Economic Forecast

Rob Hayward

January 16, 2015

Outline

Aims

The aim is to forecast interest rate changes. This will require

Aims

The aim is to forecast interest rate changes. This will require

- An understanding of the central bank

Aims

The aim is to forecast interest rate changes. This will require

- An understanding of the central bank
- Some knowledge of the current state of the economy

Aims

The aim is to forecast interest rate changes. This will require

- An understanding of the central bank
- Some knowledge of the current state of the economy
- A forecast of how the economy will evolve in the future

Aims

The aim is to forecast interest rate changes. This will require

- An understanding of the central bank
- Some knowledge of the current state of the economy
- A forecast of how the economy will evolve in the future
- An assessment of what this means for monetary policy

Aims

The aim is to forecast interest rate changes. This will require

- An understanding of the central bank
- Some knowledge of the current state of the economy
- A forecast of how the economy will evolve in the future
- An assessment of what this means for monetary policy

Aims

The aim is to forecast interest rate changes. This will require

- An understanding of the central bank
- Some knowledge of the current state of the economy
- A forecast of how the economy will evolve in the future
- An assessment of what this means for monetary policy

Draw on what you learnt in EC271 and EC284

Central bank

It is important to know central bank policy if you want
to understand what they will do

Central bank

It is important to know central bank policy if you want to understand what they will do

- How do they see the economy?

Central bank

It is important to know central bank policy if you want to understand what they will do

- How do they see the economy?
- What is their main focus/concern?

Central bank

It is important to know central bank policy if you want to understand what they will do

- How do they see the economy?
- What is their main focus/concern?
- Do they have a specific mandate?

Central bank

It is important to know central bank policy if you want to understand what they will do

- How do they see the economy?
- What is their main focus/concern?
- Do they have a specific mandate?
- When do they meet? How do they decide policy? What is the nature of the usual policy change?
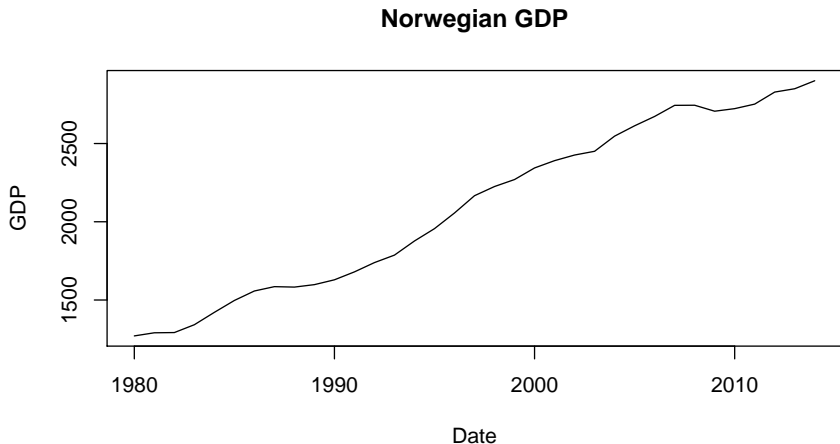
Output gap

Norwegian GDP

Figure : Norwegian real GDP

Finding the trend

There are five methods to find the trend

Finding the trend

There are five methods to find the trend

- Estimation of a growth rate

Finding the trend

There are five methods to find the trend

- Estimation of a growth rate
- Linear trend

Finding the trend

There are five methods to find the trend

- Estimation of a growth rate
- Linear trend
- Quadratic tend

Finding the trend

There are five methods to find the trend

- Estimation of a growth rate
- Linear trend
- Quadratic tend
- Hodrick-Prescott filter

Finding the trend

There are five methods to find the trend

- Estimation of a growth rate
- Linear trend
- Quadratic tend
- Hodrick-Prescott filter
- Centered moving average
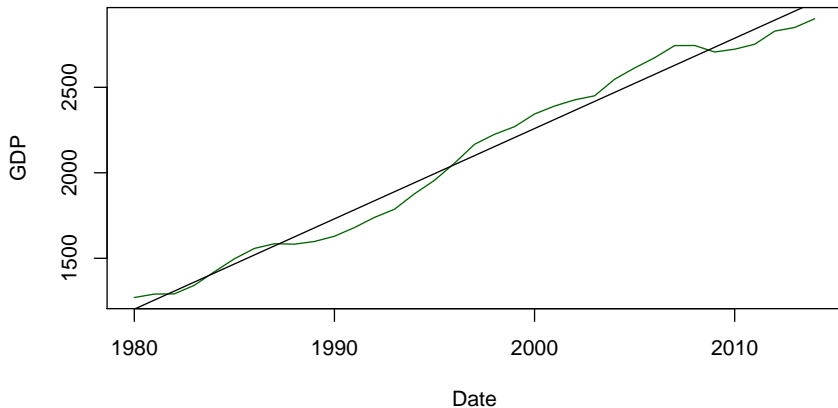
Hodrick-Prescott Filter

This aims to find a underlying trend by minimising

$$Min_g \left[\sum_{t=1}^{T}(y_t - g_t) + \lambda \sum_{t=1}^{T}[(g_t - g_{t-1}) - (g_{t-1} - g_{t-2})]^2 \right]$$

where, g_t is the trend growth, y_t is GDP and λ is a penalty function that penalises a growth rate that is too variable.
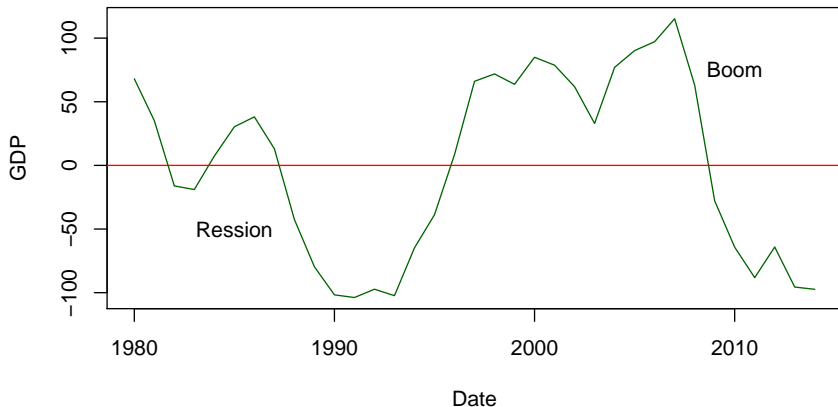
Linear Trend

Norwegian GDP and trend

Output gap

Norwegian Output gap

GDP components

GDP is made up of

GDP components

GDP is made up of

- Consumer spending (C)

GDP components

GDP is made up of

- Consumer spending (C)
- Business investment (I)

GDP components

GDP is made up of

- Consumer spending (C)
- Business investment (I)
- Government spending (G)

GDP components

GDP is made up of

- Consumer spending (C)
- Business investment (I)
- Government spending (G)
- Net exports (NX)

GDP components

GDP is made up of

- Consumer spending (C)
- Business investment (I)
- Government spending (G)
- Net exports (NX)

GDP components

GDP is made up of

- Consumer spending (C)
- Business investment (I)
- Government spending (G)
- Net exports (NX)

How will these evolve? What factors drive these components? How will the drivers of GDP change in the forecast period?

Taylor rule

Taylor rule

$$i_t = \pi_t + r_t^* + \alpha_\pi(\pi_t - \pi_t^*) + \alpha_y(y_t - \bar{y}_t)$$

where i_t is the nominl interest rate; π_t is the inflation rate; r_t^* is the real interest rate; y_t is GDP; π_t^* is the inflation target; $\bar{y}_t$ is the potential rate of GDP growth; α_π is the elasticity of interest rates to inflation; α_y is the elasticity of interest rates to the potential growth rate.

Estimation of rule

- Add other variables if appropriate (exchange rate)

Estimation of rule

- Add other variables if appropriate (exchange rate)
- OLS regression estimation of α_π and α_y

Estimation of rule

- Add other variables if appropriate (exchange rate)
- OLS regression estimation of α_π and α_y
- What does the model say about interest rates?

Estimation of rule

- Add other variables if appropriate (exchange rate)
- OLS regression estimation of α_π and α_y
- What does the model say about interest rates?
- What happens to inflation, GDP or the exchange rate from this point?