

MONETARY POLICY

'Threat of deflation' scenario

1. Introduction

In the Mopos 3.0 simulation game, you assume the role of central banker. A central bank is no normal bank; it has a special function in that it is charged with the task of pursuing a monetary policy that serves the interests of the country as a whole. Exactly what this means and just how monetary policy works will be explained to you in this exercise.

Preparatory steps:

- Start Mopos 3.0 using the following link: www.iconomix.ch/en/mopos
The welcome page will appear. Click on 'Next'.
- You will now be asked if you wish to play in random mode or in scenario mode. Select the **'threat of deflation' scenario**. This scenario allows you to put your monetary policy knowledge to the test.
- The next screen provides a brief description of the scenario. You will be asked whether the shocks that lead to business cycle fluctuations in the Mopos simulation should be observable or not. Select **'All shocks observable simultaneously'**. This helps reduce uncertainty and makes it easier to conduct monetary policy.
- Click on 'Next' to load the scenario.

2. Scenario summary

At the time of your taking office, the economic situation presents itself as follows:

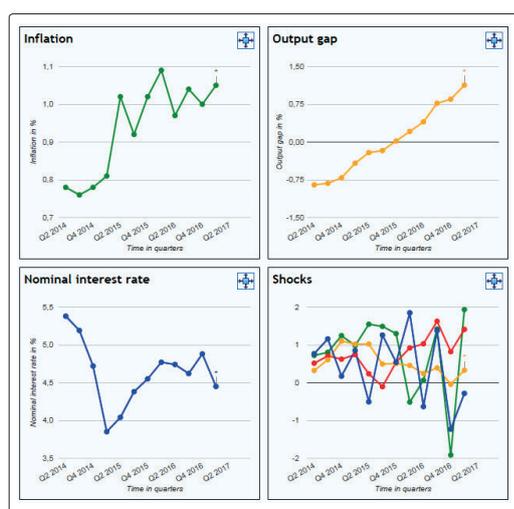


Chart 1: Starting 'threat of deflation' scenario (all shocks observable simultaneously)

After a recession, the real economy is in a cyclical upswing phase and in danger of overheating (the 'output gap' indicator reaches 1.13% in the current quarter). By contrast, inflation is at a moderate level (just over 1%). You recognise the danger: If the economy overheats, inflationary pressure will emerge, which is why you are going to want to raise interest rates. But beware! Some surprises lie in wait in this scenario! Your main concern might soon be deflation and not inflation.

Please note: In Mopos, a threat of deflation must be combated quickly and decisively so as to prevent the economy from falling into a deflationary spiral. By contrast, monetary policy should not be expansionary for too long in Mopos or you will sooner or later be confronted with an inflation problem.

3. Your task

Conduct your country's monetary policy for the next five years (20 quarters). Ensure that prices remain stable (inflation between 0% and 2%) without the overall economy overheating or cooling down strongly (output gap between -1% and 1%).

On the log sheet (attached to this worksheet), make a brief note for each quarter explaining the reason for your interest rate decision.

When your term of office comes to an end, you will be required to present a report to parliament and government (your class) in which you sum up your time in office. To help you prepare your report, use – in addition to your log notes – the 'Evaluation' function, which contains the most important data on your monetary policy

- Time: 40 minutes (including preparation time for presentation)
- Players: Individually or in groups of two or more
- Teaching aids: Computer, video projector or overhead projector for presentation

Please note: The 'Evaluation' tab enables you to leave the simulation at any time and see how you have performed as a central banker up to the current stage of the game. You can return to the simulation tool via the 'Simulation' tab. To create a screenshot (e.g. for an 'Evaluation'), use the print function in the browser. To restart the simulation tool, use the 'Refresh' function in the browser.

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4. Your score

The goal 'ensure stable prices without the overall economy overheating or cooling down strongly' can be expressed in terms of four key figures:

Average inflation: This value reflects the average rate of inflation achieved across all quarters.

Average output gap: This value reflects the average output gap measured across all quarters..

Standard deviation of rate of inflation: This value measures whether the inflation target has been steady (low standard deviation) or strongly fluctuating (high standard deviation). A low standard deviation means a better result.

Standard deviation of output gap: As above, but for the output gap target.

Table 1 contains benchmark values for assessing performance during your term of office in the 'threat of deflation' scenario. In order to calculate the benchmark values, monetary policy is run through an 'automatic pilot' guided by the Taylor rule, which specifies how a central bank should react to inflation and economic activity:¹

Average inflation	0.21%
Average output gap	1.06%
Standard deviation of rate of inflation	0.77%
Standard deviation of output gap	0.35%

Table 1: Benchmark for 'threat of deflation' scenario after 20 quarters

economix provides a results sheet in Excel format (teacher evaluation) to make it easier to check the final score. This sheet converts the four key figures calculated by you in Mopos ('Evaluation' tab) into one single value, the score. In the calculation, your results are compared with the benchmark (table 1) and your mandate ('ensure stable prices, etc.').

In order to obtain the score, you need to transfer the four key figures from Mopos ('Evaluation' tab) into the Excel worksheet, as shown in the example.

Transferring the results from Mopos ...

Inflation (average)	0.73
Output gap (average)	0.62
Inflation (standard deviation)	0.69
Output gap (standard deviation)	1.07

... into the Excel sheet ...

	Average inflation	Standard deviation of inflation rate	Average output gap	Standard deviation of output gap
Benchmark	0.21%	0.77%	1.06%	0.35%
Player 1	0.73%	0.69%	0.62%	1.07%

... and reading the score:

	Score
Benchmark	88%
Player 1	75%

Interpreting your score:

	75%+	excellent (mandate fulfilled)
	68–74%	good (mandate not fulfilled)
	58–67%	sufficient (mandate not fulfilled)
	0–57%	insufficient (mandate not fulfilled)

¹ If inflation is higher than the central bank's long-term target – 2% in Mopos 3.0 – the central bank should increase interest rates, by 1.5 percentage points for each percentage point of inflation. If actual output is above potential, there is a danger that the economy will overheat and inflationary pressure will emerge. Consequently, the Taylor rule specifies that the key rate be raised by 0.5 percentage points for each percentage point that production exceeds its potential. This leads to a very volatile rate of interest. It is therefore usual to smooth the interest rate somewhat. Mopos assumes a smoothing coefficient of 0.2, which means that, in each period, only 80% of the interest rate step recommended by the Taylor rule is actually carried out.

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Appendix: Log sheet

Quarter	Key rate lowered	Key rate maintained	Key rate raised	Reasoning
Q1				
Q2				
Q3				
Q4				
Q5				
Q6				
Q7				
Q8				
Q9				
Q10				
Q11				
Q12				
Q13				
Q14				
Q15				
Q16				
Q17				
Q18				
Q19				
Q20				