CLASSROOM EXPERIMENT OF FINANCIAL MARKET PRICE BUBBLE

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Economics is often taught at a level of abstraction that can hinder some students from gaining basic intuition. Experiments and other economic games are used more often. We held some classroom games to help students to get some practical skills in financial market.

During the research were conducted 4 games: two of them with female, another two with male audience.

A paper of Sheryl B. Ball and Charles A. Holt "Classroom Games: Speculation and Bubbles in an Asset Market"[1] was used as an instruction. The main purpose of these game is to make a model of price bubbles and analyze conditions and reasons of their appearance.

Games were held as oral double auction, where each bid after the first must exceed the highest outstanding bid, and each ask after the first must be lower than the lowest outstanding offer.

We limited every game to:

- 5-7 minutes for reading of instructions;
- 3 trial trading periods to explain students in more details what they must do;

Every session consisted of 10 real trading periods with time limit in 2 minutes for each one, during which participants could do unlimited number of deals.

For every game we:

- splited group into 5 teams;
- prepared 15 colored sheets of paper to represent assets (3 assets for one team);
- provided participants with some capital (2000 tokens) to finance trading.

At the end of every period a six-sided dice was thrown for every asset. If side "1" had fallen, an asset would be destroyed, otherwise it was saved and could be sold or bought in the next period.

For participants the main purpose of the game was to earn as much tokens as possible.

There was three ways for traders to earn tokens from assets:

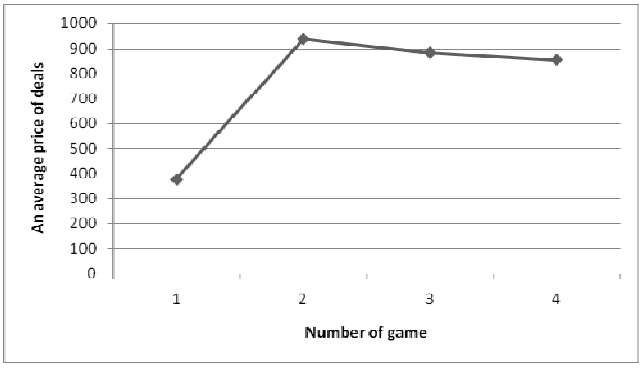
1.Dividends (100 tokens), which are paid for every saved asset at the end of every period.

2.Profits from buying and selling assets.

3.Any asset that still exists at the end of the 10th trading period was redeemed by price of 600 tokens.

The most challenging moment of the game was risk factor, which was determined by throwing of a dice for every asset at the end of periods.

The result was an emergence of price bubble in 3 from 4 games.



Picture1 Average prices of deals in every game

It happened that once there was no bubble because risk factor was very high to make decisions for deals, and students was afraid of deals or did them at very low prices.

During the game every student has his/her own strategy, which was determined by his/her mind, psychology, mood, etc. We distinguished such tendencies as:

1. At the beginning they tried to earn money via profits from buying and selling assets (1-6 periods).

2. Some students sold all assets by 6^{th} period and didn't buy any more because of fear of risk to lose assets and money.

3. To the end of the games number of deals decreased because assets were being destroyed or a price of bid was less 600 tokens (amount of tokens which was given for every saved asset after 10^{th} period).

4. There were some outstanding people which were very active, and didn't want to stop selling/buying assets even at the end of game. The result of their profit depended on fortune of destroying/saving assets.

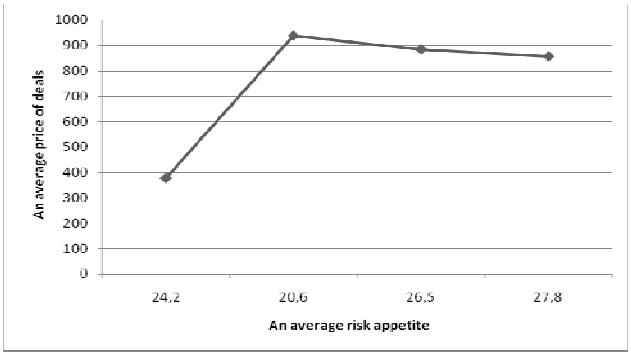
The next hypothesis were offered:

1) Risk appetite determines amount of money which students have at the game's end. Risk appetite was determined by Shubert's test.

2) An average risk appetite among students and a size of price bubble have direct correlation.

Table 1 Dependence of prices of deals from risk appetite

Number of an experiment	1	2	3	4
An average risk appetite	24,2	20,6	26,5	27,8
An average price of deals	377,5	937,4	883,75	856



Picture 2 Dependence of prices of deals from risk appetite

3) Girls have less risk appetite, so that their price bubbles are less.

4) "Price anchor" helps to do a price bubble bigger.

"Price anchor" means that we set an example of prices of bids and asks in instructions during the auction. We had two types of instructions:

1.The 1st one, where we give an example of initial prices of asks and bids, and if someone didn't know what price of bid to stand, it was typically that he/she made references to an example in the instruction.

Bid		*Ask*	
Team	*Price*	*Team*	*Price*
A	758	B	981
C	759	D	979

2.The 2nd type, where there was no example of prices.

Bid		*Ask*	
Team	*Price*	*Team*	*Price*
A	***	B	***
C	***	D	***

During the experiment there was established a dependence of participants' behavior and their gender features. Also hypothesis was not statistically proved. The reasons are:

- small sample;
- influence individual features on game results;
- imperfection of Shubert's test to identify risk appetite;
- possibility of subsidy by one student for another (student with a big risk appetite agreed to do unprofitable deal because of losing tokens);
- possibility of earning tokens by some students because of misunderstanding of game rules by others.

Holding of business games becomes more widespread in modern science and education. It helps to teach students to use their theoretical knowledge in practical case. And it's necessary to improve form of such games.

References:

1. Sheryl B. Ball and Charles A. Holt "Classroom Games: Speculation and Bubbles in an Asset Market" // The Journal of Economic Perspectives, Vol. 12, No. 1 (Winter, 1998), p. 207-218.

2. Канеман Д., Тверски А. Рациональный выбор, ценности и фреймы // Психологический журнал. 2003.Т. 24. № 4. С. 31-42.

3. Борисова А. Мальчик – девочка//Общество: мир людей. [Электронный ресурс]// ГазетаРу. Дата размещения: 25.08.09. URL:www.gazeta.ru/science/2009/08/25_a_3240078.shtml (Дата обращения: 9.12.10)