# Lecture Slides 4

Economics 210C – Macroeconomics

Spring 2019

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Real GDP, Nominal Price Level and Money Stock

Legend:
- GDP, billions of chained 2012 dollars
- GDP deflator x 100
- M2, billions of dollars
- M1, billions of dollars

x-axis: 1964:1, 1974:1, 1984:1, 1994:1, 2004:1, 2014:1

y-axis: 0, 0.2, 0.4, 0.6, 0.8, 1, 1.2, 1.4, 1.6, 1.8, 2 ($\times 10^4$)
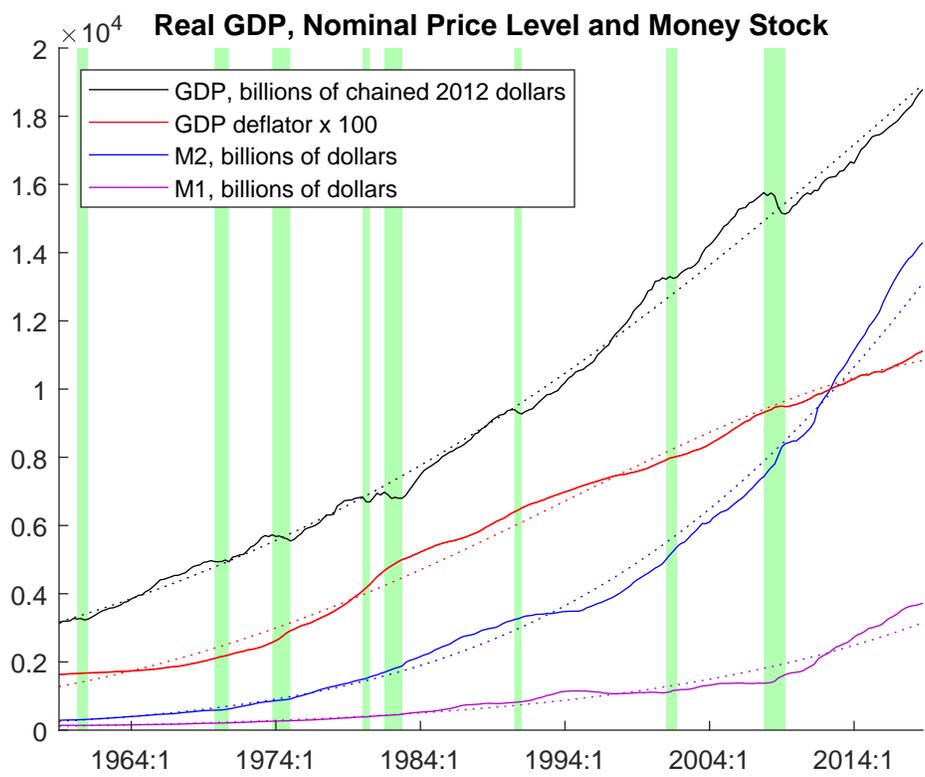
Annual Growth Rates of GDP, GDP Deflator, and Money Stocks

Quarterly Cyclical Components, HP Filtered Log Levels

Quarterly Cyclical Components, Band-Pass Filtered Log Levels
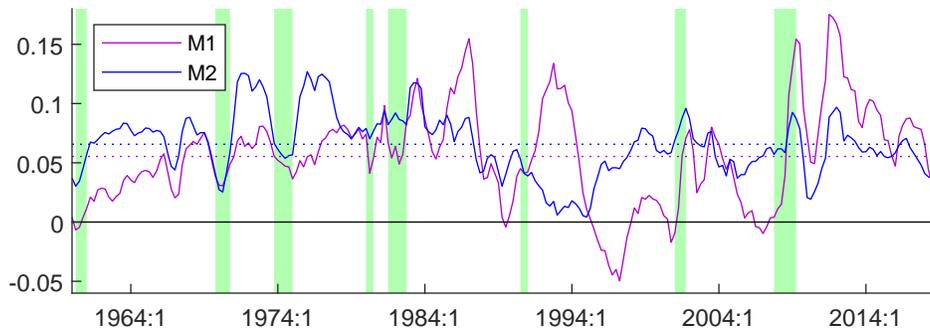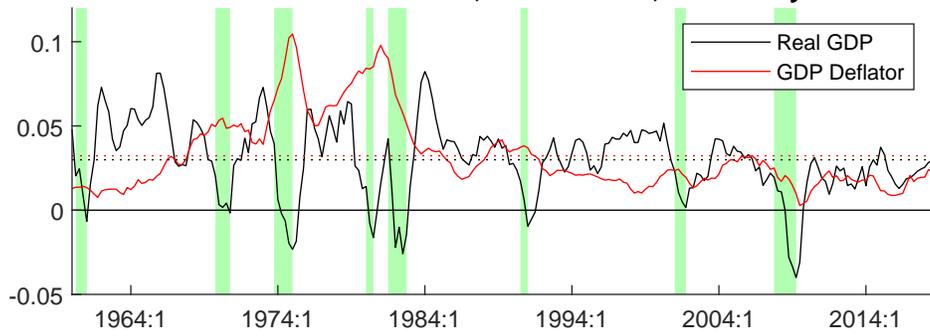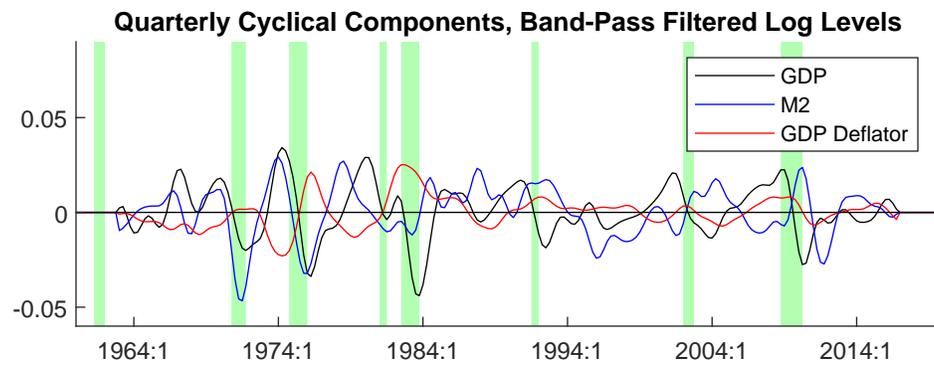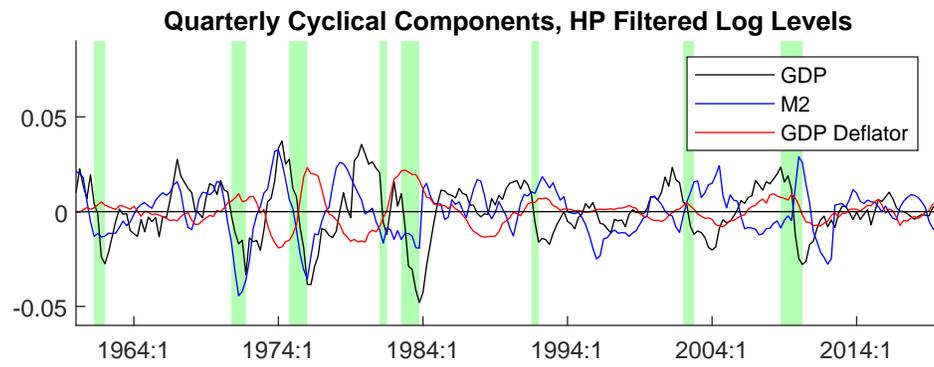
Standard Deviations of Quarterly Cyclical Components

	GDP	M2	GDP Defl.
First Diff.	0.0082	0.0082	0.0058
HP Filtered	0.0145	0.0131	0.0076
BP Filtered	0.0131	0.0128	0.0079

|	M2 Growth	GDP Defl. Growth	T-Bill Rate
HP Filtered	0.0062	0.0026	0.0112
BP Filtered	0.0047	0.0021	0.0100

Corr(Variable at t, GDP at t-k), HP Filtered
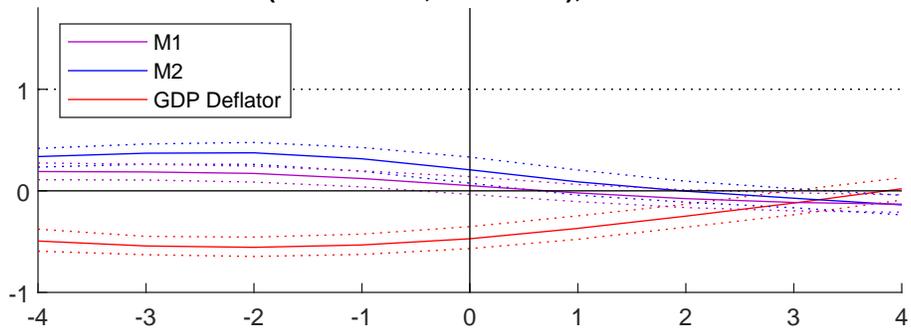
**Corr(Variable at t, GDP at t-k), Band Pass Filtered**
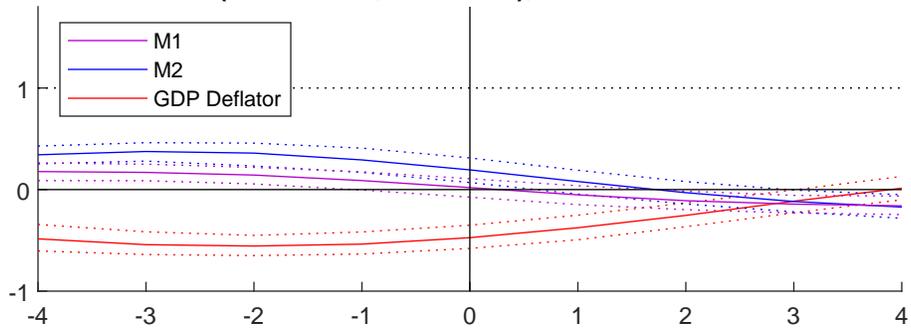
Annualized Nominal Interest and Inflation Rates
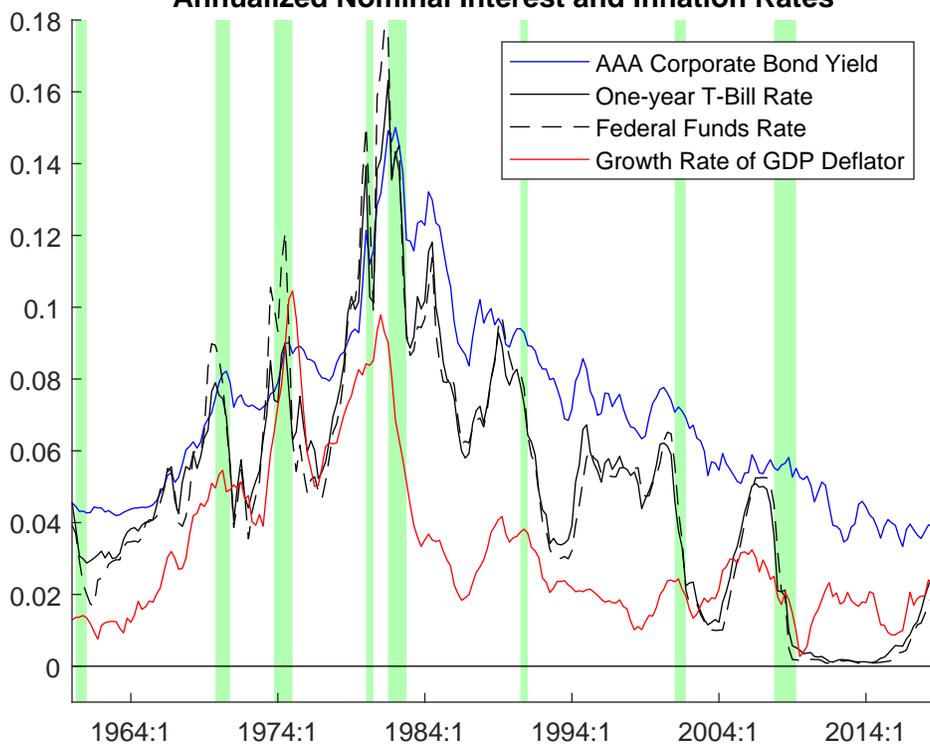
Legend:
- AAA Corporate Bond Yield
- One-year T-Bill Rate
- Federal Funds Rate
- Growth Rate of GDP Deflator

## Quarterly Cyclical Components, HP Filtered Log Levels
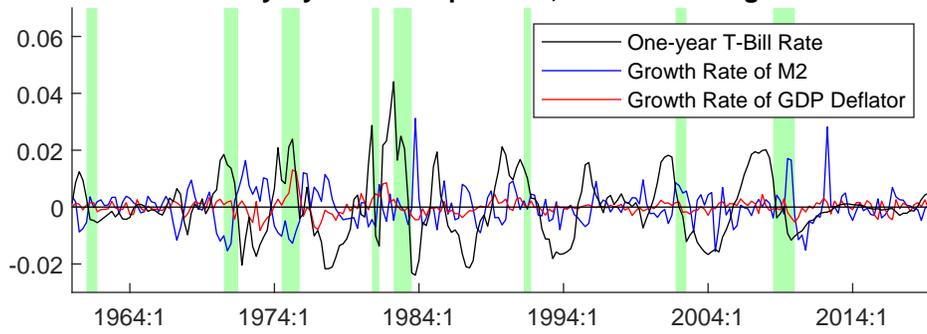
Quarterly Cyclical Components, Band Pass Filtered Log Levels
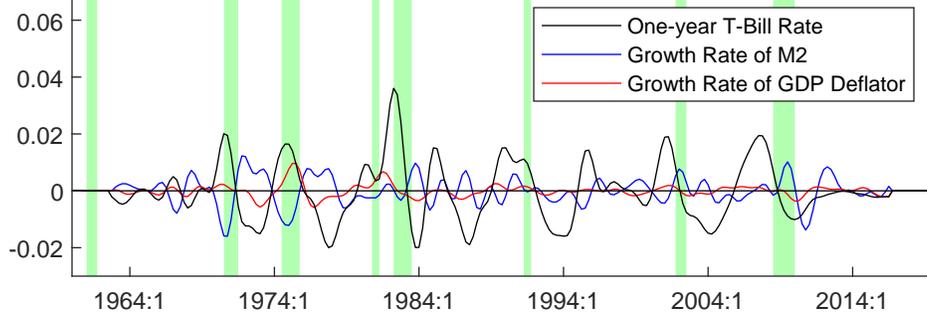
**Corr(Variable at t, M2 Growth Rate at t-k), HP Filtered**

- One-year T-Bill Rate
- Growth Rate of GDP Deflator
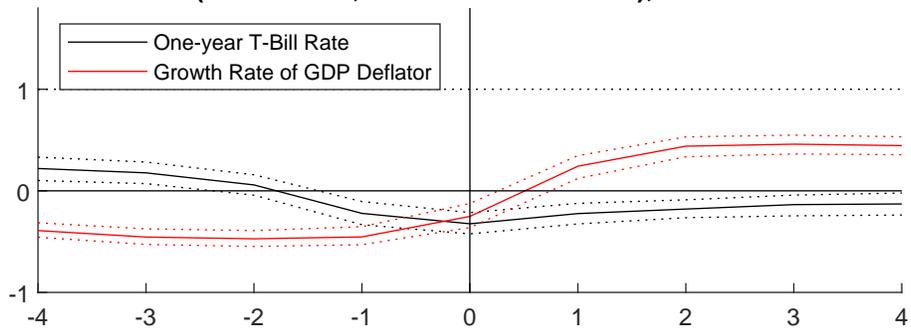
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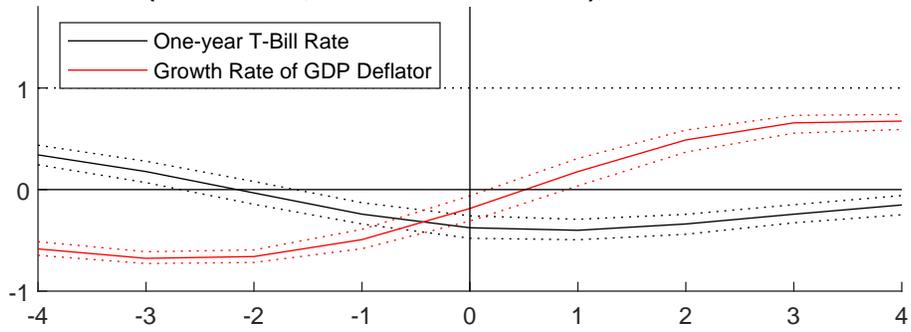
Autocorrelations, HP Filtered Growth Rates

- GDP Deflator
- CPI
- PPI
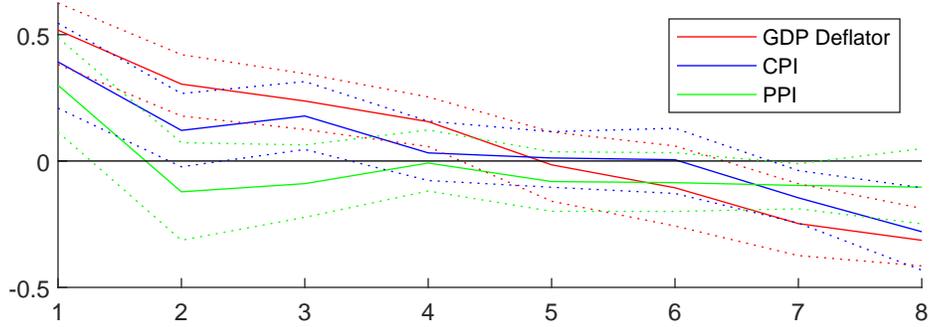
Autocorrelations, Band-Pass Filtered Growth Rates

- GDP Deflator
- CPI
- PPI

Responses to M2 Shock