Time series data and macroeconomics

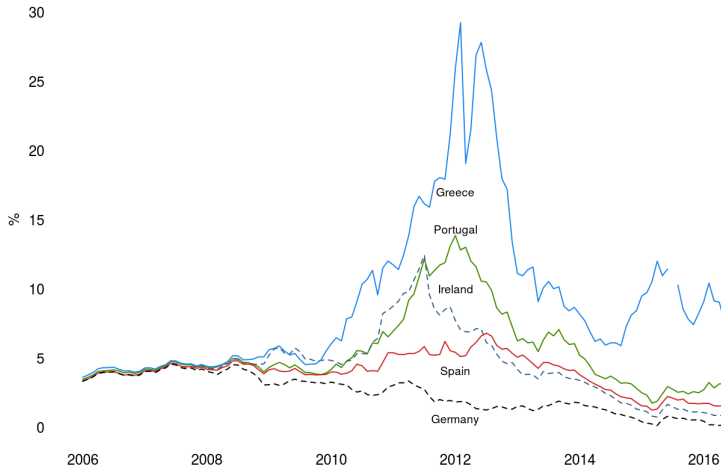School of Economics, University College Dublin

Spring 2017

Before Economics.
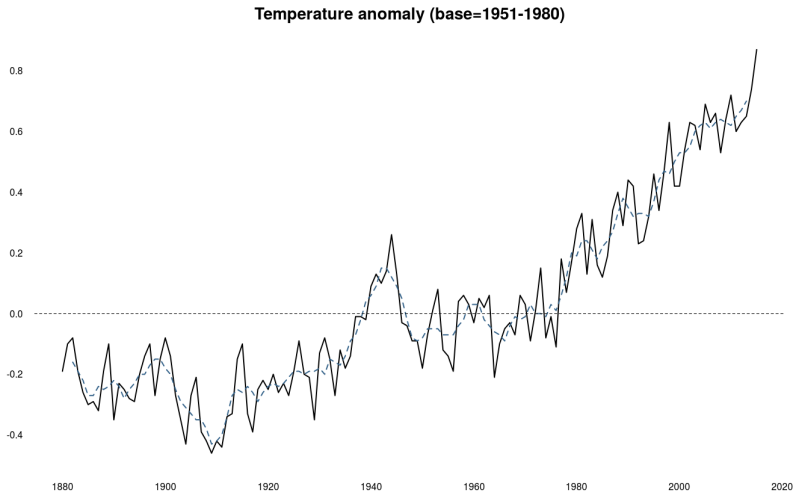
10-year government bond interest rates
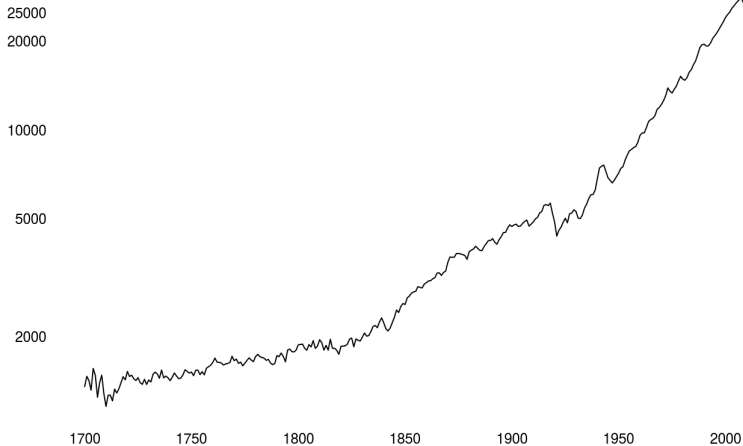
Data source: Eurostat

Global average temperature anomaly
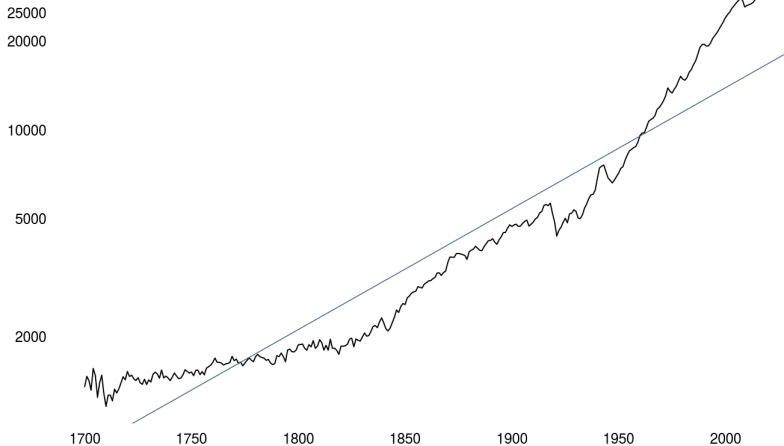Base period is 1951-1989. Data source: NASA

Temperature anomaly (base=1951-1980)

Trends and cycles in U.K. GDP per capita

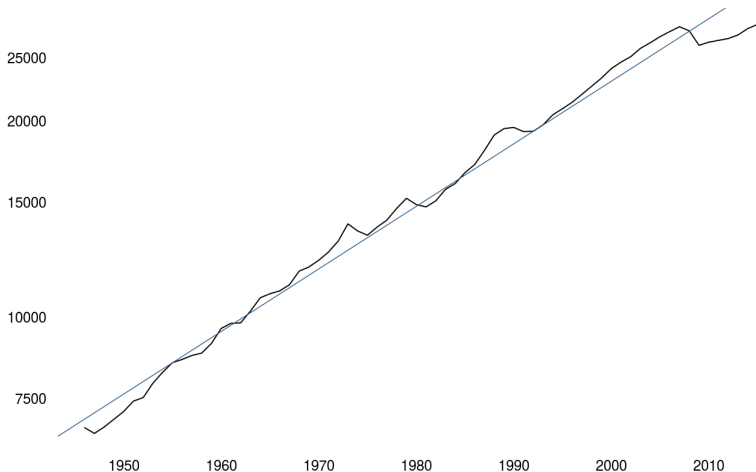# Trends and cycles in U.K. GDP per capita (log-linear trend)
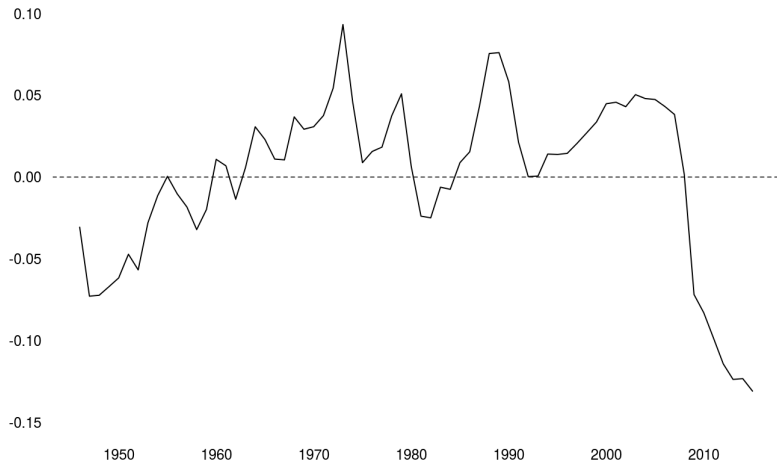
Data source: Bank of England

Trends and cycles in U.K. GDP per capita since 1946 (log-linear trend)
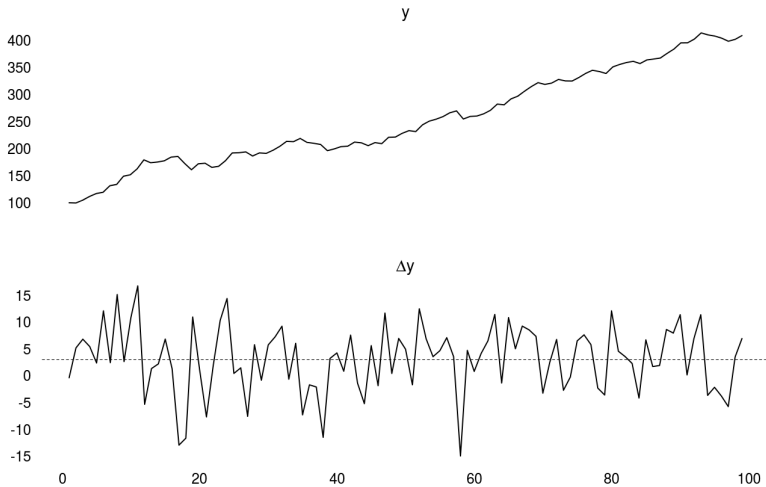
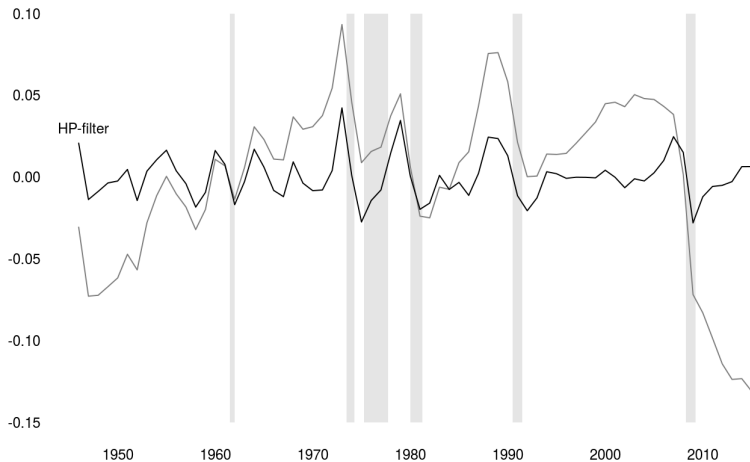Data source: Bank of England

Cycles from log-linear model: U.K.

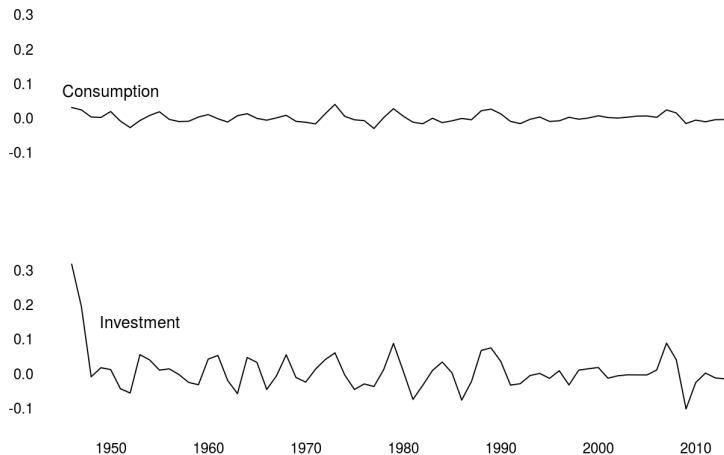# Example of a caveat with regard to linear detrending

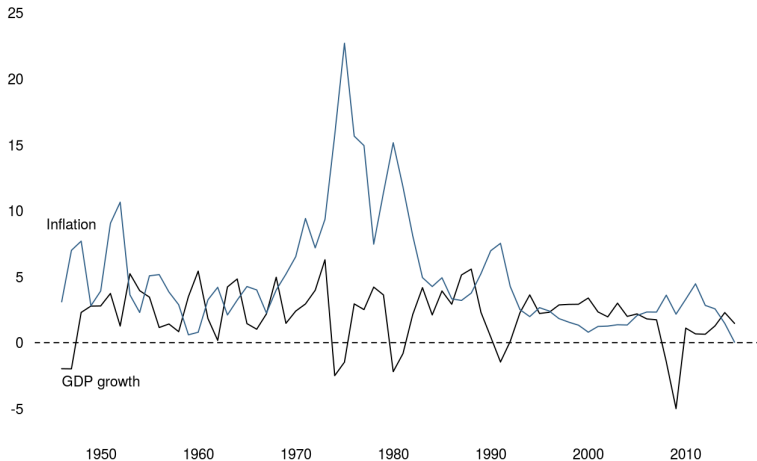# HP-filtered cycles: U.K

HP-filtered cycles: U.S.

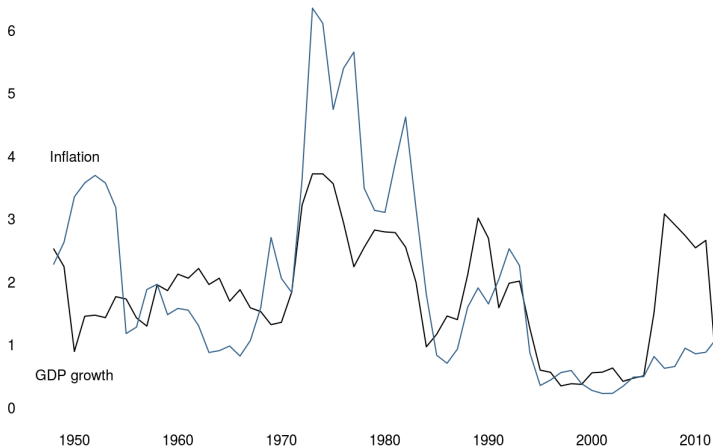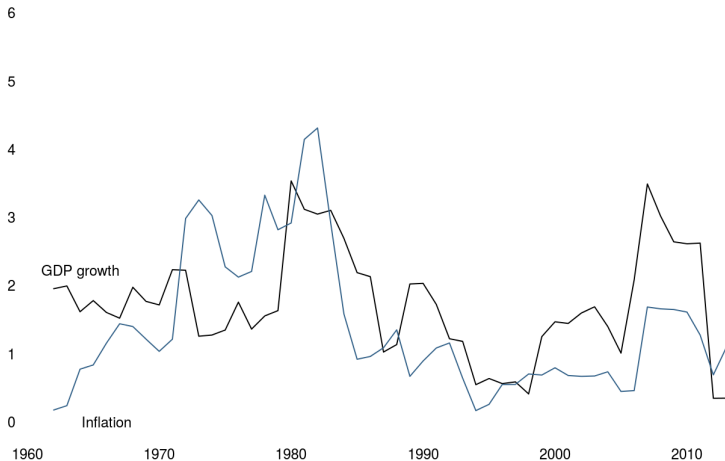# Cycles in consumption and investment for the U.K.

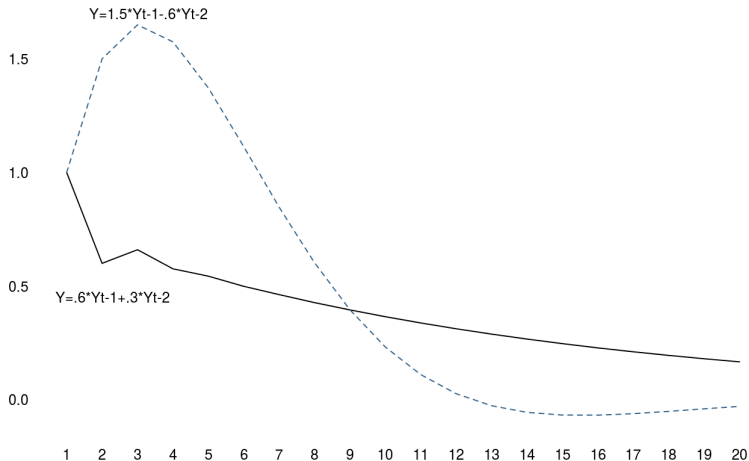Data source: Bank of England

Cycles in growth and inflation

Volatility in economic growth and inflation: U.K. (standard deviation, 5-year moving average)

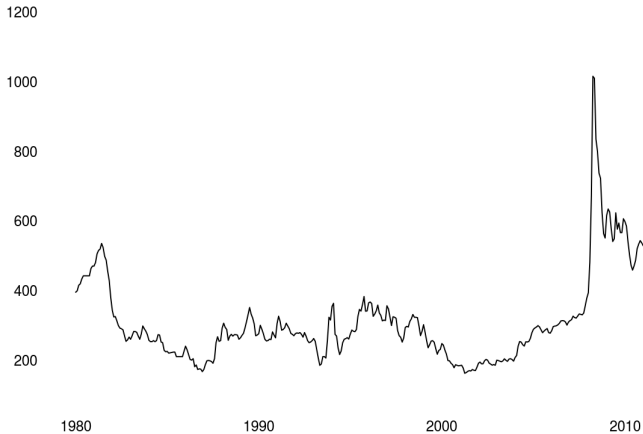# Volatility in economics growth and inflation: U.S. (standard deviation, 5-year moving average)

Example of the Impulse Response Function of two different $AR(2)$ models
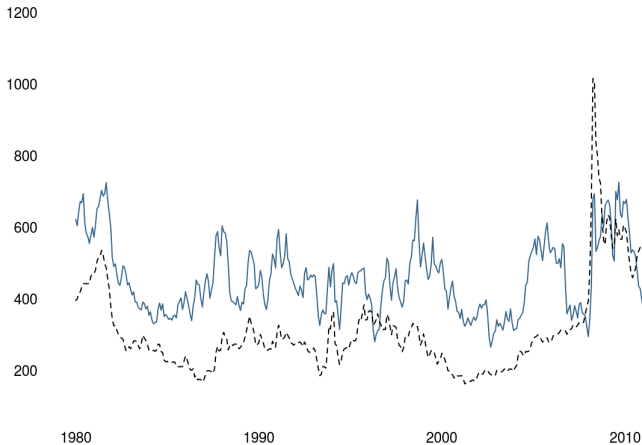

Y=1.5*Yt-1-.6*Yt-2

Y=.6*Yt-1+.3*Yt-2
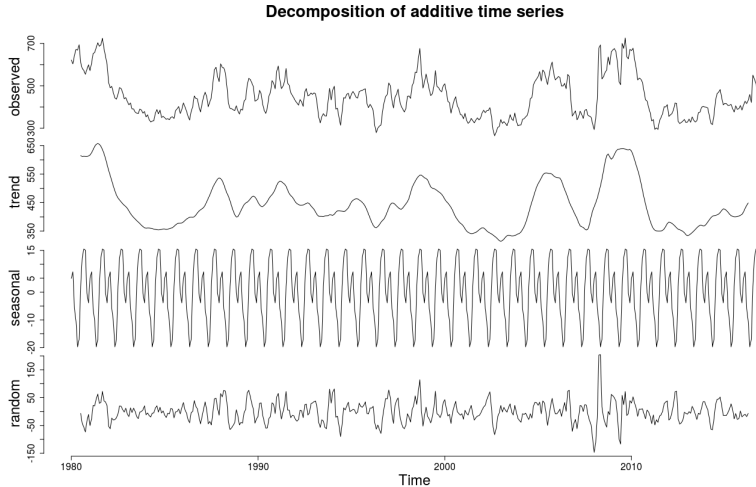
Nominal prices for rice

Data source: IMF

Real (in blue) and nominal prices (dashed, black) for rice
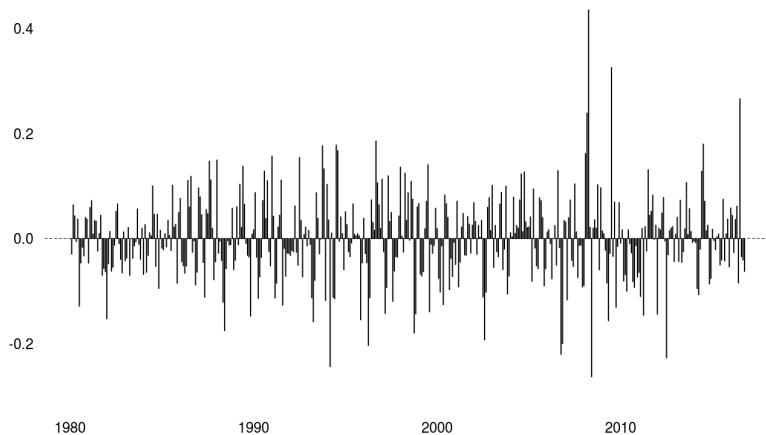
Data source: IMF, U.S. Buro for Labor Statistics

Decomposition of international rice prices

Data source: IMF, U.S. Buro for Labor Statistics

Decomposition of additive time series

Volatility in international rice prices

Data source: IMF

Impulse Response Function based on $AR(4)$ model fitted to the rice prices

Shock is 1 at $Y = 1$