Midterm Exam Economics 181 PLEASE SHOW YOUR WORK! PUT YOUR NAME AND TA's NAME ON ALL PAGES 100 Points Total

PART I. Short-Answer. (40 points). Please explain your work whenever possible. Each of the following 8 questions is worth 5 points each.

1. True or False? George Soros recently pointed out in the San Francisco Chronicle that although international trade leads to overall gains for the whole population, there are some individuals who lose from international trade. An excellent illustration of this idea is represented by the Ricardian model.

FALSE.

In the Ricardian framework there are no losers from trade as there is no way of observing distrubtional impacts within each country.

2. True or false? Evidence suggests that in the United States an increase in the supply of skilled labor relative to unskilled labor has contributed to an increase in inequality. Other factors, such as such as globalization and skill-biased technical change, have also contributed to rising inequality.

FALSE.

An increase in the supply of skilled labor should DECREASE inequality. Overall there has been an increase in the relative supply of skilled labor in America (depite the impacts of immigration). However other factors such as skill biased technical change, and increased trade with low-wage countries have contributed to an increase in inequality.

3. True or false? Larry Summers once proposed that developing countries should dispose of pollution because they have a comparative advantage in this area.

The answer wanted was TRUE, a document under Larry Summers' name did make such a recommendation. However since many people had difficulty interpretting this question, everyone was automatically given the 5 marks.

4. You are given the following unit labor requirements:

	TVs	Whiskey	
Britain	40	1	
Japan	20	$\frac{1}{2}$	

Are there gains from trade? Show your work.

The autarkic relative price of TVs in terms of Whiskey is 40 in both countries. Since they are equal, there would be no gains from trade.

5. True or false? While the Ricardian model predicts that there will be wage differences in the world as a result of differences in technology, the specific sector model suggests that wages should equalize as a consequence of international trade.

FALSE.

The specific sector model does not predict wages equalize across countries. It is the Factor Price Equalization Theorem from the Hecksher-Ohlin framework that makes this prediction.

6. True or false? While most economists generally agree that countries that grow faster see a reduction in poverty (ie the number of individuals living below the poverty line), the evidence regarding the linkages between poverty and international trade is mixed.

TRUE.

Most economists do agree that growth generally leads to reductions in poverty. Dollar and Kraay claim that since increases in trade are correlated with higher growth, there is an indirect link between increased trade and reduced poverty. However others, such as Rodrick, point out that the direct links between trade and poverty are not well established and that many countries, eg China and India, experienced strong growth BEFORE liberalizing their trade regimes.

7. What does Adrian Wood claim that this picture indicates? What critique could you make regarding his claim?

Wood claims that the figure shows that increased trade in manufactures with developing countries is leading to a decline in the manufacturing share of employment in developed countries.

There are several potential critiques of this claim. Some are:

- 1. Correlation does not imply causation. Other things (such as skill biased technical change or exogenous shifts in the structure of the economy) may have caused the decrease in the manufacturing share of employment.
- 2. A la Krugman "The tail cannot wag the dog". The changes in net imports are quantitatively much smaller than the changes in manufacturing employment share.

Note that shifting comparative advantage is not a valid critique, it is in fact exactly what is being claimed by Wood. However, it does suggest that we should not be so worried about the decrease in manufacturing employment, as we assume jobs in other industries will compensate.

8. What would have to be true for the observed increase in inequality in Mexico to conform with standard predictions of the Hechscher –Ohlin model? Do you think this is the case? If cannot explain the increase in inequality in Mexico, can you propose other explanations? Give one policy prescription that could address rising inequality in the US and Mexico.

b) This is not the case relative to the US, which is Mexico's largest trading partner. c) An alternative explanation is skill-biased-technical change. Another is that Mexico is importing more manufactures from countries that are relatively more unskilled labor abundant, eg China. d) To address inequality in BOTH the US and Mexico, the best policy perscription is improved access to education and training for unskilled workers. Improved welfare (safety nets) is also a valid recommendation. Tariffs will generally not help as they will decrease inequality in one country, but increase it in another.

a) Mexico would have to be a relatively skilled labor abundant country.

Part II.

- (1.) Ricardian Model
 - (a.) Home has 1200 units of labor. Each apple uses 4 units of labor. Therefore, home can produce up to 300 apples. Each banana uses 2 units of labor. Therefore, home can produce up to 600 apples. Below is the PPF:



- (b.) The relative pre-trade price of apples in terms of bananas is equal to the ratio of unit labor requirements: $\frac{ULR_{Apples}}{ULR_{Rananas}} = \frac{4}{2} = 2.$
- (c.) Foreign has 900 units of labor. Each apple uses 3 units of labor. Therefore, foreign can produce up to 300 apples. Each banana uses 1 unit of labor. Therefore, foreign can produce up to 900 bananas. Below is the PPF:



- (d.) The pre-trade price of apples in terms of bananas in home is 2 and in foreign is 3. Next, we note that home has a comparative advantage in apple production and foreign in banana production. Thus, when the two countries are both completely specialized, home will produce apples and foreign will produce bananas. We have already seen that if home produces only apples, they will produce 300 apples and if foreign only produce bananas, they will produce 900 bananas. Therefore, the ratio of production of apples to bananas under complete specialization will be:1/3
- Rel. Price: Apple/Banana



(e.) We can show gains from trade by showing that consumption possibilities are at least as high post-trade as pre-trade in each good and strictly higher for at least one good. Pre-trade, one person can consume as much as they can produce,

which is the multiplicative inverse of their ULR. Post-trade, since home has comparative advantage in apples and foreign in bananas, a worker in home will be able to afford the same amount of apples and a worker in foreign the same amount of bananas. However, a worker in home will be able to produce $\frac{1}{4}$ units of apples and trade it for $\frac{1}{4} * 2.5 = \frac{5}{8}$ apples. Also, a worker in foreign will be able to produce 1 banana and trade it for $\frac{1}{2.5} = \frac{2}{5}$ apples. So, a worker in home can consume just as many apples and more bananas after trade relative to before trade. Similarly, a worker in foreign can consume just as many apples.

Pre – Trade	Apples	Bananas	Post - Trade	Apples	Bananas
H	1	1	Н	1	5
	4	2		4	8
F	$\frac{1}{3}$	1	F	$\frac{2}{5}$	1

(2.) Specific Factors Model:

(a.) Drawing of the demand for capital: Notice that capital is the mobile factor so that capital goes on the bottom axis, the rental rate for capital goes on the left and right axes. The two curves in the graph are factor demands for capital:



(b.) Drawing of the demand for capital: The immigration of "unskilled" labor raises the return to capital in the sector in which unskilled labor works: apparel. This temporarily raises the rate of return to capital in the apparel sector, attracting capital into the apparel sector... as capital migrates from cars to apparel, the rate of return to capital falls in the apparel sector and rises in the car sector until the economy comes back into equilibrium. The net impact on capital allocation is that the car sector loses capital to the apparel sector.



(c.) Since capital moves out of the car industry, the marginal product of skilled labor in the car industry goes down. Therefore, the nominal wage decreases for skilled labor. Also, prices don't change. Therefore, the nominal wage goes down in terms of both apparel and cars. The real wage, therefore, unambiguously goes down for skilled labor.

(3.) Heckscher-Ohlin Model

(a.) The ratio of capital usage to labor usage in steel is: $\frac{2}{8} > \frac{1}{8}$ which is the ratio of capital usage to labor usage in the bread industry. Therefore, steel is capital intensive and bread is labor intensive

(b.) The ratio of the capital stock to the labor stock in the US is: $\frac{40}{200} = \frac{1}{5} > \frac{1}{6} = \frac{10}{60}$ which is the ratio of the capital stock to the labor stock in Canada. Therefore, the US is capital abundant and Canada is labor abundant. From the Heckscher-Ohlin Theorem, the labor abundant country will export the labor abundant good. Therefore, Canada exports bread.

(4.) Standard Trade Model

(a.) The terms of trade is defined as the ratio of the price of exports to the price of imports: $\frac{P_{Exports}}{P_{Im ports}}$.

(b.) A rise in the terms of trade will increase the price of exports (the good that the country on net produces) relative to imports (the good which the country on net

consumes). This unambiguously raises welfare. On the diagram below you can see an example where a country exports apples and imports bananas and where there is an increase in the price of apples, the welfare of the country goes up (follow the arrow to a higher utility level):

