

ECO 301: Money and Banking

Assessment Exercise: Financial Markets and the Macroeconomy

Administered: Final Exam Week, Fall 2016

Course Learning Objectives:

- LO1: Describe how financial markets affect the overall functioning of the economy.
- LO2: Define different measures of money, and analyze a market for money to predict changes in interest rates and the quantity of money in the economy.
- LO3: Predict changes in interest rates using fundamental economic theories including present value calculations, behavior towards risk, and supply and demand models of money and bond markets.

Administration:

The following task was part of students cumulative final exam, which was worth a significant part of students' final grades. Students completed the task independently, and without any aids such as notes, textbook, or electronic devices. The task includes content from multiple points in the semester, including material initially taught in third week and material covered in the final three weeks of class.

Instructional Content:

The assessment tool measures students' ability to use multiple models to evaluate the impact of a shock on both financial markets and the macroeconomy, and use these models to prescribe monetary policy to counteract the effects of the shock.

The task challenges students to use three different models to address different aspects of a macroeconomic shock. In the first problem, students use the aggregate supply / aggregate demand (AS/AD) model to illustrate the macroeconomic impact of a shock. In the second question, students use the supply and demand model for money to illustrate the impact on the interest rate and quantity of money. In the third question, students again make a prediction for the interest rate, but using a model for supply and demand for bonds. This market makes a prediction for the price of bonds, which students must recognize is inversely related to the interest rate. In the final problem, students use two models, the market for money to illustrate the impact of monetary policy, and the AS/AD model to describe the macroeconomic impact.

Assessment Exercise:

Suppose an economy is operating at full employment when a drop in businesses' expectations of future profitability.

1. Describe and illustrate the short-run effect on equilibrium real GDP and the price level.
2. Describe and illustrate the short-run equilibrium effect on the interest rate and the quantity of money.
3. Describe and illustrate the impact on equilibrium interest rate and quantity of corporate bonds.
4. Suggest a monetary policy that can achieve price stability and bring the real GDP back to potential GDP. Describe and illustrate the impact of the policy on the equilibrium quantity of money, interest rate, real GDP, and price level.

Evaluation Rubric

I assign up to three points for each question. One point is awarded for correctly including each of the following aspects of the answer:

- Student chooses correct model and correctly labels it.
- Student manipulates the model correctly and illustrates the original and new equilibrium.
- Student correctly describes the impact illustrated in the model.

With 4 questions and 3 points possible per question, the scores can range between 0 to 12 points. I assign the following performance categories based on total points earned:

- **Exemplary:** 11-12 points
- **Proficient:** 9-10 points
- **Competent:** 7-8 points
- **Underdeveloped:** 5-6 points
- **Unsatisfactory:** 0-4 points

To earn a performance rating of competent, the students must earn more than half of the allotted points. To earn anything above unsatisfactory, the student must have earned more than 1 point in at least one of the problems. The proficient and exemplary categories leave little room for mistakes.

Activities and Pedagogy Prior to Assessment:

I gave my students a lot of in-class exercises and some homework assignments that give them practice using multiple models to address various effects deriving from macroeconomic and financial market shocks. I interleave all models in the class. That is, after introducing a model to the students, we bring up the model again throughout the semester, applying it to new situations as they learn new models. The students get practice seeing how the models are related to one another. They also get practice choosing the appropriate model to answer questions.

I do not give my students any multiple choice questions and very little modeling prompting throughout the semester. The examples from my lecture, in-class exercises, homework assignments, and exam questions all take a similar pedagogical approach as this exercise. I give students a real world scenario and challenge them to pick a graphical model to analyze the situation, draw and label the model, manipulate the model, and use the model results to describe the impact.

Results: The results are given below. There were 28 students who completed this assessment exercise.

Performance	Percentage	Cumulative Percentage
Exemplary	3.6	3.6
Proficient	14.3	17.9
Competent	57.1	75.0
Underdeveloped	17.9	92.9
Unsatisfactory	7.1	100.0

Strengths in Student Learning:

- With only two exceptions, all students picked the correct model for all of the problems. I am quite pleased with this result. I expect that this success is due to the repeated practice the students get throughout the semester of selecting and manipulating multiple models in a single exercise.
- Students gave model-consistent explanations of their answers in nearly every case. I did not detect a single incident of a student giving a written description of the macroeconomic or financial market impacts that were inconsistent with the conclusions of the graphical model.
- Students correctly labeled models in every single case. I attribute this success to repeated practice of using graphical models to answer questions.

Weaknesses in Student Learning:

- While a minority, there were several cases in which students neglected to accompany their answers with intuitive descriptions of their answers. Students that neglected this but otherwise gave a correct analysis with a graphical model earned two points.
- There were a number of cases where students used the correct graphical model, gave intuitive answers based on their results from the model, but shifted the wrong curves or shifted curves in the wrong direction. In these cases, students earned only 1 point for the problem, as their intuitive description, while consistent with their analysis, was not correct. This accounts for a very large majority of points not earned in exercise. This is the primary reason that 25% of students scored at the underdeveloped or unsatisfactory performance levels.

Closing the loop:

I believe the evidence shows that interleaving macroeconomic and financial graphical models throughout the semester leads to a high ability for students to select appropriate models to analyze the macroeconomic and financial aspects of macroeconomic shocks. I plan to give my students more out-of-class practice to address the weakness that many students used the models incorrectly. I plan to give approximately three more graded homework assignments and develop a long set of optional practice problems.

I plan to emphasize in class lecture the intuitive explanations behind the models. While this is always part of my lecture, I rarely write down these intuitive explanations or challenge my students to do so. I plan to adopt a practice of pausing class after completing the graphical analysis to give students time to write down the intuitive explanation, then ask someone in the class to share their explanation.