



Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

Irish Amortising Bonds

Information Memorandum

National Treasury Management Agency

July 2012

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Irish Amortising Bonds – Information Memorandum

This Information Memorandum outlines the issuance procedures and related debt management arrangements in respect of Irish Government amortising bonds. The Memorandum, or any further information supplied in connection with it, is not a recommendation by the National Treasury Management Agency (NTMA) to purchase Irish Amortising Bonds (IABs) nor is it intended to provide the basis of any credit or other evaluation.

This Information Memorandum creates no legal relations between the NTMA and any potential purchaser of IABs. Potential purchasers of IABs should make their own investment decision and take their own legal, tax and financial advice. Nothing in this Information Memorandum may be relied upon as legal, tax or financial advice.

All times referred to in this Information Memorandum are local times in the Dublin market.

1. Form

Irish Amortising Bonds will be issued by Ireland acting through the National Treasury Management Agency under the authority contained in the National Treasury Management Agency Act, 1990 and other statutes.

IABs are amortising bonds which make equal annual payments over their lifetime. Each such annual payment includes a partial principal repayment and a payment of interest, as set out in the offering circular for each IAB.

On the payment dates each year the remaining principal balance of each IAB is reduced by the amount of the partial principal redemption. An example of an Offering Circular with a schedule of payments is set out in Annex 1. For illustrative purposes the example assumes that a 35 year IAB had been issued in March 2012.

The NTMA anticipates issuing IABs with maturities of 15, 20, 25, 30 and 35 years, though these may vary depending on market conditions.

2. Transaction Conventions

The NTMA will issue IABs on an original principal balance basis. i.e. market prices will be quoted per €100 of original principal. In order to calculate the declining principal balance, the original principal amount is adjusted annually over the life of each IAB using a factor (the 'sink factor').

The day-count convention on IABs will be ICMA Actual/Actual and they will settle on a Delivery versus Payment (DVP) basis.

The formula to calculate the **clean-price consideration** on an IAB is:

$$CPC = OP \times CP \times SF$$

Where

CPC = Clean Price Consideration

OP = Original Principal

CP = Clean Price

SF = Sink Factor

When it issues IABs, the NTMA will calculate **accrued interest** on the following basis:

$$AI = OP \times IR \times \left(\frac{DA}{DP}\right) \times SF$$

Where

AI = Accrued Interest

OP = Original Principal

IR = Interest Rate

DA = actual number of calendar days from and including the last payment date or the day from which interest is to accrue for a new issue, up to but excluding the settlement date of the transaction

DP = actual number of calendar days in the Period from the last payment date, or the day from which interest is to accrue for a new issue, up to but excluding the next payment date

SF = Sink Factor

The formula to calculate the **total consideration** on an IAB transaction is:

$$TC = CPC + AI$$

Where

TC = Total Consideration

CPC = Clean Price Consideration

AI = Accrued Interest

Annex 2 contains examples of how the formulae above may be applied.

3. Issuance

IABs may be issued by the NTMA via auctions, taps or reverse enquiry. Individual IAB auctions or taps will be announced in advance. The frequency or pattern of IAB auctions or taps may be altered from time to time subject to market conditions.

Participation in auctions, taps and reverse enquiries is limited to recognised Primary Dealers in Irish Government Bonds and Eligible IAB counterparties as approved by the NTMA. Lists of recognised Primary Dealers and any approved Eligible IAB Counterparties can be found on the NTMA website (www.ntma.ie).

(a) Auction Issuance

One or more IABs may be offered in each auction.

The IAB(s) to be issued through an auction will be announced by the NTMA at 10.00 a.m. two business days preceding the auction date. The announcement will indicate whether the auction allocations will be based on a multi-price model or a single-price, Dutch-style model.

The NTMA reserves the right in exceptional circumstances not to proceed with a previously announced auction.

The Bloomberg Auction System will be used to conduct an auction and announce the results. In the event of a Bloomberg network fault at any time during the bidding process the auction will be cancelled by the NTMA and all bids deemed void. An alternative time, and if necessary alternative arrangements, for the auction will be announced as soon as possible. The NTMA reserves the right to make other arrangements for the conduct of any auction if it is not fully satisfied with the operation of the Bloomberg Auction System.

It is the responsibility of Participants to ensure that they are enabled to participate in an auction.

On the auction date, once the auction is officially opened, normally at 8.30 a.m., bids may be submitted up to the deadline indicated in the auction announcement, normally 11.00 a.m.

Each bid will indicate:

- (a) the IAB required
- (b) the original principal amount, which must be at least €100,000
- (c) the price, which must be a multiple of € one cent (€0.01)

Participants may submit multiple bids and may amend their bids up to the time the auction closes but each Participant's total bids may not exceed the stated auction size or the upper end of the stated range within which the auction size will be determined by the NTMA.

The NTMA reserves the right at its absolute discretion to reject all or any bids submitted by Participants.

In a multi-price competitive auction, allocations of IABs will be made in descending price order with a pro-rata adjustment of the allocations at the lowest accepted price, where required, in order to bring the total allocations in line with the amount to be issued as decided by the NTMA. Allocations will be made at the prices indicated in the Participants' bids.

In a single-price competitive auction, allocations will be made in descending price order with a pro-rata adjustment of the allocations at the cut-off price, where required, in order to bring the total allocations in line with the amount to be issued as decided by the NTMA. All allocations will be made at the cut-off price.

Participants will be informed of the bids that have been accepted and of the overall results of the auction approximately fifteen minutes after the close of the auction, unless technical problems occur that call for alternative arrangements.

For a multi-price auction the NTMA will announce the following results:

- total amount of bids
- original principal amount sold
- bid-to-cover ratio
- highest accepted price
- weighted average price
- lowest accepted price and any partial allocation percentage

For a single price auction the NTMA will announce the following results:

- total amount of bids
- original principal amount sold
- bid-to-cover ratio
- cut-off price

Immediately after a competitive auction has closed, the NTMA will open a non-competitive auction of the IAB(s) sold in the auction. Participants may place their bids with the NTMA by electronic mail or by recorded telephone. The price in the non-competitive auction will be the weighted average price of the multi-price competitive auction or the cut-off price of the single-price competitive auction, whichever is appropriate. Each Participant will be entitled to bid for up to twenty-five per cent of the amount of each IAB allocated to it in the competitive auction. The non-competitive auction will close at 3.00 p.m. on the following business day.

(b) Tap Issuance

Following consultation with Participants and subject to market conditions, the NTMA may offer IABs by a tap mechanism. When issuing by tap the NTMA will announce one hour in advance on Bloomberg (page NTMA2) and to the market generally the IAB(s) to be tapped and the size of the tap issue. The price will be electronically notified to Participants when the tap opens and will normally remain available for two hours. Once the tap is opened, Participants may place their orders, either by Bloomberg messaging or recorded telephone. All aggregated orders received up to the tap size will be satisfied in full.

To the extent that aggregated demand exceeds the tap size, orders will be satisfied on a proportional basis so that they are scaled back to the tap size range. The NTMA reserves the right in its absolute discretion to reduce or reject all or any orders in a tap.

If market conditions warrant, the tap posted price may be varied by the NTMA, and, upon each change in the offer terms, the amount remaining on tap will be open to Participants for a period which will be notified to the market.

If there is excess demand for a tap, the NTMA may, exceptionally and at its discretion, issue up to the full amount demanded.

Participants will be advised via Bloomberg (page NTMA2) when a tap is closed and of the amount sold.

(c) Reverse Enquiry Issuance

In addition to auctions and taps, the Participants may approach the NTMA for IABs on an ad hoc basis and the NTMA may at its discretion facilitate specific demand. Any transactions completed under this process will be reflected in the daily bonds outstanding report posted to www.ntma.ie.

4. Settlement and Registration

IABs will be issued in dematerialised form and the register of holders will be maintained by the Central Bank of Ireland. The register will reflect the principal amount outstanding and this will be reduced as principal is redeemed in accordance with the relevant offering circular. All issues of any individual IAB will be fully fungible from the date of issuance.

IABs will be listed on the Irish Stock Exchange.

The official settlement system for IABs is Euroclear. The paying agent for IABs is the Central Bank of Ireland.

Annex 1 -Offering Circular Example



Gníomhaireacht Bainistíochta an Chisteáin Náisiúnta
National Treasury Management Agency

IRELAND

6.00% Amortising Bond 1 March 2047

ISIN CODE: IEXXXXXXXXXX

Settlement:

The first issue date for the 6.00% Amortising Bond 2047 (the 'bond') will be 1 March 2012 (T + 5).

The bond will be distributed across all relevant settlement systems from the account of Ireland, acting through the National Treasury Management Agency, in Euroclear and will be available in the over-night processing cycles for value 1 March 2012.

National Treasury Management Agency

CONDITIONS ATTACHED TO 6.00% AMORTISING BOND 2047

Issuer: Ireland, acting through the National Treasury Management Agency. The payments on the bond, which is issued under the National Treasury Management Agency Act, 1990 and other statutes, will be charged on the Central Fund.

Currency: euro

Purpose of Issue: The proceeds of the issue will be used for general financing purposes of the Exchequer.

Taxation: Interest on the bond will be paid gross without deduction of income tax or any other deductions or withholdings. In general, where the holder of the bond is an Irish resident taxpayer, the interest element payable on the bond is assessable to income tax, whereas any gains arising on disposal or redemption of the bond are exempt from capital gains tax. However, where the bondholder resident in Ireland is dealing in Government bonds as part of a trade, he/she is assessable to income tax or corporation tax, as the case may be, in respect of the interest element and also the gains arising on disposal or on redemption of the bond.

Section 43 of the Taxes Consolidation Act 1997 provides that the bond and the interest payable thereon is exempt from all Irish taxation so long as it is shown that the bond is in the beneficial ownership of a person not resident in Ireland. However, where the bond is held by or for an Irish branch or agency of a foreign financial concern, interest and gains on such bond will be chargeable to Irish tax.

In Ireland, individual purchasers should note that, where the bond is comprised in a gift or inheritance, the gift or inheritance to that extent will be exempt from capital acquisitions tax provided that the conditions for exemption set out in section 81 of the Capital Acquisitions Tax Consolidation Act 2003 of Ireland are met.

In addition, the execution of instruments for the issue and the transfer of the bond will be free of Irish stamp duty provided the conditions for exemption set out in section 85(2) and section 113 of the Stamp Duties Consolidation Act 1999 of Ireland, are met.

EU Directive on the Taxation of Savings Income: Under the terms of Council Directive 2003/48/EC of 3 June 2003 on taxation of savings income in the form of interest payments, Ireland is required to provide to the tax authorities of any other Member State details of interest payments (as defined) made by paying agents within its jurisdiction to individuals resident in that other Member State. These provisions apply in respect of relevant interest payments to individuals who are beneficial owners of this bond.

Payments: Payments will be at a rate of 6.897385898% of original principal on 1 March for each of the years 2013 to 2047 inclusive. Payments are made up of Principal and Interest as outlined in Schedule 1.

Principal: The Principal amortises over the life of the bond in accordance with the sink factors set out in Schedule 1. The principal outstanding at each period start date is equal to the original principal amount multiplied by the sink factor for that date.

Interest: Interest will accrue from the first issue date of the bond and will be paid annually on the dates outlined in Schedule 1. The rate of the accrual will be 6.00% on the remaining principal outstanding. Interest will be calculated on the ICMA Actual/Actual basis.

Business Day: A day on which the Trans-European Automated Real-Time Gross Settlement Express Transfer (TARGET2) System is open.

Business Day Convention: The Following Business Day Convention shall apply to all payments due under this bond with no adjustment

Account: It is a condition of this bond that registered holder(s) shall nominate an account in a credit institution linked to TARGET2, the payment system of the European System of Central Banks, into which all interest/redemption payments will be made. Details of the account to which such payments are to be made must be provided to the Central Bank of Ireland (as Registrar) on the appropriate form, which is available from the Registrar, by the Registrar's close of business in Dublin on the day of registration of the holding. Holders must notify the Registrar of any change in account details through completion and lodgement of a further copy of the form.

Settlement, Registration and Transfer: The official settlement system for IABs is Euroclear. The registrar and paying agent for this bond will be the Central Bank of Ireland. The register will reflect the principal held and will be adjusted as each principal repayment is made.

Stock Exchange Listing: The bond will be listed on the Irish Stock Exchange.

Governing Law and Jurisdiction: Ireland.

Schedule 1 – Based on €100 Original Principal

Payment No.	Period Start Date	Period End and Payment Date	Scheduled Payment * €	Interest Portion of Payment €	Principal Portion of Payment €	Principal Outstanding at each Start Date	Sink Factor
1	01/03/2012	01/03/2013	6.90	6.00	0.90	100.00	1.000000000000
2	01/03/2013	01/03/2014	6.90	5.95	0.95	99.10	0.991026141020
3	01/03/2014	01/03/2015	6.90	5.89	1.01	98.15	0.981513850502
4	01/03/2015	01/03/2016	6.90	5.83	1.07	97.14	0.971430822552
5	01/03/2016	01/03/2017	6.90	5.76	1.13	96.07	0.960742812925
6	01/03/2017	01/03/2018	6.90	5.70	1.20	94.94	0.949413522721
7	01/03/2018	01/03/2019	6.90	5.62	1.27	93.74	0.937404475105
8	01/03/2019	01/03/2020	6.90	5.55	1.35	92.47	0.924674884632
9	01/03/2020	01/03/2021	6.90	5.47	1.43	91.12	0.911181518730
10	01/03/2021	01/03/2022	6.90	5.38	1.52	89.69	0.896878550874
11	01/03/2022	01/03/2023	6.90	5.29	1.61	88.17	0.881717404947
12	01/03/2023	01/03/2024	6.90	5.19	1.70	86.56	0.865646590264
13	01/03/2024	01/03/2025	6.90	5.09	1.81	84.86	0.848611526700
14	01/03/2025	01/03/2026	6.90	4.98	1.91	83.06	0.830554359322
15	01/03/2026	01/03/2027	6.90	4.87	2.03	81.14	0.811413761902
16	01/03/2027	01/03/2028	6.90	4.75	2.15	79.11	0.791124728636
17	01/03/2028	01/03/2029	6.90	4.62	2.28	76.96	0.769618353375
18	01/03/2029	01/03/2030	6.90	4.48	2.42	74.68	0.746821595598
19	01/03/2030	01/03/2031	6.90	4.34	2.56	72.27	0.722657032354
20	01/03/2031	01/03/2032	6.90	4.18	2.72	69.70	0.697042595316
21	01/03/2032	01/03/2033	6.90	4.02	2.88	66.99	0.669891292055
22	01/03/2033	01/03/2034	6.90	3.85	3.05	64.11	0.641110910599
23	01/03/2034	01/03/2035	6.90	3.66	3.23	61.06	0.610603706255
24	01/03/2035	01/03/2036	6.90	3.47	3.43	57.83	0.578266069651
25	01/03/2036	01/03/2037	6.90	3.26	3.63	54.40	0.543988174850
26	01/03/2037	01/03/2038	6.90	3.05	3.85	50.77	0.507653606361
27	01/03/2038	01/03/2039	6.90	2.81	4.08	46.91	0.469138963763
28	01/03/2039	01/03/2040	6.90	2.57	4.33	42.83	0.428313442609
29	01/03/2040	01/03/2041	6.90	2.31	4.59	38.50	0.385038390186
30	01/03/2041	01/03/2042	6.90	2.04	4.86	33.92	0.339166834618
31	01/03/2042	01/03/2043	6.90	1.74	5.15	29.05	0.290542985715
32	01/03/2043	01/03/2044	6.90	1.43	5.46	23.90	0.239001705878
33	01/03/2044	01/03/2045	6.90	1.11	5.79	18.44	0.184367949251
34	01/03/2045	01/03/2046	6.90	0.76	6.14	12.65	0.126456167227
35	01/03/2046	01/03/2047	6.90	0.39	6.51	6.51	0.065069678281

*The actual annual payment is 6.897385898%

Formulae for Calculating Interest and Principal on an IAB

For any annual payment the split between Principal and Interest is calculated as follows

$$\text{Interest} = OP \times IR \times SF_t$$

$$\text{Principal} = ((SF_t - SF_{t+1}) \times OP)$$

Where;

OP = Original Principal

IR = Interest Rate

SF_t = Sink Factor at time *t*

Illustrative examples below for period ended 1 March 2021 using *SF₉* and *SF₁₀*

Original Principal €	Total Annual Payment	Interest	Principal
100.00*	6.90	5.47	1.43
1,000.00	68.97	54.67	14.30
10,000.00	689.74	546.71	143.03
100,000.00	6,897.39	5,467.09	1,430.30
10,000,000.00	689,738.59	546,708.91	143,029.68
100,000,000.00	6,897,385.90	5,467,089.11	1,430,296.79

*** €100.00 original principal:**

$$OP = \text{€}100$$

$$IR = 6.00\%$$

$$SF_9 = 0.911181518730$$

$$SF_{10} = 0.896878550874$$

$$\text{Interest} = 100 \times 6.00\% \times 0.911181518730 = \text{€}5.47$$

$$\text{Principal} = ((0.911181518730 - 0.896878550874) \times 100) = \text{€}1.43$$

Annex 2 - Calculations involved in settlement of an IAB transaction

The NTMA will issue IABs on an original principal balance basis. i.e. market prices will be quoted per €100 of original principal. In order to calculate the declining principal balance, the original principal amount is adjusted annually over the life of each IAB using a factor (the 'sink factor').

The day-count convention on IABs will be ICMA Actual/Actual and they will settle on a Delivery versus Payment (DVP) basis.

The formula to calculate the **clean-price consideration** on an IAB is:

$$CPC = OP \times CP \times SF$$

Where

CPC = Clean Price Consideration

OP = Original Principal

CP = Clean Price

SF = Sink Factor

When it issues IABs, the NTMA will calculate **accrued interest** on the following basis:

$$AI = OP \times IR \times \left(\frac{DA}{DP}\right) \times SF$$

Where

AI = Accrued Interest

OP = Original Principal

IR = Interest Rate

DA = actual number of calendar days from and including the last payment date or the day from which interest is to accrue for a new issue, up to but excluding the settlement date of the transaction

DP = actual number of calendar days in the Period from the last payment date, or the day from which interest is to accrue for a new issue up to but excluding the next payment date

SF = Sink Factor

The formula to calculate the **total consideration** on an IAB transaction is:

$$TC = CPC + AI$$

Where

TC = Total Consideration

CPC = Clean Price Consideration

AI = Accrued Interest

Examples 1 and 2

Using the formulae outlined above and the details of the bond example in Annex 1 the following are examples of the calculations involved:

Example 1

Trade Details

- Trade Date: 2 September 2013
- Settlement Date: 5 September 2013
- NTMA sells original principal of €1,000,000 6.00% IAB 1 March 2047 to Party A
- Clean Price: 99.50 per €100 of original principal

Clean Price Consideration (CPC)

- $CPC = OP \times (CP/100) \times SF = (1,000,000 \times 99.50\% \times 0.991026141020) = €986,071.01$

Accrued Interest (AI)

- $DA = 1 \text{ March } 2013 \text{ to } 5 \text{ September } 2013 = 188$
- $DP = 1 \text{ March } 2013 \text{ to } 1 \text{ March } 2014 = 365$
- $AI = OP \times IR \times (DA/DP) \times SF = (1,000,000 \times (6.00\% \times (188/365))) \times 0.991026141020 = €30,626.78$

Total Consideration (TC)

- Total consideration to be paid by NTMA on 5 September 2013
- $TC = CPC + AI (€986,071.01 + €30,626.78) = €1,016,697.79$

Example 2

Trade Details

- Trade Date: 4 December 2017
- Settlement Date: 7 December 2017
- NTMA sells original principal of €5,000,000 6.00% IAB 1 March 2047 to Party B
- Clean Price 95.00 per €100 of original principal

Clean Price Consideration (CPC)

- $CPC = OP \times (CP/100) \times SF = (5,000,000 \times 95.00\% \times 0.949413522721) = €4,509,714.23$

Accrued Interest (AI)

- $DA = 1 \text{ March } 2017 \text{ to } 7 \text{ December } 2017 = 281$
- $DP = 1 \text{ March } 2017 \text{ to } 1 \text{ March } 2018 = 365$
- $AI = OP \times IR \times (DA/DP) \times SF (5,000,000 \times (6.00\% \times (281/365))) \times 0.949413522721 = €219,275.51$

Total Consideration (TC)

- Total consideration to be paid by Party B on 7 Dec 2017
- $TC = CPC + AI (€4,509,714.23 + €219,275.51) = €4,728,989.74$