QUESTIONS - CHAPTER 28 CREDIBILITY

Question 28.1

28.1A What is the objective of the European Central Bank (ECB)? Is the ECB hard-nosed or wet-nosed?

28.1B What instruments does the ECB have to reach its objective. Explain in detail what these instruments are and how they influence the target variable(s).

28.1C Why do these instruments offer the ECB no perfect control over the target variable(s)?

Question 28.2

The ECB and the FED have different policy objectives. According to the Maastricht treaty the primary goal of the ECB is to keep price stability. The support of general economic policies is only of secondary importance. The Federal Reserve Reform Act on the other hand specifies the three objectives of the FED: “maximum employment, stable prices, and moderate long-term interest rates”. Unlike the Maastricht treaty price stability is not given higher priority than the other goals.

In this question we will find out what consequences these different policy objectives of the ECB and FED have in the Barro-Gordon model. For this purpose the figure below shows the Barro-Gordon model for the ECB on the left-hand-side and for the FED on the right-hand-side. The figures are identical to figure 28.9 (surprise inflation policy with an expected inflation of 0%) in the main text except for the loss function. The loss function has been modified according to the policy objectives of the ECB and FED. Assume for now that there are no policy rules.
28.2A How can you derive from the figure above which central bank is wet-nosed and which central bank is hard-nosed?

28.2B Why do the central banks fool the citizens if the expected inflation rate is larger than the realized inflation rate? Which central bank fools its citizens most? Explain.

28.2C Explain why the equilibrium indicated in the figure above is not sustainable.

28.2D Copy the figure above and indicate in both panels the sustainable equilibrium. Do you expect the inflation rate to be higher in the Euro Area or in the United States?

28.2E Do you stick to your conclusion of 28.2D if you know that both the ECB and the FED have introduced a policy rule? The ECB has promised to keep inflation below 2%. The FED, on the other hand, keeps inflation at such a level that “economic agents no longer keep account of the prospective change in the general price level in their economic decisionmaking”.

Question 28.31

In his 1993 paper “Discretion versus policy rules in practice” John Taylor introduces an intuitive policy rule to determine the Federal funds rate:

\[
\text{Federal funds rate} = \pi + 0.5y + 0.5(\pi - 2) + 2, \quad \text{where}
\]

\(\pi\) is the rate of inflation

\(y\) is the output gap or \((\text{real GDP} - \text{trend real GDP}) / \text{trend real GDP}\).

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Taylor assumes a trend real GDP growth of 2.2% during the 1987-1991 period.

The left panel of the figure below shows that this policy rule fits the actual policy performance over the period analyzed by Taylor (1987-1991) surprisingly well. If the policy rule is extrapolated to the future (keeping the assumptions on the target inflation rate and trend real GDP constant) the results are, however, less encouraging. This is shown in the right panel of the figure.


28.3A What inflation target did the FED have according to Taylor during the 1987-1991 period?

28.3B The intuitive policy rule presented above differs from the estimation made by De Grauwe in the main text. In what respect does the policy rule above differ and why do you think Taylor has made this choice?

28.3C The policy rule above is based on quarterly data while the FED has to determine the Federal funds rate every day. Explain whether the policy rule can still be used by policy makers in the Central Bank.

28.3D The figure in the right panel shows that at the start of the 1990s the policy rule no longer reflected the actual decisions made by the FED. There was a good reason for the FED to deviate from the policy rule: the spot price of oil doubled with the Iraqi invasion of Kuwait, but the futures price of oil changed very little. Why is this a good reason to deviate from the
policy rule?

28.3E Also after the first Gulf War the policy rule did not reflect the actual policy of the FED. Is the Taylor rule worthless or is there another reason for this deviation?

Question 28.4
Economists have made many recommendations in order to avoid the rational expectations equilibrium with its relatively large welfare loss. Below we have listed a number of these recommendations. Explain for each of them why these proposals may convince the general public that the authorities will pursue a low inflation target.

28.4A The Central Bank should have an inflation target

28.4B The Central Bank should be independent

28.4C Appoint conservative central bankers

28.4D The wage of central bankers should depend negatively on inflation

Question 28.5
The Excel file for question 28.5 offers data on the federal funds rate, inflation, GDP, and unemployment of the United States. Develop and estimate your own Taylor rule with this data and evaluate in class which student has made the best rule. Compare the different Taylor rules both on goodness of fit and their usefulness in policy making.

Question 28.6
The Excel file for question 28.6 gives the Barro-Gordon model as shown in figure 28.9 in the main text. The simulation allows you to analyse the consequences of changes in the target inflation rate, target unemployment rate, expected inflation, natural rate of unemployment and the parameters. In this question we will analyse the consequences of changes in exogenous variables in the case of surprise inflation. Rational expectations will be introduced in question 28.7.

28.6A Explain the difference in the loss function between the simulation and figure 28.9 in the main text.
28.6B What happens to the actual inflation and unemployment rate when a government becomes less ambitious in reducing unemployment? Explain why this happens.

28.6C Why is it unlikely that a government targets an unemployment rate above the natural rate of unemployment?

28.6D What happens to the actual inflation and unemployment rate when a government becomes less ambitious in curbing inflation?

Question 28.7
Rational expectations can easily be added to the simulation of question 28.6 by realizing that not only the government but also economic agents (like you and me) can predict what the inflation rate will be with the Barro-Gordon model. It is therefore rational to assume that the expected inflation rate will be equal to the outcome of the model.

28.7A What is the rational expectations inflation rate in the simulation of question 28.6?

28.7B Does the loss of the government increase with the introduction of rational expectations? Why is this the case?