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Exam 2: Version A
Spring 2016

Do not open this exam until instructed to do so.

- You have 75 minutes to complete this exam
- You may use a calculator; you may **not** use any other device (cell phone, etc.)
- You may consult one page of notes (both sides); you may not use books, notebooks, etc.
- Show your work

I understand that the honor code applies: I will not lie, cheat, or steal to gain an academic advantage, nor tolerate those who do.

M. WAUGH

Signature

Printed Name

For each question below, **write the letter of the most correct answer to the left of the question.**

1. (3 pts.) In a small open economy, an increase in the world interest rate would
   A. reduce country's trade deficit or increase a country's trade surplus
   B. reduce a country's trade deficit or reduce a country's trade surplus
   C. increase investment.
   D. decrease national savings

2. (3 pts.) Under the model of monopolistic competition, a(an) _____ in the number of firms in the industry will cause _____ to _____.
   A. decrease; markup; decrease.
   B. increase; marginal cost; decrease.
   C. increase; markup; increase.
   D. increase; average cost; increase.

3. (3 pts.) In a small open economy, policies that increase
   A. outsourcing of jobs cause a trade deficit.
   B. investment tend to cause a trade deficit.
   C. investment tend to cause a trade surplus.
   D. the tax burden of households and firms do not affect the trade balance.

4. (3 pts.) In 1975, wage levels in South Korea were roughly 5% of those in the United States. Then
   A. It's likely free trade with South Korea would lead to a large trade deficit.
   B. This fact simply means that South Korea was less productive in absolute terms relative to the United States.
   C. If Korean goods were freely imported into the United States at that time, this would have caused devastation to the standard of living in the United States.
   D. No producer in the United States could possibly compete with such low wages.

5. (3 pts.) The Ricardian model of international trade demonstrates that trade can be mutually beneficial. Why, then, do governments restrict imports of some goods?
   A. Imports are only restricted when foreign-made goods do not meet domestic standards of quality.
   B. Economist are often incorrect in their prediction that trade can be mutually beneficial.
   C. Trade can have significant harmful effects on some segments of a country's economy.
   D. Import restrictions are the result of trade wars between hostile countries.

Consider the following information for the next questions:

Chile can produce two goods: manufactures and copper. The technology to produce manufactures and copper both only use labor and they have constant marginal products of labor. The marginal product of labor in manufactures is 5. The marginal product of labor in copper production is 10. The labor force is of size 50 units.

6. (3 pts.) If Chile is in autarky, what is the relative price of copper to manufactures?
   A. 1/2
   B. 5
   C. 2
   D. unable to determine, need to know opportunity cost.

7. (3 pts.) The maximal amount of copper that Chile can produce is
   A. 500 units of copper.
   B. 250 units of copper.
   C. Its a small open economy, it can supply as much as the world demands.
   D. Constant marginal products of labor mean that it can produce as much as it wants.

8. (3 pts.) If Chile specializes in and exports copper, consumers in Chile
   A. can consume more copper and manufactures than they would be able to in autarky.
   B. can consume more copper than they would be able to in autarky.
   C. are no better off because consumption possibilities must line up with consumption possibilities.
   D. can consume more manufactures than they would be able to in autarky.

9. (3 pts.) Suppose that the world relative price of copper to manufactures is 3/4. Specialization according to comparative advantage implies that
   A. below; below
   B. below; above
   C. above; above
   D. the same as; above

10. (3 pts.) If Chile specializes in and exports copper, wages in Chile
    A. stay the same in units of manufactures, increase in units of copper.
    B. increase in both units of manufactures and in units of copper.
    C. decrease in units of copper, increase in units of manufactures.
    D. stay the same in units of copper, increase in units of manufactures.

11. (35 pts.) **Revisiting NAFTA.** As an aid to Robert Lighthizer (United States Trade Representative), you are tasked to revaluate the benefits from trade between the United States and Mexico. You are asked to write a research report focusing on the Beer industry to provide a historical perspective on the gains from trade and to inform the renegotiation of the NAFTA.

    Some information about the Beer industry in the US and Mexico:

    - Firms in both countries share the same technological characteristics. Consultants from Accenture report that the fixed cost associated with producing Beer are \$7,500, the variable costs associated with producing a Beer are \$0.50. The demand elasticity parameter "b" was estimated to be 1/3.
    - The consultants from Accenture also report industry characteristics of the US and Mexico market: Currently there are 10 firms in the combined market. Six of these firms are US firms. The other four firms are from Mexico.
    - Total Beer demand (and units sold) in the combined market is 250,000 units. Out of the total, 160,000 units were sold in US and 90,000 units were sold in Mexico.

    a. (7 pts.) In a preliminary draft of the report, your summer intern writes, "we find that US firms are no longer under undue competitive pressure from Mexican firms ...the integrated Beer market is in a **long-run equilibrium**" Is this correct? Why or why not?

A couple ways we could chek this. One is to compute P, AC and see if they equall. Another is to plug in values for number of Firms and see if equall....

$$n = \left(\frac{1}{b}\frac{S}{F}\right)^{\frac{1}{2}} = \left(3 \times \frac{250{,}000}{7{,}500}\right)^{\frac{1}{2}}$$

$$= 10$$

So yes!!! This looks like its in a Long Run Equillibrium.

b. (7 pts.) Please answer the following questions. Assume that the US beer market was closed prior to NAFTA and in a long-run equilibrium.

- How many US firms where there prior to NAFTA?
- What was the US price of Beer prior to NAFTA? Immediately after NAFTA?

Carefully and clearly explain your reasoning.

Again, just plug in the numbers....

$$\text{Pre-NAFTA} = \quad n = \left(3 \times \frac{160{,}000}{7{,}500}\right)^{\frac{1}{2}}$$

$$= \underline{\underline{8}}$$

Price prior to NAFTA in US...

$$P = 0.50 + \frac{3}{8}$$

Price after NATA... we need to say something about Mexico....

$$n = \left(3 \times \frac{90{,}000}{7{,}500}\right)^{\frac{1}{2}} = 6$$

$$P^{\text{AFTER}}_{\text{NAFTA}} = 0.50 + \frac{3}{14}$$

$14 =$ 8 US Firms + 6 Mexican Firms,

c. (7 pts.) Robert Lighthizer asks you to connect your previous findings in (b) with welfare. Specifically,

- How might the changes brought about by NAFTA be good for US consumers?
- Who might be unhappy with these outcomes?

Carefully and clearly explain your reasoning.

Good for US Consumers.....

(1) More VARIETY!!!

— Prior to NAFT ~ 8 Firms

— Immidiatly after ~ 14 Firms

— LONG RUN EQ ~ 10 Firms

I have more choices after the trade lib

(2) Lower Prices!!!

— Prior NAFTA ~ $P = \frac{1}{2} + \frac{3}{8}$

— Immidiatly After ~ $P = \frac{1}{2} + \frac{3}{14}$

— LONG RUN EQ. ~ $P = \frac{1}{2} + \frac{3}{10}$

Prices Fall as we open to Trade

Bad for Producers....

— Notice prior to NAFTA there were 8 US FIRMS

— AFTER NAFTA, there are 10 total firms, but only 6 are US Firms.

⟹ Some Firm's exited....

(1) OWNERS of the Firms we probably upset...

(2) Workers of the Firms ~~were prob.~~ lost their jobs (but may have found ~~more~~ new jobs in other Firms)

(3) Consumers who especially liked the products these Firms produced.

d. (7 pts.) Suppose that Beer makers differ in the quality of beer that they produce. Robert Lighthizer asks you to speculate as to how the average quality the US beer industry has changed since the inception of NAFTA. **Carefully and clearly explain your reasoning.**

So part c showed the following

NAFTA : 10 ~~exact~~ total Firms, 6 US.

Pre NAFTA : 8 US Firms.

We see that 2 Firms must have exited the market. If they differ in quality, then we should sospet that these Firms were of the worst quality. They exit.... OK? So averge quality Must be increasing (For US 書 industry) as only the best quality Firms remain, thus raising averge quality.

e. (7 pts.) In Professor Bowmaker's forthcoming book on economic policymaking in the White House, there is a statement from a former Bush official about NAFTA being intended to help Mexico (and less about helping the United States).

Can you make this statement precise in the context of our model. Who gained the most from NAFTA (the US or Mexico)? What is the underlying reason why one country gains more than the other?

In terms of gains, I'll focus on # of Firms (but its not important, since p is a function of # of Firms).

US: 8 ⟶ 10 (Again # Firms Consumers Have access to)

Mexico: 6 ⟶ 10

⟹ Mexico recieves a much larger increase in Number of Firms (% wise or counts) than the US. Mexico gains the most!!

Why??? For Mexico, the increase in Market Size Was much bigger (90,000 → 250,000). The US was already big @ 160,000. Thus, Mexico experienced a much larger change in the size of market, thus experince larger gains from trade.

12. (35 pts.) **Thriftiness in an Open Economy.** This question builds on a question from Midterm # 1. Recall that Senator Charles Schumer (D, NY) is concerned that private Americans do not save enough. You are asked to prepare a report on a policy that will discourage consumption and encourage savings. The Congressional Budget Office provided you the following information to use in your report:

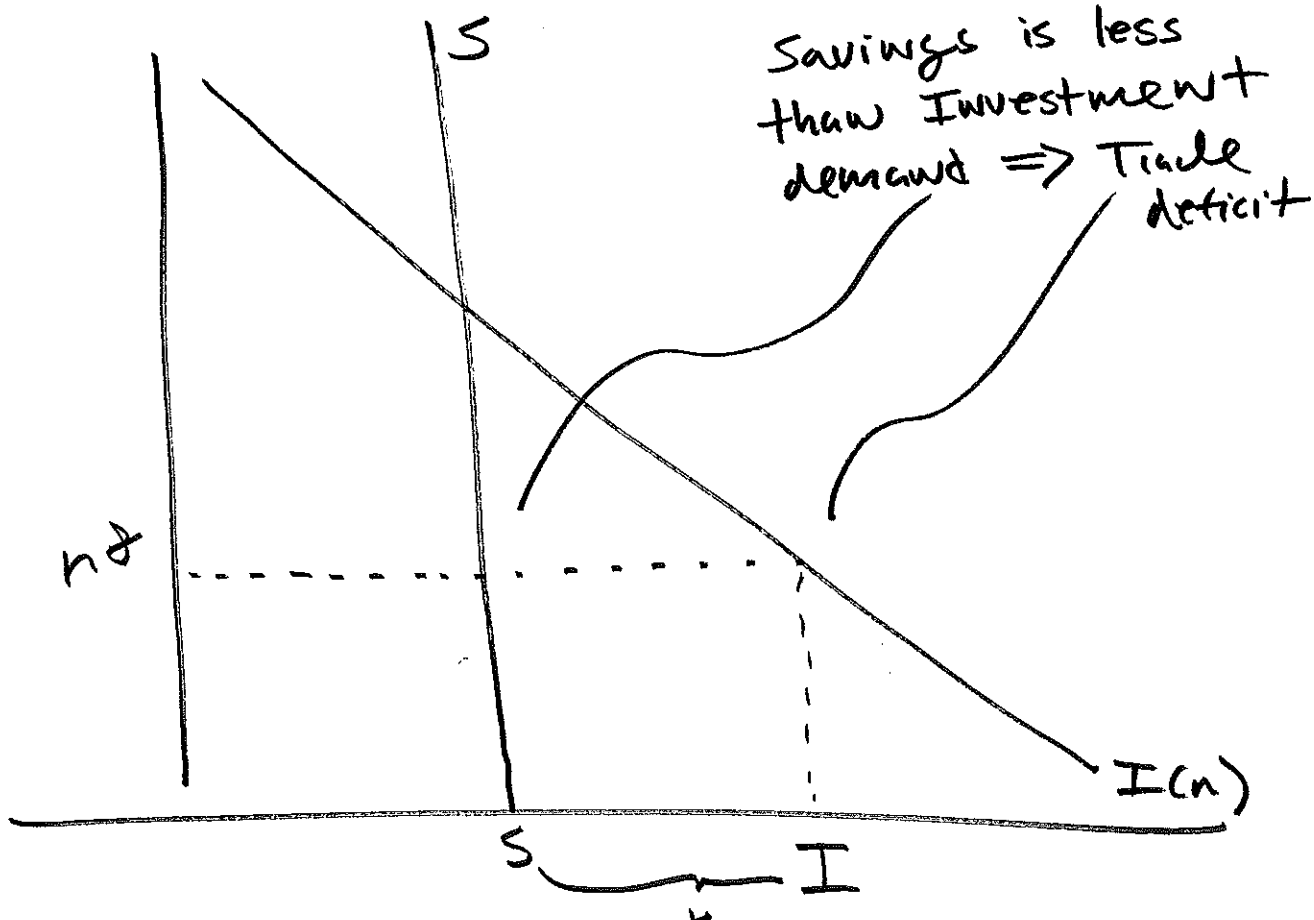
    - The proposed policy would decrease the marginal propensity to consume.
    - The marginal propensity to consume is unaffected by real interest rates.
    - The proposed policies will have no overall fiscal effect. That is T and G are unaffected by this policy.

    Please answer the following questions in the context of Chapter 6 (i.e. a small open economy where net-exports need not equal zero).

    a. (7 pts.) At the end of 2017, United States exports are 2.4 trillion dollars; imports are 3.0 trillion dollars. Carefully illustrate savings, investment, net exports, and the world real interest rate that corresponds with the 2017 situation of the United states.

(Exports = 2.4) − (Imports = 3.0) = −0.6 Tn

Trade deficit . . .



S − I = EX − IM = Trade Deficit

b. (7 pts.) Carefully explain how Senator Schumer's plan changes: GDP, national savings, consumption, investment and net-exports.

(1) No change in GDP.... Why

$Y = F(K, L)$ ~ does nothing to affect this stuff today.

(2) S = Private Savings + Public Savings

↑ ↑ Plan wants this — No Change

(3) C ↓ ~ Plan says this....

(4) HARD PART... I....

No Change.

In an open economy, I is pinned down by r*. It's disconnected with S. ~~Those rates~~ Thus it stays constant.

(5) $EX - IM = S - I$

↑ ↑ No change

Trade Deficit Shrinks

c. (7 pts.) The staff from the Council of Economic Advisors emailed you a report that says Senator Schumer's plan would reduce aggregate consumption by 0.60 trillion dollars. Can you provide a **quantitative** estimate of the US trade deficit as a result of Schumer's plan if the CEA's forecast holds true?

Quite Simple.....

$$Y - C - G = I + (EX - IM)$$

C ↓ 0.60 trillion.

$Y_1 = G_1 I_1$ No change....

$(EX - IM)$ ↓ 0.60 trillion.

This means the trade defit = 0

Great JOB Schumer!

d. (7 pts.) In Midterm #1: We argued that Senator Schumer's plan would (i) increase savings (ii) increase investment and this implies the US will have more capital in the future, hence a higher level of GDP in the future. This logic does not apply in this case. Why not? Carefully explain what the issue is and why our logic from Midterm #1 does not apply.

The key issue is than in #1.

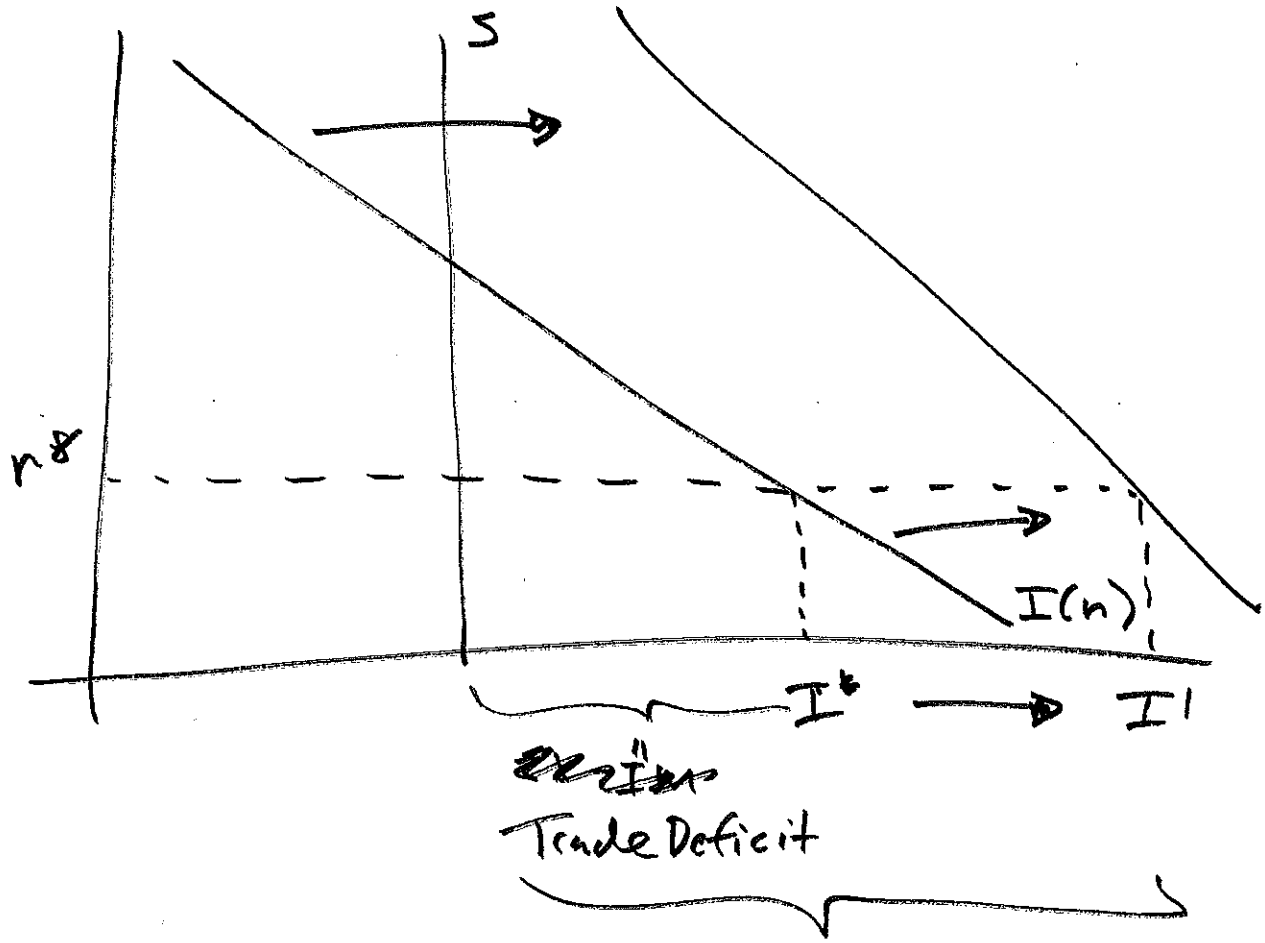
$S \uparrow \Rightarrow I \uparrow = K \uparrow$, so more Y tommorow

This is the problem.

In the new economy, investment is where it "needs to be" given prices. Thus any change in savings ~~shows~~ does Not show up in a change in vestment. It simply is absorbed by a change in the trade deficit. So this plan eleminates the deficit, but with NO gain in output.

e. (7 pts.) After working through these issues, later that day during Happy Hour, a fellow intern for the Club for Growth says the following: "Current policy changes in the United States should increase the demand for investment. Even with Schumer's plan, we could still see an increase in the trade deficit"

Within the context of our class, discuss (i) how this claim may be correct and (ii) if true, is an expanding trade deficit "bad" in this case?



Trade Deficit

NEW Trade Deficit !!! HUGE!

OK "Bad" .... Yes a bigger deficit, but, This increase in I ⇒ More k in future, Thus more Y in the future. I call this a good trade deficit!!!