

1 OVERVIEW

1.1 Topic and contents

The topic of this module is the formation of prices, on markets in general and on well-organised and transparent markets (e.g. commodities exchange) in particular. With the aid of a strategy game, students experience at first hand how markets function. The module is a good introductory tool, particularly for this topic. It explains basic concepts, such as price formation on markets, equilibrium, supply and demand, trading profit and market efficiency.

1.2 Type of iconomix module

Online strategy game: The main element of this module is a game played in class. The game is supplemented by an online presentation, which calls for the use of a central computer with internet access and a projector.

1.3 Time required

Two to three lessons, depending on the degree of detail with which the topic is addressed.

1.4 Subjects and level of difficulty

The module is suitable for use in the following subjects: Economics and humanities.

Level of difficulty: Intermediate.

The game can be used in a wide range of contexts. Depending on the level of difficulty, the degree to which the topic is developed after the game can be adapted.



A slightly more demanding iconomix module – Market and price formation II – is also available and deals with similar topics (see note to chapter 3 of this document).

1.5 Learning objectives

The module aims to develop the following economic skills:

Personal skills

Students should be able to:

- assume the role of a trader in a well-organised market;
- propose reasonable purchase and sale prices, in a simple context (where quantity and quality are predetermined).

Social skills

Students should be able to:

- negotiate a price with other traders, in a simple context;
- discuss matters regarding the market and price formation with each other.

Professional skills

Students should be able to:

- explain how a market price is formed in a well-organised market and what an equilibrium price is;
- explain what is meant by trading profit and market efficiency;
- compare their findings from the evaluation of the game with economic theory and observations from everyday life.



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 Documentation

The module consists of this commentary for teachers, the online application (cockpit for teachers) relating to Pitgame, and the following documents:

- Worksheet 1
- Worksheet 2
- Knowledge sheet
- Knowledge test
- Advanced question
- Sample answers



You can order any document from this module by completing the online form at www.iconomix.ch/en/market1.



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: Online strategy game (Pitgame 1)
2. Learning through dialogue: Review and transfer tasks (worksheets 1 & 2), knowledge sheet
3. Learning by applying: Knowledge test, possible supplementary questions



For information on the didactic background, cf. 'Learning with iconomix' at www.iconomix.ch/en/learning. An overview of how to work with the module, including space for notes and individual modifications, can be found at the end of this document.

2.2 Learning by doing

In the first phase, the students play the strategy game – Pitgame 1 – where they act as traders on a commodities exchange. Their job is to purchase a particular commodity at the lowest possible price or sell it at the highest possible price. The teacher oversees the game and keeps a record of the completed trades (or delegates this task).

A minimum of 12 players are required for the game. It is played with cards, which are printed out in advance, and is ideally played in class. The game is supplemented by an online presentation, which calls for the use of a central computer with internet access and a projector.



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

A printer is also required should the teacher wish to print out the playing cards in class. Alternatively, the teacher can generate a game in advance and print out the cards beforehand; this can be done on any computer with internet access. A game can be generated for every possible combination of players and product by defining the players' names and the purchase and sale prices. In this case, the teacher simply has to re-enter the same number of players and the same product before the game, so that they

can use the cards they prepared. It is, however, imperative that the very same details be entered as before; otherwise the names and prices on the playing cards will not match those in the system.



If the number of players is lower than the number of pre-printed cards, remove the card with the lowest maximum purchase price. If necessary, the card with the highest minimum sale price can also be removed. And so on. This is the only way to avoid the equilibrium price being distorted.

The teacher can best familiarise themselves with the game by clicking through the online presentation in advance. This is roughly how the game works:

1. The teacher sets up a new game (determines number of players, selects product, generates game) and prints out the playing cards (either immediately before the game or in advance).
2. The teacher explains the game and the rules using the presentation.
3. The teacher distributes the cards with the buyer/seller roles and the purchase/sale orders.
4. When the game starts, the students try to complete a trade in the designated trading zone, based on the details on their cards.
5. As soon as two people agree a trade, they go to the teacher and hand over their cards. The teacher enters their names and the trade price into the computer. The agreed trades will immediately become visible on the projector screen.
6. Once no more trades are being agreed, the teacher announces the end of the round, redistributes the cards and starts a new round.

Some helpful hints:

- Plan in advance how the classroom should be arranged. Trading should be restricted to one area of the room. The registration area, meanwhile, should be set up in such a way that the players queuing to have their trades recorded do not get in the way of the projector or the other players.



- The teacher may find it more efficient to have a (nimble-fingered) student record the trades.
- To make it easier to identify the buyers and sellers, the two groups could stand on opposite sides of the trading zone at the beginning of each round.
- A minimum of three rounds should be played. A relatively stable price usually comes about quite quickly, at which stage the game can be concluded.
- To allow the equilibrium price to establish itself more quickly, the students should refrain from forming groups or sub-markets. They should also keep an eye on the prices on screen and try to negotiate the best possible price, rather than taking the first offer they get. These are things that the teacher can influence.

2.3 Learning through dialogue

Review

After playing Pitgame, the students examine the evaluation graphs and the table on the projector screen. In a class discussion, they interpret their observations and see how they tie in with the concepts of equilibrium, supply and demand. The teacher oversees the discussion and provides additional information where required. A list of questions, which can be found on worksheet 1, can be distributed in class to help the students prepare for the class discussion (e.g. in group work).



The evaluations can be saved and/or printed and kept for a later lesson.



In order to get the students to participate actively in the discussion, and so that they do not underestimate the importance of the evaluation, present only the graph with the trade curve first. Introduce the graph with the supply and demand curve once the discussion is underway.

Theory and tasks

The knowledge sheet, which can be worked through in class or at home, explains the most important technical terms and concepts. Depending on the students' previous knowledge, it might also serve to recap the most important issues. Worksheet 2 give the students the opportunity to deal with the topic of markets and price formation in greater depth. It also helps

them to apply their newly acquired knowledge to situations in their daily lives. Depending on the class, the teacher can select the most suitable questions from the worksheet.

2.4 Learning by applying

To round off the module, the teacher can have the students take a short knowledge test. This test aims to secure a minimum knowledge of the topic and check how much the students have retained. In addition to the test, a more difficult question – the advanced question – is available for more in-depth study 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 award.



Information on the iconomix award 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: Becoming familiar with the strategy game – Pitgame 1, applying existing skills, gaining experience and coming up with personal theories on markets and price formation.
2. Learning through dialogue: Verbalising the experiences acquired in Pitgame in discussions with fellow students and the teacher, thereby furthering one's own knowledge.
3. Learning by applying: Applying the newly acquired skills in a knowledge test and by answering additional questions, and possibly presenting the knowledge acquired 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.

A similar – more challenging – module, entitled Market and price formation II, deals with other aspects related to this topic, such as the indicator function of price changes, shifts in the supply and demand curve, stock exchange developments, the impact of taxes and state intervention, individual versus aggregated supply and demand curves. The main element is a version of Pitgame which can be played online.



OVERVIEW OF HOW TO WORK WITH THE MODULE

Phase 1: Learning by doing



Steps	Description	Media/material	Time
Introduction	The teacher explains Pitgame – the objective, how the game works and the rules of the game.	Online presentation	5–10 minutes
Strategy game (Pitgame 1)	Under the teacher's supervision, the students play several rounds of Pitgame.	Online presentation Printed playing cards	20–25 minutes
Discussion	The students have the opportunity to give their impressions of the game.		5–10 minutes



OVERVIEW OF HOW TO WORK WITH THE MODULE

Phase 2: Learning through dialogue



40–60
minutes

Steps	Description	Media/material	Time
Evaluation and review	The students examine the evaluation graphs and the table on the projector screen (e.g. in group work) and interpret their observations in a class discussion. The teacher oversees the discussion and provides additional information where required.	Online presentation (evaluation graphs/table) Worksheet 1 Answers for worksheet 1	20–30 minutes
Knowledge sheet Transfer and advanced tasks	The students read the knowledge sheet and work in groups on worksheet 2 (or depending on the class, on certain questions selected by the teacher).	Knowledge sheet Worksheet 2 Answer for worksheet 2	20–30 minutes



OVERVIEW OF HOW TO WORK WITH THE MODULE

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	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	Open-ended
Challenge question	Classes or students interested in answering the challenge question work on it and then submit their answers.	Challenge question Online information on iconomix award	Open-ended

