in 2008

Criterion	Guidelines for 2008	December 31, 2008
International issues	Max. 50% of the total annual gross borrowing requirement	26.7%
	CZK 0.0 to 89.9 bn	CZK 48.3 bn
Gross government bonds issues	CZK 75.1 to 165.0 bn	CZK 123.6 bn
Net money market issues	CZK 0.0 to – 20.0 bn	CZK -3.4 bn
Loans from EIB	CZK 14.7 bn	CZK 12.6 bn
Short-term state debt	20% and less	17.7%
Average time to maturity	6.0 to 7.0 years	6.6 years
Interest Rate Re-fixing	30 to 40%	28.4%

Note: EIB – European Investment Bank. Source: MF CR.

As regards **international funding**, the Czech Republic has drawn one tranche of loans from the European Investment Bank in the amount of **CZK 1.0 billion** during the fourth quarter. During the year 2008, loans in total amount of CZK 12.6 billion were drawn, which represents 85.7% of the limit in the State Budget Act for 2008

Regarding **domestic issuance activity**, the gross issuance of government bonds was **CZK 34.8 billion** in the fourth quarter, including tap sales in the amount of CZK 11.5 billion via Reuters Dealing system used by the Debt and Financial Assets Management Department. The total annual gross issuance reached **CZK 123.6 billion**, which is about 74.9 % of the maximal supply announced on 3 December 2007. The net issue of government bonds was **CZK 34.8 billion** in the fourth quarter (CZK 43.4 billion during the whole year 2008). No buy-backs of government bonds were executed in the fourth quarter.

**The volume in issue of money market instruments** increased by **CZK 33.4 billion** during the fourth quarter, the net issue of money market instruments decreased by CZK 3.4 billion during the year 2008.

**The short-term state debt** decreased by 1 percentage point and reached the share of **17.7%** at the end of the year 2008. It means that the Ministry of Finance maintains the planned long-term target.

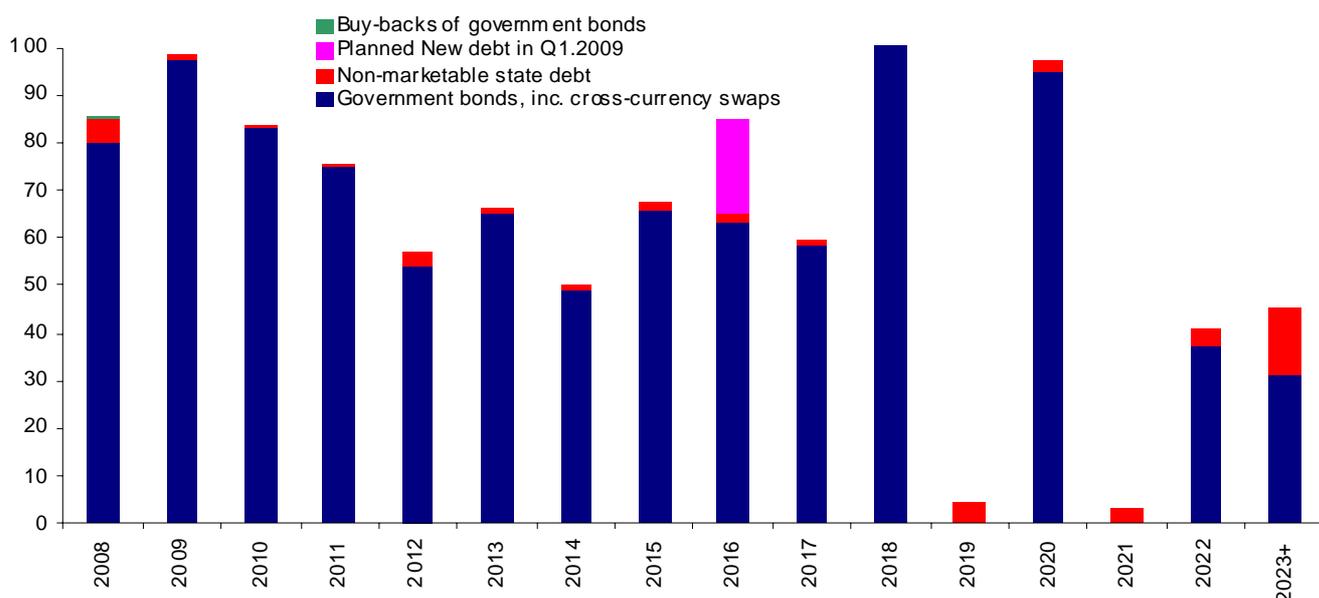
**Average time to maturity** reached the level of **6.6 years**, i.e. within the announced target band 6.0–7.0 years for 2008.

Beginning with the year 2006, **the interest rate re-fixing** up to one year replaces the modified duration targeting in the area of market risk management. The *Financing and Debt Management Strategy for 2008*

sets the average yearly range between 30 and 40%. This risk measure increased to 28.4% at the end of the year 2008 and is approaching the lower limit.

### Redemption profile of state debt (CZK billion)

(end of 2007; updated on 8 January 2009)



Note: Without money market instrument instruments in circulation.

Source: MF CR.

## II. State debt costs and Cost-at-Risk in 2008

Planned and actual budgetary expenditures and revenues in relation to debt service are captured in the following table.

### Planned and actual budgetary expenditures and revenues on state debt in 2008

Measure (CZK mil)	Actual 2007	Budget 2008		Actual 2008	% Execution	Index 2008/2007 (%)
		Approved	After changes			
1	2	3	4	5	5:4	5:2
<b>Total balance</b>	<b>34 126</b>	<b>45 460</b>	<b>44 897</b>	<b>44 751</b>	<b>99.7</b>	<b>131.1</b>
	-	(-) 1 460	(-) 1 460	(-) 7 087	485.4	-
<b>1. Total interest costs</b>	<b>33 981</b>	<b>45 141</b>	<b>44 607</b>	<b>44 600</b>	<b>100.0</b>	<b>131.3</b>
	-	(-) 1 460	(-) 1 460	(-) 7 024	481.1	-
<b>Domestic debt</b>	<b>29 500</b>	<b>38 847</b>	<b>37 821</b>	<b>37 726</b>	<b>99.7</b>	<b>127.9</b>
	-	(-) 1 460	(-) 1 460	(-) 6 044	414.0	-
<i>Of which:</i>						
Money market instruments	1 767	2 484	2 419	2 209	91.3	125.0
	-	(-) 1 460	(-) 1 460	(-) 3 683	252.3	-
Government bonds	27 733	36 363	35 402	35 517	100.3	128.1
	-	-	-	(-) 2 361	-	-
<b>Foreign debt</b>	<b>4 481</b>	<b>6 294</b>	<b>6 785</b>	<b>6 874</b>	<b>101.3</b>	<b>153.4</b>
	-	-	-	(-) 980	-	-
<i>Of which:</i>						
International issues	3 381	4 653	5 145	5 255	102.1	155.4
	-	-	-	(-) 980	-	-
EIB loans	1 100	1 641	1 641	1 619	98.7	147.2
	-	-	1	0	90.8	-
<b>2. FX gain/loss</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>(-) 63</b>	<b>-</b>	<b>-</b>
	-	-	-	-	-	-
<b>3. Total fees</b>	<b>145</b>	<b>300</b>	<b>270</b>	<b>132</b>	<b>49.0</b>	<b>91.2</b>
<b>4. Redemption</b>	<b>-</b>	<b>19</b>	<b>19</b>	<b>18</b>	<b>96.3</b>	<b>-</b>

Note: (-) means revenues (gains).

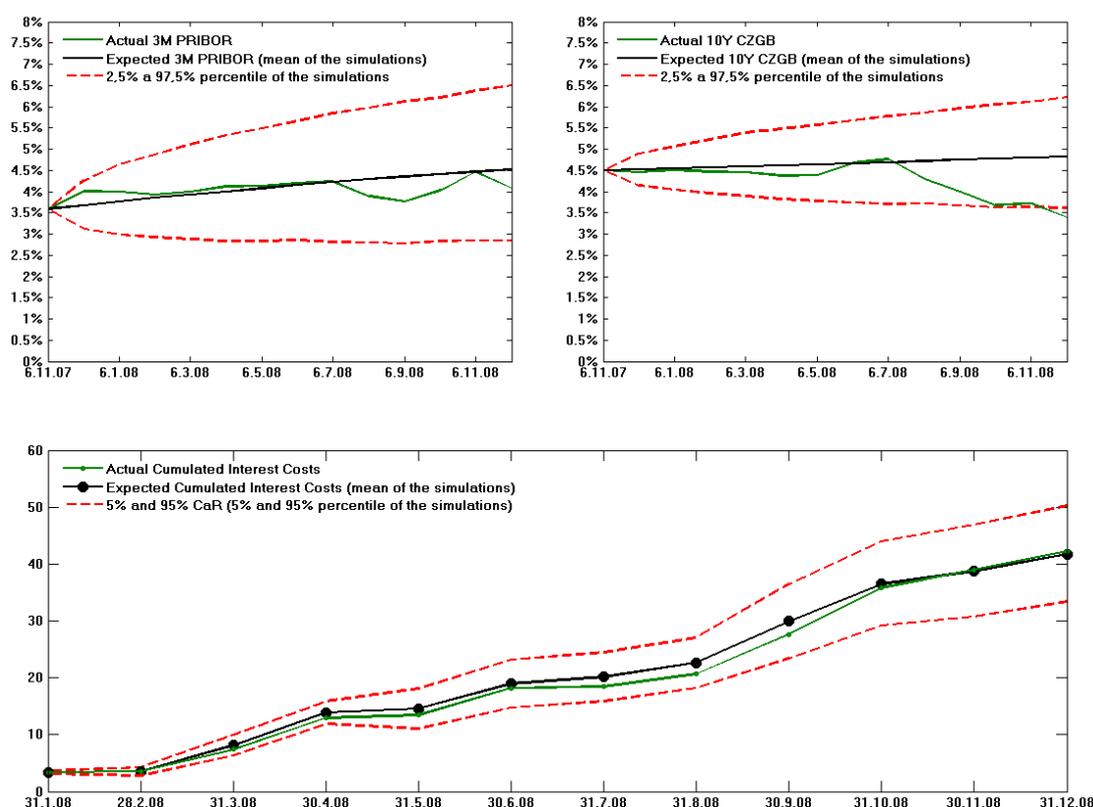
Source: MF CR.

The **net interest costs** on the state debt in 2008 amounts **CZK 37.7 billion**. Financial investments on the money market gain CZK 3.7 billion and accrued interest income and T-bonds premiums achieve CZK 2.4 billion. The gross interest costs reached CZK 44.8 billion.

The state debt interest costs model **Cost-at-Risk (CaR)** for the year 2008 was published in the *Financing and Debt Management Strategy for the year 2008*. Calculations of the CaR values are based on future interest rates simulations.

The actual versus simulated development of the PRIBOR 3M and 10-year government bond benchmark from November 2007 till December 2008 is in the upper part of the figure. The actual versus simulated interest costs for the year 2008 is in the lower part of the figure.

**Actual versus simulated evolution of the interest rates and the actual versus simulated monthly gross interest costs (CZK billion)**



Note: Interest costs are calculated on the cash principle relevant for the current methodology of the state budget.  
Source: MF CR.

The comparison between the actual development of interest costs and the development of the simulated interest costs in 2008 in comparison with 2007 is summarized in the following table.

**Cost-at-Risk deviation from the actual interest costs in the first three quarters of 2007 and 2008**

	2007	2008
Actual interest costs (CZK billion)	34.0	42.2
Expected (simulated) costs (CZK billion)	33.3	41.7
Cost-at-Risk 95% (CZK billion)	35.8	50.2
Expectation bias (%)	-2.1	-1.2

Source: MF CR.

### III. State Debt Parameters (end of quarter)

Debt Parameter	Dec 2007	Mar 2008	Jun 2008	Sep 2008	Dec 2008
<b>Total state debt (CZK billion)</b>	<b>892,3</b>	<b>860.1</b>	<b>933.3</b>	<b>925.5</b>	<b>999.5</b>
Market value, inc. derivatives (CZK billion)	899.5	867.9	921.4	952.4	1000.3
Short-term state debt (%)	18.7	16.5	13.8	10.3	17.7
Share of money market instruments (%)	9.2	5.5	3.6	4.9	7.9
Average time to maturity (years)	6.4	6.7	6.8	7.0	6.6
Interest rate refixing up to one year, inc. derivatives (%)	26.0	24.2	26.1	21.3	28.4
Variable-rate state debt (%)	4.1	3.9	3.9	4.7	7.3
Modified duration (years)	3.8	4.0	4.0	4.5	4.3
Modified duration, exc. CZK IRS (years)	3.5	3.7	3.9	4.8	4.2
Foreign currency state debt (%)	0.6	0.6	0.9	4.4	4.6
Foreign currency debt, exc. cross-currency swaps (%)	8.1	8.1	12.0	12.5	12.8
Nonmarketable state debt (%)	4.4	4.2	4.3	5.0	4.7
<b>Marketable state debt (CZK billion)</b>	<b>853.0</b>	<b>823.6</b>	<b>893.1</b>	<b>879,1</b>	<b>952.2</b>
Market value (CZK billion)	860.2	831.4	884.6	906.1	952.5
Short-term marketable debt (%)	19.0	17.1	14.3	10.7	18.5
Share of money market instruments (%)	9.6	5.7	3.7	5.2	8.3
Average time to maturity (years)	6.3	6.6	6.7	6.7	6.4
Interest rate refixing up to one year, inc. derivatives (%)	22.9	21.1	23.0	17.4	25.0
Variable-rate marketable debt (%)	0.0	0.0	0.0	0.0	2.9
Modified duration (years)	3.9	4.1	4.1	4.7	4.5
Modified duration, exc. CZK IRS (years)	3.7	3.9	4.0	5.0	4.4
Foreign currency marketable debt (%)	0.6	0.6	1.0	4.7	4.8
Foreign currency debt, exc. cross-currency swaps (%)	8.5	8.4	12.5	13.2	13.4

Notes: **Interest rate refixing up to one year** = Money market instruments + Fixed-rate short-term debt + Variable-rate state debt + Effect of interest rate derivatives. Source: MF CR.

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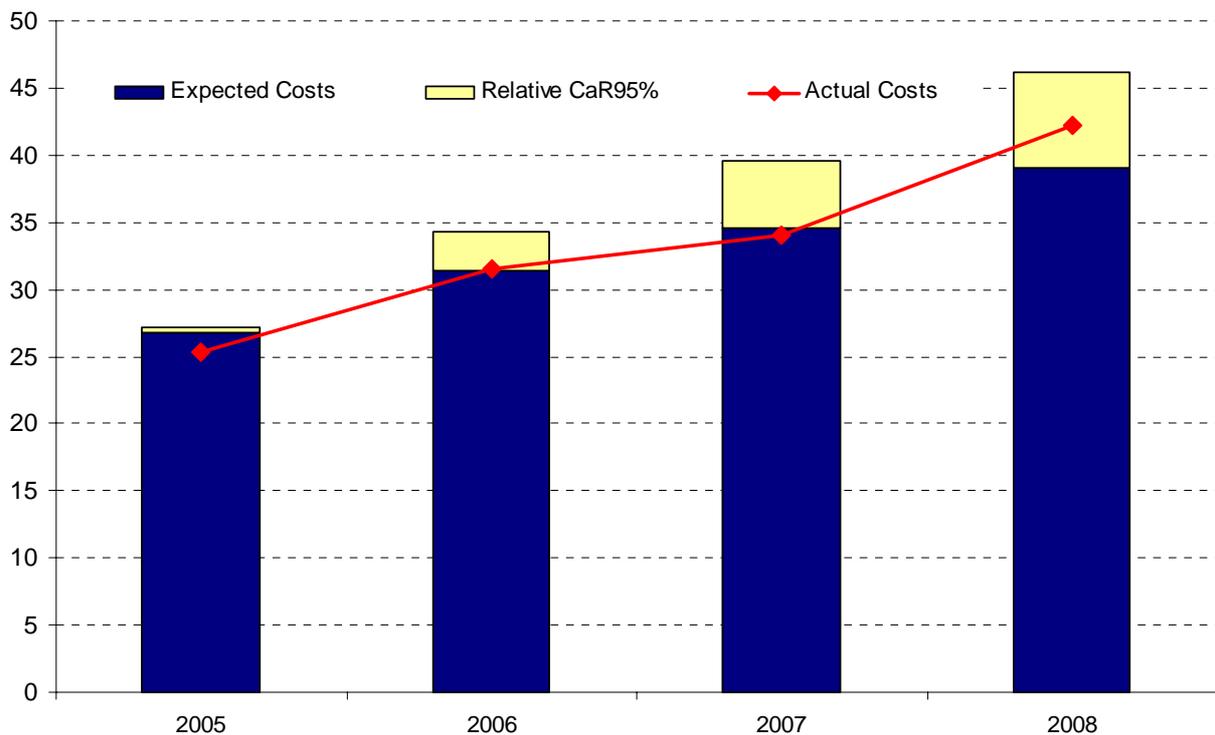
## Appendix

Model framework which allows computing risk measures such as Cost-at-Risk (CaR) was initially presented by the quantitative analysts of debt management department in June 2005. It was based on future yield curve simulations which are subsequently used for obtaining simulations of the State's interest costs on the debt.

The current state debt portfolio and its interest costs were analysed within 9 refinancing strategies in the five year horizon. For the yield curve simulations, the Cox, Ingersoll, Ross (CIR) model was used (see for more details the *Debt Portfolio Management Quarterly Review – June 2005*).

The actual versus simulated interest costs in 2005 to 2008 are captured in the following figure for the so called **Basic Strategy A** which approximately keeps the relative structure of the government bonds portfolio constant for the whole period and money market instruments are kept around the level of CZK 109 billion.

Interest costs and Cost-at-Risk in 2005 to 2008 based on original simulation model framework (CZK billion)



Source: MF CR.