HM TREASURY

Debt and reserves management report 2012-13

March 2012

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1 Introduction

1.1 This is the twentieth report outlining the Government's debt management activities and the second since the introduction of the new fiscal framework in 2010.

1.2 The Debt and reserves management report (DRMR) is published in accordance with the Charter for Budget Responsibility.[1] The Charter requires the Treasury to "report through its Debt Management Report – published as part of the Budget Report – on its plans for borrowing in each financial year" and to set remits for its agents. In particular, the Charter requires the report to include:

- the overall size of the debt financing programme for each financial year;
- the planned maturity structure of gilt issuance and the proportion of conventional and index-linked gilt issuance; and
- a forecast of net financing from National Savings and Investments (NS&I).

1.3 The Debt Management Office (DMO) publishes detailed information on developments in debt management and the gilt market over the previous year in its *Annual Review.*

1.4 Chapters 2 and 3 and Annexes A and B contain information on the Government's wholesale debt management activities, including sterling financing for the Official Reserves. Information about financing from NS&I is set out in Annex C. Further detail on the management of the UK's Official Reserves can be found on HM Treasury's website.[2]

1.5 An update to the DMO's remit for cash management has been published on HM Treasury's website.[3]

[1] The Charter for Budget Responsibility is a statutory document established by the Budget Responsibility and National Audit Act 2011. The Charter was published in April 2011 and is available at http://www.hm-treasury.gov.uk/d/charter_budget_responsibility040411.pdf.
[2] http://www.hm-treasury.gov.uk/ukecon_eea_index.htm
[3] http://www.hm-treasury.gov.uk/8872.htm

2 Debt management policy

2.1 This chapter contains an overview of the Government's macroeconomic policy frameworks and outlines the role played by debt management policy in the context of the fiscal and monetary policy frameworks, which remain unchanged since last year. It also sets out medium-term considerations for debt management policy during the current period of fiscal consolidation.

Fiscal policy framework

2.2 The Government has set out comprehensive policies to bring the public finances back under control, demonstrating the Government's determination to reduce public sector borrowing and debt and promote confidence in the sustainability of the public finances. The Government has:

- set fiscal plans to restore the public finances to a sustainable position;
- created and established in law the Office for Budget Responsibility (OBR), introducing independence, greater transparency and credibility to the economic and fiscal forecast on which fiscal policy is based; and
- announced a clear forward-looking fiscal mandate and set a supplementary target for debt to guide fiscal policy decisions over the medium term.

Fiscal objectives

2.3 To promote transparent policy-making, the Government's fiscal policy framework requires the Government to set out its fiscal policy objectives and fiscal mandate before Parliament in the Charter for Budget Responsibility. The Government's fiscal policy objectives, as specified in the Charter for Budget Responsibility and approved by Parliament in May 2011, are to:

- ensure sustainable public finances that support confidence in the economy, promote intergenerational fairness, and ensure the effectiveness of wider Government policy; and
- support and improve the effectiveness of monetary policy in stabilising economic fluctuations.

Fiscal mandate

2.4 At the June Budget 2010, the Government set a forward-looking fiscal mandate to achieve cyclically-adjusted current balance by the end of the rolling, five-year forecast period. At Budget 2012, the end of the forecast period is 2016-17.

2.5 The June Budget 2010 also announced a supplementary target for debt, which requires public sector net debt (PSND) as a percentage of Gross Domestic Product (GDP) to be falling at a fixed date of 2015-16, ensuring that the public finances are restored to a sustainable path.

Office for Budget Responsibility

2.6 The Government has asked the OBR to judge independently whether fiscal policy is consistent with a greater than 50 per cent chance of achieving the fiscal mandate; and a greater than 50 per cent chance of meeting the target for debt.

2.7 The official forecasts for the economy and public finances are produced by the OBR. The OBR forecasts for public sector net borrowing (PSNB) and the central government net cash requirement (CGNCR) in 2012-13 are published in its March 2012 *Economic and fiscal outlook.* These aggregates, together with a number of other factors, are used to determine the Government's gross and net financing requirements.

Monetary policy

2.8 The objectives for monetary policy are set out in the Bank of England Act 1998. The Act states that, in relation to monetary policy, the objectives of the Bank of England shall be:

- to maintain price stability; and
- subject to that, to support the economic policy of Her Majesty's Government, including its objectives for growth and employment.

2.9 The Monetary Policy Committee (MPC) of the Bank of England has full operational independence to set monetary policy to meet the Government's inflation target. The Government reaffirms in Budget 2012 the inflation target of 2 per cent for the 12-month increase in the Consumer Prices Index (CPI), which applies at all times. The MPC has maintained Bank Rate at 0.5 per cent since March 2009 and undertaken a programme of asset purchases through the Asset Purchase Facility (APF) that is projected to reach £325 billion by May 2012, financed by the issuance of central bank reserves. The Government confirms in Budget 2012 that the APF will remain in place in 2012-13.

Debt management framework

2.10 The debt management framework includes:

- the debt management objective;
- the principles that underpin the debt management framework;
- the roles of the DMO and HM Treasury; and
- the full funding rule.

Debt management objective

2.11 The debt management objective was established in 1995 following the *Debt Management Review.* The objective, which is explicitly long term, is:

> to minimise, over the long term, the costs of meeting the Government's financing needs, taking into account risk, while ensuring that debt management policy is consistent with the aims of monetary policy.

2.12 While decisions on debt management policy must be taken with a long-term perspective, specific decisions on funding the Government's gross financing requirement are taken annually. Those decisions are announced in the Budget for the forthcoming year and are updated during the year consistent with published revisions to the fiscal aggregates (typically in April following the publication of the CGNCR outturn for the previous year and in the Autumn alongside the publication of the OBR's updated forecasts). The components of the objective are examined in Box 2.A.

Box 2.A: Components of the debt management objective

The cost of meeting the Government's financing needs in the long term arises directly from interest payable on debt (coupons and the difference between issuance proceeds and redemption payments) and the costs associated with issuance.

'Over the long term' means that the Government expects to borrow in the future over the long term, that is, beyond the forecast period for fiscal policy. This expectation is reflected in the Government's choice of debt management strategies. For example, the Government promotes secondary market liquidity because it is a 'repeat borrower'. In addition, the Government may dismiss strategies offering short-term 'opportunistic' benefits if those strategies would adversely affect investors' attitudes over the long term.

There is no single definition of risk in debt management. Rather, a number of risks are taken into account when selecting possible debt management strategies. Five particularly important risks are:

- interest rate risk – the risk associated with new issuance each year as interest rate exposure arises at the time that new debt is issued;
- refinancing risk – the risk associated with the rollover of maturing debt. An interest rate exposure arises at the time that debt is rolled over and the debt may need to be rolled over at a time when the future CGNCR may also be high, and against a market background that cannot be forecast. Refinancing risk is greater if redemptions are concentrated in particular years;
- inflation risk – the exposure to inflation arising from the indexation of coupons and principal of index-linked gilts;
- liquidity risk – the risk that the Government may not be able to borrow from a particular part of the market in the required size at a particular point in time because that part of the market is insufficiently liquid for it to do so; and
- execution risk – the risk that the Government may not be able to sell the offered amount of debt at a particular point in time, either in full, or at a particularly deep discount to the market price, that would not yield value for money for the Exchequer.

This list of risks is not exhaustive. However, these are the major risks that have been taken into account in recent years in the determination of the debt management remit and are expected to be taken into account in future years. The weight placed on each risk can change over time. An explanation of how the risks are taken into account and the weight placed on them in determining the DMO's financing remit for 2012-13 is set out in Annex B.

Debt management policy principles

2.13 The debt management objective is achieved by:

- meeting the principles of openness, transparency and predictability;
- developing a liquid and efficient gilt market;
- issuing gilts that achieve a benchmark premium;
- adjusting the maturity and nature of the Government's debt portfolio, primarily by means of the maturity and composition of debt issuance and potentially by other market operations including switch auctions, conversion offers and buy-backs; and
- offering cost-effective savings instruments to the retail sector through NS&I.

2.14 The framework is underpinned by the institutional arrangements for debt management policy established in 1998, in particular the creation of the DMO with responsibility for the implementation and operation of debt management policy.

Roles of HM Treasury and the DMO

2.15 The respective roles of HM Treasury and the DMO are set out in the DMO's *Executive Agency Framework Document.*[1]

2.16 The Government's approach to debt management is based on the principles of openness, predictability and transparency, which is recognised internationally as the most effective way to minimise the long-term costs of debt management. In support of this:

- the DMO will continue to conduct its operations in accordance with the principles of openness, predictability and transparency;
- HM Treasury and the DMO will explain the basis for their decisions on debt issuance as fully as possible to the market to allow market participants to understand better the rationale behind the decisions; and
- the DMO will continue to have a responsibility to advise on, and promote the liquidity and efficiency of, the gilt and Treasury bill markets.

2.17 HM Treasury sets the annual financing remit using the projected financing requirement prepared on the basis of the OBR's forecasts for the fiscal policy aggregates. The DMO has responsibility for pre-announcing the details of its debt issuance plans to the market, including an auction calendar setting out the dates and gilt type of auctions for the year ahead, and details on planned average auction sizes.

The full funding rule

2.18 An overarching requirement of debt management policy is that the Government fully finances its projected financing requirement each year through the sale of debt. This is known as the 'full funding rule'. The Government therefore issues sufficient wholesale and retail debt instruments to enable it to meet its projected financing requirement.[2]

2.19 The rationale for the full funding rule is:

- that the Government believes that the principles of transparency and predictability are best met by full funding of its financing requirement; and
- to avoid the perception that financial transactions of the public sector could affect monetary conditions, consistent with the institutional separation between monetary policy and debt management policy.[3]

2.20 However, the total amount of financing raised in a financial year will differ in practice from the projected financing requirement at the margin. This divergence normally occurs towards the end of the financial year and can be explained by a number of different factors. These include: the difference between the projected CGNCR and its outturn; auction proceeds (including via the Post Auction Option Facility (PAOF)) in the period following the Autumn Statement that are

[1] Available at http://www.dmo.gov.uk/documentview.aspx?docname=publications/corpgovernance/fwork040405.pdf&page=.

[2] Wholesale refers to gilts and Treasury bills; retail to NS&I products.

[3] With the exception of a small and stable balance on the Debt Management Account held at the Bank of England and the Ways and Means Advance (a government account at the Bank of England), the short-term net cash position of the Exchequer will be held with market counterparts. This means that, in practice, financial transactions of the public sector would not affect monetary conditions.

different from those required to meet relevant financing targets;[4] the sale of Treasury bills, including the DMO's operational flexibility to vary the end-year stock, as well as the bilateral sale of Treasury bills that mature in the next financial year; and the implementation of the syndication programme at year-end.[5]

2.21 The difference will be reflected in an increase/decrease in the DMO's cash balance at the end of the financial year. To meet the full funding rule year by year, the Government aims to return the DMO's net cash balance to its original level by adjusting the projected net financing requirement in the following financial year.

Medium-term projections for annual financing requirements

2.22 The Government publishes projections for the financing requirement in each year of the fiscal policy forecast period, consistent with the path for fiscal consolidation. The financing requirement includes the projected path for borrowing, the gilt redemption profile and financing for the Official Reserves. Table 2.A sets out the financing requirement projections for 2013-14 to 2016-17. The projected financing requirements are a broad indication of future gilt sales on the assumption that the Treasury bill stock is unchanged and NS&I makes a zero net contribution to financing.

Table 2.A: Financing requirement projections, 2013-14 to 2016-17

	2013-14	2014-15	2015-16	2016-17
£ billion				
CGNCR	112	81	56	37
Redemptions	52	60	67	69
Financing for the Official Reserves	6	6	-	-
Financing requirement	170	147	123	106

Source: OBR, HM Treasury and DMO

2.23 Debt management considerations during the period of fiscal consolidation are set out in Box 2.B.

[4] To meet the financing requirements which is determined in cash terms, the DMO sizes auctions in nominal terms and takes into account prevailing market prices. Movements in market prices between the announcement of auction sizes and gilt auctions taking place mean that it is not possible to meet these targets precisely. In addition, in sizing auctions in the period following the Autumn Statement (AS), the Government makes an assumption about proceeds that will be raised via the PAOF in the period following the AS – proceeds raised may deviate from this assumption. See the DMO operational note, *Applying Proceeds from the Post Auction Option facility to Auction Sizing,* available at http://www.dmo.gov.uk/documentview.aspx?docname=publications/operationalrules/opnot311011.pdf&page=operational_rules/Document

[5] Discussed further in paragraph B.25.

Box 2.B: Debt management considerations during the period of fiscal consolidation

Decisions on debt management policy are taken annually, in advance, to achieve the debt management objective:

> to minimise, over the long term, the costs of meeting the Government's financing needs, taking into account risk, while ensuring that debt management policy is consistent with the aims of monetary policy.

Each year, the Government assesses the costs and risks associated with different possible patterns of debt issuance taking into account the most up-to-date evidence and information about market conditions and demand for debt instruments.

At present, annual debt management decisions are also made in the context of an elevated level of debt relative to GDP, high but falling government borrowing and fiscal consolidation. Consistent with the long-term focus of the debt management objective, the Government takes annual decisions which enhance fiscal resilience by:

- mitigating refinancing risk, that is, the need to roll over continuously high levels of debt and to avoid concentrating redemptions in particular years, by taking issuance decisions which spread out gilt issuance along the maturity spectrum;
- promoting the liquidity and efficiency of the gilt market; and
- maintaining a diversity of exposure, both real and nominal, across the maturity spectrum, reflecting its preference for a balanced portfolio.

As a result, subject to cost-effective financing, the Government will:

- maintain a relatively high proportion of long fixed-rate exposure and a relatively long average maturity in the debt portfolio in order to limit exposure to interest rate volatility;
- maintain a significant proportion of real exposure by issuing index-linked gilts;
- continue to issue conventional and index-linked gilts over a range of maturities, taking account of structural demand; and
- maintain the end-year Treasury bill stock at a level that will support market liquidity.

3 The Debt Management Office's financing remit for 2012-13

Introduction

3.1 The financing arithmetic sets out the components of the Government's net financing requirement and the contributions of the various sources of financing. The DMO's financing remit sets out how the DMO, acting as the Government's agent, will fund the projected net financing requirement.

Financing arithmetic

3.2 The OBR's forecast for the central government net cash requirement (CGNCR) in 2012-13 is £121.0 billion. The CGNCR, which is the fiscal aggregate that ultimately determines gross debt sales, is derived from public sector net borrowing (PSNB). The relationship between PSNB and the CGNCR is set out in the OBR's March 2012 *Economic and fiscal outlook*.

3.3 The forecast net financing requirement in 2012-13 of £166.4 billion reflects projected gilt redemptions of £52.9 billion and additional sterling financing for the Official Reserves of £6 billion.

3.4 NS&I is expected to make a zero net contribution to financing in 2012-13, following a net contribution of £4.3 billion in 2011-12. This projection assumes gross inflows of around £14 billion in 2012-13.

3.5 Gilt issuance is the Government's primary means of meeting the net financing requirement. Treasury bills and other cash management instruments may be used at the margin.

3.6 The net financing requirement will be met by:

- gross gilt issuance of £167.7 billion;[1] and
- a reduction in the Treasury bill stock of £1.3 billion, implying an end-March 2013 stock of £68.5 billion.

[1] Figures in this chapter are in cash terms unless otherwise stated.

Table 3.A: Financing arithmetic in 2011-12 and 2012-13

	2011-12	2012-13
£ billion		
Central government net cash requirement	129.9	121.0
Gilt redemptions	49.0	52.9
Financing for the Official Reserves	6.0	6.0
Buy-backs[1]	0.0	0.0
Planned short-term financing adjustment[2]	-8.6	-13.6
Gross financing requirement	176.3	166.4
less		
National Savings and Investments	4.3	0.0
Net financing requirement	172.0	166.4
Financed by:		
1. Debt issuance by the Debt Management Office (DMO)		
a. Treasury bills[3]	6.2	-1.3
b. Gilts	179.4	167.7
of which:		
Conventional:		
Short	60.6	51.6
Medium	40.1	34.9
Long	39.7	37.6
Index-linked	39.0	36.1
Mini-tenders		7.5
2. Other planned changes in net short-term debt[4]		
Change in the Ways and Means Advance	0.0	0.0
3. Changes in net short-term cash position[5]	13.6	0.0
Total financing	185.6	166.4
Short-term debt levels at end of financial year		
Treasury bill stock[6]	69.8	68.5
Ways and Means Advance	0.4	0.4
DMO net cash position	14.1	0.5

Figures may not sum due to rounding.

[1] Purchases of 'rump' gilts, with a small nominal outstanding, in which Gilt-edged Market Makers (GEMMs) are not required to make two-way markets. The Government will not sell further amounts of such gilts to the market but the DMO is prepared, when asked by a GEMM, to make a price to purchase such gilts.

[2] To accommodate changes to the stated year's financing requirement resulting from: (i) publication of the previous year's CGNCR outturn; (ii) an increase in the DMO's net cash position; and/or (iii) carry over of unanticipated changes to the cash position from the previous year.

[3] The stock change shown for 2011-12 is a planning assumption and measures the change in the level of the Treasury bill stock in issue between end-March 2011 and that currently forecast for end-March 2012. The stock of bills for this purpose comprises both those issued at weekly tenders and those issued separately to individual cash management counterparties. The stock change shown for 2012-13 is that currently required to take the stock of Treasury bills to £68.5 billion by end-March 2013.

[4] Total planned changes to short-term debt are the sum of: (i) the planned short-term financing adjustment; (ii) net Treasury bill sales; and (iii) changes to the level of the Ways and Means Advance.

[5] The change in the short-term cash position for 2011-12 reflects changes to the public finance forecasts and any changes to financing from NS&I and Treasury bills (including those sold directly to counterparties separately from weekly tenders). It will also reflect any differences between the gilt sales outturn and plans. In addition, the change will include any impact on financing arising from other activities carried out within Government (e.g. issuance of tax instruments, transfers between central government and other sectors, and foreign exchange transactions). The zero change for the short-term cash position in 2012-13 assumes that the DMO's planning assumption for the end-year Treasury bill stock is met. A negative (positive) number here indicates an increase in (reduction in) the financing requirement for the following financial year.

[6] The DMO has operational flexibility to vary the end-financial year stock subject to its operational requirements.

Source: DMO, HM Treasury and OBR

Royal Mail Pension Plan: disposal of gilt holdings

3.7 In order to secure the future of the universal postal service and facilitate private sector investment into Royal Mail, the Government announced last year its intention to address the significant deficit in the company's pension scheme. Under the powers contained in the Postal Services Act 2011, the Government intends to transfer assets (alongside the historical liabilities) of the Royal Mail Pension Plan (RMPP), a private sector pension scheme, into public ownership in April 2012, subject to State Aid clearance. As a result, around £11 billion worth of gilts by market value, of which around 80 per cent are likely to be index-linked, are expected to be transferred into public ownership in April 2012. The majority of the conventional gilts are expected to be of short maturities, with the majority of the index-linked holdings being of long maturities. However, the exact amount and breakdown of the gilts to be transferred depends on a number of factors and will not be known with certainty until the transfer has been completed. In due course, once this process has been completed, the DMO will publish the full portfolio breakdown.

3.8 It is the Government's intention that these gilts will be cancelled during 2012-13. Cancellation of gilts will have no impact on the CGNCR, the net financing requirement or any of the other fiscal aggregates. The DMO will invite feedback from the market, at its quarterly consultation meetings, on the appropriate timing of cancellation to take account of the impact on indices. The DMO will provide the market with good notice of any cancellations, including the stocks and amounts to be cancelled.

Financing for the Official Reserves[1]

3.9 The financing arithmetic provides for £6 billion of sterling finance for the Official Reserves in 2012-13. The Government continues to envisage sterling financing being held, on average, at a similar level up to 2014-15. This additional financing, announced at Budget 2011, is intended to meet potential calls on the Official Reserves that may arise and ensure that the level of foreign currency reserves held is sufficient.

3.10 For the purposes of the financing arithmetic in Table 3.A, it is assumed that sterling will remain the main form of financing for the Official Reserves (as has been the case in recent years) and no new foreign currency debt will be issued in 2012-13. However, if the Government judges that there is a case for doing so, taking into account cost, risk, market conditions and

[1] The Government's official holdings of international reserves, with the exception of the Special Drawing Rights (SDR) assets, are held in the Exchange Equalisation Account (EEA).

consistency with debt management objectives, up to £2 billion of foreign currency securities could be issued to finance part of the increase in the Official Reserves in 2012-13. If the Government were to decide to issue a foreign currency bond during 2012-13, this would be taken into account in subsequent updates to the DMO's financing remit. The Bank of England will act as HM Treasury's agent in issuing and managing any foreign currency liabilities associated with the Official Reserves.

Other short-term debt

3.11 The projected level of the Ways and Means Advance at the Bank of England at 31 March 2012 is £0.4 billion. No changes to the level of the Ways and Means Advance are planned in 2012-13.

3.12 The projected level of the DMO's net cash position at 31 March 2012 is £14.1 billion, £13.6 billion above the level projected at Autumn Statement 2011. The level will be reduced to £0.5 billion during 2012-13, as shown by the planned short-term financing adjustment, and this will in turn reduce the net financing requirement in 2012-13.

Quantity of gilt sales

3.13 The DMO, on behalf of the Government, will deliver gilt sales of £167.7 billion in 2012-13.

Gilt issuance methods

3.14 Auctions will remain the Government's primary method of gilt issuance. In addition, the Government has decided to continue the use of supplementary methods of gilt issuance, which will comprise syndications and mini-tenders.

3.15 The use of supplementary methods adds flexibility to the gilt issuance programme. This additional flexibility is designed to facilitate the effective delivery of the gilt issuance programme while remaining consistent with the debt management principles of openness, predictability and transparency.

3.16 It is anticipated that:

- £126.7 billion (75.6 per cent of total issuance) will be issued by auction;
- £33.5 billion (20.0 per cent of total issuance) will be issued by syndication; and
- £7.5 billion (4.5 per cent of total issuance) will be issued by mini-tender.

The maturity structure of gilt issuance

3.17 The amount of issuance via auctions and syndicated offerings in 2012-13 is planned to total £160.2 billion (or 95.5 per cent of total issuance) and will be split by maturity and type as follows:

- £51.6 billion of short conventional gilts (30.8 per cent of total issuance);
- £34.9 billion of medium conventional gilts (20.8 per cent of total issuance);
- £37.6 billion of long conventional gilts (22.4 per cent of total issuance); and
- £36.1 billion of index-linked gilts (21.5 per cent of total issuance).

3.18 In addition, the DMO plans to deliver sales via mini-tender of £7.5 billion (4.5% of total issuance). The mini-tender programme will continue to be used to support the syndication programme by providing flexibility to accommodate any variations in proceeds from syndicated offerings.

3.19 In 2012-13 the use of mini-tenders will be extended to include the sale of short and medium conventional gilts. The DMO will decide on the maturities and types of gilts sold in consultation with the market during the year.

3.20 To maintain predictability about the number of syndications to be held in the year, in 2012-13 the overall size of the syndication programmes (conventional and index-linked) may be increased by up to 10 per cent at the time of the final syndicated offering.

3.21 Through its gilt issuance programme the Government aims at regular issuance across the maturity spectrum throughout the financial year and at building up benchmarks at key maturities in both conventional and index-linked gilts.

3.22 The planning assumption for gilt issuance in 2012-13 by method of issue, type and maturity is shown in Table 3.B.

Table 3.B: Breakdown of planned gilt issuance by type, maturity and issuance method

£ billion (per cent)	Auction	Syndication	Mini-tender	Total
Short	51.6			51.6 (30.8 per cent)
Medium	34.9			34.9 (20.8 per cent)
Long	23.6	14.0		37.6 (22.4 per cent)
Index-linked	16.6	19.5		36.1 (21.5 per cent)
Total	126.7 (75.6 per cent)	33.5 (20.0 per cent)	7.5 (4.5 per cent)	167.7

Figures may not sum due to rounding.

3.23 The Government does not plan to introduce additional gilt issuance methods in 2012-13. Before introducing any new issuance methods, the DMO would consult market participants and seek HM Treasury's approval.

Gilt auction calendar

3.24 The DMO will publish, alongside the DRMR, a gilt auction calendar consistent with the remit which sets out the expected timing of gilt auctions.

Post-auction option facility

3.25 In 2012-13, the DMO will continue to offer to successful bidders (both primary dealers and investors) an option to purchase additional stock of up to 10 per cent of the amount allocated to them at auction, at the average accepted price at conventional auctions and the clearing (or strike) price at index-linked auctions. Further details of this facility are available in the DMO's gilt market operational notice.[2]

3.26 Any additional amounts sold via this facility will count towards the remit sales targets and may be used to reduce the required average sizes for the remaining auctions of the maturity/type of gilt in question. If exercised consistently, the option may allow the cancellation of future auctions, but any such cancellation would be announced well in advance as part of the regular issuance calendar announcements and/or at Autumn Statement 2012.

[2] http://www.dmo.gov.uk/documentview.aspx?docname=publications/operationalrules/Opnot20091120.pdf&page=operational_rules/Document

Taps and reverse taps

3.27 The programme of gilt sales by auction, syndicated offering and mini-tender set out above may be supplemented by sales or purchases of gilts 'on tap'.[3] Taps of gilts will be used only as a market management mechanism in exceptional circumstances.

The Standing Repo Facility

3.28 For the purposes of market management, the DMO may create and repo out gilts in accordance with the provisions of its Standing Repo Facility launched on 1 June 2000 and most recently revised on 6 August 2009.[4] Any gilts so created will not be sold outright to the market and will be cancelled on return.

Other operations

3.29 The DMO has no current plans for a programme of reverse or switch auctions or conversion offers in 2012-13.

Coupons

3.30 As far as possible, the DMO will set coupons on new issues to price the gilt close to par at the time of issue.

Buy-ins of short maturity debt

3.31 The DMO will have responsibility for buying-in gilts close to maturity to help manage Exchequer cash flows.

Treasury bill sales

3.32 The outstanding stock of Treasury bill sales at end-March 2013 is expected to be £68.5 billion. In addition to the scheduled weekly tenders, the DMO may continue to re-open, on request, existing issues of Treasury bills for sale on a bilateral basis, to raise funds for cash management. Consequently, the DMO will continue to have operational flexibility to vary the end-financial year stock subject to its operational requirements. The 2011-12 outturn for the Treasury bill stock will be reported alongside the CGNCR outturn in April 2012.

New instruments

3.33 The DMO will consult market participants and seek HM Treasury's approval prior to the introduction of any new instruments.

3.34 In light of evidence of strong demand for gilts of long maturities and against the backdrop of historically low long-term interest rates, **in 2012-13 the DMO will consult on the case for issuance of gilts with maturities significantly longer than those currently in issue (i.e. in excess of 50 years) and/or perpetual gilts.** The consultation will build an evidence base to inform the Government's decision on whether to issue such instruments. It will seek to establish the likely strength and sustainability of demand, the cost-effectiveness and risks of issuance, and the impact on market liquidity and the good functioning of the wider gilt market.

3.35 No presumption has been made about issuance at this stage, and any subsequent decision about whether to proceed with issuance will be informed by the responses received to the

[3] Taps (reverse taps) are sales (purchases) of gilts undertaken directly with the GEMMs by the DMO as a market management mechanism in circumstances, temporary or otherwise, such that the secondary market has become, or is likely to become, dislocated (http://www.dmo.gov.uk/documentview.aspx?docname=publications/operationalrules/Opnot20091120.pdf&page=operational_rules/Document).
[4] http://www.dmo.gov.uk/documentview.aspx?docname=publications/operationalrules/RepoTC060809.pdf&page=operational_rules/Document

consultation and assessed with reference to the debt management objective. If any such decision was made to proceed with issuance in-year, this would be reflected at the time of the next planned remit revision.

Revisions to the remit

3.36 In addition to the planned revisions to the remit in April 2012 and at Autumn Statement 2012, any aspect of this remit may be revised during the year in light of exceptional circumstances and/or substantial changes in any of the following:

- the Government's forecast for the net financing requirement;
- the level and/or shape of the gilt yield curve;
- market expectations of future interest and inflation rates; and
- market volatility.

3.37 Any such unplanned revisions will be announced transparently to the market.

A Debt portfolio

Debt stock

A.1 The total nominal outstanding stock of central government sterling debt (excluding official holdings by central government) was £1195.2 billion at end-December 2011. The components of this stock are set out in Table A.1.

Table A.1: Composition of central government sterling debt

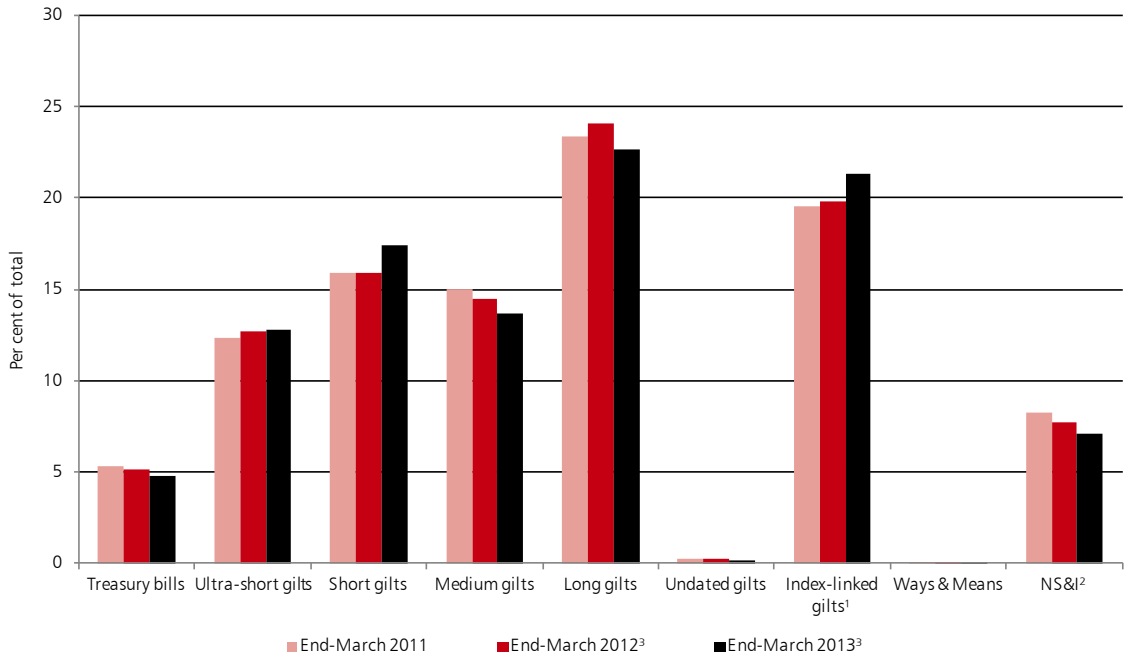
	End-December 2010	End-December 2011
£ billion, nominal value, excluding official holdings		
Conventional gilts[1]	692.5	775.0
Index-linked gilts[2]	211.8	245.8
Treasury bills	55.6	70.3
Total gilts and Treasury bills	**959.9**	**1091.1**
NS&I	99.8	103.7
Balance on Ways & Means Advance	0.4	0.4
Total central government sterling debt	**1060.1**	**1195.2**

[1] Includes undated and double-dated gilts.
[2] Includes accrued inflation uplift.

Source: DMO and NS&I

A.2 Chart A.1 shows a comparison of the Government's debt portfolio at end-March 2011 through to the projected composition at end-March 2013. It assumes that new debt is issued in accordance with the DMO's and NS&I's financing remits and also takes account of the ageing of existing debt.

Chart A.1: The composition of central government debt



[1] Includes inflation uplift.

[2] Includes accrued interest.

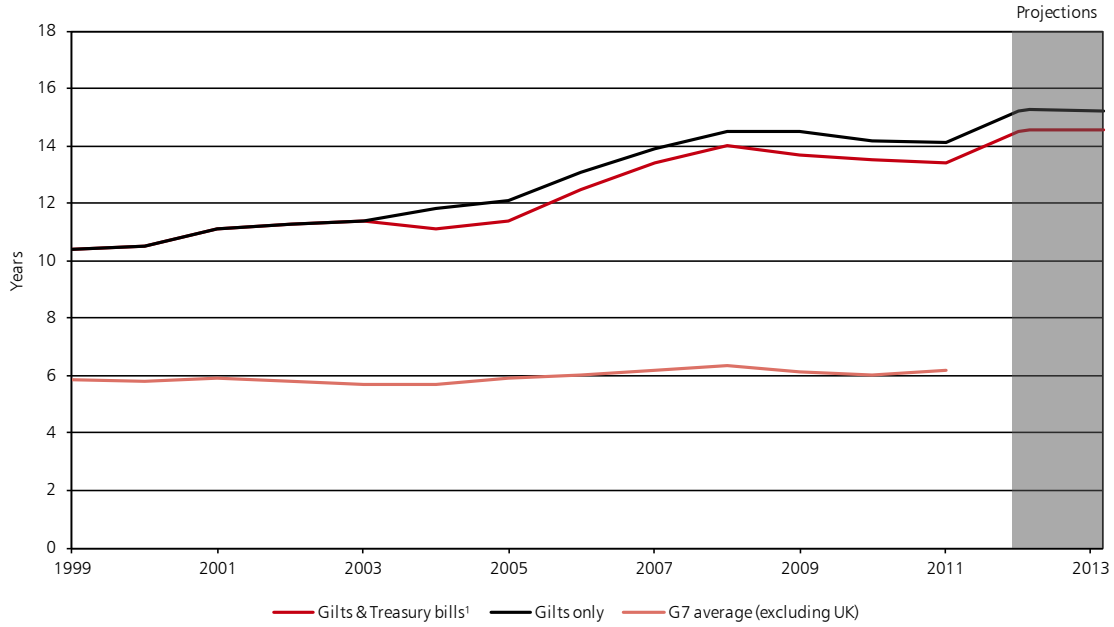
[3] Figures for end March-2012 and end March-2013 are projections.

Source: DMO and NS&I

Maturity and duration of the debt stock

A.3 The average maturity of the stock of all marketable debt is projected to increase from 13.5 years at end-March 2011 to 14.6 years at end-March 2012, as shown in Chart A.2. Over the same period, the average modified duration of the stock of conventional gilts is projected to rise from 8.3 years to 9.3 years, while that for the stock of index-linked gilts is projected to rise from 15.8 years to 17.4 years. The average maturity of the Government's wholesale debt is considerably longer than the G7 average, as shown in Chart A.3.

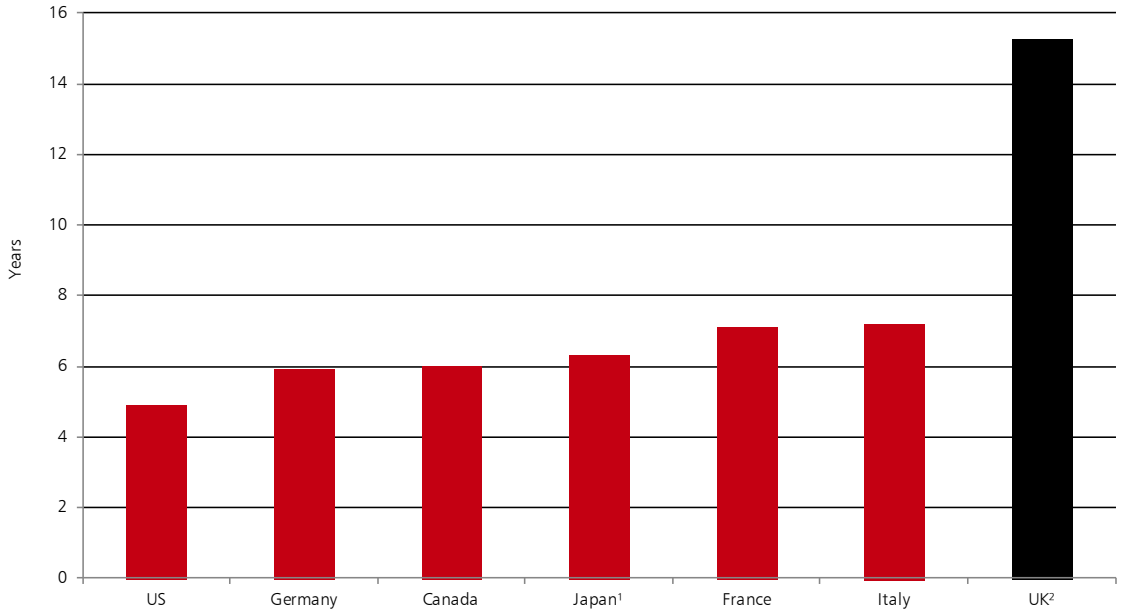
Chart A.2: Average maturity of wholesale debt



[1] Data for this series are unavailable prior to September 2003, when the DMO began publishing Treasury bill reference prices.

Source: DMO and OECD

Chart A.3: Maturity of the debt stock by country (end-December 2010)

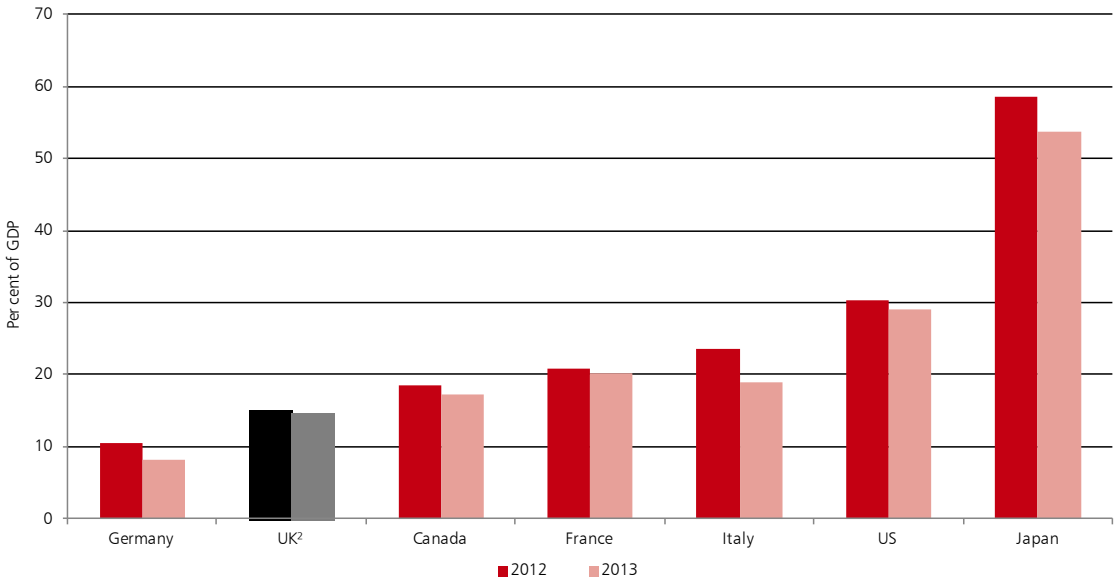


[1] As at end-December 2009.
[2] As at end-December 2011.

Source: DMO and OECD

A.4 Chart A.4 shows the supportive impact of the long average maturity of the stock of UK government wholesale debt on the UK's gross financing requirements in 2012-13 and 2013-14, which compare favourably with those of other G7 countries.

Chart A.4: Gross financing needs as a per cent of GDP[1]



[1] Includes rollover of short-term debt (i.e. the stock of Treasury bills).

[2] For financial years 2012-13 and 2013-14.

Source: HMT, OBR and IMF Fiscal Monitor September 2011

Gilt holdings by sector

A.5 Chart A.5 shows gilt holdings by sector. Data published by the Office for National Statistics (ONS) shows that in Q3 2006 the three largest gilt investor groups were: insurance companies and pension funds (55 per cent), overseas investors (27 per cent) and non-financial private corporations and other financial institutions (13 per cent). Since then, there have been significant shifts in the proportionate holdings of gilts, in part driven by the substantial increase in the total size of the debt stock in recent years. In Q3 2011, the three largest sectors were overseas investors (31 per cent), insurance companies and pension funds (28 per cent) and the Bank of England Asset Purchase Facility (APF) (18 per cent).

Chart A.5: Gilt holdings by sector (£ billion, market value)

[1] The Bank of England's holdings of gilts not related to the Asset Purchase Facility are included in the 'Banks and building societies' category.

Source: ONS and Bank of England

Gilt issuance

A.6 The CGNCR measures the cash amount that central government needs to borrow for the financial year and is the key fiscal measure from which the volume of gilt issuance is derived. The CGNCR for each of the years in which the DMO has been responsible for gilt issuance, and the volume of gilt sales in each of those years, is shown in Table A.2.

Table A.2: CGNCR and gross gilt sales, 1998-99 to 2012-13

£ billion	CGNCR	Gross gilt sales[1]
1998-99	-4.5	8.2
1999-00	-9.1	14.4
2000-01	-35.6[2]	10.0
2001-02	2.8	13.7
2002-03	21.8	26.3
2003-04	39.4	49.9
2004-05	38.5	50.1
2005-06	40.8	52.3
2006-07	37.1	62.5
2007-08	32.6	58.5
2008-09	162.4	146.5
2009-10	198.8	227.6
2010-11	139.7	166.4
2011-12[3]	129.9	179.4
2012-13[4]	121.0	167.7

[1] Figures are in cash terms.
[2] Reflecting proceeds from the 3G Spectrum auction.
[3] Budget 2012 projections.
[4] Budget 2012 projections.

Source: DMO, HM Treasury and OBR

B Context for decisions on the Debt Management Office's financing remit

Introduction

B.1 This annex sets out the context for the Government's decisions on gilt and Treasury bill issuance for 2012-13, covering the qualitative and quantitative considerations that have influenced the Government's decisions. The quantitative modelling reported in this annex has been undertaken by the DMO at the request of HM Treasury. It should be noted that the modelling is for illustrative purposes and is not used to determine a single optimal debt issuance strategy; rather it illustrates the cost-risk trade-off associated with different issuance strategies as one input to the analysis underpinning the Government's decisions on the issuance strategy to be implemented in practice.

B.2 The Government's annual decisions on the structure of the financing remit are determined in accordance with the debt management objective, the debt management framework and by wider policy considerations during the period of fiscal consolidation (see Chapter 2). In determining the overall structure of the financing remit, the Government assesses the balance between costs and risks of debt issuance by maturity and type of instrument, and considers the practical implications of issuance, for example the potential use of supplementary issuance methods and the scheduling of operations throughout the year.

B.3 The Government's decisions on the composition of debt issuance are informed in particular by an assessment of investor demand for debt instruments by maturity and type, as reported by stakeholders and as manifested in the shape of the nominal and real yield curves, as well as the Government's appetite for risk.

Demand

B.4 The Gilt-edged Market Makers (GEMMs) and end-investors report ongoing demand for conventional and index-linked gilts across the maturity spectrum. These views were most recently expressed at the Government's annual consultation meetings with gilt market participants in January 2012.[1]

B.5 Demand for gilts is well diversified among major investor groups: domestic pension funds and insurance companies, overseas investors, and UK banks and other financial institutions. The Bank of England's Asset Purchase Facility (APF) has also been a substantial buyer of gilts in the secondary market since 2009.

B.6 Demand from international investors has been strong in 2011-12, particularly for short and medium conventional gilts, reportedly reflecting developments in other sovereign debt markets (in particular within the euro area), the Government's commitment to fiscal consolidation and changes to the size and composition of overseas central bank reserves. Market expectations are for continued demand for gilts from overseas investors in the coming financial year.

[1] Minutes available at http://www.dmo.gov.uk/documentview.aspx?docName=/gilts/press/sa130112.pdf and http://www.dmo.gov.uk/documentview.aspx?docName=/gilts/press/sa160112.pdf

B.7 There has been ongoing demand from domestic banks and building societies for shorter-dated conventional gilts to meet expected regulatory requirements for high quality liquid assets. There is expected to be further demand for gilts from domestic financial institutions in 2012-13, although feedback from market participants suggests that this sector's rate of gilt purchases could slow as institutions reach their required levels of liquid asset holdings.

B.8 Pension funds and insurance companies also continued to purchase gilts in 2011-12 as they sought to match their long-term liabilities with long-term assets. They are expected to continue to represent a major source of gilt demand in the coming financial year.

B.9 Since 2009, the Bank of England's Asset Purchase Facility (APF) has bought gilts in the secondary market, financed by the creation of central bank reserves, for monetary policy purposes. The APF is projected to have purchased up to a total of £325 billion of gilts by May 2012. In the context of decisions on the structure of the financing remit, and consistent with the debt management objective, the Government does not alter its issuance strategy as a result of asset purchase transactions undertaken by the APF for monetary policy purposes.

Cost

B.10 In assessing the cost of different types of debt issuance by maturity and type the Government undertakes an analysis of the shape of the nominal and real yield curves, and the inflation spot curve. Box B.1 sets out how the overall shape of the yield curves can be analysed.

Box B.1: Analysing the yield curve

There are a number of ways in which to analyse the shape of a yield curve. Three of these used by the Government in its assessments of cost are based on the following:

Pure expectations – the shape of the yield curve is determined solely by risk neutral market expectations about the future evolution of interest rates. If market expectations hold in practice, the Government would be indifferent (on cost grounds) about the maturity of issuance because there would be no cost advantage from issuing one maturity relative to another.[1]

Liquidity preference – the yield curve does not solely reflect market expectations about the future evolution of interest rates but includes a risk premium that investors require for holding longer maturity bonds. This premium (i.e. additional yield) is required by investors to offset additional 'risk' taken on through investing in longer-dated bonds. The yield curve is expected to be upward sloping if this premium increases with maturity.

Preferred habitat[2] – investor preferences for bonds with specific characteristics (such as maturity) can result in yields deviating from market expectations about future interest rates (e.g. yields lower than otherwise). Relative preferences are important: preferred habitats may exist simultaneously in two distinct gilt market sectors (from different investor groups). Depending on the strength of relative preferences, it may be possible to issue certain gilts at a lower cost to the Government than others.

[1] Assuming that shorter-dated issuance is refinanced over the same horizon as longer-dated issuance. For example, issuing a ten-year gilt today would, under 'pure expectations', have the same cost as a strategy based on issuing a five-year gilt today and refinancing with a five-year gilt in five years' time.
[2] A variant of segmented market theory, where demand for gilts is segmented; that is different maturities are not substitutes for one another.

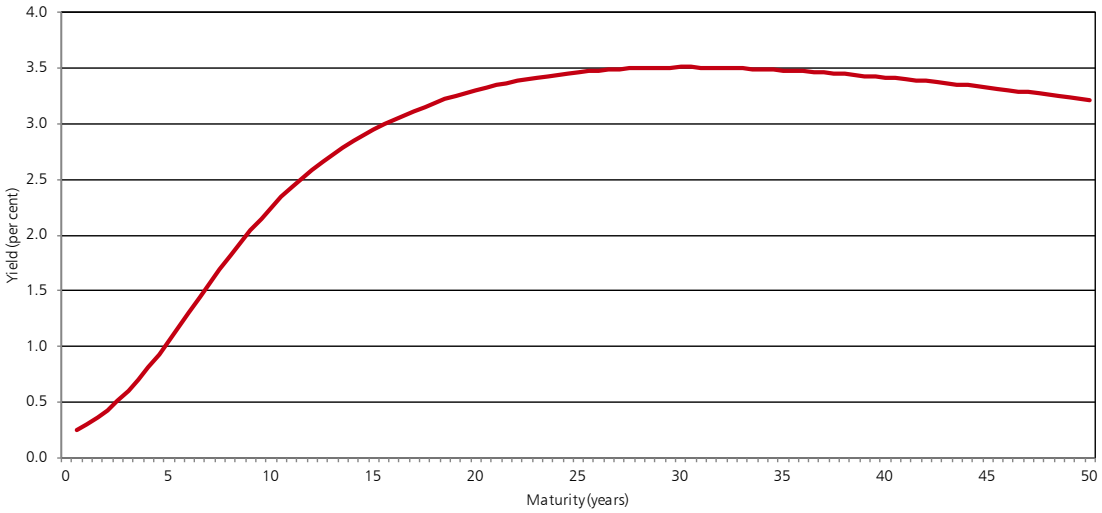
B.11 Until relatively recently the UK had downward sloping yield curves for conventional and index-linked gilts. The shape of these curves had been explained by strong structural demand from domestic investors (e.g. pension funds and insurance companies) with a preferred habitat for longer-dated gilts. This is a reversal of typical liquidity preference theory and could suggest

there is a negative risk premium in the yield curve that could be captured by the Government through the issuance of longer-dated gilts to achieve lower cost financing. More recently, both the nominal and the real yield curve have become upward sloping, making it more difficult to observe this preferred habitat directly.

B.12 In setting the remit for 2012-13, the Government has concluded that high demand for short conventional gilts and long-dated index-linked gilts supports the assumption that investor preferences (a preferred habitat) may have caused yields in these sectors to deviate from market expectations of future interest rates, which could result in lower costs of issuance for the Government in these sectors.

B.13 In conventional gilts, the shape of the spot curve (Chart B.1) and slope between 5 and 10 years implies a sharp rise in five-year spot rates over a five year horizon. In part, the shape of the curve will reflect current and anticipated monetary policy conditions. However, the Government believes another key explanatory factor is investor preferences for short conventional gilts, which should currently make those gilts more cost-effective for the Government to issue than conventional gilts of other maturities.

Chart B.1: Nominal spot curve (8 March 2012)



Source: DMO

Chart B.2: Spread between five-year forward rate in five years and five-year spot rate (8 March 2012)

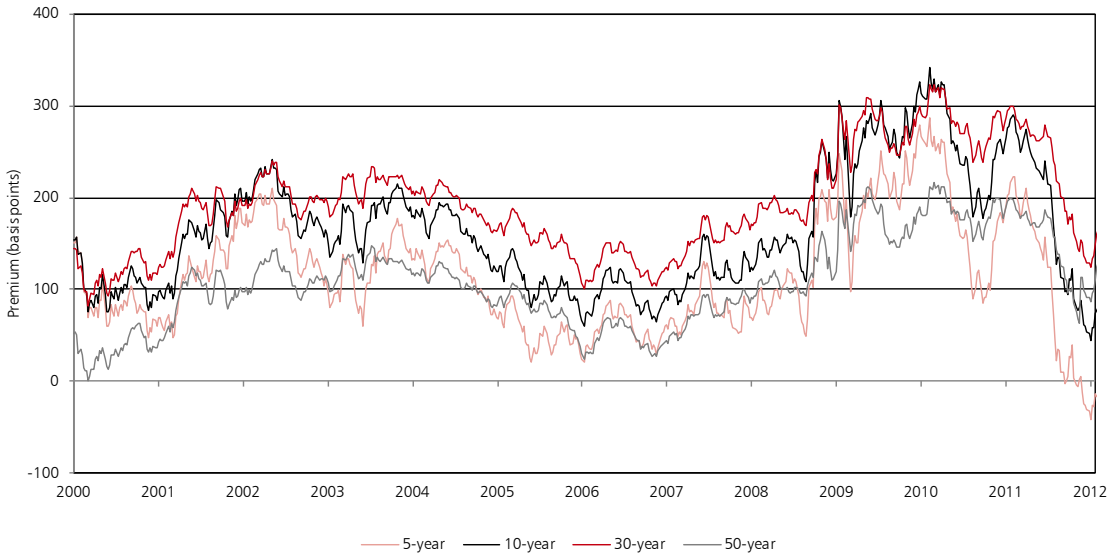
Source: DMO

B.14 This potential preferred habitat can be seen in the spread between the implied five-year forward rate in five years and the current five-year spot rate (Chart B.2), which is at a historically high level. While the components of this spread cannot be disaggregated definitively, and will in part reflect the anticipated evolution of monetary policy and other risk factors, the presence of a large spread is consistent with strong demand for short conventional gilts relative to medium conventional gilts. Strong investor preferences for short conventional gilts today would suggest that the implied five-year rate in five years' time is higher than its expected outturn in five years' time: in this case the Government could issue a five-year gilt today and refinance it in five years at a lower overall yield than the ten-year yield today.

B.15 This view is consistent with the DMO's analysis of the risk premium in the conventional yield curve, which suggests that the risk premium at the short-end of the conventional yield curve is close to zero and at historically low levels, as shown in Chart B.3.

B.16 The chart also highlights the particularly low risk premium for ultra-long conventional gilts, relative to that expected given their maturity, suggesting that there are cost benefits to the Exchequer from issuance of these gilts relative to other maturities. In addition, the chart highlights how the risk premium can vary over time, making it difficult to predict its evolution in the future.

Chart B.3: Estimated nominal risk premia by maturity[1]

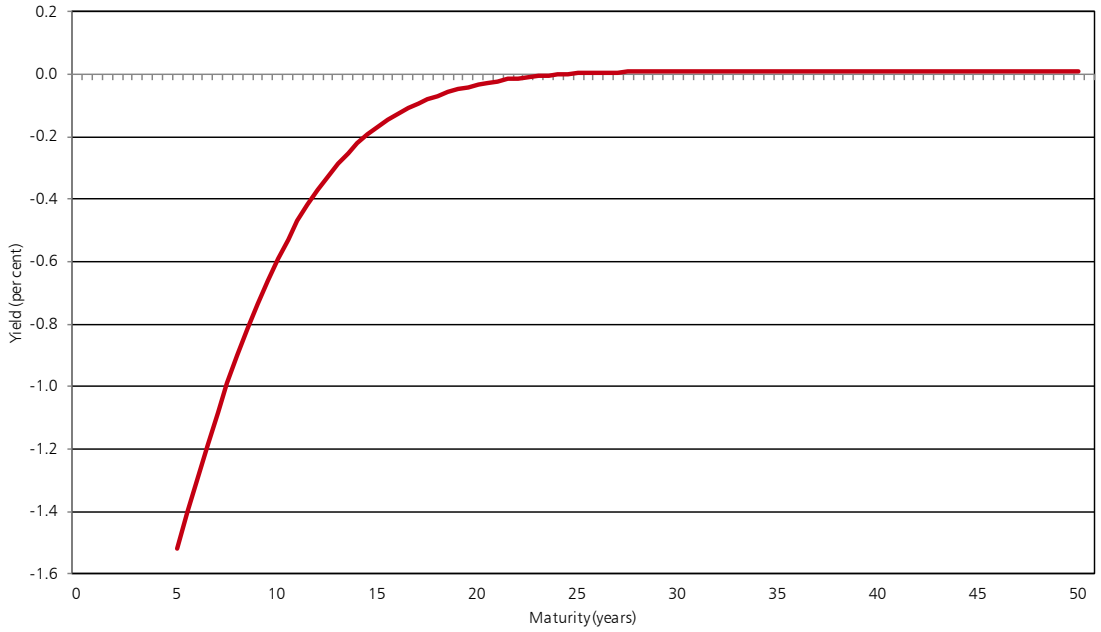


[1] The model used is a Multi-factor Econometric Nelson-Siegel model for Interest Rates (MENIR) provided by Société Générale Cross Asset Research.

Source: DMO and Société Générale Cross Asset Research

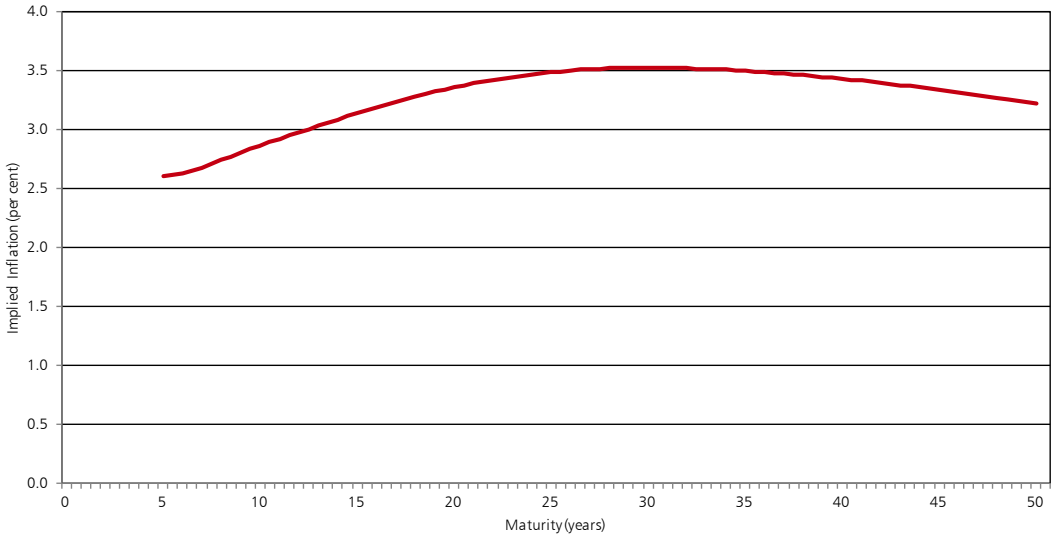
B.17 Chart B.4 shows the real spot curve, which is upward sloping at all maturities. Together with the conventional spot curve, it can be used to derive the inflation spot curve (Chart B.5), which is used to examine the relative cost-effectiveness of index-linked gilts and conventional gilts of equivalent maturity.

Chart B.4: Real spot curve (8 March 2012)



Source: DMO

Chart B.5: Inflation spot curve (8 March 2012)



Source: DMO

B.18 On the assumption that inflation returns to the Bank of England's target rate in the medium term, and based on the neutral assumption that inflation remains at target thereafter, an assessment of the path of long-term inflation relative to that priced in by the market indicates that a cost advantage exists for the Exchequer to issue longer-dated index-linked gilts relative to equivalent maturity conventional gilts. In contrast, the relatively low level of implied inflation at the short-end of the curve suggests that short-dated conventional gilts are likely to be more cost-effective for the Government to issue than comparable maturity index-linked gilts.

Risk

B.19 The other key determinant in the Government's decisions on debt issuance by maturity and type of instrument is its assessment of risk. In reaching a decision on the overall structure of the remit, the Government considers the risks to which the Exchequer is exposed through its issuance of debt instruments (see Box 2.A). Different maturities and types of issuance give rise to different risk exposures and the Government assesses the relative importance of each risk in accordance with its risk appetite. These risks are also considered in the context of supporting fiscal resilience in the medium term while remaining consistent with the long-term focus of the debt management objective (see Box 2.B).

B.20 Taking into account these medium-term fiscal considerations, the Government currently places a relatively high weight on minimising near-term exposure to refinancing risk as far as possible. One of the ways in which the Government will manage this exposure is by maintaining a high proportion of long-dated debt in its portfolio (subject to achieving cost-effective financing), aimed at reducing the need to roll over debt frequently. The Government also places significant importance on avoiding large concentrations of redemptions in any one year. To achieve this, it will seek to issue debt across a range of maturities, thereby smoothing the profile of gilt redemptions.

Liquidity, market management and portfolio diversification

B.21 The Government places importance on maintaining a deep and liquid gilt market and a diverse investor base to maintain continuous access to cost-effective financing in all market conditions. To do so, the Government will continue to issue both conventional and index-linked gilts at key maturities in sufficient size, seeking to achieve a benchmark premium for issuance.

Practical and operational issues

B.22 The Government has announced a gilt issuance programme in 2012-13 that will be very similar in size to the programme in 2011-12. To raise this amount of financing in the coming financial year, it will be necessary for the Government to be a frequent issuer in large size across a range of maturities and types of gilt, with auctions remaining the primary method of issuance.

B.23 The Government has evaluated the potential use of supplementary gilt distribution methods in 2012-13 (syndications and mini-tenders) and judges that they should continue to be used in the coming financial year.

B.24 In 2012-13, the Government intends that there should be a broadly even-flow pace of funding through the use of syndications, to sample interest rates evenly through the year. However, the DMO will continue to vary the size of each syndicated offering to take account of market and demand circumstances at the time of each operation. In order to maintain predictability, such discretion will be limited to around £1.0 billion (cash) above or below the prevailing average required operation size.

B.25 As was the case last year, the mini-tender programme will be used as the main method to accommodate variations in proceeds from syndicated offerings. However, if syndications have been consistently upsized through the financial year, it is possible that the remaining balance of sales to meet planned syndication targets could be too small to hold a final viable offering, despite offsetting adjustments in the size of the mini-tender programme. To maintain predictability about the number of syndications to be held in the year, the DMO may increase the syndication programme sales target by up to 10 per cent to ensure that the final offering(s) can take place.

B.26 As part of its evaluation of supplementary gilt distribution methods, the Government has taken into account market feedback on the current functioning of mini-tenders. It has determined that their effectiveness as a distribution mechanism could be improved in 2012-13 by extending their usage across the curve to include the sale of short and medium conventional gilts.

B.27 The DMO will determine the maturity and type of gilts sold at mini-tenders in consultation with the market during the year.

Allocation of gilt issuances between maturities and types of gilt

B.28 The relatively high weight the Government places on mitigating near-term exposure to refinancing risk influenced, in particular, its decision about the allocation of issuance to short conventional gilts in 2012-13. This was weighed against an assessment that short conventional issuance in 2012-13 is likely to be relatively cost-effective versus medium and long conventional gilt issuance.

B.29 Short conventional gilts will constitute a slightly lower proportion of gilt sales by auction than they did for the overall programme in 2011-12, although they can be supplemented by sales by mini-tenders depending on market feedback.

B.30 The Government judges that index-linked gilts remain a cost-effective means of financing, particularly at longer maturities. The Government is aware that with no index-linked redemptions in 2012-13, net issuance would be higher than in 2011-12 for any given level of primary issuance. As a result, the Government has chosen to reduce marginally the allocation of issuance of index-linked gilts this year.

B.31 Given the large size of the overall financing programme, the weight that the Government places on mitigating near-term exposure to refinancing risk, and ongoing gilt demand in these sectors, the Government will continue with a large programme of medium and long conventional gilt issuance in 2012-13.

B.32 The Government has also assessed the contribution to financing made by Treasury bill issuance. The Government concluded that, in order to foster liquidity and to serve an increasingly diverse investor base across the entirety of the sterling government yield curve, it would be appropriate to maintain the planned end-March 2013 Treasury bill stock at close to the level projected at end-March 2012.

Quantitative analysis of debt service cost and risk

B.33 The DMO's Portfolio Simulation Tool (PST) model is used to provide estimates of the evolution over a five year horizon of cost and risk metrics of the gilt portfolio resulting from alternative debt issuance strategies.[2] Debt service cost is defined as the cost of the coupon payments and redemptions associated with government debt, measured in terms of the relevant yield.[3] Risk is defined as the standard deviation of debt service cost or debt service cost volatility. This can be thought of as a measure of the interest rate refinancing risk of the gilt portfolio.[4]

B.34 Debt service cost volatility is estimated by first deriving a lognormal distribution of nominal yields one year ahead from a large number of Monte Carlo simulations.[5] The yield distribution is then translated into a cost distribution by running the PST model for each yield curve simulated and calculating the resulting debt service cost. This process is repeated for each issuance strategy considered.

Table B.1: Gilt issuance strategy composition (per cent)

	Short conventional (0 – 7 years)	**Medium conventional** (7 – 15 years)	**Long conventional** (over 15 years)	**Index-linked**
Strategy 1	78	0	0	22
Strategy 2 2011-12 skew	34	22	23	22
Strategy 3	0	0	78	22

B.35 Table B.1 illustrates three issuance strategies. Strategies 1 and 3 represent two extreme issuance programmes with 100 per cent allocation to short and long gilt issuance respectively. Strategy 2 represents a split of issuance based on that in 2011-12, which is well diversified across maturity baskets with the highest allocation to short conventional issuance. All strategies have the same issuance split between conventional and index-linked gilts, 78 and 22 per cent respectively.

B.36 It is worth noting that the PST uses the implied nominal and real forward par yield curves for setting the coupons of new bonds issued over the five year simulation horizon. Chart B.6 shows a gradual flattening of the slope of the implied nominal forward curve over the five years of the simulation horizon, which will affect the relative cost-effectiveness of a given issuance

[2] Described in detail in Chapter 6 of the *DMO Annual Review 2008-09*. See http://www.dmo.gov.uk/documentview.aspx?docname=research/PST_gar0809.pdf

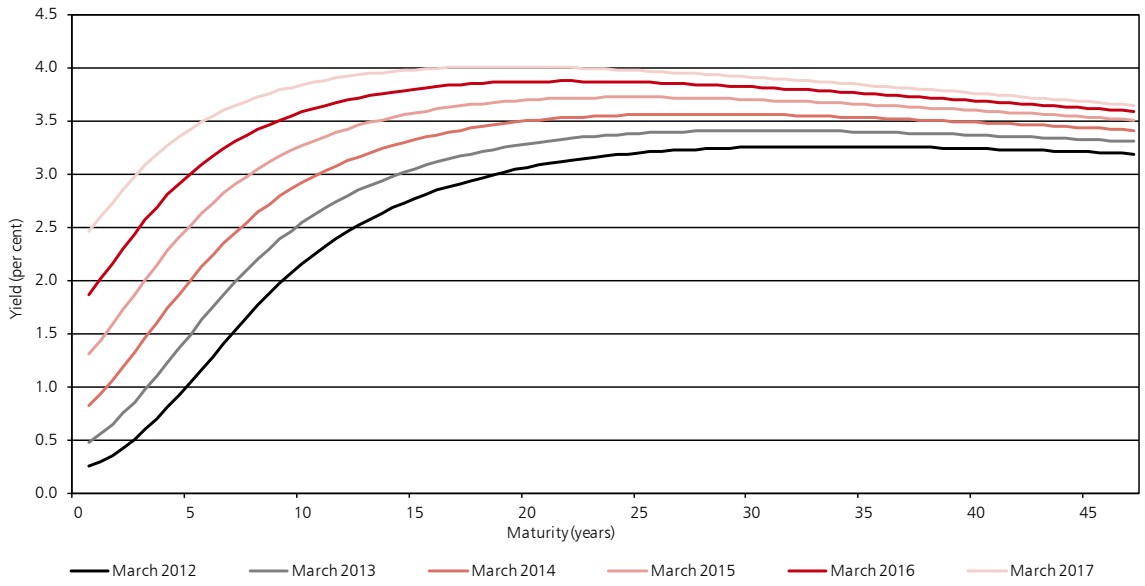
[3] The yield curve model used in the PST is the Variable Roughness Penalty (VRP) model developed by the Bank of England and employed by the DMO since 2007. For more information on the VRP yield curve model see http://www.bankofengland.co.uk/statistics/yieldcurve/index.htm.

[4] Interest rate risk refers to the risk related to the financing of new debt, i.e. the CGNCR, whereas refinancing risk refers to the risk related to the refinancing of existing debt, i.e. refinancing of bonds that are redeeming.

[5] In a lognormal distribution the underlying variable that is sampled is the natural logarithm of the variable itself. For example, if 'yield' is the variable, the sampling applies to log (yield). Use of this approach ensures that by construction the yield can never be negative. For real yields, a normal distribution (not in logs) is used in order to permit negative values in the simulation. Using a commercial risk management system, Monte Carlo methods are a class of computational algorithms that rely on repeated random sampling to compute their results. In this case, the random sampling is drawn from a distribution of historical yield data from January 2000 to January 2011. The underlying model used for generating the Monte Carlo scenarios is a Black-Karasinski model of yields where the mean reversion parameters are estimated through Ordinary Least Squares (OLS) regressions using historical data between January 2000 and January 2008. It is worth noting that since the onset of the financial crisis in 2008, yields up to ten years maturity have not been mean reverting due to historically low short-term interest rates. After considering alternative modelling options, the mean reverting model has been retained as the most appropriate despite its drawbacks.

strategy over the horizon considered.[6] In practice, of course, it is unlikely that future rates will coincide with the rates implied from the yield curve used in these simulations.

Chart B.6: Implied nominal forward curves each year of the simulation horizon



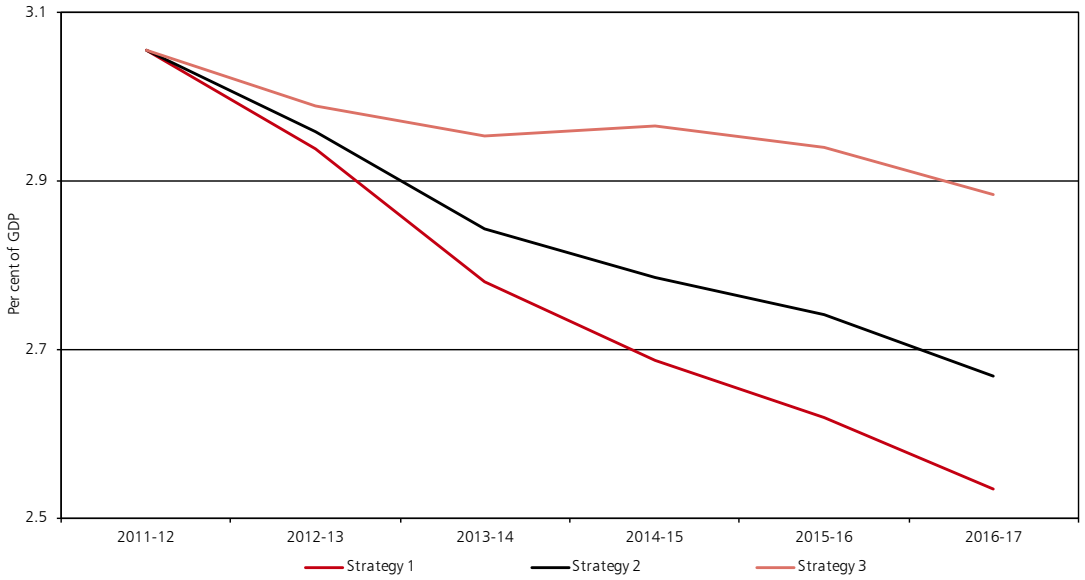
Source: DMO

Simulation results

B.37 Debt service cost is shown in Chart B.7. The overall drop in debt service cost as a per cent of GDP during the simulation horizon is due to both the falling CGNCR as well as the projected increase in nominal GDP. Implementing Strategy 2 would result in debt service cost of around 2.7 per cent of GDP by the end of 2016-17. Strategy 1 is the cheapest issuance strategy whereas Strategy 3 is the most expensive, providing a floor and a ceiling respectively for debt service cost. The results when comparing the three strategies mainly reflect the upward sloping shape of the yield curve and historically low short-term yields.

[6] Yield data as of 8 March 2012.

Chart B.7: Debt service cost



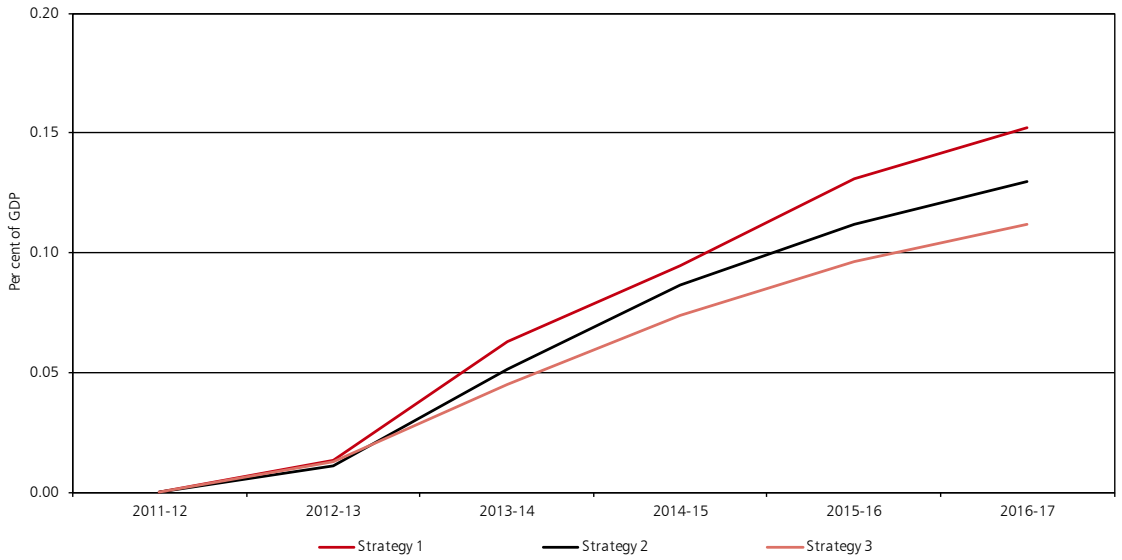
Source: DMO

B.38 The standard deviation of debt service cost, or debt service cost volatility, is shown in Chart B.8. Strategy 2 has a standard deviation of debt service cost of around 0.13 per cent of GDP by the end of 2016-17. It follows that the debt service cost of Strategy 2 may range between 2.5 per cent and 2.8 per cent of GDP by the end of 2016-17 with 68 per cent probability, reflecting potential yield movements.[7]

B.39 In comparative terms, the debt service cost volatility of Strategy 1 is the highest while that of Strategy 3 is the lowest, providing a ceiling and a floor respectively in terms of cost volatility. The volatility of debt service cost of Strategy 2 is roughly equidistant between strategies 1 and 3. These findings reflect the fact that short-term yields have historically been more volatile than long-term yields.

[7] For a normal distribution, the probability of values occurring within one standard deviation at either side of the mean of the distribution is of 34.1 per cent at each side. This means that the range of costs presented has a probability of occurring of just over 68 per cent.

Chart B.8: Standard deviation of debt service cost



Source: DMO

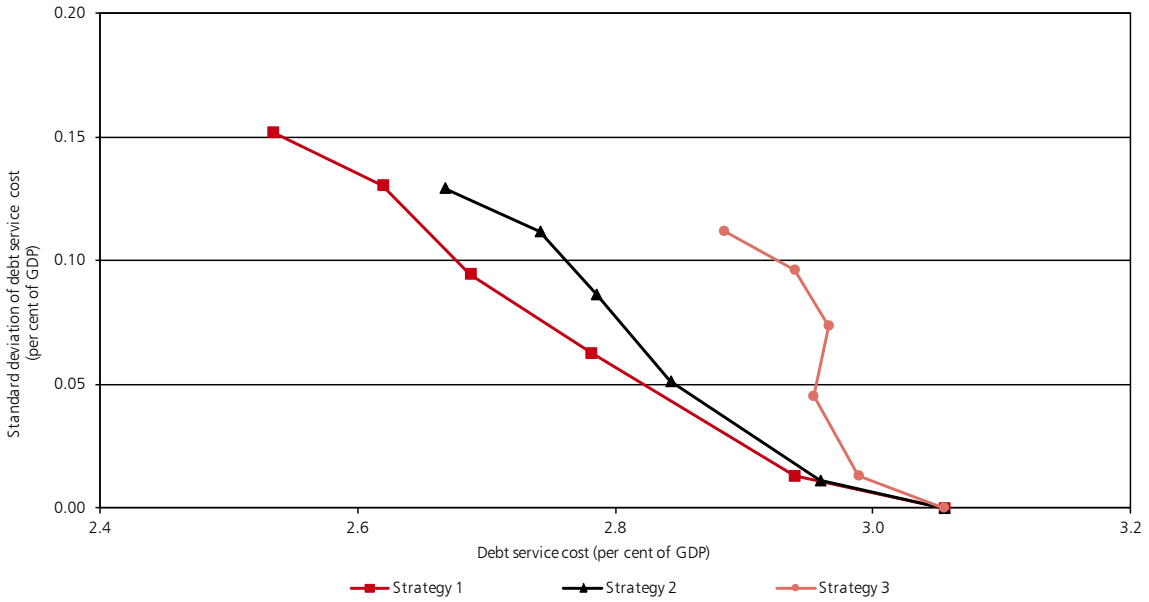
B.40 Chart B.9 shows a form of scatter plot obtained by combining the data from Chart B.7 and Chart B.8 and illustrates the simulated debt service cost and risk trade-off. Each point in the chart represents a financial year. The first point of the chart, representing 2011-12, depicts the same cost for all strategies and a standard deviation of zero, given that the financial year has finished in these scenarios and the actual cost of the debt portfolio has materialised.

B.41 The cost and risk trade-off in Chart B.9 indicates how much interest rate refinancing risk would be incurred for a given amount of cost when following each issuance strategy over the five year horizon. For example, taking the last point, which represents 2016-17, the cost of Strategy 1 is over 2.5 per cent of GDP with an interest rate refinancing risk of 0.15 per cent of GDP, whereas the cost for Strategy 3 is higher at around 2.9 per cent of GDP but has a lower interest rate refinancing risk of around 0.11 per cent of GDP. Strategy 2 would incur an interest rate refinancing risk of around 0.13 per cent of GDP, in between the two extreme strategies.

B.42 The relative comparison follows prior expectations given the assumption of an upward sloping yield curve.

B.43 Of all the strategies considered, Strategy 1 depicts the highest interest rate refinancing risk for a given cost because it needs to be refinanced more often. Strategy 3, which wholly comprises long-term issuance, needs to be rolled over less frequently and thus has the lowest interest rate refinancing risk of all the strategies considered, but the highest cost. Strategy 2 incorporates gilt issuance across a range of maturities and thus implies a more even trade-off.

Chart B.9: Simulated debt service cost and debt service cost at risk trade-offs



Source: DMO

B.44 It is worth noting that it is several years into the simulation before the cost and risk trade-offs of these strategies start to diverge significantly.[8] This is due to the large size of the existing debt portfolio relative to issuance, which induces inertia so that any changes in the structure of the debt portfolio resulting from issuance are slow to take effect. This feature can be depicted by the average maturity of the debt portfolio, historical and simulated, under the different issuance scenarios, as shown in Chart B.10.[9]

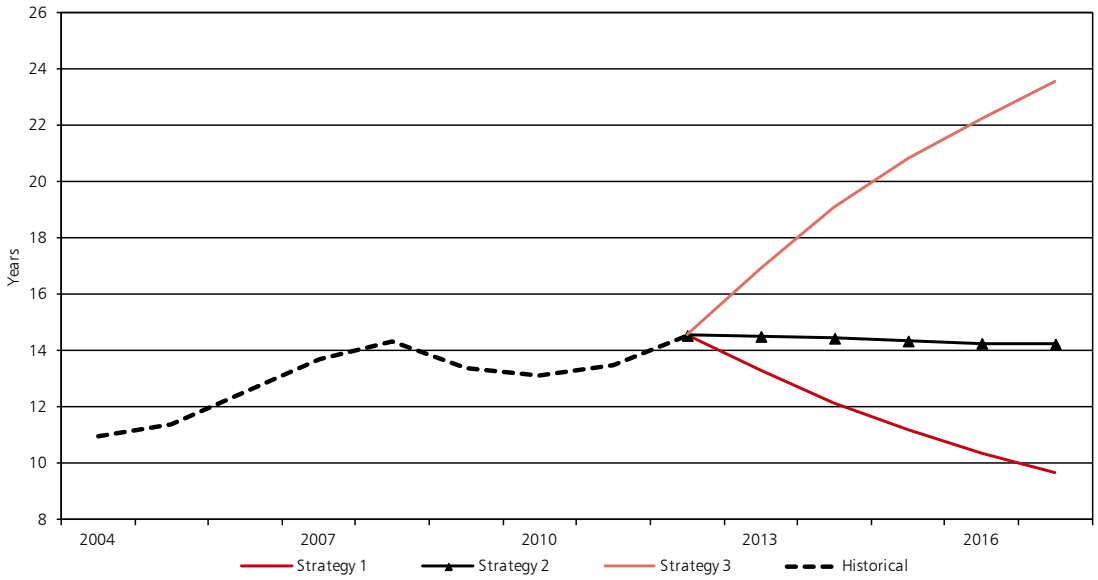
B.45 It is important to bear in mind some technical factors when interpreting the average maturity statistic. Firstly, the average maturity of the gilt portfolio as shown in Chart B.10 is weighted by market value. This implies that yield curve movements will affect the resulting average maturity of the portfolio regardless of issuance choices. For example, an upward move of 100 basis points of the entire yield curve will reduce the prices of longer-dated bonds proportionately by more than shorter-dated bonds, affecting the relative weighting in a way that reduces average maturity.

B.46 Secondly, there are portfolio effects to be considered. The natural tendency of the existing portfolio is for the average maturity to fall as time passes, i.e. portfolio ageing. As the gilt portfolio has become larger in recent years, and yearly issuance has become lower in proportion to the overall size of the portfolio, the impact of a given issuance skew on the overall average maturity is reduced. The redemption profile also matters when evaluating the effect of the issuance skew on the overall portfolio and can manifest itself in irregular movements in the average maturity profile year-on-year.

[8] In order to depict completely the cost and risk characteristics of each issuance strategy, a longer horizon that covers all cash flows up to the maturity of the longest bond should be considered. This is, however, beyond the scope of this analysis.

[9] Includes gilts and Treasury bills.

Chart B.10: Simulated average maturity of the debt portfolio



Source: DMO

Conclusions

B.47 The quantitative modelling conducted by the DMO shows that a diversified issuance strategy offers a cost and risk trade-off which lies between that of an all-short issuance strategy – in which debt service costs are lower but debt service cost at risk is higher – and an all-long issuance strategy – in which debt service cost at risk is lower but debt service costs are higher.

B.48 The results of this model are presented to illustrate the cost and risk implications of pursuing theoretical 'extreme' issuance strategies relative to more balanced strategies. However, 'extreme' strategies would fail to take into account a broad range of factors including: relative cost-effectiveness of different maturities and types of gilt, demand, consideration of other risks, operational and practical considerations.[10] Therefore, in reaching its decision the Government has favoured a more balanced strategy that takes into account these factors.

[10] See the first section of this annex.

C National Savings and Investments' financing remit for 2012-13

C.1 This annex sets out information on the activities of NS&I in 2011-12 and 2012-13. NS&I is both a government department and an executive agency of the Chancellor of the Exchequer. Its activities are conducted in accordance with its remit, which is to provide cost-effective finance now and in the future for the Government. It does this by raising deposits and investments from retail customers. This will remain the case in 2012-13.

C.2 NS&I's contribution to financing is agreed with HM Treasury each year, and is based on the Government's gross financing requirement, conditions in the retail financial services market and NS&I's ability to raise the funding without distorting the market.

Volume of financing in 2011-12

C.3 NS&I's contribution to financing in 2011-12 is projected to be £4.3 billion with gross inflows (including reinvestments and gross accrued interest) of approximately £19.9 billion. This is above NS&I's target range of £0-£4 billion, due to an unexpected increase in the overall size of the savings market in December 2011, which resulted in higher than forecast inflows of funds and higher retention rates in respect of existing customer deposits. Table C.1 shows changes in NS&I's product stock during 2011-12.

Table C.1: Changes in NS&I's product stock in 2011-12

£ billion	End-March 2011	End-March 2012[1]
Variable rate	64.0	64.0
Flexible rate	15.0	13.7
Index-linked	19.9	25.5
Total	**98.9**	**103.2**

Figures may not sum due to rounding.
[1] Projections

Source: NS&I

C.4 NS&I calculates the value it creates for the Government using the Value Indicator, which compares the cost of funds raised to comparable gilt yields (see Table C.2). These comparator rates have been materially depressed as a result of falling gilt yields over the course of the year, which were not anticipated in the OBR's previous forecast. On this basis, NS&I projects a cost saving of £385 million in 2011-12.

Table C.2: Calculation of Value Indicator

	Comparator cost[1]
Less	Capitalised and accrued interest paid on total NS&I stock
Less	Management costs of NS&I products (net equivalent of DMO costs & leveraging revenue)
Less	Tax foregone on total stock of 'tax free' products
Equals	Value Indicator

[1] This is the cost of raising funds in the wholesale market of an equivalent term. For fixed rate products it is the term of the product while, for variable rate products, it is the average length of time the product is held by the customer.

Source: NS&I

Volume of financing in 2012-13

C.5 Gross inflows (including reinvestments and gross accrued interest) into NS&I's products are projected to be around £14 billion in 2012-13. After allowing for expected maturities and withdrawals, NS&I is expected to make a zero net contribution to financing (within a range of -£2 billion to +£2 billion) in 2012-13.

C.6 Based on current forecasts for continued low gilt yields, the cost to the Government of NS&I's stock is not expected to be higher than wholesale funding costs.

C.7 Further details of NS&I's activities in 2012-13 will be included in its *Annual Report and Accounts*, which is scheduled to be laid in Parliament in July 2012 and will be available in print form and at www.nsandi.com.

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This document can be found in full on our website: http://www.hm-treasury.gov.uk

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