

# Managing the UK National Debt 1694-2018

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## Data archive and MATLAB files

### Quantity and price data

The quantity data is contained in five Excel spreadsheets. The format of each spreadsheet is the same, with column A the ID number of the gilt, columns B and C the year and month of the observation, column D the coupon rate, column E the name, column F possible features and column G the quantity.

[Q\\_1694m3-1860m2.xlsx](#)  
[Q\\_1860m3-1881m2.xlsx](#)  
[Q\\_1881m1-1947m12.xlsx](#)  
[Q\\_1900m11-1947m12.xlsx](#)  
[Q\\_1946m1-2018m12.xlsx](#)

The price data is contained in six Excel spreadsheets. The format of each is the same, with column A the ID number of the gilt, columns B and C the year and month of the observation, column D the name, column E the price and column F the coupon rate.

[P\\_1729m7-1860m2.xlsx](#)  
[P\\_1860m3-1888m2.xlsx](#)  
[P\\_1881m1-1949m3.xlsx](#)  
[P\\_1949m1-1962m12.xlsx](#)  
[P\\_1963m1-1975m12.xlsx](#)  
[P\\_1976m1-2018m12.xlsx](#)

There is some overlap in the quantity files so only observations up to 1880m12 from the second file and after 1947m12 from the fifth file should be used. Similarly, in the price files only observations up to 1887m12 from the second file and before 1949m1 from the third file should be used. The third and fourth quantity files contain details of different gilts, so should be combined even though their dates overlap. The MATLAB files below do this automatically when needed.

### Supplementary data files

<a href="#">Specification.xlsx</a>	Detailed specification on each gilt. The redemption date is in column S, the first and last months for which there is quantity data in columns H to K and the first and last months for which there is price data in columns L to O
<a href="#">data_BOE.mat</a>	MATLAB data file containing GDP and the total (marketable + non-marketable) debt to GDP ratio from: <a href="https://www.bankofengland.co.uk/statistics/research-datasets">https://www.bankofengland.co.uk/statistics/research-datasets</a>
<a href="#">1917X.mat</a>	MATLAB data file used to adjust prices of 4½% War Loans in the run up to the conversions in 1917
<a href="#">1932X.mat</a>	MATLAB data file used to adjust prices of 4½% and 5% War Loans in the run up to the conversions in 1932
<a href="#">surplus_gain.mat</a>	MATLAB data file containing annual primary surplus relative to GDP and capital gain on 3% Treasury Consol. Primary surplus data is from: <a href="https://www.ukpublicspending.co.uk/uk_national_deficit_analysis">https://www.ukpublicspending.co.uk/uk_national_deficit_analysis</a> Capital gain data is from <a href="http://www.globalfinancialdata.com/">http://www.globalfinancialdata.com/</a>

### MATLAB files to process data

<code>debt.m</code>	Calculates the face and market value of debt at monthly frequency and stores it as <code>debt_data.mat</code>
<code>debt_f.m</code>	Calculates the face and market value of fixed-term nominal debt at monthly frequency and stores it as <code>debt_f_data.mat</code>
<code>returns.m</code>	Calculates the one-period nominal holding period return at monthly frequency and stores it as <code>returns_data.mat</code>
<code>returns_f.m</code>	Calculates the one-period nominal holding period return on fixed-term nominal debt at monthly frequency and stores it as <code>returns_f_data.mat</code>
<code>Issuance_f.m</code>	Calculates the face value of new issuance of fixed-term nominal debt at monthly frequency and stores it as <code>issuance_f_data.mat</code>
<code>ZCY.m</code>	Estimates zero coupon yields using MATLAB's Financial Instruments Toolbox. Yields and prices are stored as <code>ZCY_data.mat</code>
<code>decompose.m</code>	Common base file for Hall-Sargent decompositions
<code>fixed1.m</code> <code>fixed2.m</code> <code>fixed3.m</code>	Functions for constructing counterfactuals with one, two and three maturity strategies without buyback
<code>fixed1bb.m</code>	Function for constructing counterfactuals with one maturity strategy with buyback

All files run on MATLAB 2019a. The data files produced are included in the zip archive for convenience.

### MATLAB files for figures and tables

<code>Fig1.m</code>	Figure 1
<code>Fig2.m</code>	Figure 2
<code>Fig3_Fig4.m</code>	Figures 3 and 4
<code>Fig5.m</code>	Figure 5
<code>Fig6.m</code>	Figure 6
<code>Fig7.m</code>	Figure 7
<code>Fig8.m</code>	Figure 8 (requires Ambrogio Cesa-Bianchi's toolkit for VAR analysis, available at <a href="https://sites.google.com/site/ambropo/MatlabCodes">https://sites.google.com/site/ambropo/MatlabCodes</a> )
<code>Fig9.m</code>	Figure 9
<code>Fig10_11.m</code>	Figures 10 and 11
<code>Fig12.m</code>	Figure 12
<code>Fig13.m</code>	Figure 13
<code>Fig14.m</code>	Figure 14
<code>Table1_2.m</code>	Tables 1 and 2
<code>Table3_4_actual.m</code>	Actual issuance in Tables 3 and 4
<code>Table3_4_counter.m</code>	Counterfactuals in Tables 3 and 4