

Fall 2009

Assessment Task: ECO 120: Global Macroeconomics

General Education Student Learning Outcome: 1.6 Construct and use models to analyze, explain or predict phenomena.

Economics Department Learning Outcome: Use the market demand and supply model to predict changes in currency prices.

Instructional Content and Administration: The content is based on the fundamental model used in economics – demand, supply and equilibrium. The application of the model includes a global focus, as the student must use the model to analyze and predict movements in the exchange rate.

Administration details:

- All instructors teaching ECO 120 in the fall semester will administer the task.
- The identical task will be administered by instructors of the course during the last three weeks of the fall semester or during finals week to individual (not groups of) students during a class period.
- Some credit will be given to students as an incentive for participation.
- Instructors will not return the assignment after it is scored, so that no advantage is gained by students completing the task in a subsequent week.
- All tasks will be scored by the instructor of each class using the uniform rubric; the results and comments will be forwarded to Kathryn Birkeland by Dec. 29, 2009.
- It is recommended that if an instructor teaches ECO 120 only in the spring semester that the task is administered then.

Assessment Task:

1. Consider the Euro or U.S. Dollar market. The current exchange rate is 1.50 U.S. Dollars per Euro (or 0.67 Euros per U.S. Dollar). Graphically illustrate the exchange market and indicate the equilibrium exchange rate. **Clearly label the axes and the curves.**
2. Consider the following scenario: U.S. consumers' preferences change so that they prefer fewer European goods. Use the graph of the exchange market from question 1 to predict the change in the equilibrium exchange rate. **Clearly label the axes and the curves.**
3. Propose a scenario which would cause the U.S. Dollar to depreciate against the Euro. The scenario should be different from a change in U.S. consumers' preferences. Explain and diagram the exchange market to illustrate the depreciation. **Clearly label the axes and the curves and be specific in describing the scenario.**

Rubric for evaluating student performance: Performance level is indicated by the highest **sequential** box checked.

Performance Level	Criteria and Standards
Unsatisfactory	<input type="checkbox"/> For question 1, axes or curves on diagram are not drawn or labeled correctly.
Underdeveloped	<input type="checkbox"/> For question 1, axes of diagram for question 1 are labeled correctly. <input type="checkbox"/> For question 1, demand and supply curves are correctly drawn and labeled. <input type="checkbox"/> For question 1, the equilibrium exchange rate is correctly indicated and labeled.
Competent	<input type="checkbox"/> For question 2, the decreased supply of U.S. Dollars (or decreased demand of Euros) is correctly depicted. <input type="checkbox"/> For question 2, the new equilibrium is indicated to show the appreciation of the dollar (or depreciation of the Euro).
Proficient	<input type="checkbox"/> For question 3, a scenario is explained <u>OR</u> drawn correctly to show a depreciation of Dollar:
Exemplary	<input type="checkbox"/> For question 3, a scenario is explained <u>AND</u> drawn correctly to show a depreciation of Dollar:

Assessment Task Results for James Murray's sections of ECO 120

Actions taken prior to assessment: This was the second year the ECO 120 classes used this same assessment task, but as a first year faculty member, this was the first time I administered it. The ECO 120 instructors, including myself, met before Fall 2009 semester began. We discussed how outcomes from many other classes in the previous year were rather low, discussed some teaching strategies to encourage learning on this subject, and agreed to administer the same assessment task.

Teaching strategies suggested in this meeting that I followed throughout the semester included:

- 1) Showing students two concurrent currency markets when discussing supply and demand for a pair of currencies.
- 2) Teaching exchange rate markets immediately after Supply and Demand at the beginning of the semester, then frequently returning to the subject throughout the semester with applications to the other topics in the course.
- 3) Instruction should encourage correct labeling of axis.
- 4) Instruction should include multiple types of exercises – both cooperative learning and individual exercises.

I followed these suggestions and administered the task as part of the final exam. In order to not influence the results, I did **not** emphasize to my students to study exchange rates over any other topic.

Results: The results are tabulated below:

Performance Level	Frequency	Cumulative Frequency
Unsatisfactory	64.8%	64.8%
Underdeveloped	18.5%	83.3%
Competent	1.9%	85.2%
Proficient	3.7%	88.9%
Exemplary	11.1%	100%

I was disappointed in the overall performance level, and I recognize I must make changes to improve student learning on this particular subject. About 83% of the students performed at the underdeveloped or unsatisfactory level. The most popular mistake the students made was to incorrectly label axes and curves.

Closing the loop: Throughout the semester, I emphasized correctly labeling axes and curves, but this was still the most popular mistake students made on the assessment tasks. I believe this happened because too much of the students' practice involved multiple choice exam questions and Aplia homework and practice problems, both of which regularly provide students with a correctly labeled market when asking specific questions on shifts in curves. The other type of exercises where students were asked to analyze markets without being given the graph with labels was in class exercises. In this case, one student out of the group could provide the right starting point, or the students could find the appropriate graph in the class notes or textbook. From this point on I will be giving the students more individual practice beginning a modeling

problem – quizzing them on what model to use, what labels go on what axis, and what the curves are. I will do this in individual short quizzes, short answer problems on exams, and quick 2 minute individual in-class exercises.

Furthermore, I will not only emphasize correctly labeling graphs, but model building strategy in general. After discussion with other ECO 120 faculty, we believe that students simply memorize graphs, memorize factors that shift graphs, but do not gain the intuition for why we chose to build a model in such a way to answer specific questions. Principles of macroeconomics courses use a large number of different graphical models, yet at a low cognitive level, each look relatively similar to each other, i.e. many look like a big ‘X’. In the future, as I introduce new models, I will ask the students for their input on what we should put on which axes and why, and what shape various curves should take and why. The hope is that when students have an intuition for model building strategy, they will be able to correctly label graphs without relying on memorization (or lack thereof).

Spring 2009

Assessment Task: ECO 120: Global Macroeconomics

General Education Student Learning Outcome: 1.6 Construct and use models to analyze, explain or predict phenomena.

Economics Department Learning Outcome: Use the market demand and supply model to predict changes in currency prices.

Instructional Content and Administration: The content is based on the fundamental model used in economics – demand, supply and equilibrium. The application of the model includes a global focus, as the student must use the model to analyze and predict movements in the exchange rate.

Administration details:

- All instructors teaching ECO 120 in the fall semester will administer the task.
- The identical task will be administered by instructors of the course during the last three weeks of the fall semester or during finals week to individual (not groups of) students during a class period.
- Some credit will be given to students as an incentive for participation.
- Instructors will not return the assignment after it is scored, so that no advantage is gained by students completing the task in a subsequent week.
- All tasks will be scored by the instructor of each class using the uniform rubric; the results and comments will be forwarded to Betsy Knowles by May 12, 2010.
- It is recommended that if an instructor teaches ECO 120 only in the spring semester that the task is administered then.

Assessment Task:

1. Consider the Euro or U.S. Dollar market. The current exchange rate is 1.50 U.S. Dollars per Euro (or 0.67 Euros per U.S. Dollar). Graphically illustrate the exchange market and indicate the equilibrium exchange rate. **Clearly label the axes and the curves.**
2. Consider the following scenario: U.S. consumers' preferences change so that they prefer fewer European goods. Use the graph of the exchange market from question 1 to predict the change in the equilibrium exchange rate. **Clearly label the axes and the curves.**
3. Propose a scenario which would cause the U.S. Dollar to depreciate against the Euro. The scenario should be different from a change in U.S. consumers' preferences. Explain and diagram the exchange market to illustrate the depreciation. **Clearly label the axes and the curves and be specific in describing the scenario.**

Rubric for evaluating student performance: Performance level is indicated by the highest **sequential** box checked.

Performance Level	Criteria and Standards
Unsatisfactory	<input type="checkbox"/> For question 1, axes or curves on diagram are not drawn or labeled correctly.
Underdeveloped	<input type="checkbox"/> For question 1, axes of diagram for question 1 are labeled correctly. <input type="checkbox"/> For question 1, demand and supply curves are correctly drawn and labeled. <input type="checkbox"/> For question 1, the equilibrium exchange rate is correctly indicated and labeled.
Competent	<input type="checkbox"/> For question 2, the decreased supply of U.S. Dollars (or decreased demand of Euros) is correctly depicted. <input type="checkbox"/> For question 2, the new equilibrium is indicated to show the appreciation of the dollar (or depreciation of the Euro).
Proficient	<input type="checkbox"/> For question 3, a scenario is explained OR drawn correctly to show a depreciation of Dollar:
Exemplary	<input type="checkbox"/> For question 3, a scenario is explained AND drawn correctly to show a depreciation of Dollar:

Assessment Task Results for James Murray's sections of ECO 120

Previous Closing of Loop (Quoted from results from identical assessment measured in Fall 2009): “Throughout the semester, I emphasized correctly labeling axes and curves, but this was still the most popular mistake students made on the assessment tasks. I believe this happened because too much of the students’ practice involved multiple choice exam questions and Aplia homework and practice problems, both of which regularly provide students with a correctly labeled market when asking specific questions on shifts in curves. The other type of exercises where students were asked to analyze markets without being given the graph with labels was in class exercises. In this case, one student out of the group could provide the right starting point, or the students could find the appropriate graph in the class notes or textbook. From this point on I will be giving the students more individual practice beginning a modeling problem – quizzing them on what model to use, what labels go on what axis, and what the curves are. I will do this in individual short quizzes, short answer problems on exams, and quick 2 minute individual in-class exercises.

“Furthermore, I will not only emphasize correctly labeling graphs, but model building strategy in general. After discussion with other ECO 120 faculty, we believe that students simply memorize graphs, memorize factors that shift graphs, but do not gain the intuition for why we chose to build a model in such a way to answer specific questions. Principles of macroeconomics courses use a large number of different graphical models, yet at a low cognitive level, each look relatively similar to each other, i.e. many look like a big ‘X’. In the future, as I introduce new models, I will ask the students for their input on what we should put on which axes and why, and what shape various curves should take and why. The hope is that when students have an intuition for model building strategy, they will be able to correctly label graphs without relying on memorization (or lack thereof).”

Actions taken prior to assessment: In every class period throughout the semester and with every topic I consciously thought about and acted on emphasizing modeling strategy. I taught that one of the most important things a student takes away from ECO 120 is a new ability to construct models to answer questions. With every model I emphasized and quizzed the students on what labels go where *and why*, what concepts are we modeling and how should these relationships be drawn *and why*.

I also re-introduced old models to answer new questions along with new concepts and new models in some in-class exercises during the semester. I did this in order to keep the use of previously learned models fresh in their head, and give them practice using more than one model to address a similar issue.

Finally, for all exams during Spring 2010, I included short answer, problem solving questions, where all but one involved using an economic model and shifting curves to answer questions. I intended for this to help emphasize the importance of being able to start from a blank piece of paper and recall, draw and label an appropriate model to answer the given questions.

I administered the task as part of the final exam. In order to not influence the results, I did **not** emphasize to my students to study exchange rates over any other topic.

Results: The results from Spring 2010 are tabulated below, with results from Fall 2009 repeated for comparison:

Performance Level	Spring 2010		Fall 2009	
	Frequency	Cummulative	Frequency	Cumulative
Unsatisfactory	42.5%	42.5%	64.8%	64.8%
Underdeveloped	12.5%	55.0%	18.5%	83.3%
Competent	5.0%	60.0%	1.9%	85.2%
Proficient	7.5%	67.5%	3.7%	88.9%
Exemplary	32.5%	100.0%	11.1%	100.0%

I was extremely happy about the marked improvement from the Fall 2009 semester. The results were very bi-modal – the most popular outcomes were the lowest, unsatisfactory, and the highest, exemplary. There were still many students who were unable to correctly remember the model, but most of those that were were able to use the model correctly through the next two assessment questions. Still the proportion of students able to correctly draw and apply the model in Spring 2010 was significantly greater.

Closing the loop: I find my teaching strategy for ECO 120, emphasizing model building and use, was very effective and will continue doing this. In addition, I expect to give students more individual practice in homework and quizzes using the foreign exchange model.

ECO 120: Global Macroeconomics
Assessment Exercise: Currency Markets
Date administered: December 17, Fall 2010.

General Education Learning Objective: Students will be able to construct or use models to analyze, explain or predict phenomena.

Course Specific Learning Objective: Apply the supply and demand model to predict quantity and price outcomes of a number of different markets..

Instructional Content and Administration: The content is based on the fundamental model used in economics: demand, supply, and equilibrium. The application of the model includes a global focus, as the student must use the model to analyze and predict movements in the exchange rate. The impact of exchange rates on international trade is then considered.

Administration details:

- All instructors teaching ECO 120 in the fall semester will administer the task.
- The identical task will be administered by instructors of the course during the last three weeks of the fall semester or during finals week to individual (not groups of) students during a class or exam period.
- Some credit will be given to students as an incentive for participation.
- Instructors will not return the assignment after it is scored, so that no advantage is gained by students completing the task in a subsequent week.
- All tasks will be scored by the instructor of each class using the uniform rubric; the results and comments will be forwarded to Kathryn Birkeland by 8 a.m. Dec. 30, 2010.
- It is recommended that if an instructor teaches ECO 120 only in the spring semester that the task is administered then.

ECO 120: Global Macroeconomics
Assessment Exercise: Currency Markets
Date administered: December 17, Fall 2010.

Assessment Task:

1. Consider the Euro or U.S. Dollar market and suppose the current equilibrium exchange rate is 1.50 U.S. Dollars per Euro (or 0.67 Euros per U.S. Dollar).
 - (a) Graphically illustrate the exchange market and indicate the equilibrium exchange rate. **Clearly label the axes and the curves.**
 - (b) Consider the following scenario: U.S. consumers' preferences change so that they prefer fewer European goods. Use the graph of the exchange market from question 1a to predict the change in the equilibrium exchange rate. **Clearly label the axes and the curves.**

2. Suppose the Mexican Peso appreciates against the currencies of its major trading partners. Holding everything else constant, what do you expect to happen to Mexico's net exports over time and why? What is the impact on Mexico's aggregate demand from this change in net exports?

Rubric for Evaluation: Performance level is indicated by highest *sequential* box checked.

Unsatisfactory	<input type="checkbox"/> For question 1a, axes or curves on diagram are not drawn or labeled correctly.
Underdeveloped	<input type="checkbox"/> For question 1a, axes of diagram for question 1 are labeled correctly. <input type="checkbox"/> For question 1a, demand and supply curves are correctly drawn and labeled. <input type="checkbox"/> For question 1a, the equilibrium exchange rate is correctly indicated and labeled.
Competent	<input type="checkbox"/> For question 1b, the decreased supply of U.S. Dollars (or decreased demand of Euros) is correctly depicted. <input type="checkbox"/> For question 1b, the new equilibrium is indicated to show the appreciation of the dollar (or depreciation of the Euro).
Proficient	<input type="checkbox"/> For question 2, net exports OR aggregate demand are identified as declining.
Exemplary	<input type="checkbox"/> For question 2, net exports AND aggregate demand are identified as declining. <input type="checkbox"/> For question 2, the explanation identifies that the change in the exchange rate affects the price of the goods.

ECO 120: Global Macroeconomics
Assessment Exercise: Currency Markets
Date administered: December 17, Fall 2010.

Background: The subject of this assessment task, exchange rates and supply and demand for currencies, is one that students find most confusing. There are two likely reasons for this: (1) exchange rates can always be written two different ways but you must operate with them differently depending on this choice, and (2) supply curves are not traditional supply curves, rather they are disguised demand curves for other currencies. I have had success teaching students these concepts during the semester, but unless it is practiced regularly throughout the semester, it is easy to trip up on the same mistakes when it comes to the final exam.

Teaching Methods Prior to Assessment: I taught a unit on exchange rates and currency markets early in the semester and repeatedly returned to the topic throughout the semester. **One major change I made in my teaching** this semester is to make most assignments, quizzes, and exams cumulative. I got this idea from reading Chapter 1 of Ambrose et. al. (2010) and a short paper by Rohrer and Pashle (2010). These authors suggest the best way to have something become part of long-term memory is to have regular practice on it, over an extended period of time. Throughout the semester, with many different topics, I brought up the issue of exchange rates and related it to the topic at hand. When students did problem solving questions on homework, quizzes, and exams for these topics, there were often problems that included currency markets.

A second major change I made in my teaching this semester was to discontinue multiple choice tests and online homework. Instead, students were always given short question / problem solving questions like those in this exercise, and given a blank space to do their work. The drawback with multiple choice questions and online homework exercises is most often the structure requires problems that are already started for students, and students merely have to alter a model that is shown to them. This semester, the students had much more practice developing appropriate models from scratch in order to address economic questions.

Results: There were 43 out of 44 total students that completed this assessment exercise. The percentage of students falling into each performance category (%) and cumulative percentages (Cum %) are given below. The table below also includes results from a very similar assessment exercise I administered in the previous two semesters. The results show student learning continues to improve each semester. The percentage of students reaching performance level competent or above was about 61%, compared to 45% in Spring 2010 and only about 17% in Fall 2009.

Performance	Fall 2010		Spring 2010		Fall 2009	
	%	Cum %	%	Cum %	%	Cum %
Exemplary	53.5	53.5	32.5	32.5	11.1	11.1
Proficient	4.7	58.1	7.5	40.0	3.7	14.8
Competent	2.3	60.5	5.0	45.0	1.9	16.7
Underdeveloped	34.9	95.3	12.5	57.5	18.5	35.2
Unsatisfactory	4.7	100.0	42.5	100.0	64.8	100.0

Closing the loop: I find my teaching strategies have very effectively improved student learning and retention (this topic was first taught at the beginning of the semester, but assessed in the final exam). I will continue making all exams, quizzes, and homework assignments cumulative and continue giving students more practice answering problem solving / application questions.

References

- AMBROSE, S. A., M. W. BRIDGES, M. DIPIETRO, M. C. LOVETT, AND M. K. NORMAN (2010): How Learning Works: Seven Research-Based Principles for Smart Teaching. Jossey-Bass, San Francisco.
- ROHRER, D., AND H. PASHLE (2010): "Recent Research on Human Learning Challenges Conventional Instructional Strategies," Educational Researcher, 39, 406–412.

ECO 120: Global Macroeconomics
Assessment Exercise: Currency Markets
Administered: Final Exam Week, Spring 2011.

General Education Learning Objective: Students will be able to construct or use models to analyze, explain or predict phenomena.

Course Specific Learning Objective: Apply the supply and demand model to predict quantity and price outcomes of a number of different markets..

Instructional Content and Administration: The content is based on the fundamental model used in economics: demand, supply, and equilibrium. The application of the model includes a global focus, as the student must use the model to analyze and predict movements in the exchange rate. The impact of exchange rates on international trade is then considered.

Administration details:

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- It is recommended that if an instructor teaches ECO 120 only in the spring semester that the task is administered then.

ECO 120: Global Macroeconomics
Assessment Exercise: Currency Markets
Administered: Final Exam Week, Spring 2011.

Assessment Task:

1. Consider the Euro or U.S. Dollar market and suppose the current equilibrium exchange rate is 1.50 U.S. Dollars per Euro (or 0.67 Euros per U.S. Dollar).
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2. Suppose the Mexican Peso appreciates against the currencies of its major trading partners. Holding everything else constant, what do you expect to happen to Mexico's net exports over time and why? What is the impact on Mexico's aggregate demand from this change in net exports?

Rubric for Evaluation: Performance level is indicated by highest *sequential* box checked.

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Underdeveloped	<input type="checkbox"/> For question 1a, axes of diagram for question 1 are labeled correctly. <input type="checkbox"/> For question 1a, demand and supply curves are correctly drawn and labeled. <input type="checkbox"/> For question 1a, the equilibrium exchange rate is correctly indicated and labeled.
Competent	<input type="checkbox"/> For question 1b, the decreased supply of U.S. Dollars (or decreased demand of Euros) is correctly depicted. <input type="checkbox"/> For question 1b, the new equilibrium is indicated to show the appreciation of the dollar (or depreciation of the Euro).
Proficient	<input type="checkbox"/> For question 2, net exports OR aggregate demand are identified as declining.
Exemplary	<input type="checkbox"/> For question 2, net exports AND aggregate demand are identified as declining. <input type="checkbox"/> For question 2, the explanation identifies that the change in the exchange rate affects the price of the goods.

ECO 120: Global Macroeconomics
Assessment Exercise: Currency Markets
Administered: Final Exam Week, Spring 2011.

Background: The subject of this assessment task, exchange rates and supply and demand for currencies, is one that students find most confusing. There are two likely reasons for this: (1) exchange rates can always be written two different ways but you must operate with them differently depending on this choice, and (2) supply curves are not traditional supply curves, rather they are disguised demand curves for other currencies. I have had success teaching students these concepts during the semester, but unless it is practiced regularly throughout the semester, it is easy to trip up on the same mistakes when it comes to the final exam.

Previous Iterations of the Loop: This is the fourth subsequent semester I have administered an assessment task similar to this one (only a small change was made in Fall 2010). In my first semester student performance was rather low, but I made a number of changes to my teaching and I have documented improvement in student learning over three semesters. I have made rather large changes to my class over the last two years. I stopped giving multiple choice questions and I have been giving the students much more individual and group practice doing problem solving questions / short answer questions involving graphical modeling. I have documented how these changes have led to improved student performance not only in this task, but also for other economic applications that involve graphical modeling.

Teaching Methods Prior to Assessment: As I did last semester, I taught a unit on exchange rates and currency markets early in the semester and repeatedly returned to the topic throughout the semester. I also continued to make most assignments, quizzes, and exams cumulative. Finally I gave my students lots of practice in homework assignments and in-class exercises with problem solving / short-answer questions that involved graphical modeling. These problems gave students a real-world scenario, required them to select and manipulate an appropriate graphical model, and use the model to describe the implications once again in the real-world setting. Unlike many multiple choice questions that give students a model, my questions did not prime the students with the appropriate model or appropriate labels for the model.

Results: There were 62 students that completed this assessment exercise. The percentage of students falling into each performance category (%) and cumulative percentages (Cum %) are given below. The table below also includes results from a very similar assessment exercise I administered in the previous three semesters. The results show student learning continues to improve each semester. This semester, most of the class (79.1%) performed in the 'Competent' category or higher.

Performance	Spring 2011		Fall 2010		Spring 2010		Fall 2009	
	%	Cum %	%	Cum %	%	Cum %	%	Cum %
Exemplary	71.0	71.0	53.5	53.5	32.5	32.5	11.1	11.1
Proficient	71.0	71.0	4.7	58.1	7.5	40.0	3.7	14.8
Competent	8.1	79.1	2.3	60.5	5.0	45.0	1.9	16.7
Underdeveloped	16.1	95.2	34.9	95.3	12.5	57.5	18.5	35.2
Unsatisfactory	4.8	100.0	4.7	100.0	42.5	100.0	64.8	100.0

Closing the loop: I find my teaching strategies have very effectively improved student learning and retention (this topic was first taught at the beginning of the semester, but assessed in the final exam). I will continue making all exams, quizzes, and homework assignments cumulative and continue giving students a lot of practice answering problem solving / application questions. Having documented such high performance on this assessment task, I do not plan on administering this same task again in my face-to-face class, but will move on to challenging material that integrates graphical modeling with discussion of current government policy that is popular in mainstream media.