Food and Resource Economics 306: Answer Sheet
Midterm Examination – Fall Term 2011

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Oct 24, 2011
Total time: 80 minutes

I. **Multiple Choice**: Choose which of the following statements are true and circle (write down) that letter. The number of true statements is between one and four. 1.5 marks are given for each letter correctly circled (written down) or correctly left uncircled (not written down). Do FOUR (4) of the following five questions. Indicate which questions you are answering and which one not. Total marks = 4*5*1.5 = 30. Total suggested time: 30 minutes.

Correct Answers:

1. Farm product price trends and cycles — E.
   a. Price cycles are observed for virtually all food commodities.
   b. The key source of sustained real price declines in agriculture is abundant domestic subsidies.
   c. Agricultural price cycles and declining real trend prices cannot be observed together.
   d. Declining real agricultural prices within Canada cannot be stopped by Canadian government policy action.
   e. Stopping all agricultural research and extension activities around the world can replace the downward trend in agricultural prices with an upward trend.

2. Applying the farm retail price model — A, C, D.
   a. The demand curve at retail is calculated by summing horizontally the willingness to pay of all consumers of that product at each price level.
   b. The demand curve at the farm level is found by taking the retail demand curve and subtracting the costs of transportation from farm to processor.
   c. A reduction in competition at the retail level will lower farm prices.
   d. An increase in the productivity of farmers will lower consumer prices.
   e. An increase in government-regulated food safety standards that increases food processing costs with no increase in demand will raise farm prices for the raw material food product.

3. Constructing and using the excess supply and demand model — A, B, C.
   a. The intercept of the excess supply curve is the price point on the domestic supply curve that is equal to the domestic demand curve for the country that is lower cost.
   b. The excess demand curve is more price-elastic than the domestic market demand curve in the importing country.
   c. If the price elasticity of the excess demand curve facing the Canadian Wheat Board is large in absolute value, this means the CWB has little power to set its own price.
   d. A firm that has an exaggerated view of its true market power is equivalent to the firm believing its excess demand curve is more elastic than it is.
   e. An increase in production (rightward shift in domestic supply) in the importing country shifts the excess demand curve to the right.

4. Market Integration — A, B, C, D.
   a. If prices over time in two different markets for the same product are highly correlated, those markets are said to be integrated.
   b. Increased market integration means permitting price differences to be reduced by trading.
   c. Integration of food markets is valuable to ensure that food products will move from areas of surplus production to food deficit or shortage areas.
   d. Increased market integration is accomplished by relaxing government regulations that limit arbitrage and trade between regions.
   e. The topic of market integration does not extend to the efficiency of storage.

5. Miscellaneous topics — A, C.

a. When a country/firm with market power overestimates the steepness of the demand curve it faces it will overprice its product.
b. As the share of a raw material's cost in total revenue rises, the better able a firm will be to compete with other firms who pay less for that raw material.
c. A decrease in storage costs will raise the harvest price received by farmers.
d. CR4 stands for the percentage of profits in an industry accounted by the four largest firms.
e. The percentage mark-up for a profit-maximizing firm (Lerner coefficient) should equal the (negative of the) elasticity of demand facing that firm.

II. True, False, Uncertain: Indicate whether you judge the following statements to be True, False, or Uncertain. In each case explain and defend your answer in several sentences, using supply and demand diagrams when they are appropriate. This explanation will determine your grade for the question. Answer FOUR (4) of the following five (5) questions. The marks per question are 10. Total suggested time for this section @ 10 minutes per question is 40 minutes.

1. If raw food commodity prices start falling a profit-maximizing food processor or manufacturer with market power will maintain its selling prices to increase its profits.
   False. A decline in the price of the food processor's raw material will shift the firm's MC curve down. For a firm with market power, the lower MC curve will intersect its MR curve at a point lower on that MR curve, or at an increased quantity. When the firm sells an increased quantity, it must move down its demand curve, meaning a lower price. If it failed to increase its production or lower its price, it would be failing to maximize its profits.

2. If production increased this year in a large rice importer country (such as Indonesia) this would lower world prices and increase the volume of trade because the excess demand curve in the world market would have shifted to the left.
   False/Uncertain. If there was a large rice crop in a large importer country, this would shift its domestic supply curve to the right. This in turn would intersect its domestic demand curve at a lower price, meaning that the excess demand curve would shift down. A shift down in the excess demand curve would intersect the excess supply curve at a lower price and a lower quantity (the excess demand curve would have slid down the excess supply curve). The result is indeed a lower world market price but a reduced (not increased) trade volume.

3. The rural-urban seasonal price model shows that imports will only briefly penetrate rural markets due to the high level of transport costs from the port to rural areas.
   False/Uncertain. This model does show that imports will penetrate rural markets for only a brief period during the year, at the point during the storage period when the price of the stored crop would rise high enough to exceed the import price *plus* the transportation cost from the urban area (port) to the rural area. So this result, imports moving to rural areas, could occur even if transport costs were low or even zero if the cost of the stored crop rose high enough due to storage costs. So it does not depend on transport costs alone or their size alone.

4. In a market where the food processor has market power in selling his/her product, the addition of a retailer monopoly will have no effect on the price of that product because it is already elevated due to the existing market power of the processor.
   False. The farm-retail price model as it is initially drawn assumes competition at all stages in the food chain. If there is a food processor that has market power, this will increase the farm-retail price margin due to the existence of the monopolist's higher price/markup. The diagram implicitly assumes all other components of the food chain are competitive. If a monopoly develops at the retail level, that will increase the processor to retail margin, and shift the retail supply curve up further. This will increase the retail price of the commodity further, higher than if there was only a processor with market power. Therefore, the answer is false.

5. Interest rates are likely to increase soon, resulting in an increase in consumer prices in the non-harvest (storage) season, and an increase in farm prices in the harvest season.
   False. Interest costs are one component of the cost of storage, and if interest rates increase, the cost of storage increases. If the cost of storage increases, then the supply curve to the storage or nonharvest season will shift up. The new higher supply curve will intersect the non-harvest season demand curve at a higher price and a lower quantity. But this means that less product will be purchased in the harvest season by storage firms, pushing down the harvest period price to farmers. Alternatively, when you subtract the now-higher storage costs from the new higher non-harvest season price, the resulting price at the harvest period is lower. So although the statement is correct that prices in the storage season will increase, prices in the harvest season will fall.