

SOME NOTES ON A LEARNING EXPERIENCE

This note reflects on some of the experience gained from student participation in an experimental computer-simulated decision-making situation.

The Experimental Setting

On Friday, March 15, approximately 110 students from BA 101, Sections 1 and 3, (Ms. Garcia) participated in a macroeconomic game. The objective of the game was to demonstrate how manipulation of the money supply and government budget of a mythical economy ("Equilibria") can effect the level and rate of change of certain aggregate economic variables. Students played the game in groups of three, each group interacting independently with the computer via a typewriter console. The game ran through ten iterations or "years;" each "year" a new set of national accounts being displayed. The experiment was held in the Management and Behavioral Sciences Laboratory. Three terminals were used in the morning, four in the afternoon. Each group was allocated approximately one-half hour to play the game.

The Model

The model used to represent an economy was typically Keynesian. In addition to the usual demand functions, it contained a Cobb-Douglas production function to represent potential output. Both unemployment and the rate of inflation depend upon the gap between potential and actual output. Inflation is lagged to represent inflationary expectations, the lag operator depends upon the rate of inflation in the previous period--enabling the economy to enter into a slow hyperinflation. The model

incorporated a crude "price-freeze" mechanism which provided an exit from the hyperinflationary situation.

The Participants

The participants were not given a "welfare function" to enable them to measure their success (or failure) in achieving certain objectives. Instead, they were told to use their own ethical judgements and real-world experience to develop what they considered to be "correct" values of the aggregate economic indicators (notably, inflation and unemployment). Some students interpreted this to mean that anything better than the initial values of these variables (Unemployment = 5.5%; Inflation rate = 5.7%) was good. Others held specific goals in mind. It seems useful to classify the participants into three major categories. These are:

"Stop - Go" Policy Makers

Probably 60 - 70% of the students used this approach. It involved periods of enormous expansion of the economy, followed by a period of rapid contraction to control inflation. This group used the "price-freeze" mechanism frequently to control rampant inflation rates of 15 - 30%. Often this policy tool was combined with severe deflationary measures to produce drastic results. It was perhaps noteworthy that this group was almost exclusively preoccupied with the rate of inflation, allowing unemployment levels to reach highs of 10 - 15% in order to control inflation.

"Fine-tuners"

About 10 - 20% of the students adopted a "fine-tuning" approach. By comparing the effects of different policy changes on the equilibrium level of national income, they were able to gauge the size of the multipliers.

Unemployment was gradually reduced until no further improvements could be made and inflation was held at a steady value, thereby using the lag structure to stabilize the rate of inflation. The few groups adopting this approach achieved the best results (3% unemployment, 3% rate of inflation).

"Neutralists"

This group chose to set predetermined percentage increases for all variables, especially the money supply. They usually assumed a value for the multiplier. Then, by using pocket calculators, they increased all policy variables by set percentages and entered these values. Most times it produced undesirable results, causing much argument among the participants.

Participant Reaction

The high rate of attendance (approximately 90% of the enrollment) for this non-compulsory, non-graded exercise, on the last day of the quarter suggests that students were interested in this experiment. No criticism was solicited from the students, thus it is not possible to obtain a fair interpretation of their reactions.

Recommendations

1. Some students suggested that they would like to have played the game early in the quarter (after an introduction to national accounting); then again at the end of the quarter, to see if they could use the knowledge gained during the quarter to improve their performance.
2. The game could be made interactive (between groups of participants) by allowing each group to control only one variable; having them enter values for the variable under their control independently for a few

iterations, then cooperatively, to see if there is any value in mutual cooperation.

3. The model is probably limited to this level of instruction. It contains weaknesses (little dynamic structure, no wage/employment sector) which make it unsuitable for use in more advance courses.