

Supervision 4 Unemployment

Short questions (max 1.5 page handwritten)

1. The employment rate n_t in an economy evolves according to

$$n_{t+1} = (1 - \lambda)n_t + fu_t$$

where λ denotes the job separation rate, f the job-finding probability, and u_t the unemployment rate in period t . [cf Tripos 2013]

- (a) Derive the steady-state unemployment rate u_{ss} .
 - (b) Now suppose that both the job-finding probability and the separation rate change to $\hat{f} = \gamma f$ and $\hat{\lambda} = \gamma \lambda$, respectively, for some $\gamma > 0$. Show mathematically how this change affects the steady-state unemployment rate, and briefly discuss how it may affect the welfare of an unemployed worker.
 - (c) Lastly, for any $u_t \neq u_{ss}$, how does the above change in the job-finding probability and separation rate affect the transition back to the steady-state rate of unemployment? Is it faster or is it slower? Explain briefly.
2. Consider the following stylised Phillips curve

$$\pi_t = \pi_t^e + \alpha - \beta u_t,$$

where π_t denotes the inflation rate, π_t^e the expected inflation rate and u_t the unemployment rate. The subscript t denotes the time period.

Define the natural rate of unemployment, u_n , and rewrite the above relationship in terms of u_n .

Suppose that the population can be divided into two subgroups. The first group, which comprises a fraction γ of the population, has rational expectations such that $\pi_t^e = \pi_t$. The second group, which then comprises the fraction $(1 - \gamma)$, has adaptive expectations such that $\pi_t^e = \pi_{t-1}$. Derive an expression for π_t in terms of u_t and u_n . How does the slope of the Phillips curve change depending on the parameter γ ? Use the logic of the Aggregate Supply curve to provide an intuitive explanation. [cf Tripos 2014]

Essay questions (1000 words max)

3. Discuss the notion of a trade-off between inflation and unemployment from a theoretical and empirical perspective. [Tripos 2009]

4. In 2008, the Consumer Price Index (CPI) in the United States fell and has remained 4 percent below its trend. The unemployment rate in the United States rose to around 10 percent, and slowly declined over the course of six years. Is this pattern consistent with the NAIRU theory? (Note: The trend of CPI is defined as the level that would have materialised under an uninterrupted inflation rate of 2 percent per year.) [Tripos 2015]

Main readings

- Barro (1997), *Macroeconomics*, chapter 6 and 10.
- Blanchard (2017), *Macroeconomics*, chapter 7, 8 and 13
- Williamson (2010), *Macroeconomics*, chapter 17 and 18.

Supplementary references

- Bean (1994), "European Unemployment: A Survey", *Journal of Economic Literature* 32(2), June, pp. 573-619.
- Blanchard (2005), "European Unemployment: The Evolution of Facts and Ideas", NBER Working Paper 11750.
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- Calmfors and Drifill (1988), "Bargaining Structure, Corporatism and Economic Performance", *Economic Policy* 6, pp.13-61.
- Carlin and Soskice (1990), *Macroeconomics and the Wage Bargain*, chapters 1-8, 16-19.
- Carlin and Soskice (2006), *Macroeconomics: Imperfections, Institutions and Policies*, chapter 2.5-2.6, 4, 15.8 & appendix, 18
- Layard, Nickell and Jackman (1994), *The Unemployment Crisis*.
- Lindbeck and Snower (2001), "Insiders versus Outsiders", *Journal of Economic Perspectives* 15(1), Winter, pp. 165-188.
- Nickell (1998), "Unemployment: Questions and Some Answers", *Economic Journal* 108 (May), pp. 802-816.
- Nickell, Nunziata and Ochel (2005), "Explaining the Rise in Unemployment in Europe since the 1960s", *Economic Journal* 115, pp. 1-27.
- Phelps and Zoega (1998), "Natural-Rate Theory and OECD Unemployment", *Economic Journal* 108 (May), pp. 782-801
- Symposium on European Unemployment, *Journal of Economic Perspectives*, Summer 1997.
- Symposium on the Natural Rate of Unemployment, *Journal of Economic Perspectives*, Winter 1997.