

# UK Macro History

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## UK Macro Economic Relationships

We look at a subset of the full series between 1885 and 1985 with the following variables

- $U_t$ : percent unemployment rate. Col ;
- $P_t$  : PGDP: GDP deflator, 2013=100.
- $Q_t$ : real UK GDP at market prices, geographically consistent estimate based on post 1922 borders. £ mn Chained Volume measure, 2013 prices. Col A1.B.
- $RS_t$ : short interest rates, percent per annum, (Bank Rate).
- $RL_t$ : long interest rates, percent per annum, (Consol/10 year debt) Col

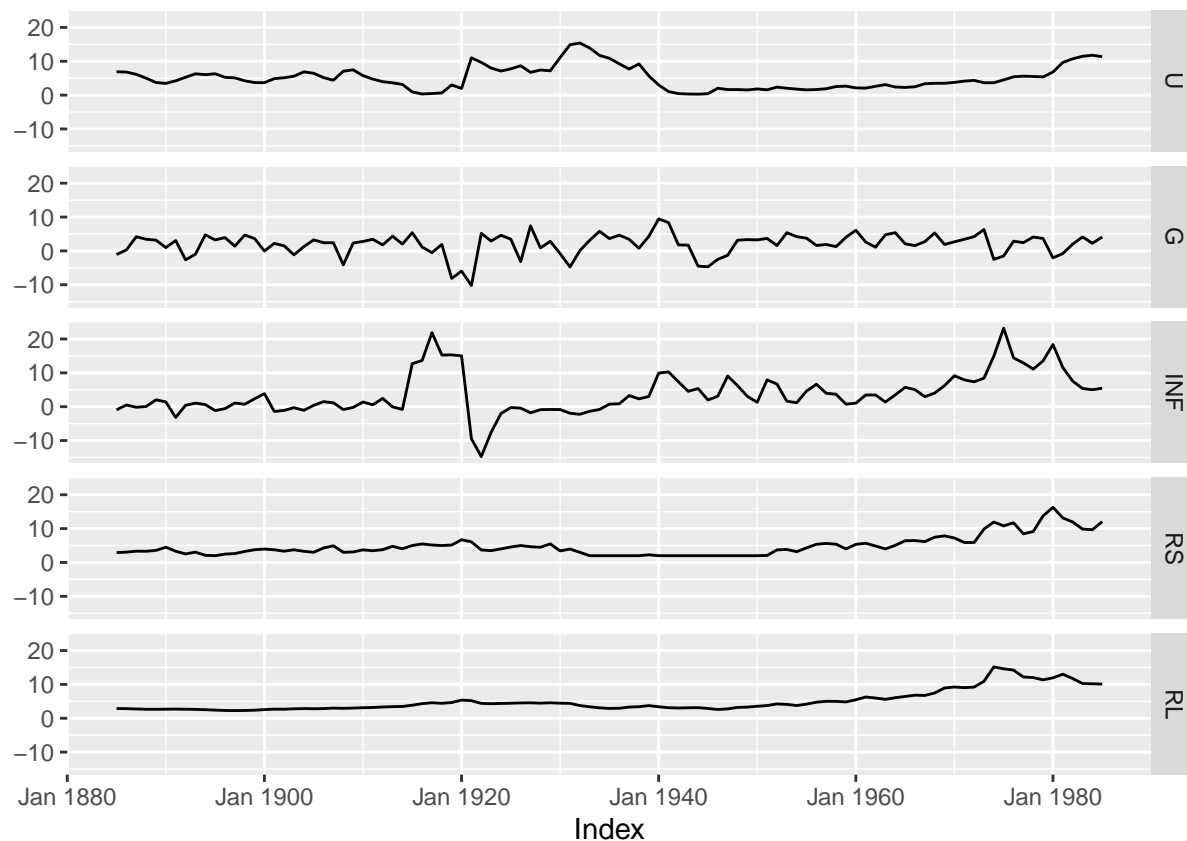
and their subsequent transformations

- log GDP:  $LQ_t$
- log GDP deflator:  $LP_t$
- inflation:  $INF_t = 100(LP_t - LP_{t-1})\%$ ;
- growth:  $G_t = 100(LQ_t - LQ_{t-1})\%$

## Expected relationships

We would expect to see cycles of growth, decreasing unemployment, potentially encouraged by easier monetary policy and lower short term interest rates. In due course this may subsequently lead to inflationary pressures as slack in the labour supply decreases and wages increase. Measures of control may increase in short term interest rates and subsequent cooling of economic growth. We would also expect inflationary pressures to lead to higher long term interest rates. We may see inflationary shocks or high periods of inflation leading to poor economic growth.

```
autoplot.zoo(macro.subset)
```



## Summary statistics

```
summary(macro.subset)
```

##	Index	U	G	INF
##	Min. :1885	Min. : 0.2835	Min. : -10.2153	Min. : -14.7434
##	1st Qu.:1910	1st Qu.: 2.3972	1st Qu.: 0.9712	1st Qu.: -0.1722
##	Median :1935	Median : 4.3887	Median : 2.6406	Median : 2.3143
##	Mean :1935	Mean : 5.0910	Mean : 1.9688	Mean : 3.7673
##	3rd Qu.:1960	3rd Qu.: 6.8727	3rd Qu.: 3.9406	3rd Qu.: 6.6286
##	Max. :1985	Max. :15.3873	Max. : 9.4607	Max. : 23.1675

##	RS	RL
##	Min. : 2.000	Min. : 2.264
##	1st Qu.: 3.000	1st Qu.: 2.904
##	Median : 3.959	Median : 3.756
##	Mean : 4.824	Mean : 5.061
##	3rd Qu.: 5.496	3rd Qu.: 5.458
##	Max. :16.301	Max. :15.173

Unemployment averages at 5% over the period with an average growth rate of 1.96%. The mean of inflation is 3.76% with the short and long term interest rates averaging at 4.8% and 5% respectively. We see peaks of inflation at 23% during the 1970s oil crisis (similar sustained periods of high inflation during WWI), unemployment at 15% following the great depression. Short term and long term interest rates show significant increases during the 1970s and onwards.

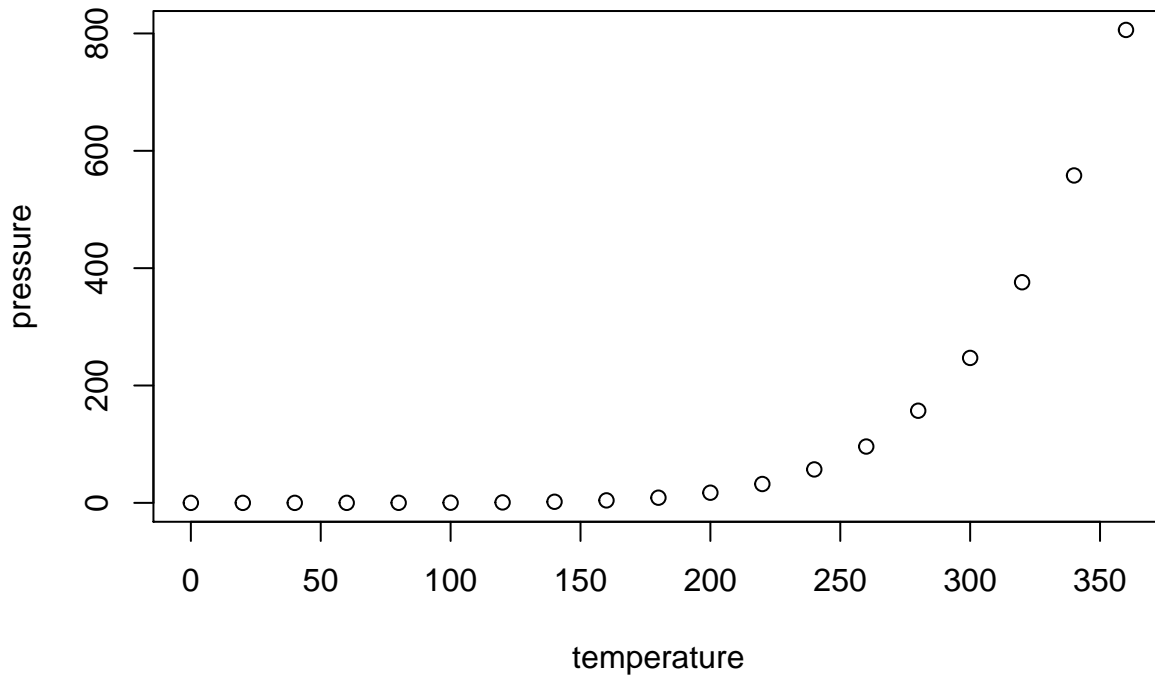
```
cor(macro.subset)
```

##	U	G	INF	RS	RL
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```
## U    1.0000000 -0.0883304 -0.4006868  0.1359800  0.1201737
## G   -0.0883304  1.0000000 -0.1001583 -0.0861742 -0.0204763
## INF -0.4006868 -0.1001583  1.0000000  0.5439262  0.5781197
## RS   0.1359800 -0.0861742  0.5439262  1.0000000  0.9114121
## RL   0.1201737 -0.0204763  0.5781197  0.9114121  1.0000000
```

## Including Plots

You can also embed plots, for example:



Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that generated the plot.