

1 OVERVIEW

1.1 Topic and contents

This module deals with monetary policy, the core task of a central bank. The most important goals of modern central banks (price stability and balanced economic activity), the significance of the monetary policy instrument (interest rate) and the most important correlations between the instrument and the target variables (inflation and economic activity) are conveyed to the students in a fun way.

The module is well suited both as an introductory and as an advanced learning tool. However, students are required to have some previous knowledge of the topic. In comparison with the basic monetary policy module, the advanced module also deals with the lack of complete or accurate information, thus rendering the conduct of monetary policy more realistic, but also more challenging.

1.2 The iconomix modules

At present, iconomix offers two modules in English, the basic and the advanced monetary policy modules. The main component of these two modules is an online simulation tool which can be used in a computer room or for classroom teaching. In the classroom, a computer with internet access and a projector are all that is needed.

1.3 Time required

Three to four lessons, depending on the degree of detail in which the topic is looked at.

1.4 Suitable subjects and level of difficulty

The module is suitable for use in the following subjects: economics and related topics, e.g. in upper secondary schools (Maturitätsschulen and Berufsmaturitätsschulen) with a commercial or technical focus.

Level of difficulty: high



The basic monetary policy module offers less challenging tasks. Cf. also the note in chapter 3 of this commentary.

1.5 Learning objectives

The module promotes the following aspects of economic competence:

Personal skills

- Students should be able to assume the role of central banker, make an interest rate decision – based on a number of simplified assumptions – and explain their decision.

Social skills

- Students should be able to discuss monetary policy matters with each other and present and explain their own points of view.

Technical skills

Students should be able to:

- name the goals and main instrument of monetary policy.
- describe the monetary policy decision-making process.
- describe and explain the effects of monetary policy decisions and the basic correlations between interest rates, inflation and economic developments.
- describe the effect of incomplete or inaccurate information on the monetary policy decision-making process



For information on integration into the curricula of Swiss upper secondary schools, go to www.iconomix.ch/en/service (German and French only).

1.6 MOPOS package

The module consists of this commentary for teachers, the MOPOS Advanced application and the following teaching material:

- Introductory text
- Slides (to accompany introductory text)
- Test questions on the simulation
- Worksheet (tasks 1 to 3)
- Knowledge sheet and knowledge test
- Advanced question
- Sample answers



You can order any document from this module by completing the online form at www.iconomix.ch/en/policy_plus.



2 WORKING WITH THE MODULE

2.1 Overview of module phases

The teaching material is based on a three-phase concept:

1. Learning by doing: MOPOS Advanced online simulation
2. Learning through dialogue: tasks 1 to 3, knowledge sheet
3. Learning by applying: knowledge test, possibly further questions



For information on the didactic background, cf. 'Learning with iconomix' at www.iconomix.ch/en/learning. At the end of this commentary is an overview of how to work with the module, including space for notes and the option for individual modifications.

2.2 Learning by doing

The MOPOS Advanced online simulation tool is the main component of phase 1. The introductory text and the corresponding test questions provide the students with basic knowledge on the operation of MOPOS Advanced and on the conduct of monetary policy by a central bank. Afterwards, they can work through the MOPOS Advanced simulation individually or in groups, obtaining instructions from guidance texts in the simulation and from task 1.

The simulation can be run on individual computers (with internet access) or as an online projector presentation in class (using a central computer with internet access).



The computers need to be equipped with Adobe Flash Player (version 8 or higher). Information on technical requirements is available at www.iconomix.ch/en/support.

Materials used in phase 1:

Introductory text, slides, test questions:

The MOPOS Basic introductory text provides the students with basic knowledge on the operation of MOPOS and on the conduct of monetary policy by a central bank. The MOPOS Advanced introductory text builds on this information and explains the additional challenge in MOPOS Advanced which consists in working with the lack of complete or accurate information. In addition to the introductory text, teachers can make use of a slide presentation and a set of test questions. These questions are handed out to the students either together with the two introductory texts or after they have read them. Once the students have correctly answered all the test questions, they are ready to start with the simulation.

MOPOS Advanced online simulation:

MOPOS Advanced is a monetary policy simulation game using a simple virtual economy. The students assume the role of central bankers. They run through several interest rate rounds (1 round = 1 quarter). Every interest rate round consists of the following three phases:

- In the *briefing phase* (at the beginning of each interest rate round), the students analyse the current overall economic situation and its history. To this end, they can look at time series on four variables: inflation, utilisation, nominal interest rate and demand shock.
- In the *interest rate decision phase*, the students are asked to set the nominal interest rate for the coming quarter. Before making their decision, students can look at a forecast to find out how the target variables (inflation and utilisation) would develop in relation to the nominal interest rate set in the current quarter.



- In the *debriefing phase* (at the beginning of the next interest rate round, but with reference to the last round), the students analyse the effect of their interest rate decision. To what extent has the forecast come true? They learn that any deviations from the forecast values are based on the fact that it is not possible to accurately predict the additional innovation influencing demand shocks (which typically is not zero as assumed in the forecast).

Upon completion of the third phase, the next interest rate round starts. It consists of the same three phases.

Students should run through 12 to 20 quarters (interest rate rounds) in MOPOS Advanced. The more quarters, the greater the students' influence on the result.

To ensure a successful learning process, it is crucial that the students know the importance of the briefing and debriefing phases. Monetary policy can only be conducted successfully over a longer period of time if the situation before and the outcome after an interest rate decision have been thoroughly analysed.

In all three phases of the monetary policy process, the 'Analysis assistance' and the 'What are forecast intervals' boxes provide useful information. To increase the level of difficulty, the context-sensitive boxes can be hidden.



By clicking the icon in the upper right-hand corner of each chart, the period displayed can be changed from a short to a long time horizon (= spanning the duration of the students' term of office). Since there is a time lag of two quarters for the utilisation and demand shock values, it is advisable to use the long-term developments as a basis for the briefing.

The 'Evaluation' function enables the students to look at any time at how they have performed as central bankers up to the current stage of the game. Monitoring the developments of the nominal interest rate, inflation and utilisation over the entire duration of the simulation, makes it easier to understand the correlations between the monetary policy instrument and the target variables. Delicate or crucial interest rate decisions can be evaluated and discussed

in retrospect and looked at in context. The back button (arrow) can be used to return to the current quarter and continue with the simulation.



The values of the nominal interest rate, inflation and utilisation can either be displayed individually (as separate charts) or on top of each other (as an integral chart). In addition to the charts, the evaluation screen provides information on recorded average values and the standard deviation of inflation and utilisation, the target variables.



The evaluation screens can be printed out or saved as pdf files.

Task 1 (warm-up):

The students are given the task to first work through 3–4 quarters of the less challenging MOPOS Basic application. MOPOS Basic is easier because demand shock and utilisation can be (accurately) observed up to the current quarter and do not need to be estimated. The forecasts are therefore also far more precise and can be displayed as point forecasts rather than interval forecasts.

Once the students have finished with MOPOS Basic, they should change to the MOPOS Advanced and again work through 3–4 quarters, noting down the differences that they notice between the two scenarios regarding their task as central bankers.

Task 2:

The students are given the task to note down briefly the reasons for their interest rate decision and some lessons learned from the debriefing. They also learn how to save or print out the evaluation screen of MOPOS Advanced at the end of the simulation. The personal notes and the saved or printed evaluation screens are needed for task 3.



2.3 Learning through dialogue

The second phase starts with an evaluation and an assessment of the course of the game (task 3). Afterwards, the students work through the knowledge sheet (in class or at home).

Task 3:

At the end of their term of office as members of the central bank's decision-making body, the students are required to compile an accountability report for the parliament and the government. This should include:

- A general report on how inflation and utilisation developed during the term of office.
- An evaluation of their own performance with regard to inflation and utilisation (an evaluation table is provided for this purpose).
- A detailed assessment of individual interest rate decisions which seem delicate or crucial in retrospect.

Both the notes from task 2 and the saved or printed evaluation screens serve as a basis for this task. The evaluation screens can be used for presentations, e.g. PowerPoint presentations.

Knowledge sheet:

Working through the knowledge sheet (in class or at home) helps students understand the economic concept behind the conduct of monetary policy. It also explains yet again the technical terms used in the module. The knowledge sheet prepares the students for phase 3 of the module.

2.4 Learning by applying

To round off the module, the teacher can ask the students to take a short knowledge test. This test aims to secure and document a certain knowledge of the topic. In addition to the test, a more challenging question – the 'advanced question' – is available for further training or examination purposes.

An even more demanding question – the 'challenge question' – is also available. Only students who have dealt with the topic in detail should tackle this question. By submitting their answers via the internet, individual students, student groups or entire classes can participate in the iconomix competition.



Information on the iconomix competition is available at www.iconomix.ch/en/contest.

2.5 Summary

In the three phases of the module, economic skills are applied and developed by means of the following learning activities:

1. Learning by doing: Getting familiar with the MOPOS Advanced online simulation tool, applying existing skills, gaining experience and coming up with personal theories on the conduct of monetary policy.
2. Learning through dialogue: Verbalising the experiences from MOPOS Advanced in discussions with fellow students or teachers, considering the experiences of others and developing skills by working on the tasks and the knowledge sheet.
3. Learning by applying: Applying the newly acquired skills in a knowledge test and by answering additional questions, and possibly presenting the gained knowledge to others.



3 ADDITIONAL INFORMATION

In this section, the German, French and Italian versions of the commentary for teachers provide references to textbooks used in Swiss upper secondary schools in the respective language regions. They also list other recommended resources from the same language regions. Please refer to the corresponding language versions.

The basic monetary policy module offers less challenging tasks. In MOPOS Basic, the demand shock and utilisation can be accurately observed up to the current quarter, and the forecasts are displayed as point forecasts rather than interval forecasts.

An additional version of MOPOS is being designed and will go live in 2008. It will be called MOPOS Pro and is primarily aimed at economics students at university level. MOPOS Pro offers the possibility to add further shocks (supply shocks, inflation shocks, exchange rate shocks) and generate specific scenarios (macroeconomic situations). The individual model equations can be displayed and the model parameters can be adjusted.



OVERVIEW OF HOW TO WORK WITH THE MODULE

Phase 1: Learning by doing



65–90 minutes

Steps	Description	Media/material	Time
Introduction to MOPOS	Working through the introductory texts about MOPOS Basic and MOPOS Advanced, the students learn how to use the simulation tool. The teacher can guide the students through the introduction by means of a slide presentation and a set of test questions.	MOPOS Basic and MOPOS Advanced introductory texts Slides Test questions	20–30 minutes
MOPOS Advanced simulation	Either individually or in groups, the students first work through a warm-up round and then through the MOPOS Advanced simulation (goal: 12–20 quarters). Assignment as outlined in task 1 (warm-up) and task 2.	Task 1, Task 2 MOPOS Basic application MOPOS Advanced application	45–60 minutes



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Phase 3: Learning through dialogue



45–60 minutes

Steps	Description	Media/material	Time
Report Review	The students assess their own decisions and compile an accountability report on their terms of office as member of the bank's decision-making body: they present their report in class (task 3).	Knowledge test, sample answers to knowledge test	35–45 minutes
Knowledge sheet	Working through the knowledge sheet, the students develop and improve their skills. Important correlations and key concepts are reviewed.	Knowledge Sheet	10–15 minutes



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Phase 3: Learning by applying



15+ minutes

Steps	Description	Media/material	Time
Knowledge test	The students answer questions from the test chosen by their teacher. The teacher evaluates the answers and/or communicates the solutions.	Knowledge test Sample answers to knowledge test	15–30 minutes
Advanced question	The students answer the advanced question to test or broaden their knowledge. The teacher evaluates the answers and/or communicates the solutions.	Advanced question Sample answers to advanced question	open
Challenge question	Interested classes or students work on the challenge question and submit their answers.	Challenge question and information on the online competition	

Total time required: depending on individual organisation of this phase

