RISK MANAGEMENT

CHARACTERISATION OF THE DEBT PORTFOLIO AND COST INDICATORS

On 31 December 2011, the market value of the total debt portfolio[7] was EUR 138,330 million, reflecting a -18.1 per cent discount in relation to its nominal value. The portfolio's average coupon rose to 4.07 per cent in 2011. The average residual term increased to 6.34 years.

Table 20 – Debt portfolio at year-end (after swaps)

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Outstanding (EUR Million)	62,584	65,823	72,023	79,554	83,611	90,821	101,810	108,609	112,852	117,169	131,892	149,837	165,580
Average coupon	5.55%	5.82%	5.31%	5.14%	4.50%	4.43%	4.09%	4.28%	4.35%	4.47%	3.51%	3.66%	4.07%
Average yield	4.54%	4.96%	4.69%	3.68%	3.18%	2.73%	2.96%	3.93%	4.16%	3.83%	2.93%	4.81%	7.80%
Average residual term (years)	4.17	4.61	4.57	4.55	4.31	3.66	4.89	5.84	6.03	6.26	6.10	5.80	6.34
Modified duration	2.87	2.96	2.98	3.19	2.92	2.98	3.41	2.91	2.71	3.80	3.52	3.80	4.38
Market value (EUR Million)	64,774	69,592	76,444	86,159	89,638	97,901	108,997	112,585	116,071	123,537	138,051	143,505	138,330
Premium (incl. accrued interest)	3.5%	5.7%	6.1%	8.3%	7.2%	7.8%	7.1%	3.6%	2.9%	5.4%	4.7%	-4.2%	-18.1%

Marked-to-market cost

The provisional benchmark model was maintained in 2011. Under this model, active debt management operations carried out by IGCP are included in a separate portfolio whose mark-to-market assessment is used to measure the performance of IGCP's active management.

In 2011, the marked-to-market cost[8] of the Adjusted Debt Portfolio[9] was -11.68 per cent. A cost of -11.89 per cent was calculated for the benchmark portfolio in the same period, resulting in an unfavourable cost differential of 20.7 basis points.

Given the difficulty in trading new financial derivatives as a result of the deterioration of the Republic's credit rating, the assessment of IGCP's performance, based exclusively on active debt management operations, is currently of little significance.

In cumulative terms, since 1999 the total annual cost of the real portfolio was 2.195 per cent, 0.4 basis points higher than that of the benchmark.

Table 21 – Annual cost of the debt portfolio and of the benchmark

	Internal Rate of Return (annualised)													
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	1999/2011
Portfolio	-1.38%	6.30%	6.19%	8.41%	3.81%	5.93%	3.76%	0.64%	3.03%	7.40%	4.04%	-5.89%	-11.68%	2.195%
Benchmark	-0.97%	6.14%	6.23%	8.44%	3.79%	5.95%	3.59%	0.64%	3.03%	7.02%	4.62%	-6.07%	-11.89%	2.190%
Difference (in b.p.)	-41.0	16.0	-3.6	-3.5	2.4	-2.0	16.9	0.0	-0.8	37.7	-57.8	17.9	20.7	0.4

[7] As from 2003, the market value of the OT portfolio has been based on secondary market prices. This methodology was subsequently extended to the BT portfolio. Prior to this, the market value of debt instruments was obtained by discounting cash-flows with benchmark market rates so that credit spreads versus these rates had to be estimated. Currently, all instruments with a liquid secondary market (OT and BT quoted on MEDIP) are evaluated according to prices quoted in this market. For non-liquid instruments, price estimates are calculated by interpolating the yields of liquid instruments.

[8] The marked-to-market cost in 2011 was once again negative because the (negative) effect of the decline in market value outweighed the (positive) interest effect.

[9] The Adjusted Debt Portfolio refers to all the instruments that make up the direct State's debt portfolio, including financial derivatives, with the exception of promissory notes, retail debt, and CEDIC and CEDIM.

RISK INDICATORS

The Guidelines for the Management of Government Debt (Guidelines) identify the risk indicators considered most relevant for the debt portfolio and set limits to its exposure. The Guidelines set maximum limits to the interest rate risk (refixing profile and modified duration), refinancing risk, exchange rate risk and credit risk.

CaR – Cost at Risk[10]

In the portfolio CaR estimate, the portfolio position at the beginning of the year was used as a starting point.

In 2007, IGCP adopted a multifactor model to calculate the CaR – the choice was the Nelson and Siegel (1987) model and the dynamic model proposed by Diebold and Li (2006) was incorporated. The methodology followed in the implementation of the model is described in more detail in the box: MODEL FOR GENERATING INTEREST RATE SCENARIOS, from the 2007 annual report.

Using the State Budget for 2012 to project the annual borrowing needs, the benchmark financing strategy[11], constant financing spreads and the various scenarios for the yield curve dynamics simulated with the model described, the estimated CaR[12] resulting from simulating the portfolio and risk-free interest rate (swap) dynamics for 2012 is as follows:

Table 22 – Portfolio CaR for 2012
(for a confidence interval of 95 per cent)

EUR million	
National Accounts	**2012**
Expected cost	7,435
Absolute CaR (C.I. 95%)	7,600
Relative CaR (C.I. 95%)	165
Relative CaR / Expected cost	2.2%
Relativa CaR / GDP	0.10%

According to the estimated absolute CaR, the expected value of the portfolio costs for 2012 is EUR 7,435 million, with a mere 5 per cent probability of this figure exceeding EUR 7,600 million. The relative CaR for the same significance level is EUR 165 million.

In relative terms and in comparison with GDP, the probability of the deficit-to-GDP ratio increasing by more than 0.10 percentage points in 2012 as a result of changes in risk-free interest rates is lower than 5 per cent.

[10] The CaR (Cost at Risk) is a budgetary risk measure whose follow-up is foreseen in the Guidelines. In 2002, IGCP developed a model to estimate this indicator whose theoretical framework and characteristics were presented in the 2002 Government Debt Management Report. CaR is a statistical estimator of the cash-flow cost of debt aimed at measuring the maximum variation of this cost in a given time frame. This indicator may be presented in two forms: the absolute CaR represents the maximum value of the cash-flow cost for a given probability; the relative CaR reflects the maximum deviation of that cost in relation to its expected value.

[11] Although the benchmark is suspended, the reference strategy which was previously approved continues to be considered as the best reference for computing CaR.

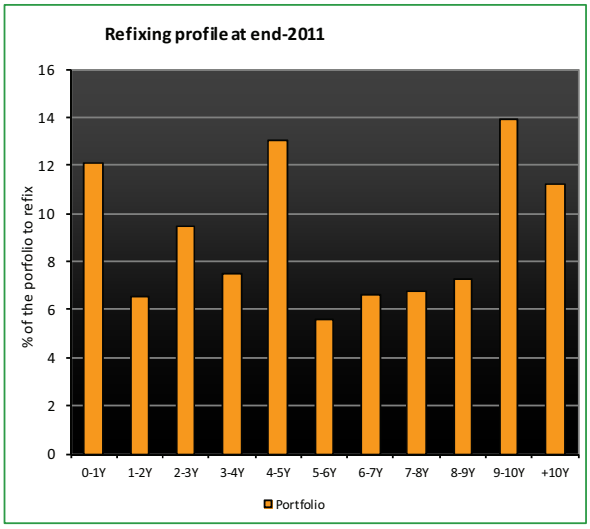
[12] Calculated on a national account basis.

Refinancing risk

In addition to market variables (tradability, liquidity, maintaining a benchmark yield curve, among others), the management of the debt portfolio takes into account the refinancing profile of the debt, so as to avoid an excessive concentration of redemptions that may lead to higher financing costs in the future.

The absolute limits set on the percentage of the portfolio maturing in a 12-month, 24-month and 36-month period are 25 per cent, 40 per cent and 50 per cent, respectively. At the end of 2011, the portfolio had the following refinancing profile:

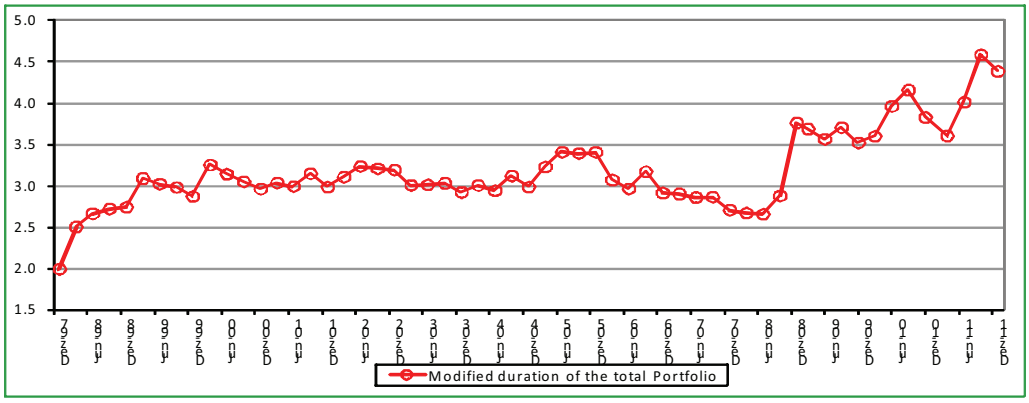
Graph 19 – Refinancing profile of the debt portfolio



Interest rate risk

At the end of 2011, the modified duration[13] of the total debt portfolio and the adjusted portfolio was 4.38 and 4.74, respectively. Throughout 2011, the duration of the adjusted portfolio was always higher than the lower limit (4.0).

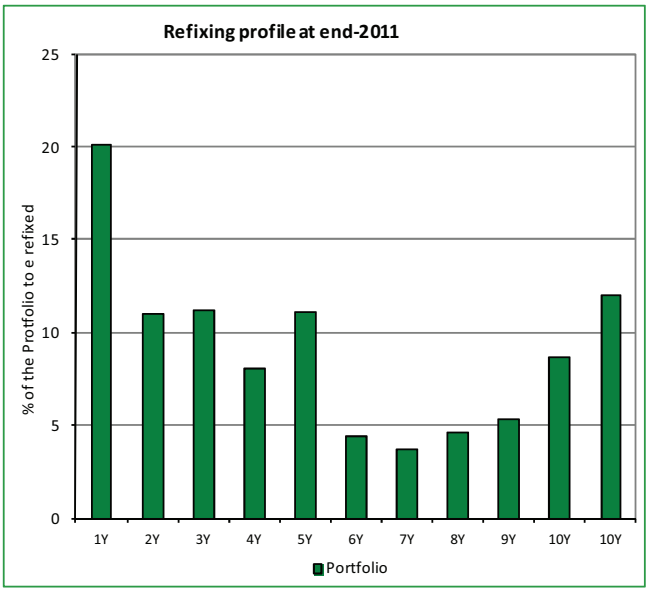
Graph 20 – Modified duration of the total portfolio



[13] The modified duration measures the elasticity of the portfolio's market value to changes in market yields.

At the end of 2011, the debt portfolio had the following refixing profile (i.e. percentage of the nominal value of the adjusted portfolio to be refixed or maturing, by term):

Graph 21 – Refixing profile of the portfolio



Exchange rate risk

At the end of 2011, the net *exchange* rate exposure of the debt portfolio after swaps was 2.45 per cent as a result of the disbursements of the IMF's Extended Fund Facility which is denominated in special drawing rights (SDR), corresponding to a basket of EUR, USD, GBP and JPY. Throughout 2011 the net exchange rate exposure of the debt portfolio after swaps remained below the 10 per cent limit.

IGCP has been using currency swaps to hedge the exchange rate exposure. However, this has only been partially possible, in spite of the new contractual terms of the CSA[14] which reduce the credit risk exposure of derivates. As a result of the deterioration of the Republic's credit rating, counterparties were less inclined to agree on new derivative operations.

The primary exchange rate exposure (excluding hedging operations) was 5.89 per cent of the total portfolio at year-end, far lower than the 20 per cent limit set by the Guidelines.

Credit risk

The assumption of credit risk by the Republic results from operations involving derivatives, repos and money market applications. The Guidelines in force[15] establish the diversification of risk and the limits of exposure attributed to each counterparty according to its credit rating, which are monitored on an ongoing basis.

The credit risk of each counterparty (i.e. of all of its derivative contracts with the Republic of Portugal) is calculated using a methodology which includes two components: its current market value, which

[14] As described in the Box – Risk Management: Bilateral CSA of the Annual Report for 2010.
[15] The Guidelines on Credit Risk in force are detailed in the Box – NEW GUIDELINES FOR MANAGING CREDIT RISK of the Annual Report for 2009.

represents the substitution value of each transaction plus an add-on, designed to estimate the potential change of that value in the future. The market value of the collateral received or delivered under the CSA should be subtracted from the amount resulting from the sum of these two components.

With the aim of minimising the exposure of the Republic to the credit risk associated to derivatives and simultaneously maximising its capacity to carry out new operations at the lowest possible cost, in January 2011 (once all the legal conditions had been met for the delivery of collateral by IGCP) IGCP began negotiating with derivative counterparties to sign bilateral CSA agreements. Following these negotiations, by the end of 2011 IGCP had signed bilateral CSA agreements with 8 counterparties. The list of counterparties for operations involving credit risk currently includes 23 financial institutions with signed ISDA contracts, 7 of which have already signed the unilateral CSA with the Republic.

As shown in the graph below, the credit risk exposure of the derivatives portfolio remained below the overall limit throughout 2011.

Graph 22 – Credit risk – components