

# Inflation as a Guidance for Estimating the Output-Gap

October 17, 2012

## Phillips correlation and Okun's Law – USA and Euro area

- Using inflation as a key input for estimating NAIRU and output gap
  1. Trend inflation and inflation target
  2. Effects of energy prices (core inflation)
  3. High-frequency noise
  4. **Demand-relevant inflation gap**
- Cyclical Co-movement of output and unemployment – Okun's Law
  1. Very stable relationship among output, unemployment and capacity utilisation at business cycle periodicity
  2. Extending the length of the cycle leads to

### Euro area

- CPI ex food & energy has seem to have a bias
- Trimmed-means inflation features high coherence with output and unemployment
- Short sample...

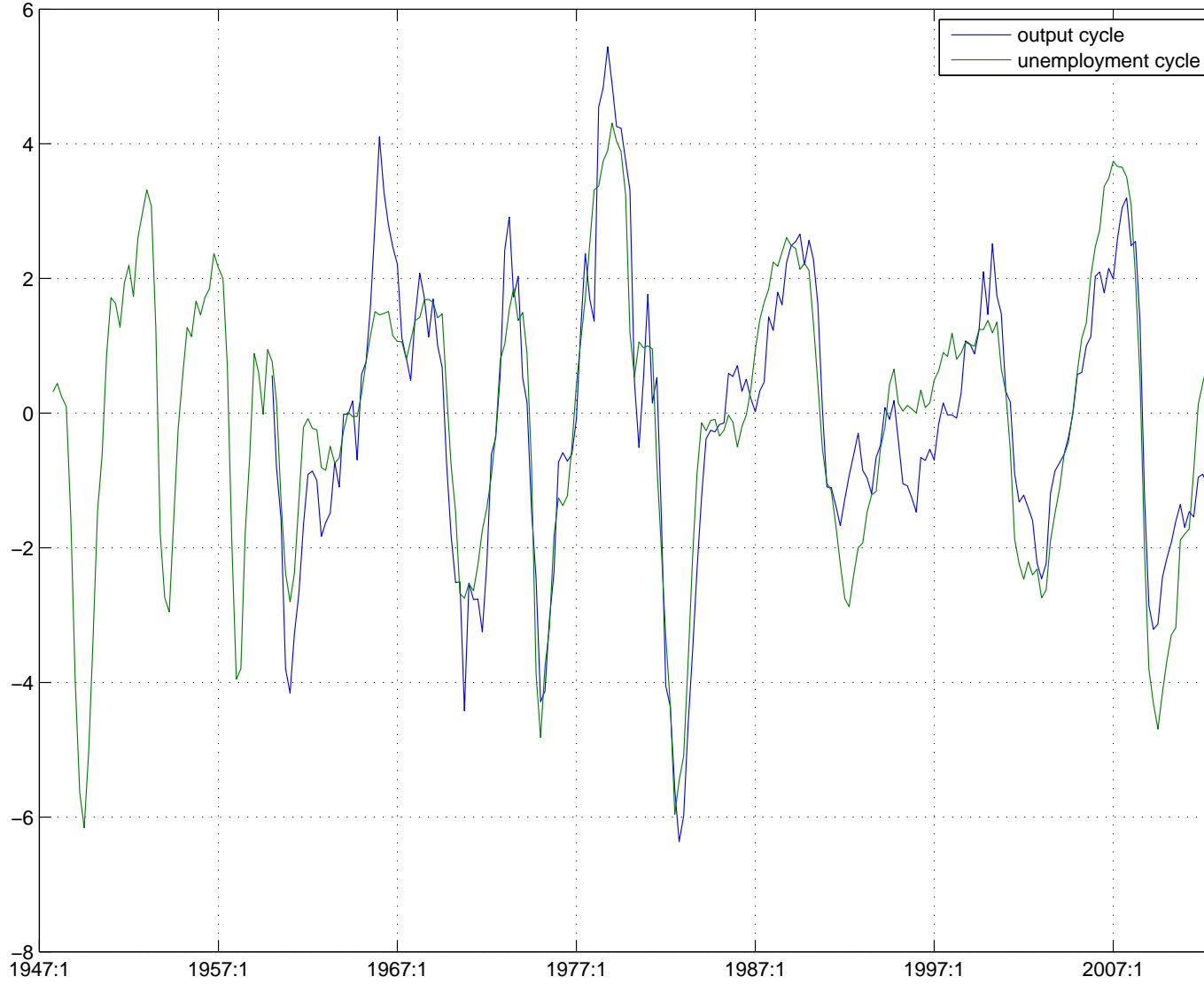
### Related literature...

- Sargent, T. (1999): *Conquest of American Inflation*
  1. "Despite its disrepute within important academic and policymaking circles, the Phillips curve persists in U.S. data.
  2. Uses Baxter-King band pass filter
- Ball, Mazumder (2011, IMF): *Inflation dynamics and Great Recession*
  1. "We show that the Great Recession provides fresh evidence against the New Keynesian Phillips curve with rational expectations"
  2. they get their results because of using non-sense CBO measure of output gap and NAIRU. . .
  3. they do not account properly for trend inflation/inflation target
- Stock and Watson: *Forecasting Inflation; Modeling Inflation after Crisis*
  1. claim that inflation is not much affected with unemployment
  2. ignore trend inflation, Pagan comments that their time-varying coefs look like trend inflation. . .
  3. using asymmetric unemployment gap, document that after 11 quarters unemployment becomes irrelevant for inflation
- Robert E. Hall: *The Long Slump* (2011)
  1. "It is not news that NAIRU theory is a failure. Robert M. Solow (1990) and Hall (2005) demonstrate its lack of support in the time-series properties of unemployment "
  2. claims "near exogeneity of inflation"
  3. does not consider business cycle, or time-varying NAIRU with hysteresis, etc.

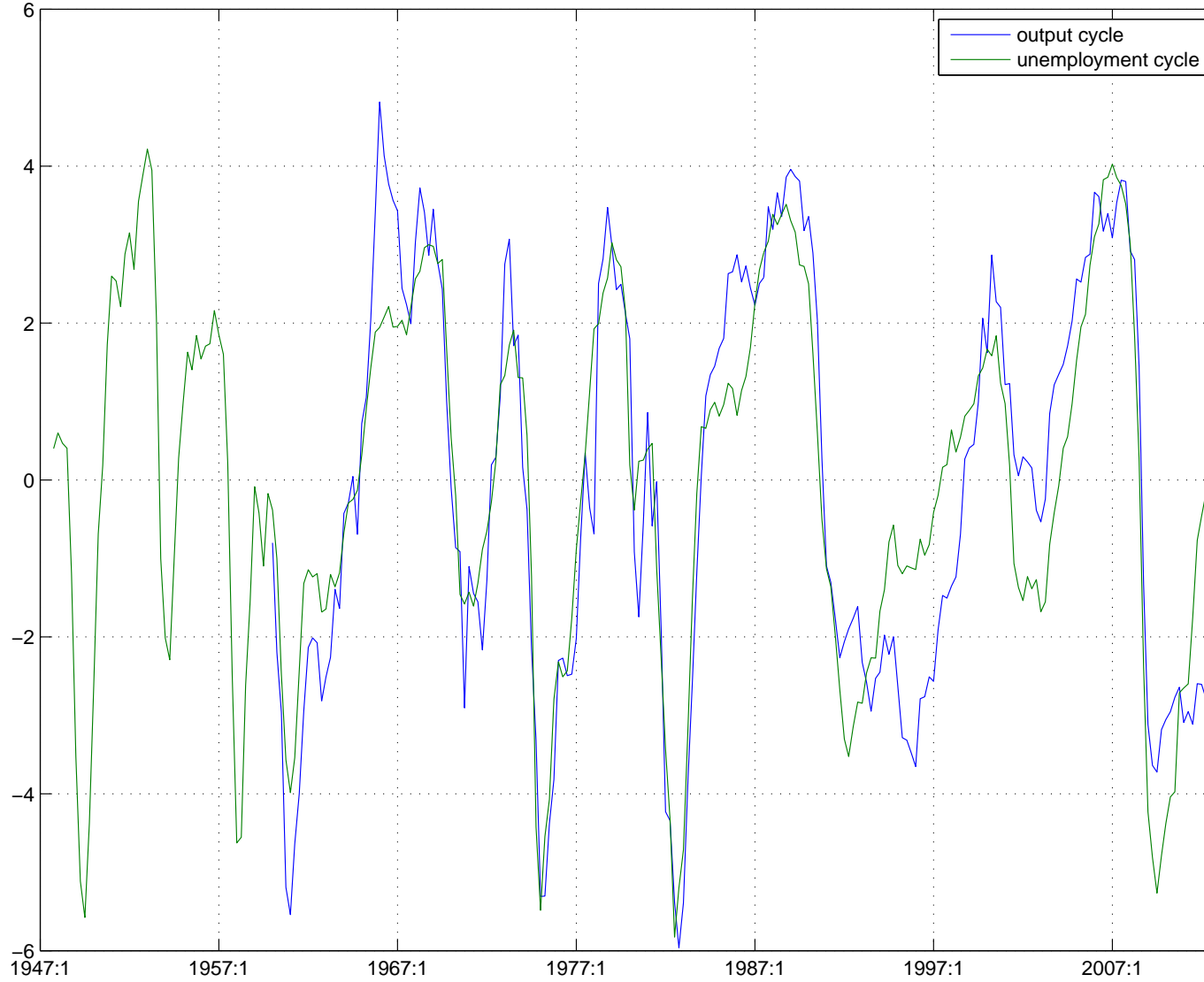
### Frequency-specific Okun's Law: [0, 36]



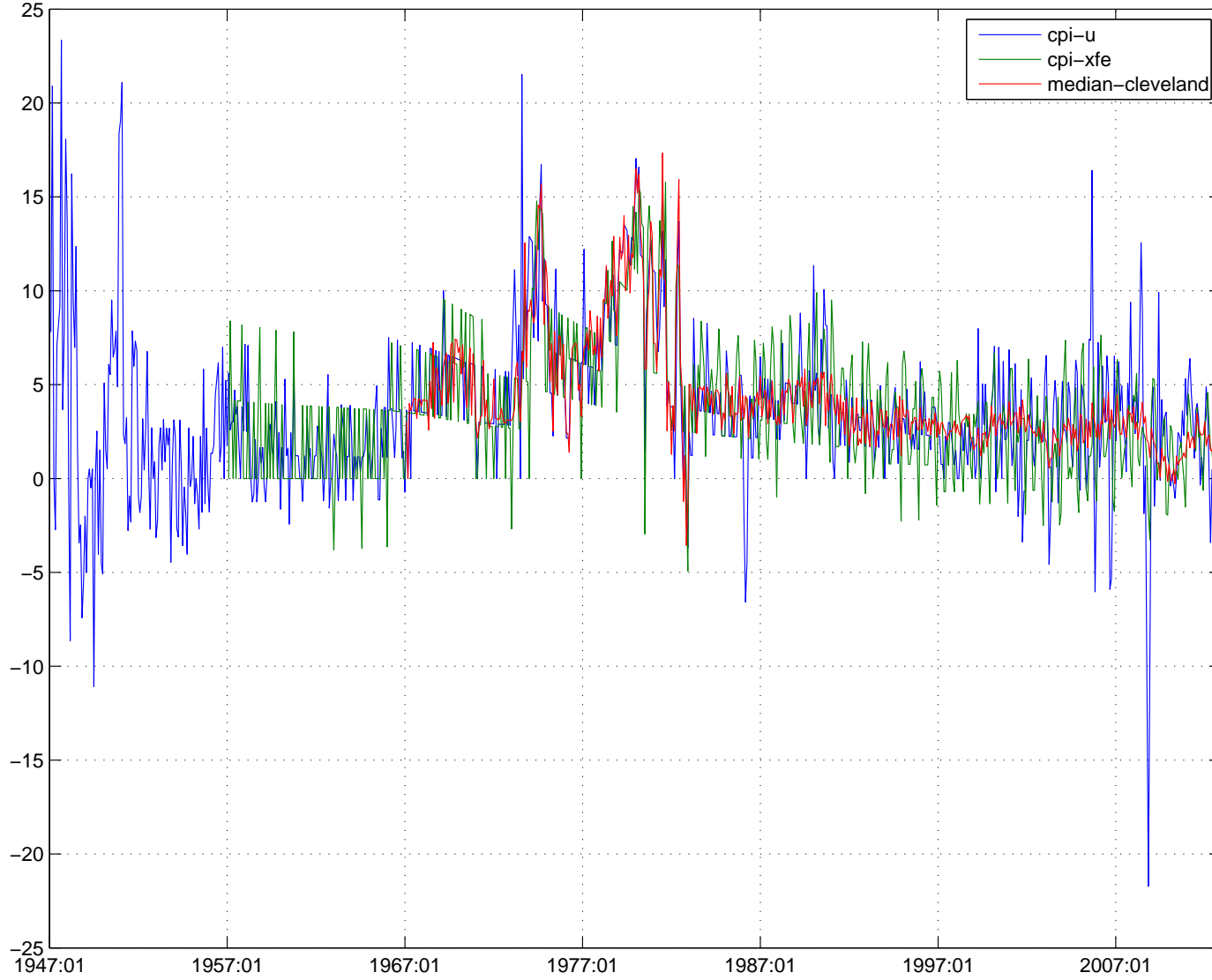
### Frequency-specific Okun's Law: [0, 60]



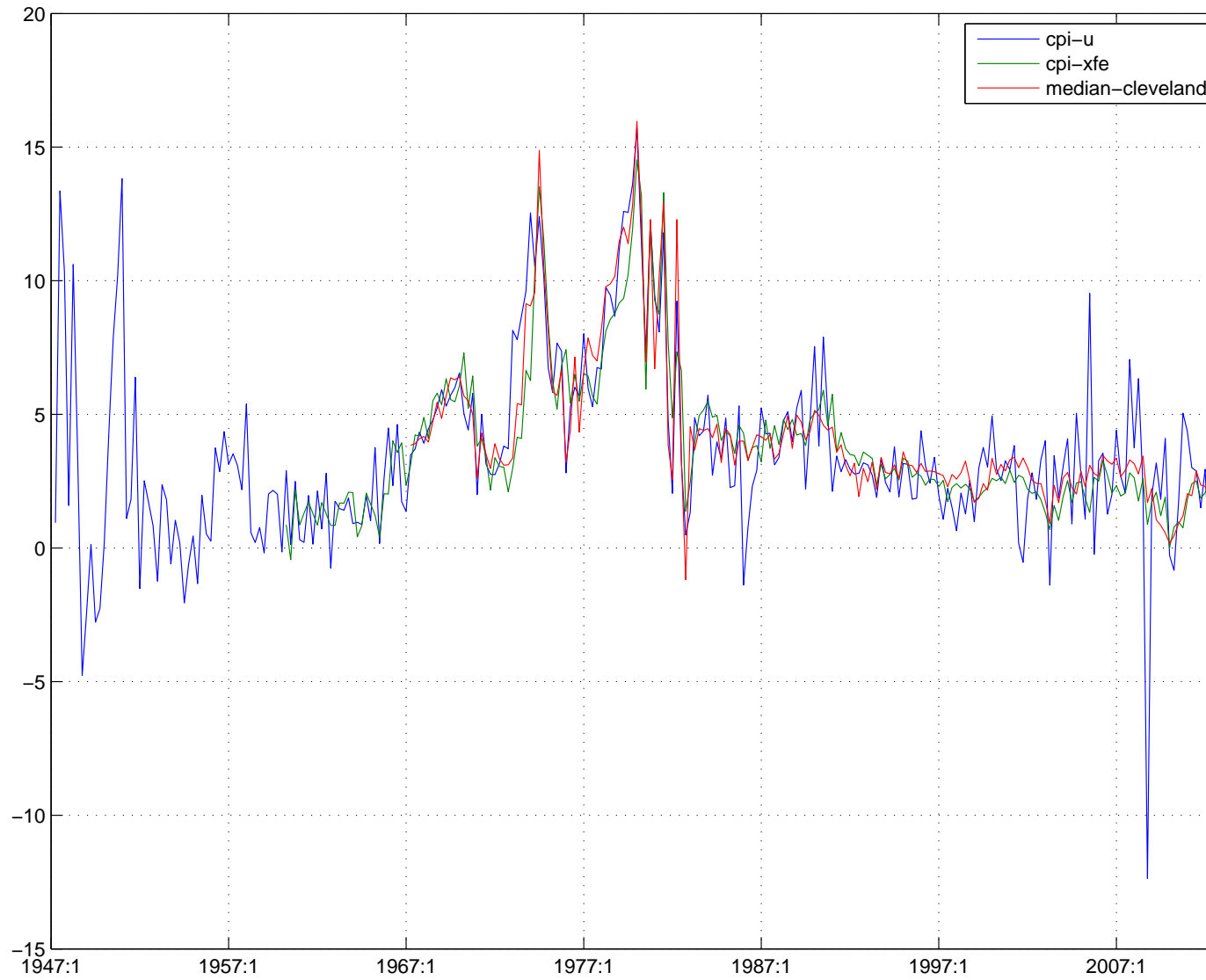
### Frequency-specific Okun's Law: [0, 90]



### Inflation measures, m/m apr.

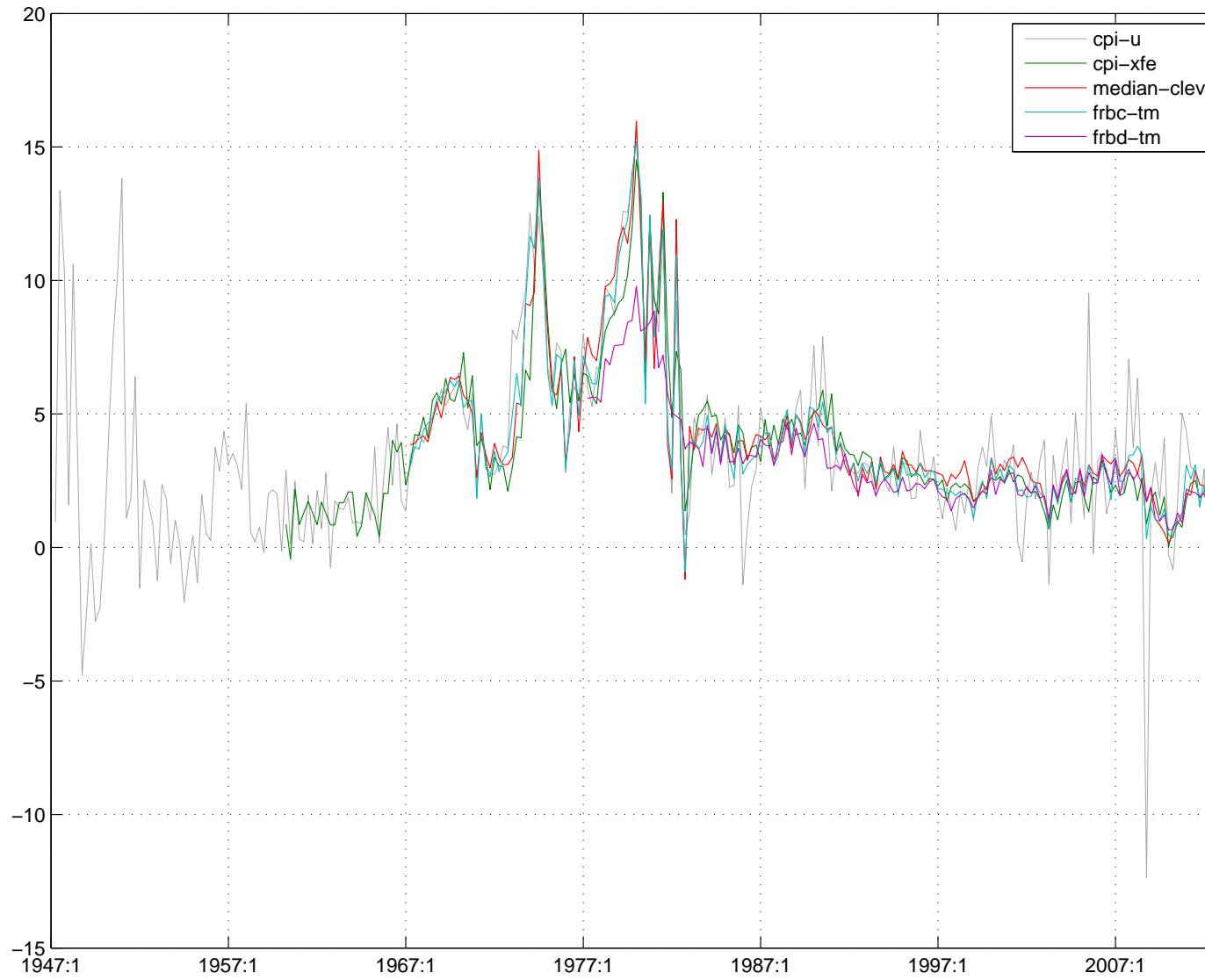


### Inflation measures, q/q apr.

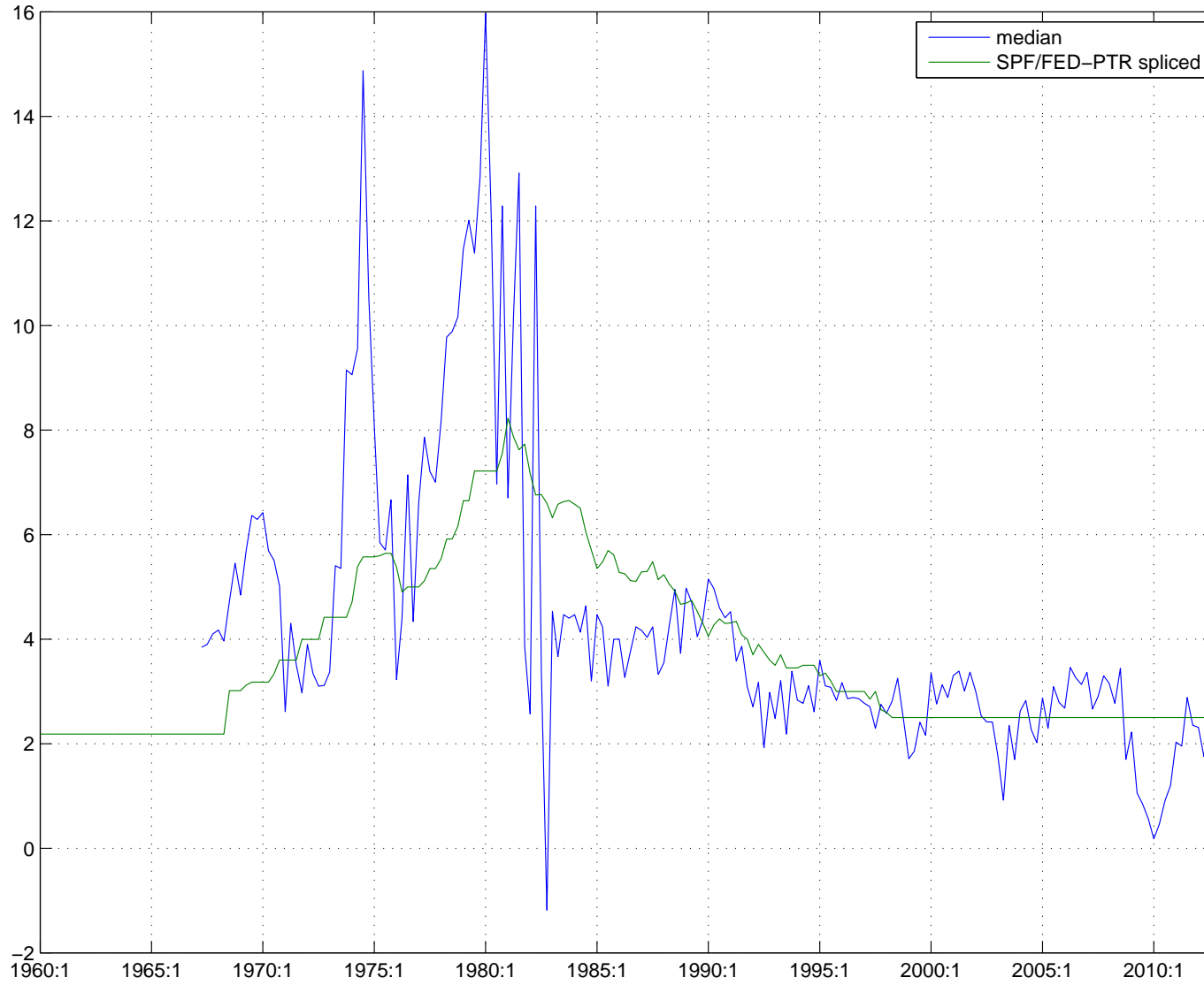




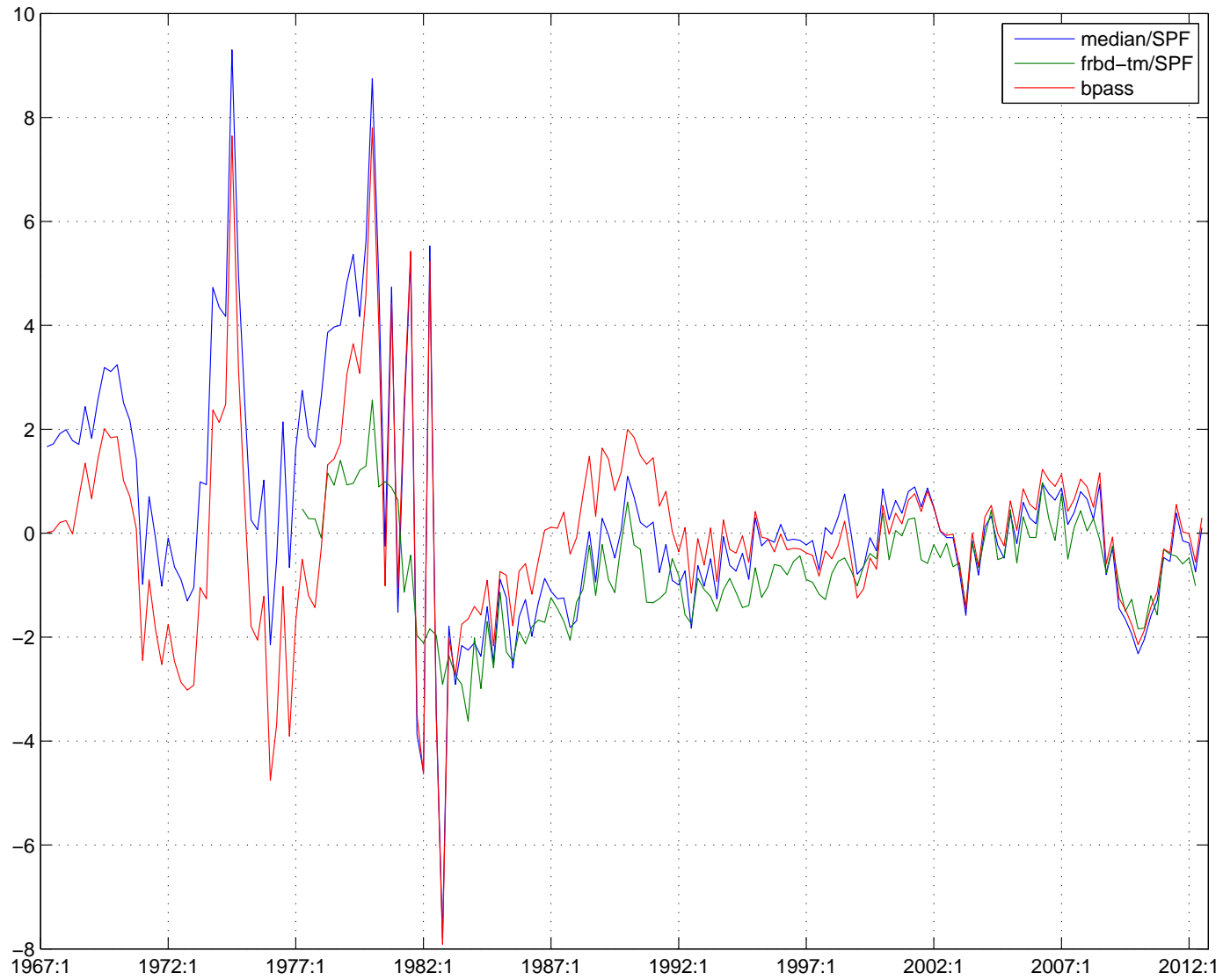
### Core inflation measures, q/q apr.



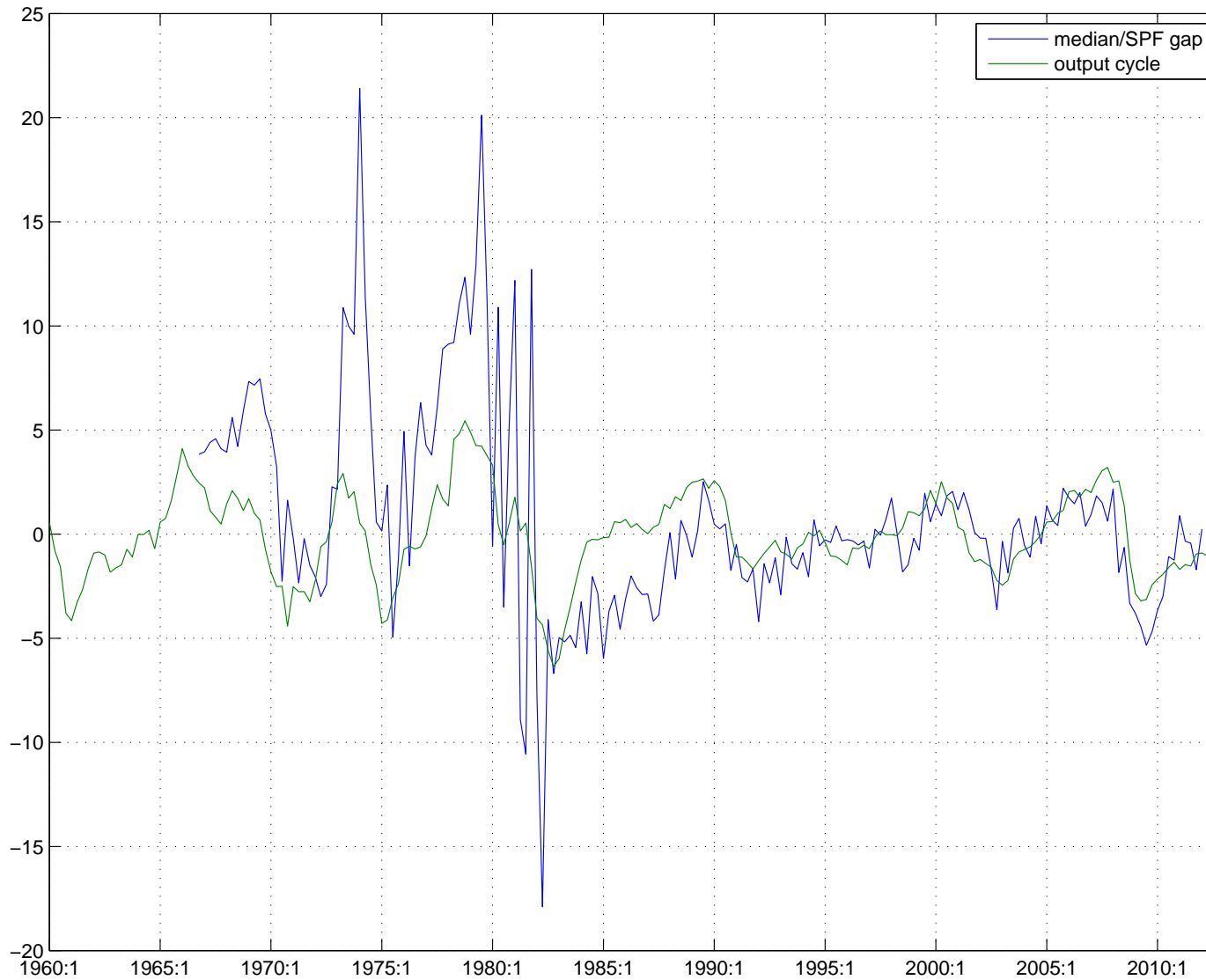
### Implicit inflation target measures, apr.



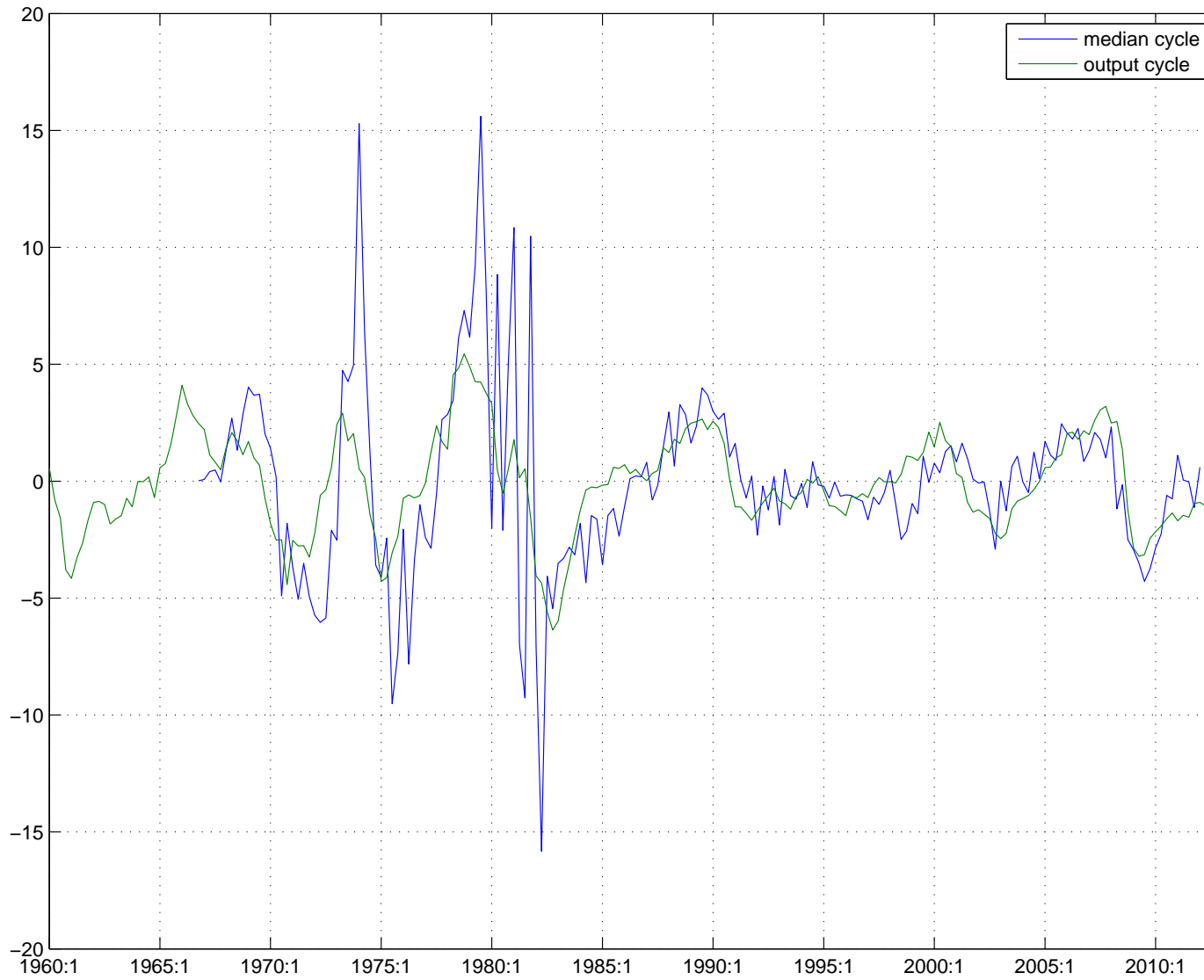
### Core Inflation GAPS



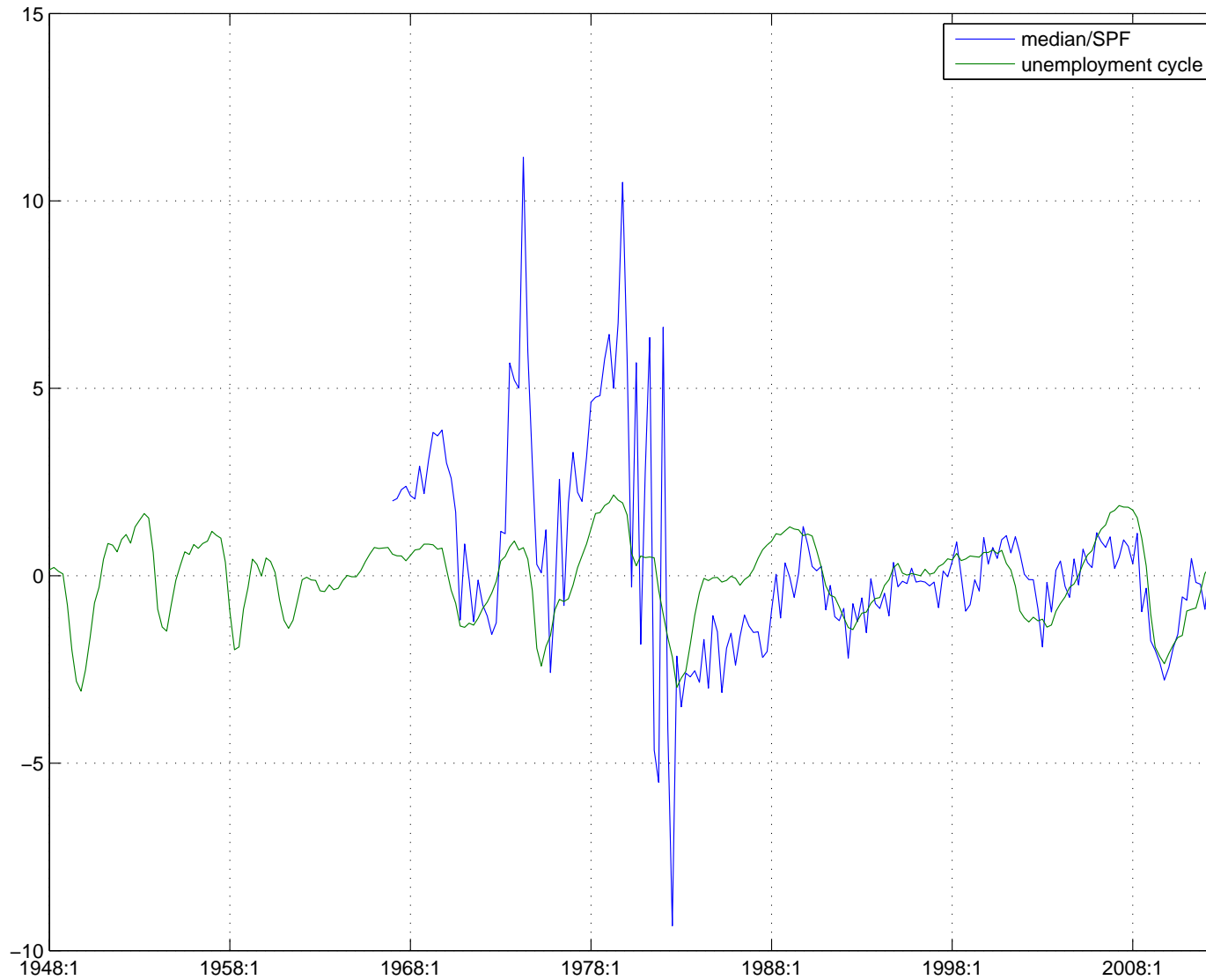
### Output Inflation Co-Movement (scaled, phase-shift)



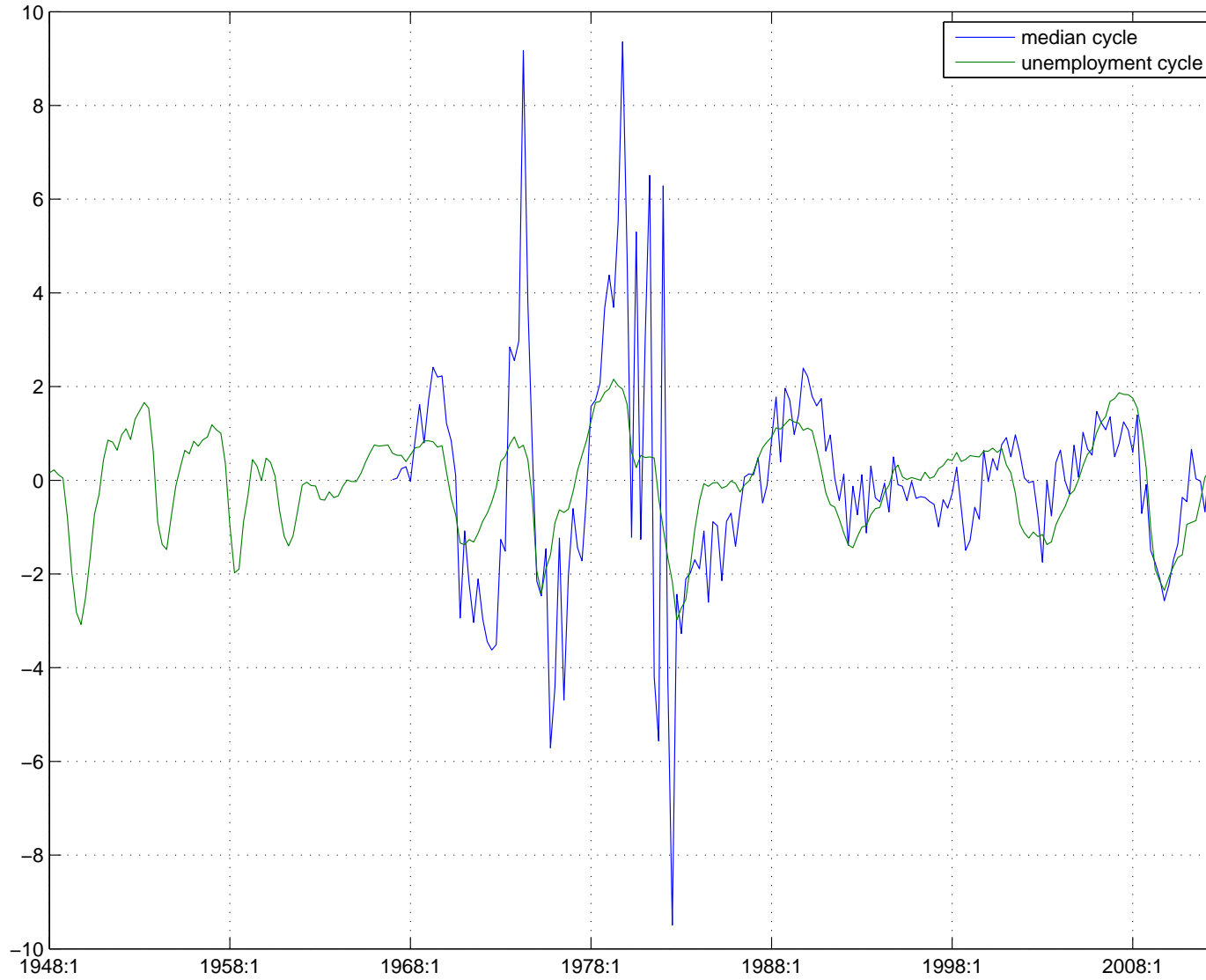
### Output Inflation Co-Movement (scaled, phase-shift)



### Phillips Correlation: Unemployment and Inflation Co-Movement (scaled, phase-shift)



### Phillips Correlation: Unemployment and Inflation Co-Movement (scaled, phase-shift)



### Modeling Efficiently Components of Headline Inflation

