Economics II

Lecture 13

2019/04/29

LISBON
SCHOOL OF
ECONOMICS &
MANAGEMENT
UNIVERSIDADE DE LISBOA

Lecture 13

Outline:

7. Business Cycles – An introduction

Readings:

Frank e Bernanke (2011), chapter 10

Objectives of this lecture:

At the end of this lecture students will be able to:

- Understand the distinction between trend and business cycle.
- Outline the concepts of expansion and recession.
- Understand the concepts of potential output and ouput gap.
- Understand the concepts of the natural rate of unemployment and cyclical unemployment.
- Understand Okun's law.

7. Business Cycles – An introduction

7.1. Recessions and Expansions

Economic "climate":

- The long-run economic conditions are the ultimate determinant of living standards

Economic "weather":

- Short-run fluctuations are important for daily living conditions.
- Business cycles are short-run fluctuations in GDP and other macroeconomic variables.

Recession [or Contraction]:

- There are (at least) two concepts with this name:
  - A period during which the economy grows at a rate significantly below the normal one.
  - A period during which real GDP decreases for at least two consecutive quarters.

- Depression:
  - A particularly severe or prolonged recession.

Expansion:

- The same happens here:
  - ➢ A period during which the economy grows at a rate significantly above the normal one.
  - ➢ A period during which real GDP increases for at least two consecutive quarters.

- Usually lasts longer than a recession.

- Boom:
  - ➢ A particularly strong and prolonged expansion.

7.2. Features of short-run fluctuations

Business cycles:

- This name could suggest that economic fluctuations (about the trend) are regular.
- However, economic fluctuations are not regular neither in duration nor in amplitude.

Some concepts related to the business cycle:

- Peak:
  - Beginning of the recession.
  - The highest point of economic activity prior to the contraction.

- Trough:
    - ➢ End of the recession.
    - ➢ The lowest point of economic activity preceding the recovery.

- Duration:
    - ➢ Time interval (“horizontal distance“) between two troughs (or peaks or…).

- Amplitude:
    - ➢ Intensity of fluctuations.
    - ➢ “Vertical distance“ between trough and peak.

Expansions and Recessions:

- Are experienced throughout the economy.
- Are not limited to just a few sectors.
- Often affect several economies.

Unemployment rate:

- Increases (decreases) significantly during recessions (expansions).
- Varies as a result of “cyclical unemployment.”

Inflation:

- Tends to precede recessions.
- Tends to decrease (increase) with recessions (expansions).

Durable goods:

- Cars, housing, equipment goods.
- Are (very) sensitive to fluctuations.

Non-durable goods and services:

- Food, clothing, footwear.
- Are less sensitive to fluctuations.

7.3. Measuring fluctuations: output gap and cyclical unemployment

Potential output (GDP) or...

... full-employment output (Y_p):

- Level of real output that would be reached by the economy if its resources were used at a normal rate.
- It grows over time.

Output gap ($Y_t - Y_{p,t}$):

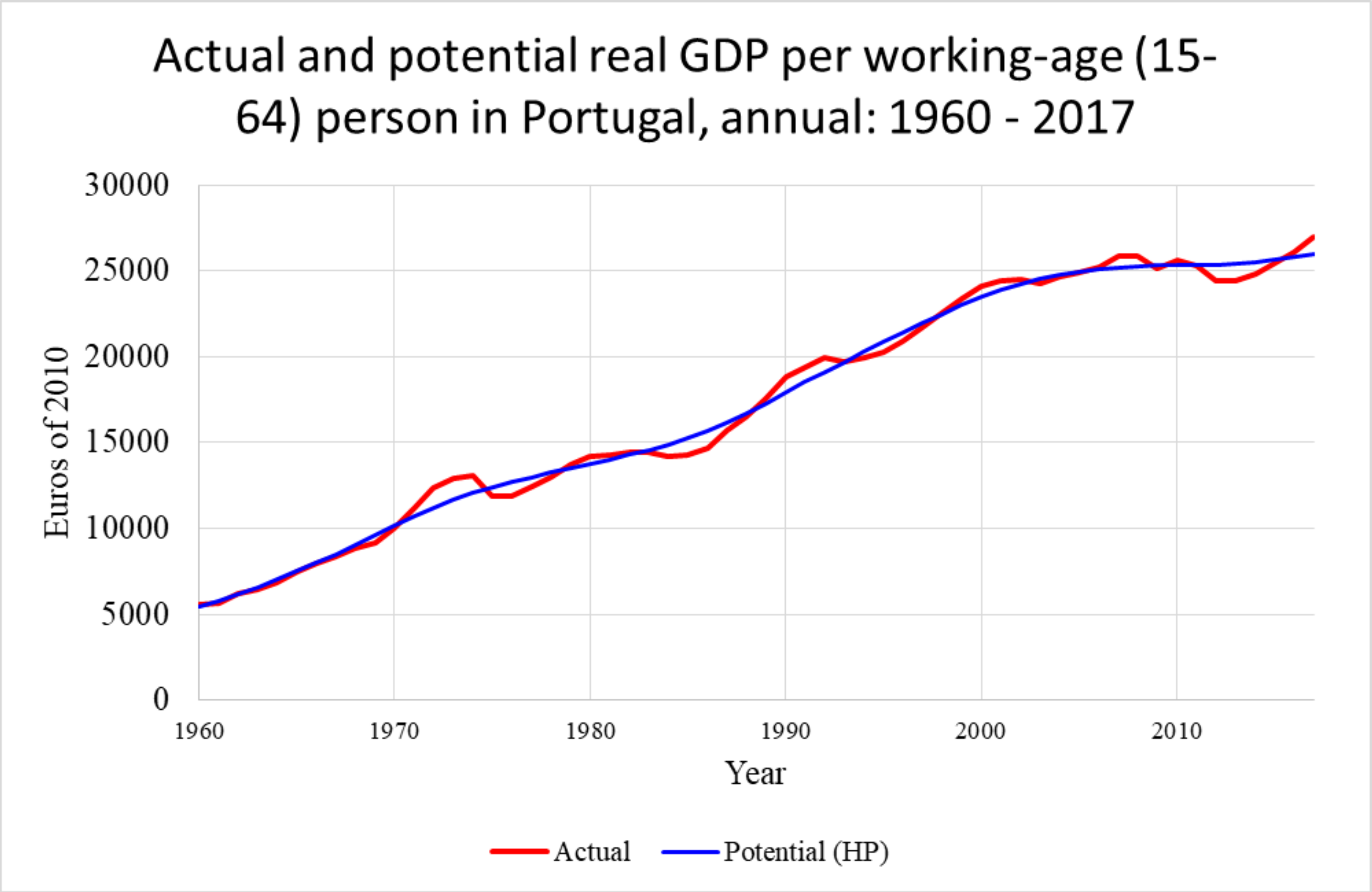
- Difference between actual and potential output in period t.
- Often, this gap is measured as a proportion of potential output: $(Y_t - Y_{p,t})/ Y_{p,t}$.

Recessive output gap ($Y_t < Y_{p,t}$):

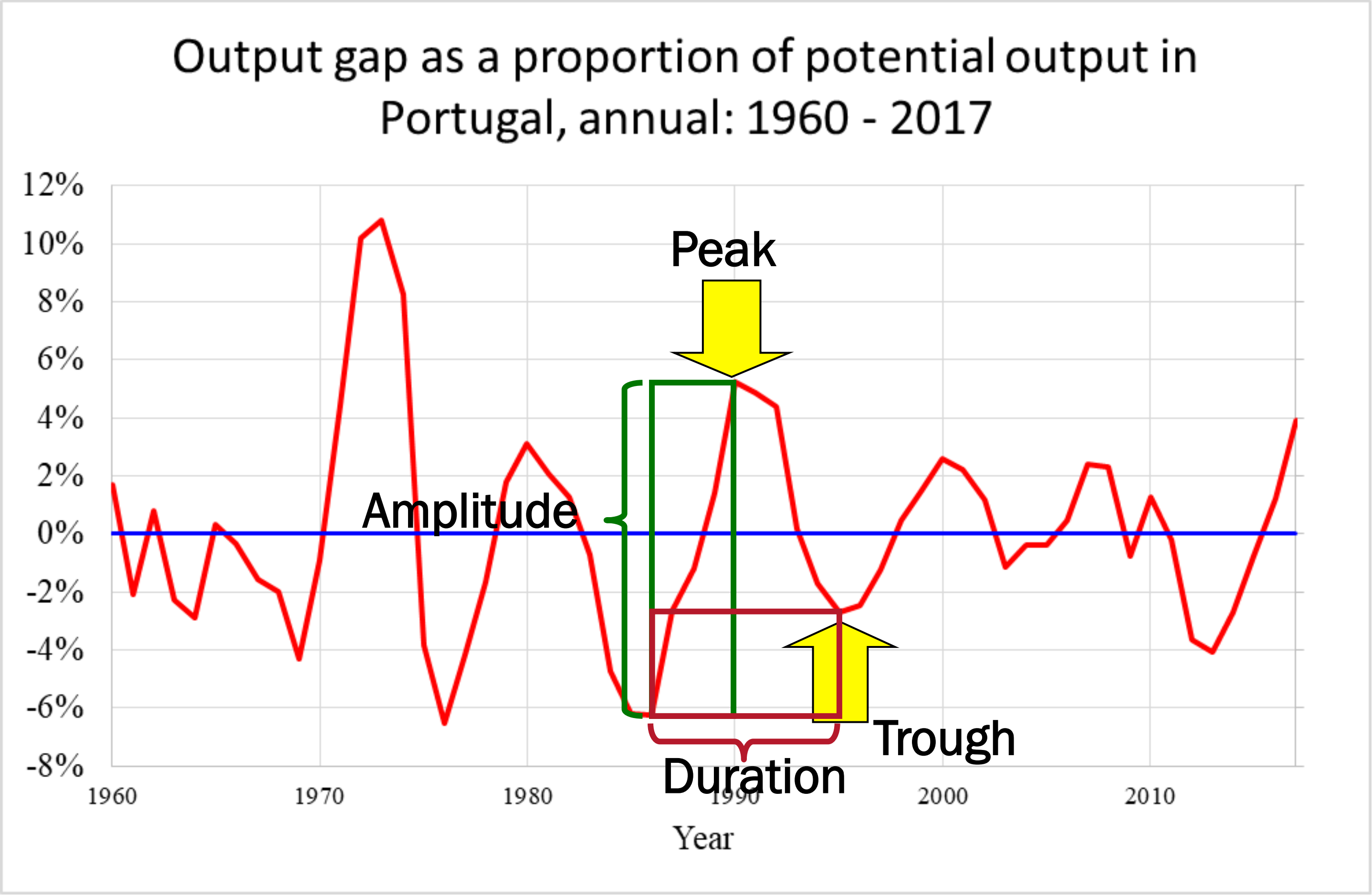
- Negative deviation - it occurs when potential output exceeds actual output.
- It is observed when primary inputs (capital and labour) are used below their “normal“ levels.

Expansionary output gap ($Y_t > Y_{p,t}$):

- Positive deviation - it occurs when actual output exceeds potential output.
- It is observed when primary inputs (capital and labour) are used above their “normal“ levels.



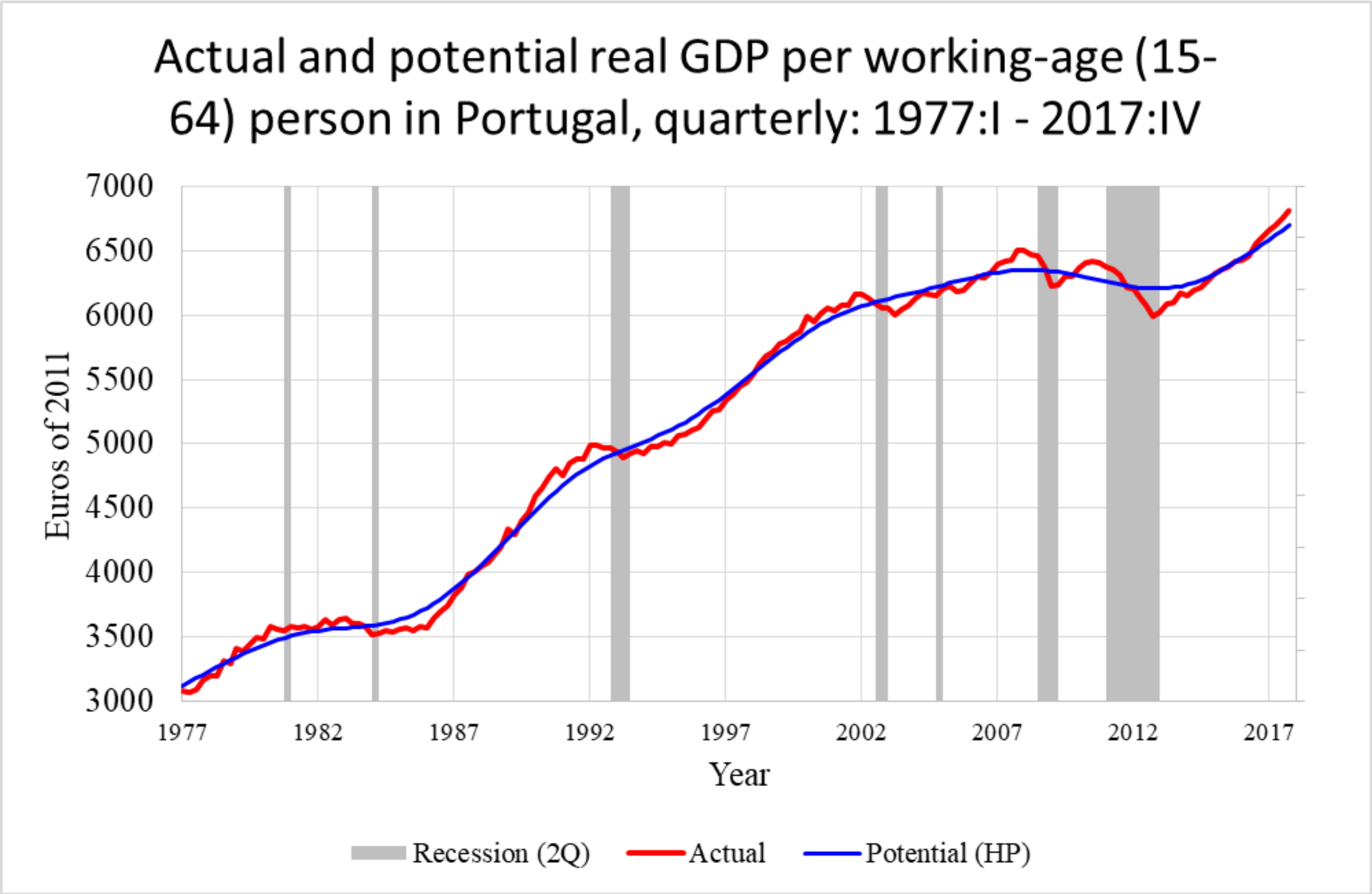
Source: European Commission (2018).



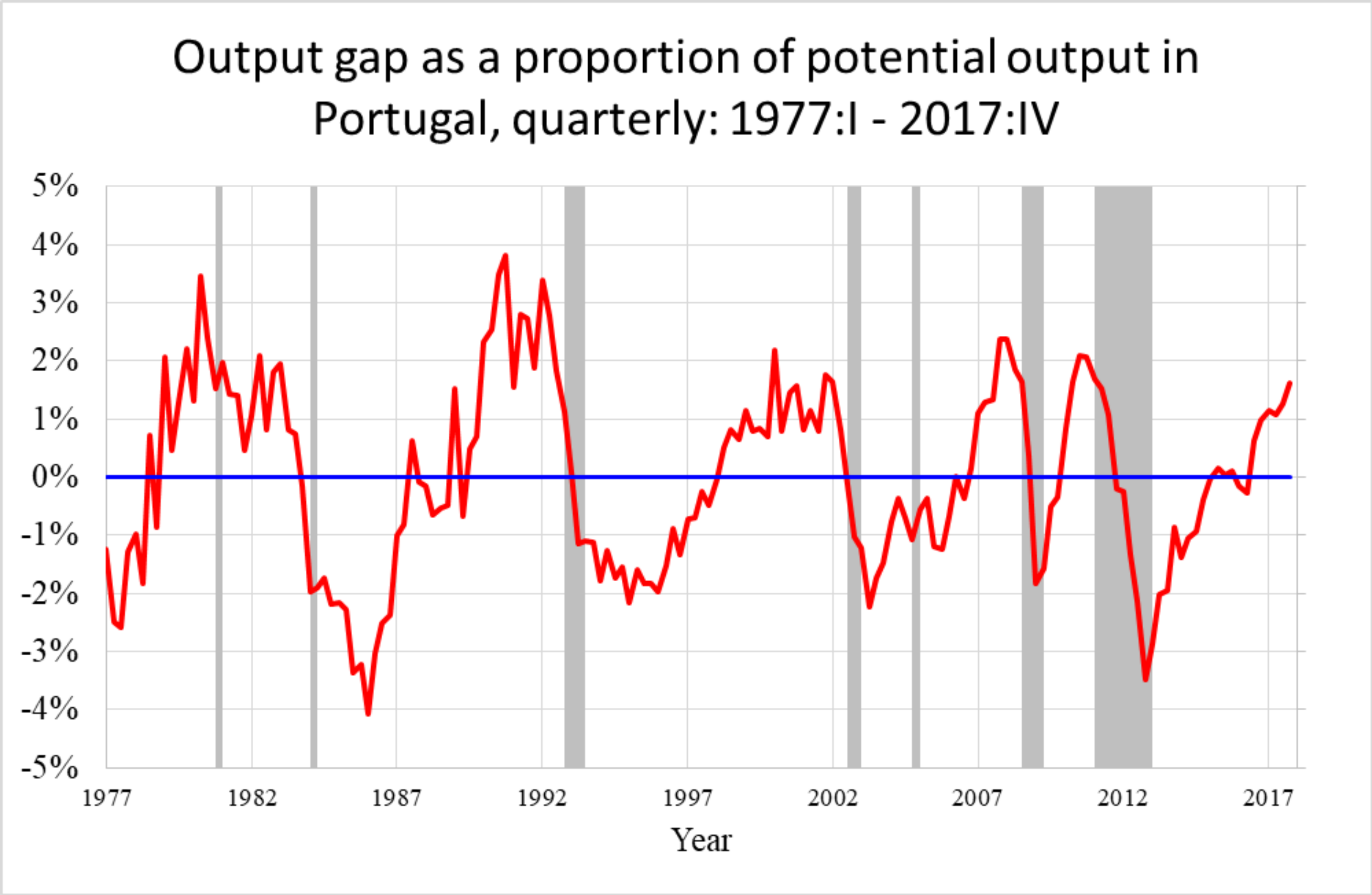
Source: [European Commission](#) (2018).

Is annual frequency the best to analyse the cyclical fluctuations?

- Pros of annual data:
  - there are longer available series;
  - they do not exhibit seasonality;
  - this is the “natural” frequency for some variables (e.g. fiscal).
- Pros of quarterly (and monthly) data:
  - the number of observations is larger;
  - they are available in a timely manner;
  - they provide more detail.



Sources: Banco de Portugal (2018) and INE (2018).



Sources: [Banco de Portugal](#) (2018) and [INE](#) (2018).

When there is a recessive output gap:

- The use of resources is below its normal (long-run) level.
- The unemployment rate tends to be high.

When there is a expansionary output gap:

- The use of resources is above its normal (long-run) level.
- The unemployment rate tends to be low.

Unemployment:

- Friccional:
  - ➢ Always present.
- Structural:
  - ➢ Long-run inadequacy between workers' skills and those skills required by employers.
  - ➢ Always present.

Cyclical:

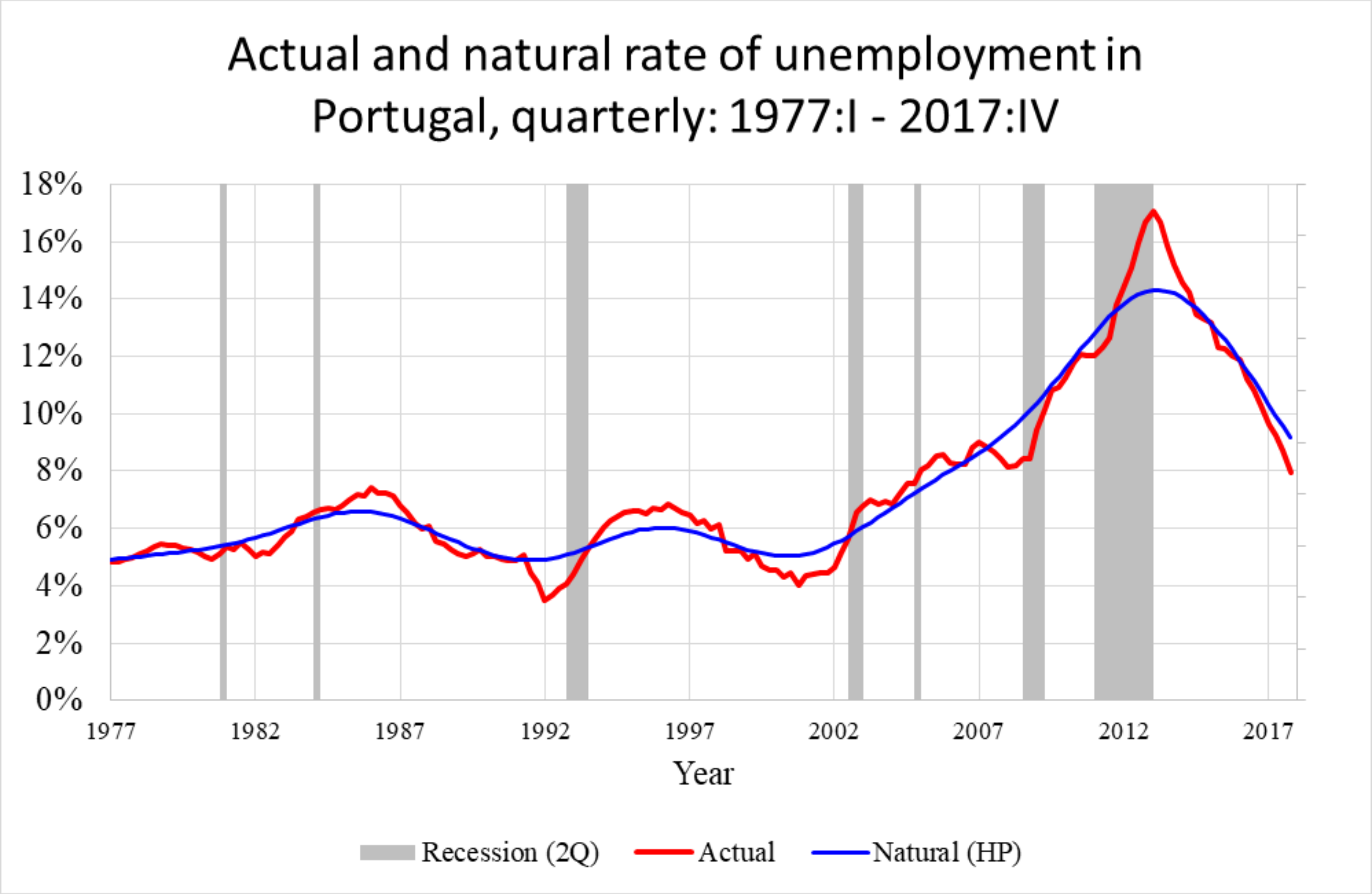
- Additional unemployment that prevails during recessions.
- It is positive during recessions.
- It is negative during expansions.

Natural rate of unemployment (u_p):

- Part of total unemployment due to both frictional and structural unemployment.
- The unemployment rate observed when the economy exhibits a zero (neither expansionist nor recessive) output gap.

Cyclical unemployment: $u_t - u_{p,t}$.

  - u_t – actual unemployment rate in period t.
  - $u_{p,t}$ – "natural" rate of unemployment in period t.
- In a recession there is:
  - positive cyclical unemployment ($u_t > u_{p,t}$).
- In an expansion there is:
  - negative cyclical unemployment($u_t < u_{p,t}$).



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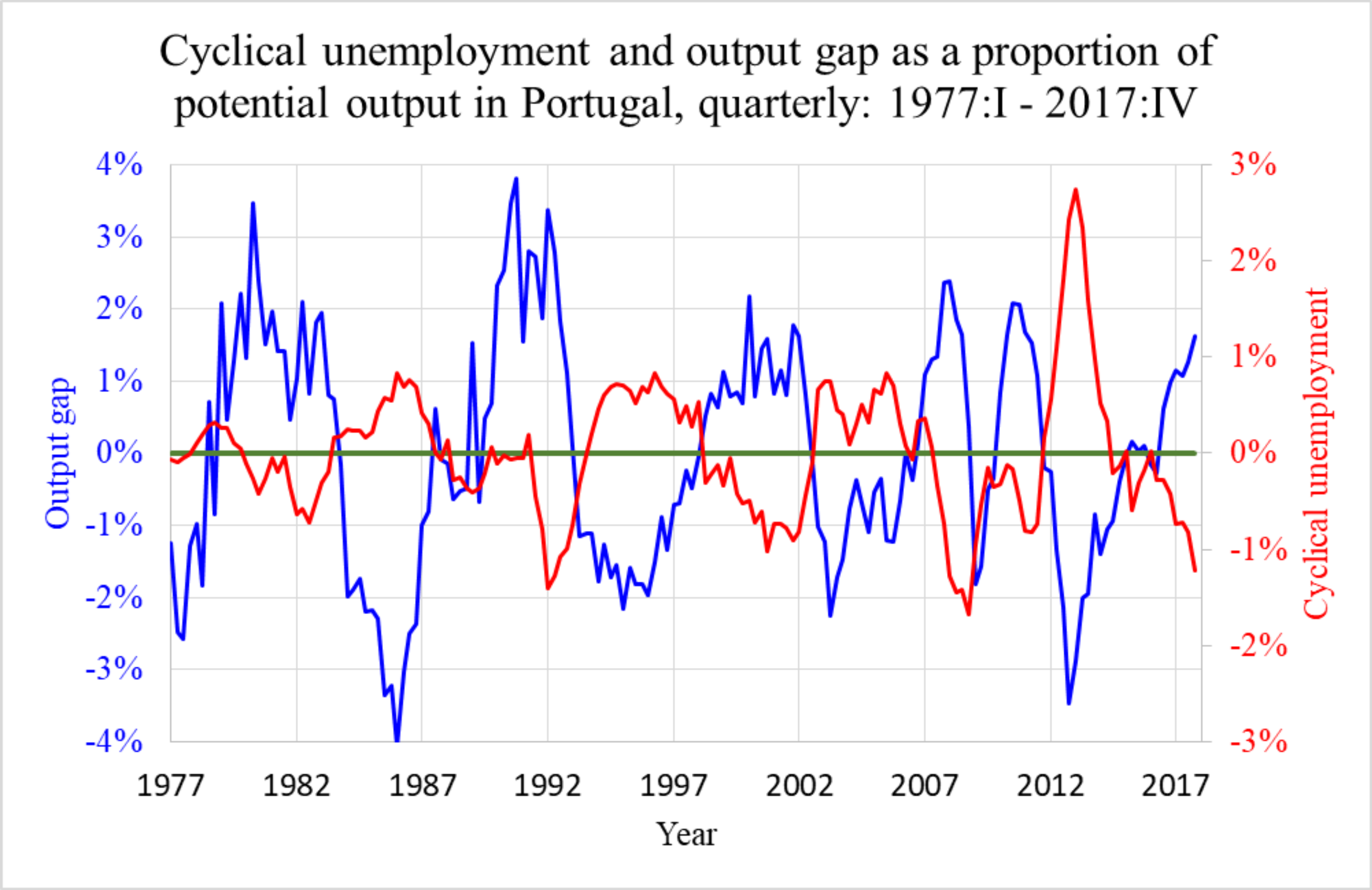


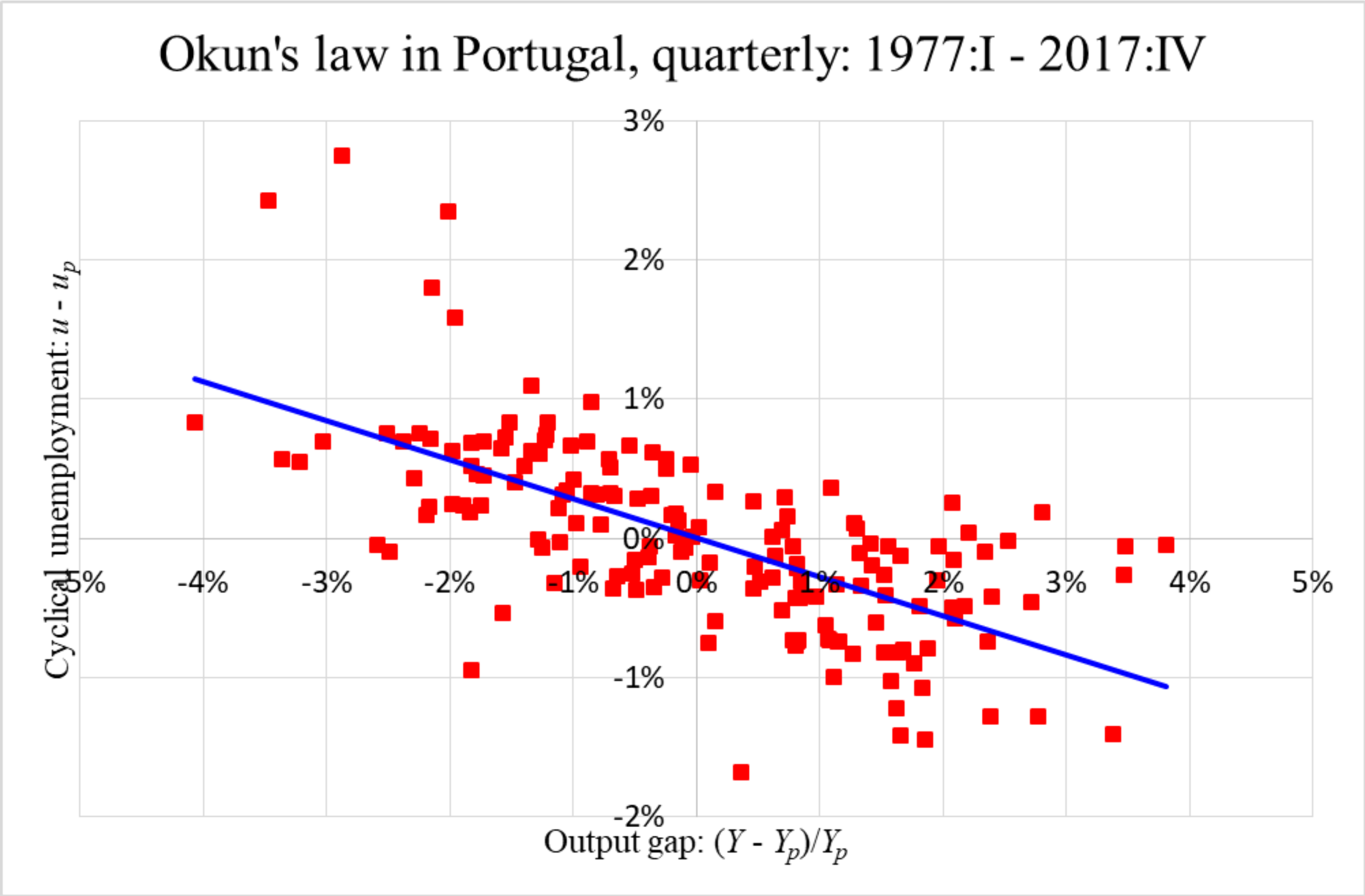
Sources: [Banco de Portugal](2018) and [INE](2018).

Okun's law:

- Relationship between output gap and cyclical unemployment.
- When actual output is below (above) potential output, the actual unemployment rate tends to be above (below) its natural rate:

$$u_t - u_{p,t} = f\left(\frac{Y_t - Y_{p,t}}{Y_{p,t}}\right)$$

with $f'(.) < 0$.



Sources: [Banco de Portugal](2018) and [INE](2018) (2018).

Why do short-run fluctuations occur? And how are they fixed?

1. Some prices adjust slowly:
   - In the short run, firms meet demand at pre-determined prices.
   - Changing prices is costly for firms.

2. Changes in aggregate demand that affect the entire economy:
   - This is a major source of output gaps.

3. Firms change their prices:
   - Increasing them in response to expansionary output gaps.
   - Decreasing them in response to recessive output gaps.

4. There are self-correcting economic mechanisms:
   - Output gaps tend to zero in the long run.