

Exam 1 2019 Int Econ

60 points total

**Budget constraints: 40 points total**

**Andrea 25 points total**

Andrea earns 30 euro/day by producing and selling six (6) coppe of gelato ( $G$ ) which he sells for 5 euro/coppe ( $P_G$ ). He spends all of this income on either trippa ( $T$ ) or vino from Carmignano ( $C$ ). The prices he faces for these items are 10 euro/piatto ( $P_T$ ) (for trippa), and 15 euro/ bottiglia ( $P_C$ ) (for Carmignano vino). His expenditures and earnings are displayed in the following chart:

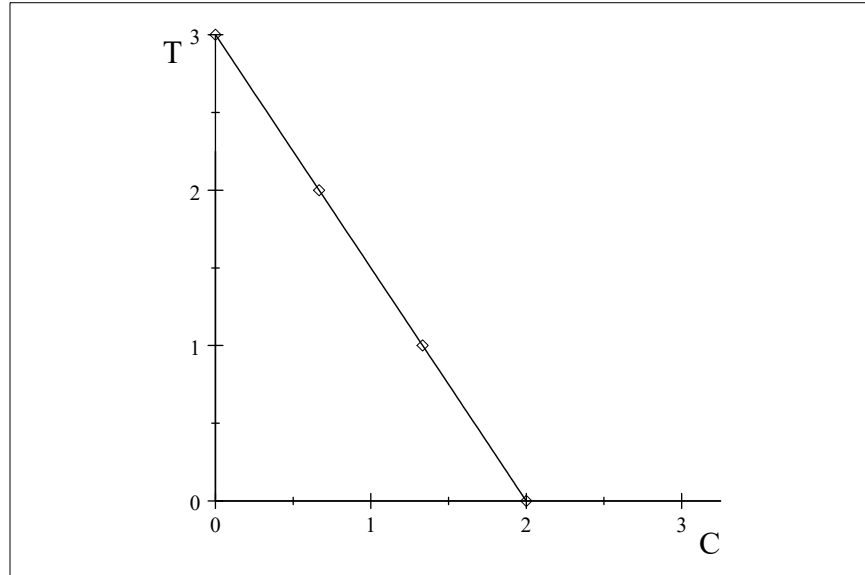
	$Q = 1$	$Q = 2$	$Q = 3$	$Q = 4$	$Q = 5$	$Q = 6$	Exp
Trippa ( $T$ ); $P_T = 10$	10	20	30				$P_T \times T$
Vino ( $C$ ) : $P_C = 15$	15	30					$P_C \times V$
Gelato ( $G$ ) : $P_G = 5$	5	10	15	20	25	30	$P_G \times G$

Prices are assumed exogenous to Andrea. Also assume he takes as exogenous that he produces six (6) coppe each day, meaning he views his income from making and selling gelato as given, i.e. exogenous, at 30 euro/day.

Five (5) points each.

1. Assume Andrea can purchase fractions of vino, e.g.,  $\frac{1}{3}$ , but only integer amounts of trippa. What are the feasible pairs  $(C, T)$  he could afford? Put these pairs in the form of ordered pairs  $(C_A, T_A)$ , e.g.  $(2, 0)$ .

2. With trippa ( $T$ ) measured on the vertical axis and Carmignano vino ( $C$ ) on the horizontal axis, graph all these pairs.

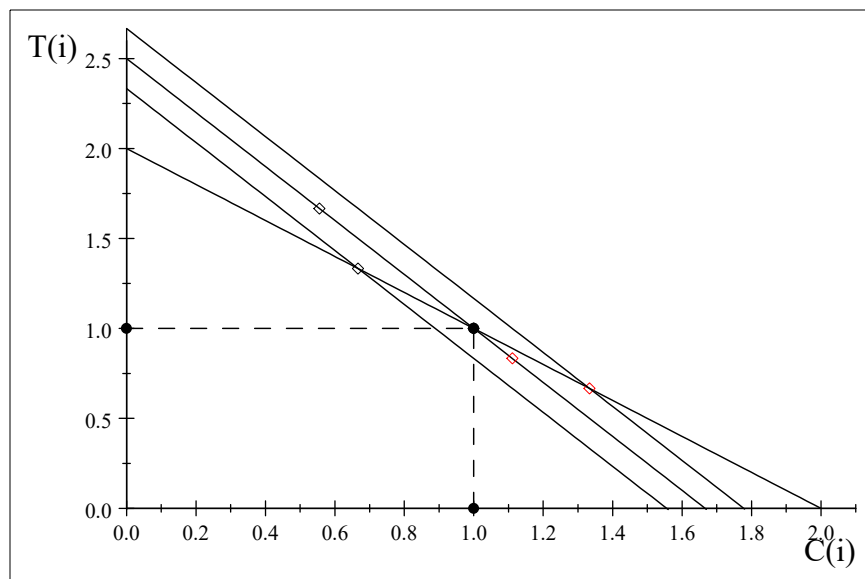


3. What is the relative price of  $C$ , i.e., how many units of  $T$  does it take to get one unit of  $C$ ?

4. Now imagine Andrea can purchase  $T$  and  $C$  in as fine an increment as imaginable. That is, he could purchase, say,  $\frac{18}{1000}$  units of  $T$ , or of  $C$ , or even  $\frac{181}{10000}$ . Let  $G$  measure coppe di gelati, and  $P_G$  measure the Euro price of a coppa; Let  $P_C$  and  $P_T$  measure the Euro price of Carmignano vino and trippa, respectively. Again, assume Andrea always produces six (6) coppe di gelati. What is the equation in slope-intercept form (with  $T$  on the left-hand-side of the equation) that expresses the budget constraint (in symbols) for Andrea?

5. Suppose there is inflation, that is, suppose  $P_G$ ,  $P_T$ , and  $P_C$  all increase by the same percentage over the course of a year. What happens to the slope and the intercept of the budget constraint?

Alex and Bobby 15 points total



Andy black pts, Bobby red pts

Consider the above figure that depicts the two POW's, Andy and Bob. They each receive an endowment of one (1) unit of coffee and one (1) unit of tea. The five points depicted on the graph are:

$$\overbrace{\left(\frac{5}{9}, \frac{5}{3}\right)}^{\#1}; \overbrace{\left(\frac{6}{9}, \frac{12}{9}\right)}^{\#2}; \overbrace{(1, 1)}^{\#3}; \overbrace{\left(\frac{10}{9}, \frac{5}{6}\right)}^{\#4}; \overbrace{\left(\frac{12}{9}, \frac{6}{9}\right)}^{\#5}.$$

The four downward-sloping lines are budget constraints. We label them according to the height of their vertical intercepts: Line A has the lowest vertical intercept, line B the second lowest, line C the third lowest, and line D the highest. Line A has a slope of minus 1 (-1), while lines B, C, and D have slopes of minus one-and-a-half (-1.5).

The scenario depicted in this figure is a comparison of autarky and free trade. Points #1 and #2 are most-preferred pairs of coffee and tea for Andy while points #4 and #5 are most preferred pairs of coffee and tea for Bob.

5 points each for the following 3 questions.

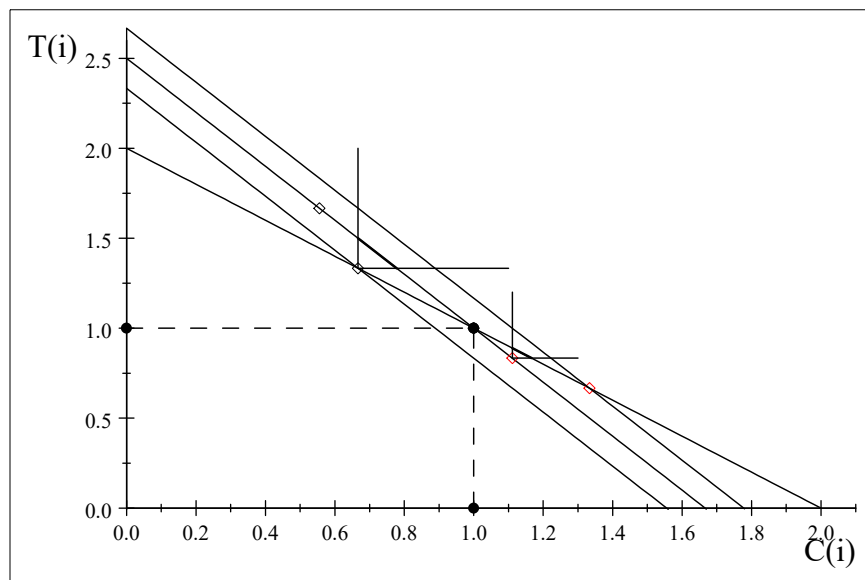
1. Explain why line A must represent the autarkic budget constraint for both Andy and Bob.

2. Now consider the case in which Andy and Bob each receive their endowment of (1, 1), but their camp trades with the French camp, and the free-trade relative price of coffee is 1.5, that is,  $p_{FT} = 1.5$ . Explain why line C represents the budget constraint for both Andy and Bob.

3. Point #1  $\left(\frac{5}{9}, \frac{5}{3}\right)$  and point #4  $\left(\frac{10}{9}, \frac{5}{6}\right)$  represent the most-preferred choices of Andy and Bob, respectively, in this free-trade scenario in which they both get the endowment of (1, 1) and trade takes place with arbitrage and an equilibrium free-trade price of 1.5. Make the argument that in this

scenario Andy is better off than he was in autarky and Bob is worse off.

Answer



Andy black pts, Bobby red pts

## Money and nominal prices 5 points total

Consider an endowment economy in which there are two commodities,  $C$  and  $T$ . The relative price  $\frac{P_C}{P_T}$  is found by our usual methods, and turns out to be one (1), i.e.,

$$\frac{P_C}{P_T} = 1.$$

This economy is not a barter economy, but rather all transactions are carried out with money. The demand for money in this economy is given as

$$L^D = kP_I \cdot Y.$$

We assume  $Y = 1$ ,  $k = \frac{1}{2}$ , and  $P_I = P_I$  is a **price index** expressed as

$$P_I = \frac{1}{4}P_C + \frac{3}{4}P_T.$$

Hence, money demand for this economy is given as

$$\begin{aligned} L^D &= \overbrace{\left(\frac{1}{2}\right)}^k \cdot \overbrace{\left(\frac{1}{4}P_C + \frac{3}{4}P_T\right)}^{P_I} \cdot \overbrace{(1)}^Y \\ &= \frac{1}{2}P_I \\ &= \frac{1}{2}\left(\frac{1}{4}P_C + \frac{3}{4}P_T\right). \end{aligned}$$

Money supply,  $\bar{L}^s$ , is exogenous and equal to three (3).

1. 2 points. What is the value of  $P_I$ ?

2. 3 points. What are the values of  $P_C$  and  $P_T$ ?

## Travels and other: 15 points total, 5 points each question

Do any three (3) of the following.

1. Rivoli argues that in the absence of slavery, cotton production in the US South would have been much more difficult. What are her arguments about why a free labor market would not have worked? (p. 12).

2. Where was the competition? Why were India and China not competitors with the Antebellum US south in cotton production?

3. Look at graph on page 34. What can you say about the *relative* price of cotton vis a vis the price of a basket of other goods (The CPI) over the time span covered?

4. Modern agricultural subsidies in the US were part of the "New Deal" policies of the FDR administration implemented during the Great Depression (see page 33).

a. One program paid farmers **not** to plant. What intended and perhaps non-intended consequences arose from this?

b. Speculate on why these policies have remained long past the end of the Great Depression.

Look ahead to "dogs snarling together" (start of chapter 10) for some ideas.

5. The Farm Bill of 2008: How did it pass in the face of widespread calls for reform?

p. 62. This is an excellent example of "logrolling," which helped get the Smoot-Hawley bill passed

6. p. x: "Who made your t-shirt? Was it a child ... chained to a sewing machine ... ?" This comment from a Georgetown student started Rivoli on her project. Did she find coercion, i.e., chaining people to their sewing machines? Could you argue there was exploitation? What might coercion or exploitation mean if not actual chains? Are University football student-athletes exploited?

7. How are markets affected by transportation costs and/or tariffs? Do these factors affect one party more or less than the other? If so, in what situations?