Managing the UK National Debt 1694-2017

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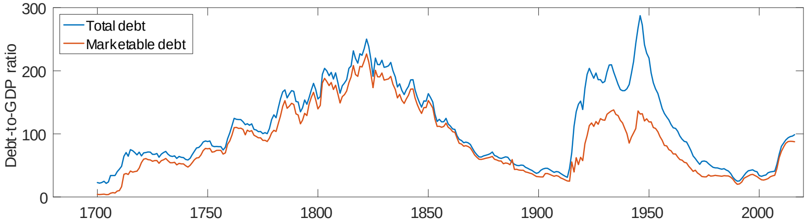
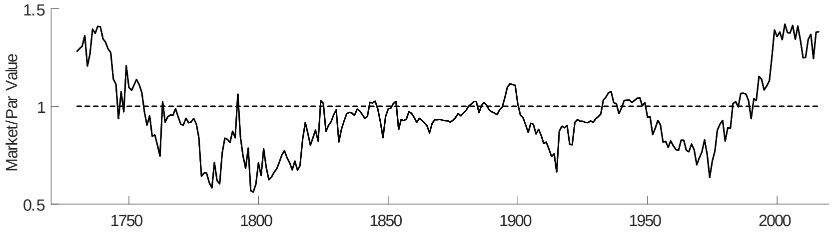
What's new?

- New database of monthly price and quantity of individual UK gilts
- Should the government issue short or long debt?

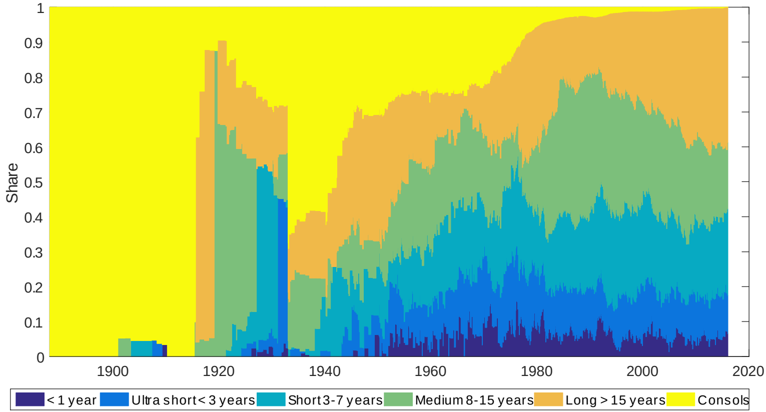
Outstanding value of marketable debt



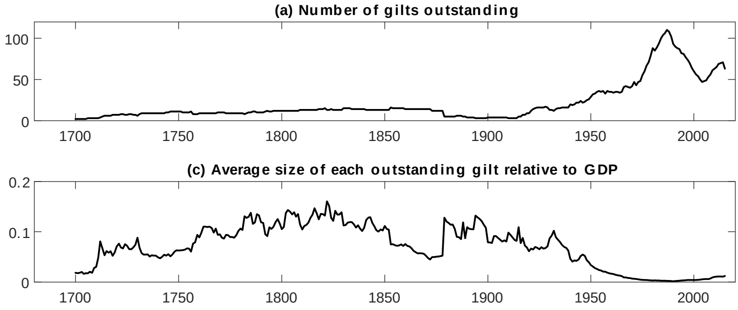
Market and par value of debt



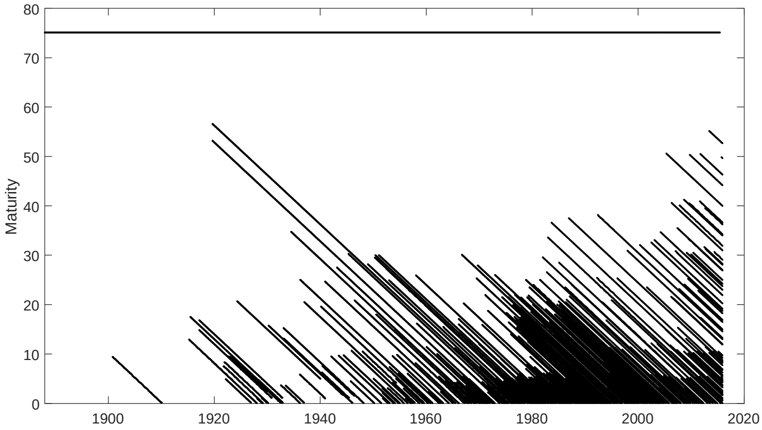
Composition by maturity



Issuance


(a) Number of gilts outstanding
100
50
0
1700
1750
1800
1850
1900
1950
2000
(c) Average size of each outstanding gilt relative to GDP
0.2
0.1
0
1700
1750
1800
1850
1900
1950
2000

Structure



80
70
60
50
40
30
20
10
0
Maturity
1900
1920
1940
1960
1980
2000
2020

Debt management policy

The DMO's remit is to carry out the Government's debt management policy of minimising financing **costs** *over the long term, taking account of* **risk***, and to minimise the cost of offsetting the Government's net cash flows over time, while operating in a risk appetite approved by Ministers in both cases.*

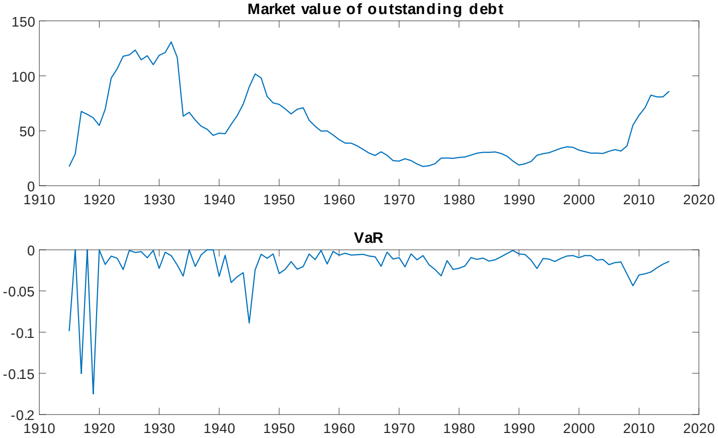
Long or short?

- What does issuance imply for the ...
    - macroeconomy?
    - primary deficit?
    - yield curve?
    - debt levels?
- Counterfactuals 1914-2017

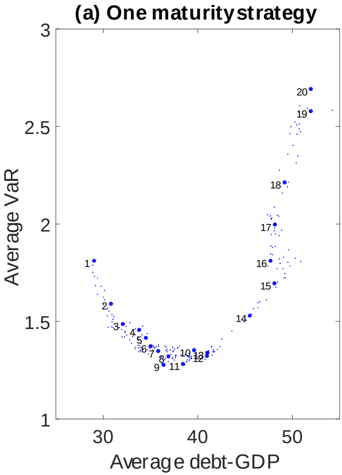
Costs and risk

- Measure **costs** by holding returns and liquidity effects
- Risk depends on quantity issued and volatility of yield curve
- Quantify **risk** using Value at Risk (VaR) measure
- Face value of issuance decided in advance
- Receipts depend on market price
- 5% VaR measures shortfall in receipts with probability 0.05

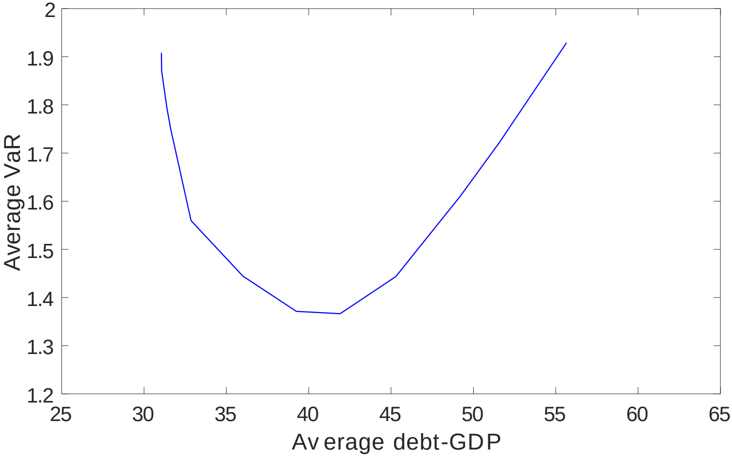
VaR


Market value of outstanding debt
150
100
50
0
1910 1920 1930 1940 1950 1960 1970 1980 1990 2000 2010 2020
VaR
0
-0.05
-0.1
-0.15
-0.2
1910 1920 1930 1940 1950 1960 1970 1980 1990 2000 2010 2020

Simple counterfactuals without liquidity effects

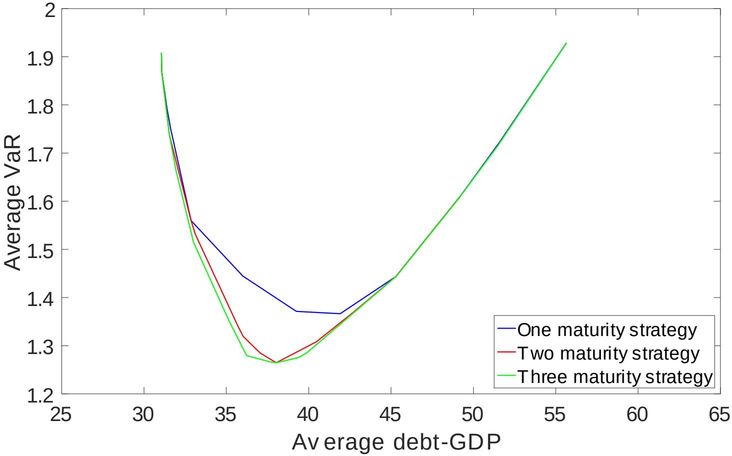


A debt management frontier



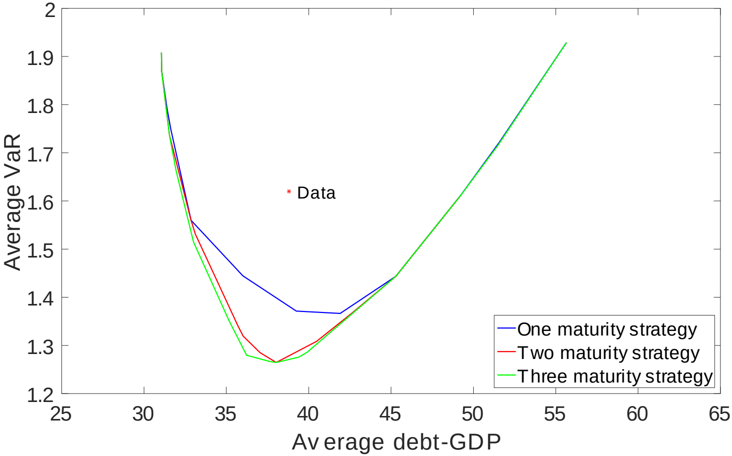
Minimum at 9 years

Multiple maturities

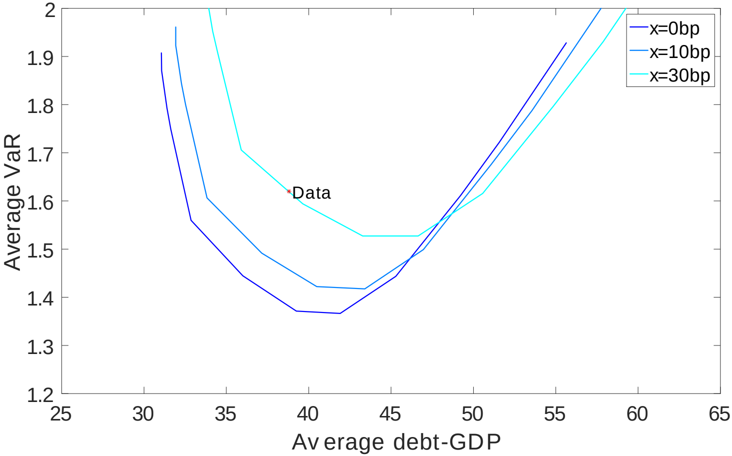


Minimum at 65% short (37 months) and 35% long (150 months)

Could we have done better?



Liquidity effects



Is a liquidity premium of 85bp large?

- Average one period holding return on 3 year bonds is 5.3%
- Average issuance of 3 year bonds is 0.8% of GDP
- Average issuance of 3 year bonds in counterfactual is 15.2% of GDP
- Doubling of issuance should raise yields by no more than **4.9bp**
- Breedon and Turner (2016) use estimates from QE to argue that doubling issuance raises yields by **2.3bp**

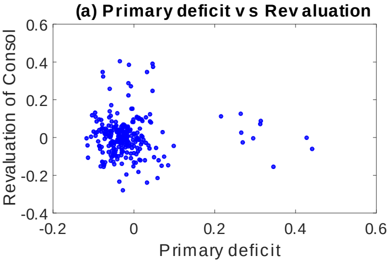
Recently

- Preference for long bonds to lock in at low rates
- Had the UK since 2010 issued only three year bonds then market value of debt today would be 9% of GDP lower

NuCamp

Nuffield College Centre for Applied Macro Policy

Fiscal insurance



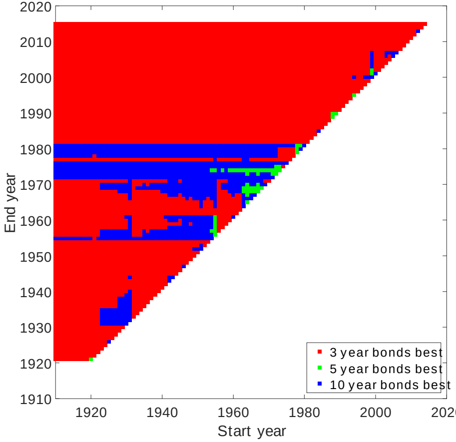
Wars

	Wars	Peace
Nominal return on bonds	3.7%	4.7%
Real return on bonds	0.7%	3.1%

Financial crises

	Crises	Normal
Nominal return on bonds	4.4%	0.4%
Real return on bonds	4.7%	0.2%

Subsamples



2020
2010
2000
1990
1980
1970
1960
1950
1940
1930
1920
1910
End year
1920
1940
1960
1980
2000
2020
Start year
3 year bonds best
5 year bonds best
10 year bonds best