



OECD Working Papers on Sovereign Borrowing and Public  
Debt Management No. 2

Principles and Trade-Offs  
when Making Issuance  
Choices in the UK

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<https://dx.doi.org/10.1787/5k9gz2mmx0vh-en>

# **Principles and Trade-Offs When Making Issuance Choices in the UK**

*Report by the United Kingdom Debt Management Office*

30 September 2011

JEL Classification: G18, H63, E43

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## Abstract

### PRINCIPLES AND TRADE-OFFS WHEN MAKING ISSUANCE CHOICES IN THE UK

This paper sets out: (i) the principles underpinning debt management policy in the UK; (ii) the key factors influencing annual issuance decisions; and (iii) how some of those factors require judgements to be made in determining appropriate trade-offs.

Key factors influencing annual issuance decisions are determined in accordance with the debt management objective. As part of this assessment the UK Government undertakes an analysis of the demand conditions in the gilt market and implications for the cost of issuance. Other factors such as market management and portfolio diversification considerations are also taken into account as well as practical and operational issues associated with any issuance strategy.

Reflecting the fiscal context of an elevated debt to GDP ratio that is projected to fall over the medium term, the 2011-12 financing remit was informed by the Government's preferences to enhance fiscal resilience by: (i) seeking to mitigate refinancing and rollover risk (by spreading out the redemption profile along the maturity spectrum); (ii) promoting the liquidity and efficiency of the gilt market; and (iii) maintaining a diversity of financing exposure across conventional and index-linked gilts and along the maturity spectrum.

The paper argues that judgements play an important role in determining appropriate trade-offs when making issuance choices. The result of the determination of cost and risk factors and judgements about trade-offs is usually a relatively balanced issuance split across the maturity spectrum, along both the nominal and real yield curves.

*JEL codes: G18, H63, E43*

*Key words: Annual issuance program, trade-offs and issuance choices, yield curve, debt management principles, portfolio diversification, liquidity, risk management*

## TABLE OF CONTENTS

PRINCIPLES AND TRADE-OFFS WHEN MAKING ISSUANCE CHOICES IN THE UK ....	5
1. Introduction.....	5
2. The debt management principles .....	5
3. Key Factors Influencing Annual Issuance Decisions .....	6
3.1. Cost and Demand .....	6
3.2. Risk .....	8
3.3. Liquidity, market management and portfolio diversification.....	8
3.4. Practical and operational issues .....	9
4. Trade-offs When Making Issuance Decisions .....	9
5. Conclusion .....	10
ANNEX: THE DEBT MANAGEMENT OBJECTIVE IN THE UK.....	11

### Boxes

1: Cost Effectiveness Considerations in the 2011-12 Financing Remit.....	7
2: Debt Management Considerations During the Period of Fiscal Consolidation.....	8

## PRINCIPLES AND TRADE-OFFS WHEN MAKING ISSUANCE CHOICES IN THE UK

### 1. Introduction

This paper sets out: (i) the principles underpinning debt management policy in the UK; (ii) the key factors influencing annual issuance decisions; and (iii) how some of those factors require judgements to be made in determining appropriate trade-offs.

Decisions on funding the Government's financing requirement are taken annually and published alongside the Budget<sup>1</sup> by HM Treasury in the UK DMO's financing remit for the forthcoming financial year<sup>2</sup>. The remit specifies the amount to be issued in conventional gilts (by maturity)<sup>3</sup> and index-linked gilts as well as the planned outstanding Treasury bill stock at the end of the financial year.

### 2. The debt management principles

In line with most sovereign issuers, the UK has a debt management objective based on minimising the costs of meeting the Government's financing needs over the long term, taking into account risk. The objective also requires consistency with the aims of monetary policy. The Annex sets out an interpretation of the components of the objective.

The debt management policy objective is achieved by:

- meeting the principles of openness, transparency and predictability<sup>4</sup>;
- developing a liquid and efficient gilt market; and
- issuing gilts that achieve a benchmark premium.

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<sup>1</sup> The Budget is usually published in March or April each year.

<sup>2</sup> The financing remit is published annually alongside the Budget in the Debt and Reserves Management Report.

<sup>3</sup> i.e. nominal bonds. The financing remit sets out the amount that will be issued in different maturity sectors: short (0-7 year), medium (7-15 year) and long (15+ year).

<sup>4</sup> For example, in the UK, it is a requirement of debt management policy that the Government fully finances its projected net financing requirement each year through the sale of debt, which is known as the "full funding rule". The rationale for the full funding rule is to ensure transparency and predictability in debt management, 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. Key Factors Influencing Annual Issuance Decisions**

Annual decisions on the structure of the financing remit are determined in accordance with the debt management objective. As part of this assessment the Government undertakes an analysis of the demand conditions in the gilt market and implications for the cost of issuance. Other factors such as market management and portfolio diversification considerations are also taken into account as well as practical and operational issues associated with any issuance strategy.

#### ***3.1. Cost and Demand***

The relative cost effectiveness of different issuance strategies will in part be determined by demand conditions in the gilt market. Demand is assessed through ongoing dialogue between the UK DMO and both primary dealers (Gilt-edged Market Makers – GEMMs) and end-investors. The Government also seeks views from gilt market participants at annual consultation meetings before the Budget as well as through an annual survey of its market makers.

The UK gilt market has typically been characterised by demand for long-dated conventional and index-linked gilts primarily from the domestic pension and insurance sectors to meet their long-term liabilities. In recent years the UK has also seen strong demand for short conventional gilts from overseas investors and also from domestic financial institutions including banks and building societies amid ongoing tightening of regulatory requirements for holding liquid assets. There has also been sustained demand for Treasury bills.

One way to assess the impact of demand on cost is to analyse the shape of the nominal and real yield curves. If the yield curve is formed solely on the basis of unbiased market expectations about the future evolution of interest rates then the Government as issuer would be indifferent on cost grounds between issuing short, medium and long-dated gilts. However, persistent excess demand for gilts at specific maturities or segments of the curve could indicate that yields no longer solely reflect pure interest rate expectations. In that case it may be possible for the Government to issue gilts into those maturities at yields lower than would be expected on the basis of interest rate expectations alone thereby capturing a ‘premium’.

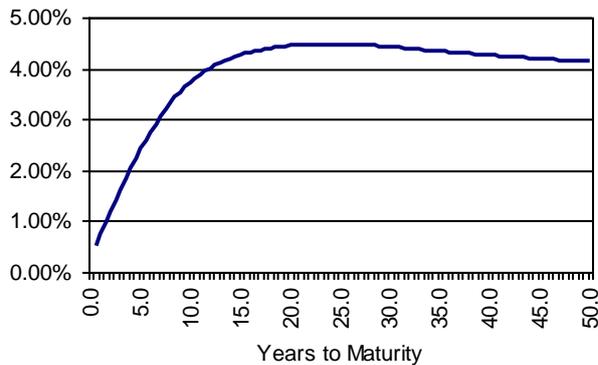
### Box 1: Cost Effectiveness Considerations in the 2011-12 Financing Remit

In setting the financing remit for 2011-12 the Government's analysis suggested that there could be a premium in the (i) nominal yield curve making short-dated conventional gilts particularly cost effective; and (ii) real yield curve that would make issuance of long-dated index-linked gilts cost effective; a result of ongoing demand for gilts in these sectors of the market.

#### *Short Conventional Gilts*

Chart 1 below shows the nominal yield curve on 16 March 2011. The steep slope of the spot curve implies a sharp increase in short-term yields: for example it would imply a sharp increase in the five year spot rate over a five year period.

**Chart 1. Nominal spot curve (16 Mar 2011)**



**Chart 2. Spread between five-year forward rate in five years and the five-year spot rate**

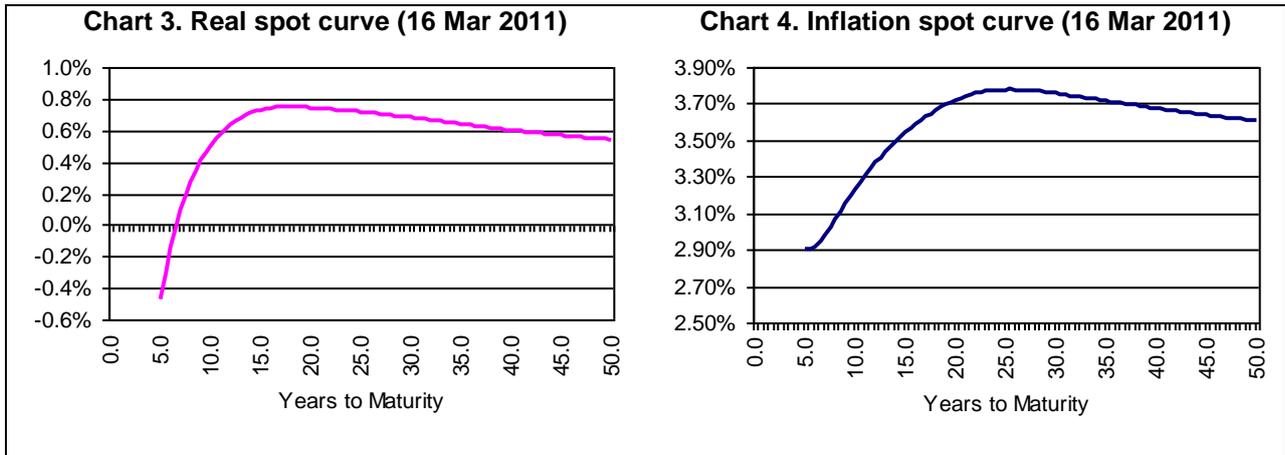


While the slope of the curve is likely to reflect the path of interest rates anticipated by the market, the steep upward slope of the yield curve at shorter maturities could be explained by the presence of a 'premium' that increases the cost-effectiveness of short-dated conventional gilts relative to medium-dated or long-dated conventional gilts. This can be seen in the spread between the five-year forward yield in five years time and the five year spot rate, which had reached 300bps (See Chart 2), its highest level over a ten year period. While the components of this spread cannot be disaggregated definitively, the presence of such a spread was consistent with strong reported demand for short conventional gilts relative to medium conventionals.

#### *Long-dated Index-linked Gilts*

Chart 3 below plots the real yield curve as at 16 March 2011. The persistently inverted shape of the real yield curve supported the assumption of a 'negative' term premium existing in long-dated real yields that could be captured through the issuance of long-dated index-linked gilts.

In addition an assessment of the path of long-term inflation relative to that priced in by the market (as implied by the implied inflation spot curve – Chart 4) indicated that a cost advantage existed for the Exchequer from issuing long-dated index-linked gilts relative to equivalent maturity conventional gilts. This conclusion reflected the Office for Budget Responsibility's (OBR's) forecast that inflation returns to target in the medium term and the neutral assumption that inflation remains at target thereafter.



### 3.2. Risk

The Government considers a range of risks in reaching decisions on the preferred structure of issuance in the annual financing remit assessing the relative importance of each risk in accordance with its risk appetite, which may change over time. Box 2 provides a steer on the Government’s risk preferences during the period of fiscal consolidation.

**Box 2: Debt Management Considerations During the Period of Fiscal Consolidation**

Decisions on the financing remit 2011-12 were made against the backdrop of an elevated debt to GDP ratio that is projected to fall over the medium term as a result of the Government’s fiscal mandate to achieve a cyclically-adjusted current balance by the end of the rolling, five-year forecast period.

Reflecting the fiscal context, the 2011-12 financing remit was informed by the Government’s preferences to enhance fiscal resilience by: (i) seeking to mitigate refinancing and rollover risk (by spreading out the redemption profile along the maturity spectrum); (ii) promoting the liquidity and efficiency of the gilt market; and (iii) maintaining a diversity of financing exposure across conventional and index-linked gilts and along the maturity spectrum.

In terms of determining the issuance strategy for 2011-12, these preferences meant that, subject to ensuring cost-effective financing, the Government plans to: (i) maintain a relatively high proportion of long fixed-rate exposure and a relatively long average maturity in the debt portfolio to reduce interest rate volatility; (ii) maintain a significant proportion of real exposure by issuing index-linked gilts; (iii) continue to issue conventional and index-linked gilts over a range of maturities, taking account of structural demand; and (iv) maintain the end-year Treasury bill stock at a level that will support market liquidity.

### 3.3. Liquidity, market management and portfolio diversification

As a repeat borrower, the Government places importance on maintaining a deep and liquid gilt market in order to retain its ability to issue gilts to a diverse range of investors at all maturities and in all market conditions.

The Government, therefore, focuses issuance at key benchmark maturities in conventional and index-linked gilts. By building liquidity at key benchmark maturities the Government also hopes to

capture a benchmark premium thereby lowering debt issuance costs for the Government. Issuing across both the nominal and real yield curves helps to ensure that the Government maintains a diverse investor base.

### ***3.4. Practical and operational issues***

Practical deliverability of the issuance programme is also an important consideration. Auctions remain the core method for the issuance of gilts but the UK DMO has in recent years also held a programme of syndications to deliver a minority of the financing programme. This reflects both risk and operational issues that are discussed in Section 4 below.

In addition, the issuance programme for any year needs to be designed to allow for a schedule which provides adequate gaps between sales of similar gilts and to avoid issuing gilts on the same days as significant pre-scheduled market events that might increase volatility in the gilt market. In a high financing environment this factor can also constrain the design of the issuance programme, for example by requiring a greater emphasis to be placed on issuing instruments that deliver relatively higher volumes of financing per operational slot.

## **4. Trade-offs When Making Issuance Decisions**

It is often the case that some of the factors set out in Section 3 can lead to conflicting conclusions which require judgements to be made in determining the appropriate trade-offs. Examples of these trade-offs are discussed below.

### *Examples of trade-offs when making issuance choices*

Cost versus risk (volatility of cost). The classic cost/risk trade-off typically involves making a judgement about the relative weights placed on lower cost versus lower volatility of cost where the yield curve is structurally upward sloping. In this case shorter maturity instruments could be more cost effective to issue over the long term, but would also expose the issuer to a greater risk of higher debt service costs as maturing debt is refinanced at prevailing interest rates.

In the UK the real yield curve has typically been structurally inverted<sup>5</sup>, and the UK debt authorities have judged that a structural premium exists in long-dated index-linked gilt yields. The Government has sought to capture this premium through issuance of long-dated index-linked gilts<sup>6</sup>, which also has the added benefit of minimising the volatility of real debt service costs relative to issuing shorter maturity index-linked gilts. In this case both cost and risk considerations support the conclusion to skew issuance towards long-dated index-linked gilts.

Volatility of cost versus regret risk. Long-dated issuance would tend to be favoured where debt issuers have a preference to minimise the volatility of debt service costs. However, regret risk is a key risk exposure arising through issuance of long-dated bonds (both nominal and real) and exposure to this risk is particularly high when at the peak of the borrowing cycle. In that context, a potential future downside to large issuance programmes being heavily skewed towards long maturities is that more borrowing is locked into, which turns out not to have been needed in a future financing environment of much lower issuance/debt stock. Reduced exposure to regret risk in a high financing environment

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<sup>5</sup> This has also applied to the nominal yield curve for long periods.

<sup>6</sup> Although the extent of such issuance has been tempered by the practical and operational constraints in distributing this type of instrument (see later).

may be achieved via a lower level of long-dated issuance but, for a given financing quantum, this will require higher issuance at shorter maturities. Hence, exposure to cost volatility and regret risk must be traded-off when making decisions about the split of nominal and real issuance by maturity.

Long-term cost minimisation versus execution risk and practical constraints. A higher absolute volume of issuance in a particular category of instrument may be preferred on cost grounds alone. However, the extent to which issuance would be skewed towards that maturity may need to be tempered by reference to risk considerations, (e.g. execution risk) and also practical or operational constraints. In the UK this has typically applied to the issuance of long-dated index-linked gilts, which, whilst judged to be cost-effective for the Exchequer, carry a higher degree of execution risk than other types of gilt.

The DMO typically issues index-linked gilts via auctions in smaller size than for equivalent maturity conventional gilts reflecting their greater price sensitivity to interest rate movements (as measured by their duration), the greater difficulty for market participants to hedge their risk exposures, their relatively lower liquidity and the less diversified investor base for index-linked gilts. These factors increase the risk for both the Government as issuer and for the primary dealers who have to warehouse the risk supplied to the market at auctions. The Government therefore tailors the amount of risk it offers to the market at each auction by modifying auction sizes accordingly – with long-dated index-linked gilt auctions delivering the smallest amount of financing per operation. This places a limit on the amount of issuance that can be delivered through a given number of auctions.

Since 2009-10, given the high level of annual financing requirements and the Government's continued preference to issue significant amounts of index-linked gilts, the DMO has used syndications as a way to distribute higher quantities of index-linked gilts<sup>7</sup> than was judged would be feasible via auctions alone. Nevertheless, practical constraints such as scheduling still place a limit on the absolute amount of index-linked gilt issuance which the Government considers should be delivered in any given year.

## **5. Conclusion**

The result of the determination of cost and risk factors and judgements about trade-offs is usually a *relatively balanced* issuance split across the maturity spectrum, along both the nominal and real yield curves, rather than very heavily skewed issuance programmes towards particular maturities and instrument types.

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<sup>7</sup> Syndications have also been used to sell long-dated conventional gilts.

## ANNEX: THE DEBT MANAGEMENT OBJECTIVE IN THE UK<sup>8</sup>

The **long-term cost of meeting the Government's financing needs** arises directly from interest income payable (coupons) and from any difference between the issuance proceeds and redemption payments. Although the accounting treatment may vary for these elements of debt servicing costs, from a debt management perspective, there is no distinction between them and they are treated as one for the purposes of cost minimisation.

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

From the debt management perspective, there is no single definition of risk. Rather, a number of risks are taken into account when selecting possible debt management strategies. Some particularly important risks are:

- **interest rate risk** – the risk associated with new issuance each year as an interest rate exposure arises at the time that new debt is issued throughout the year;
- **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 budget deficit may also be high, and against a market background that cannot be forecast. In addition, refinancing risk can arise if maturities are concentrated in particular years;
- **regret risk** – the risk of locking into a high quantum of long-term borrowing that turns out to be unnecessary and/or costly ex post and the Government, therefore, 'regrets' the extent to which those rates have been locked into.
- **inflation risk** – the exposure to inflation arising from both coupons and principal due to 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 access the market at a particular point in time, without incurring a deep discount to the market price that would not yield value for money for the Exchequer, or in the extreme not being able to sell the issue in full.

This list of risks is not exhaustive. However, they are the major risks that have been taken into account in recent years in the determination of the Government's attitude to risk and are expected to be taken into account in future years. The weight placed on each risk could change over time.

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<sup>8</sup> Adapted from the *Debt and reserves management report 2011-12*, available on the DMO's website.