

ECN 230 File of Previous Exams 2000 - 2004

ECN 230

The Microeconomics of International Trade

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SAMPLE COVER PAGE

Examination aids: You are allowed to use a two-way Norwegian (or any other foreign language) - English dictionary and/or an English-English dictionary (excluding a dictionary of economic concepts). Calculators are not required.

Instructions: Please look over the exam to ensure that there are three (3) pages, including this cover page.

Be sure to relate your answers to the concepts discussed in class.
Avoid unnecessary and irrelevant information as this adversely affects the quality of an answer. Where you are instructed to provide *a list*, you should not worry about writing in complete sentences. Graphs are only required where you are instructed to provide a graph; however, you can use graphs whenever you think it can help your explanation.

Exam format: The exam consists of three parts for a total of 100 points.

Part I: (25 points) short answer format, 5 each worth 5 points.

Brief explanation (*no more than 3 sentences*). Explain whether the statement is true, false or whether it depends. Defend your answer regardless of what you think.

Part II: (45 points) medium-length answer format, 3 questions.

Answer each question and define concepts to support your answers. Each question is divided into two sub-parts. You may use graphs in your answer, but be sure to explain your graphs if you use them.

Part III: (30 points) detailed answer format.

The question involves several parts. You must provide a graph where you are instructed to do so. Be sure to provide an explanation and any supporting assumptions that clarify what you are demonstrating in the graphs.

Part I. Explain whether the following statements are true, false, or whether it depends. Defend your answer. If depends is your answer, be sure to explain upon what it depends. (25 points)

1. A small country using trade policy, regardless of the type of trade policy, will only result in deadweight losses in production and consumption in that country's economy.

T. Trade policy by a small country has no effect on P_w . Hence, there are income transfers within the country, but what is left over are DWLs in production and consumption.

2. A prohibitive tariff (a tariff that is set at a rate that prevents imports from entering the country) cannot be optimal in a trade policy sense.

T. A tariff that is set at a rate that prevents imports from entering the country implies that no tariff revenue is earned. Nevertheless, the tariff protection results in DWLs. Hence, DWLs > income transfers from abroad, implying $SW < 0$. Optimal in a trade policy sense implies policy leads to an increase in SW.

3. Suppose Engel's law holds for countries as it does for individuals. If productivity grows at the same rate in all sectors (say all sectors grow by 10%), then the growth would cause prices of agricultural commodities and food to fall relative to manufactured goods

T. All sectors grow by 10% implies $\uparrow Q_A$, Q_M and $\uparrow Y$ by 10%. However, if the % of Y spent on food/ag is < 10%, then $Q_A < D_A$ but $D_M > Q_M$. This implies that P_A falls relative to P_M (or that $P_A \uparrow$ is slower than for P_M).

4. Free trade in a Ricardian world predicts complete specialization in production because industries are characterized by constant costs. Therefore, complete specialization under free trade is not a predicted outcome when industries are characterized by decreasing costs resulting from the presence of economies of scale.

F/D. The first part statement is correct. However, if EOS reduce average costs, then it is possible that complete specialization can occur. If consumers demand a wide range of products, then economies of scope will be less likely and a firm/country would not be able to satisfy the entire world market demand.

5. An import barrier is an appropriate policy response if the policy objective is self-sufficiency; however, if the policy objective is to support domestic production, then a production subsidy would be a more appropriate policy response.

T. A tariff /quota is an appropriate policy tool if the objective is to target a specific quantity of imports. If self-sufficiency is the target, then a quota set at zero imports would be an appropriate policy. If instead, the policy target is a specific level of production, then a subsidy set at a rate that ensures a level of production is more efficient (no DWL in consumption as with a tariff or quota).

Part II. Briefly answer each of the following questions or respond to the specific statements. Relate your answers to concepts discussed in class and avoid unnecessary information! (45 pts)

1. Some leading international economists argue that technological change affects skilled and unskilled labor differently. That is, technological changes consistently favors skilled labor. Suppose this is true when answering the following questions (15 points):

- a. What would be the economic implications of such a technological change? Discuss in detail what the effects would be from the perspective of the country that experiences the technological change. (A graph is not required.)

Summary of effects of tech Δ :	
Production	$\uparrow Q$ of goods intensive in skilled L
Factor use	$\uparrow D$ for $L_{\text{skill}} \rightarrow \uparrow W_{\text{skill}}, \downarrow W_{\text{unskill}}$; unskilled L is less mobile; discuss MP_L of each type of labor
Consumpt	$\uparrow C$ but it is not clear which product is demanded more
Trade	Theory cannot say whether trade increases or decreases (expect increase)
Result	Higher returns to skilled L relative to unskilled L. This would result in more unequal income distribution with DCs and LDCs (if tech transfers is possible). In LDCs, this tech bias can result in more problems related to dualism. Of course, it depends also on the D-side situation.

- b. Do you think that adopting this technology will cause greater change in the economy relative to a policy that liberalizes trade? Explain.

Tech Δ results in a change in the relationship b/t inputs and output (more skilled L using); this changes the relative price ratio of factors (higher wages for skilled relative to unskilled); and it changes the relative amount of goods produced (relatively more skilled L-using goods are produced). Trade liberalization has similar effects, but the causality is the other way: liberalization changes the relative ratio of output prices; the relative price changes will affect the relative ratio of factor prices and signal factor reallocation. However, without tech Δ , there is no change in the marginal prodvty of labor (so the amount of factor reallocation is more limited). Tech change can be argued to be a bigger engine of change (the whole prodn possibilities curve shifts to the right).

2. Policymakers realize that trade policy can be strategic. Suppose policymakers in a small country are considering a policy to either restrict imports or support exports in a strategic sense. Use a table as presented to help structure your answers to the following questions (15 points):

	Effects of Policy	Restricting imports	Supporting exports
a.	Short-term trade effects		
	Short-term welfare effects		
b.	Relative effectiveness of the long-term strategy		

- a. What are the short term trade and welfare effects of the policies? Provide a *list*.
b. Would one policy be more strategic than the other in the longer term? Explain.

Solution in chart that follows:

Effects of Policy		Restricting imports	Supporting exports
a.	Short-term trade effects	$\uparrow P_D; \uparrow Q_S; \downarrow Q_D; \downarrow Q_T$	$\uparrow P_D; \uparrow Q_S; \downarrow Q_D; \uparrow Q_T$
	Short-term welfare effect	$\uparrow PS; \downarrow CS; \uparrow G; \downarrow NSW$	$\uparrow PS; \downarrow CS; \downarrow G; \downarrow NSW$
b.	Relative effectiveness of the long-term strategy	Depends on what is argued in terms of promoting a sector in which a country has a comparative advantage (ie, export sector) versus protecting a sector in which the country has a comparative disadvantage (ie, import sector). The issue is related to whether one policy or the other can improve CA or reduce CD over time. Can also focus on the differences in G and how the tax money is used, who the beneficiaries really are, etc. Can also discuss in context of ISI or export promo.	

3. The standard H-O-S trade model predicts that factor endowment differences result in trade between different types of countries, e.g., north-south trade patterns. However, intra-industry trade patterns are becoming increasingly important. List and discuss the following (15 points):

- a. List any factors that cause intra-industry trade (5 points).

Differences in D, EOS, International K movement; mkt structure

- b. Discuss one of the factors that you listed to explain intra-industry trade (10 points)

Define and explain IIT. Focus on how one firm or country cannot produce the full range of products and that consumers want variety and choice. The mkt structure is monopolistically competitive or oligopolistic and there are more strategic variables relevant in international trade.

Part III. Answer the questions related to the following scenario. Be very specific and explain your answers to the best of your ability. Label your graph(s) clearly and explain what your graph(s) represent. Define concepts you think will support your answer. (30 points)

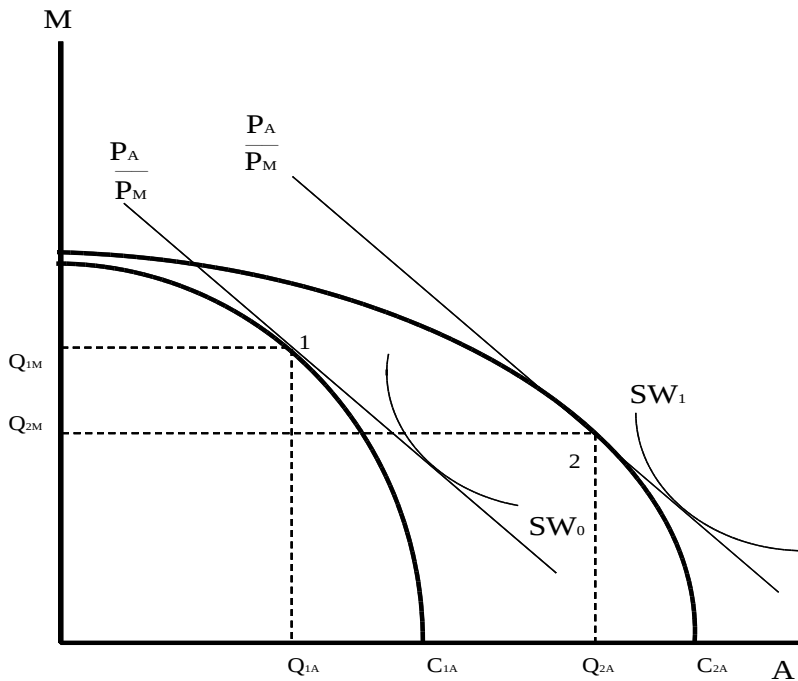
Suppose you are a consultant to the Ministry of Labor of a developed country (a country called North). There is some concern in North about the decline in the population growth rate and the increased proportion of residents that are approaching retirement age. The policy debate is whether or not to permit an increase in the rate of immigration from developing countries as a means to increase the domestic labor force. (Assume that the decision to migrate is permanent, i.e., the workers do not return to their home countries.) The Minister is keen for a loosening of the restrictions on foreign workers entering the country, but the Minister is also interested in having a better understanding of the economic implications of such a policy change. Although this is not a simple two-country world, use the H-O-S $2 \times 2 \times 2$ trade model developed in class to help you explain the theoretical expectations to the Minister. (30 points)

1. Consider the general equilibrium implications of increased migration into North by applying the Rybczynski theorem. What does the theorem predict for a change in the factor endowment of a country? What are the assumptions of the theorem? Provide a simple model to show the economic effects of the increased labor force on North and summarize the results in a table as provided below. (20 points)

Economic variables to consider	Expected economic implication	Assumptions
Factor reallocation between production sectors		<i>List any relevant assumptions that you think help explain your results</i>
Relative factor prices		
Relative output prices		
Production of each good		
Consumption of each good		
Trade effects		
Social welfare		

An $\uparrow L$ is expected to result in an $\uparrow Q$ of the good(s) that use L intensively. According to the theorem, there would be a disproportionate $\uparrow Q$ of the good(s) that use L intensively (magnification effect).

Economic variables to consider	Expected economic implication	Assumptions
Factor reallocation between production sectors	$\uparrow L_{\text{Total}} : \uparrow L_A, \uparrow L_M$; to maintain K/L ratio L and k move to A-sector	<i>List any relevant assumptions that you think help explain your results</i> See theorem in text
Relative factor prices	If small $\uparrow L_A$, $[P_L] / [P_K]$ is unaffected or reallocation ensures $K/L = [P_L] / [P_K]$ as before	
Relative output prices	If small country, then $\uparrow Q_A$ is small relative to world mkt and $[P_A] / [P_M]$ is maintained	
Production of each good	$\uparrow Q_A$ (proportionally more A); $\downarrow Q_M$	
Consumption of each good	Depends on the type of goods. If it is assumed the goods are not inferior, then $\uparrow Q, Y \rightarrow \uparrow D$.	
Trade effects	$\uparrow$ Trade if more trade dependence	
Social welfare	$\uparrow$ SW if $[P_A] / [P_M]$ is maintained	



2. Would you be confident of the theoretical expectations resulting from the Rybczynski theorem? Why or why not? If you are not confident in the theoretical expectations of the theorem, what alternative expectations could you offer? Explain and state your assumptions. Could you propose to the Minister any additional policy that would complement the immigration policy? (10 points)

NO, the Rybczynski Theorem is applicable in a 2 x 2 x 2 world. Immigration of Labor would not be expected to leave K/L ratio unaffected or the relative factor prices unaffected. Also, there are skilled vs unskilled labor issues involved in migration. Could focus on the following:

(1) ↑ specific sectors that would be useful to have labor (service sectors such as nursing, medical, other sectors targeting an older population); (2) the degree to which immigrant L will compete with local L; (3) if more L is to enter thru eased immigration, could K-inflows be facilitated to help absorb the L inflow; (4) other factors can involve trade dependence (↑ L → ↑ QA and can → ↑ trade dependence); etc..

Part I. Explain whether the following statements are true, false, or whether it depends. Defend your answer. If depends is your answer, be sure to explain upon what it depends. (25 points)

1. Voluntary export restraints (i.e., a type of export quota) will typically represent a potential Pareto improvement for the exporting country.

D. Exporter gets some or all the quota rents, but it is not sure whether $DWLs \geq$ quota rents. If the quota rents are $>$ DWLs, then losers can be compensated by the quota rents if such an income redistribution of income was desired.

2. The theory would predict that two countries with identical endowments (i.e., the same resource abundance) and the same technology would not engage in trade because there could be no gains from trade.

F. If the two countries had different preferences, then demand-side differences would create a price differential between the two countries which could result in a gains from trade opportunity.

3. A reduction in a country's terms of trade represents a decreasing demand for its exports on the international market.

D. A $\downarrow$ TOT can be the cause of either supply- or demand-side factors. A $\downarrow$ ED will $\rightarrow \downarrow$ TOT but an $\uparrow$ S in importing countries could also be a reason for the $\downarrow$ ED (not just a $\downarrow$ D in the importing countries).

4. Rybczynski's theorem states that the growth in a factor (i.e., say an increase in labor) is likely to lead to greater substitution between labor and capital factors, resulting in proportionally less production of the labor-intensive good.

F. Under the restrictive assumptions of the Rybczynski theorem, an $\uparrow$ L should $\rightarrow$ an $\uparrow$ Q in the L-intensive good which would result in a proportional $\uparrow$ Q of the good which uses labor intensively. A discussion of the assumptions could be useful, e.g., capital-labor ratio, relative factor prices, etc.

5. Suppose a country experiences slow but steady growth over time. A greater reliance on trade would imply that with growth the country would become more specialized in production.

D. Growth over time can result in a shifting of resources from one sector to another sector (e.g., from A-sector to M-sector or from M-sector to services sector. It is possible to become more reliant on trade without having to become increasingly specialized (i.e., a proportional $\uparrow$ Q of the exportable good). Greater reliance on trade can occur as a result of an $\uparrow$ D for importable and growth domestically could produce the result because $\uparrow$ Q $\rightarrow \uparrow$ Y permitting funds to pay for more imports.

Part II. Briefly answer each of the following questions or respond to the specific statements. Relate your answers to concepts discussed in class and avoid unnecessary information! (40 points)

1. A central part of the debate about the costs and benefits of international trade relate to factor adjustment and factor mobility. Think about what the theory predicts concerning factor markets and the relevant economic relationships that guide factor markets when answering the following questions.

- a. How does trade liberalization result in factor adjustments within an economy? Explain and be specific. Provide an example if you think it will help your explanation. (10 points)

- b. Why would economists generally argue that factor mobility is a good thing for an economy? Explain and provide an example if you think it appropriate. (10 points)

a. Think about the effect of trade liberalization on output price changes and the effect of these changes on input price changes. For example, under our model assumptions, an $\uparrow P_A$ r.t. $P_M \rightarrow \uparrow P_L$ r.t. P_K . If such an output price change occurs, then resources would shift from the manu sector to the ag sector.

b. Think about specialization, returns to factors, comparative advantage, meaning of TOT in relation to purchasing power and efficiency in production.

2. Consider the enlargement of the European Union and the implications for trade between the Eastern and Western Europe. Recall the assumptions of and the general lessons drawn from the Heckscher-Ohlin-Samuelson trade model that was developed in class to evaluate the following statements.

- a. In the short run, Western Europe will stand to gain more (relative to the East) from the increased trade with Eastern Europe because the West can dictate their prices to Eastern Europe. Use economic theory to help explain whether the previous statement reflects the likely economic outcome. (10 points)
- b. In the long run, the West (e.g., the higher-income countries) will become less competitive relative to East because its wages are higher than in Eastern Europe (lower-income countries). Again use theory to help explain whether the statement reflects the likely economic outcome. (10 points)

a. Think about how prices will change in the west versus the east. How close are pre-trade prices in each region to the world price? You also have to make a point about whether the markets are competitive or imperfectly competitive. If you assume that east is more L-abundant, poorer and smaller than west, then you can argue that prices will change more in east relative to west. So, gains from trade and the cost of adjustment in east will be larger than in west in the short run, and that trade is likely to be based on factor endowment differences.

b. In the long run, what happens will depends on what you argue. If east grows faster than west, then trade will resemble more trade between large countries, each able to affect prices. More K will flow to east and the K/L ratios might become more similar. Similar K/L ratios, similar technology and EOS can mean that trade becomes based more on EOS and D-side factors rather than on differences in endowment.

Part III. Answer each of the questions related to the following scenario. Be very specific and explain your answers to the best of your ability. Label your graph(s) clearly and explain what your graph(s) represent. Define concepts you think will support your answer. (35 points)

Trade negotiators have used the producer subsidy equivalent (PSE) as a measure of the protection that is provided to producers in each Member country of the World Trade Organization. Consider the PSE concept that was developed in class to help you answer the following questions.

1. What is the meaning of the producer subsidy equivalent and how is it useful for trade negotiators interested in liberalizing agricultural trade? (5 points)
2. Provide a graph to show the welfare effects of some trade policy measure (choose either an import or export policy) and show the relevant welfare effects of that policy in the case of a small country. Highlight the areas that represent the changes in consumer and producer surplus, the changes in government expenditures or tax receipts, the net social welfare change, and the PSE of the trade policy measure you selected. Explain whether your results would have differed if the country was large. Make all your assumptions explicit. Use a chart as provided below to summarize the results of the policy. (25 points)

	Area in your graph that represents policy implications	Explanation or interpretation
Change in consumer surplus		
Change in producer surplus		
Change in government expenditures		
Change in net social welfare		
Value of the PSE		
Large country implications	– not relevant –	Would your results have differed if the country was large? Explain.

3. Are there limitations of the PSE as a measure of welfare? Explain using your example above. Might there be any other factor(s) that trade negotiators should be careful of when using the PSE? (5 pts)

Answer depends on whether you chose an import policy or an export policy.
The large country implications relate to Y-transfers between countries.

Part I. Explain whether the following statements are true, false, or whether it depends. 25 pts

1. The tendency to tax exportable products and protect importable products is related to the stage of economic development of a country.

T. LDCs typically use export taxes and import tariffs to raise revenue. In addition, ISI has often been used as a means of industrialization which has required protection of the "infant industry". Hence, imports on manufactured goods have tended to be high.

2. Suppose production of clothing is a labor intensive activity and is an area where South has a comparative advantage. Importing clothes from the South would be exactly like importing the cheap labor that went into producing the clothing. Therefore, the import of clothing is a perfect substitute for the international flow of labor between countries.

F. While importing clothing is like importing cheap labor from the south, trade in goods is not a perfect substitute for labor flows between countries. Show the case of a tariff on clothing to show that total demand for clothing is less than under free trade.

3. The infant industry argument says that a tariff can be welfare improving if it fosters, or leads to, learning by doing in the protected sector.

T. If the benefits from learning > cost of the subsidy, then SW would be improving.

4. Factor price equalization cannot occur across countries if there are non-traded goods.

T. If there are non-traded goods, then this is just another reason for why the law of one price would not hold. If output prices do not converge, then we would not expect factor prices to converge.

5. Suppose an agricultural exporting nation liberalizes its trade regime and the price of the exportable goods increases by 10%. The theory would predict that wages in that sector would also increase by 10%.

F. Wages are expected to = the value of the marginal product of labor (VMP_L). This means wages are related to the output price and to the MP of labor. If MP of L $\downarrow$ as more L is hired, then the $\uparrow$ wages (from $\uparrow$ output P) would be somewhat offset by the $\downarrow$ MP.

Part II. Briefly answer each of the questions or respond to the specific statements. 45 pts

1. Consider the lessons from the simple trade models developed in class and respond to the following statements related to transportation costs. (15 points)

- a. Transport costs reduce but do not eliminate the gains from trade.

If transport cost are on a fixed per unit basis, then it would be similar to the effect of a specific tax on imports. Hence, trade volume $\downarrow$, but gains would not be eliminated except if transport costs were prohibited (i.e., $\geq P$ - differential existing on world mkt).

- b. Transport costs do not interfere with the law of comparative advantage.

Including transportation costs into the trade scenario implies that cost advantages are based on factor endowments (and comparative advantage), but also on factors that give advantages

in transport (geographical location, access to alternative transport routes such as river, rail, and road, communications links).

2. Some would argue that the presence of economies of scale provides a possibility for an extension of the Heckscher-Ohlin-Samuelson (H-O-S) factor endowment theory of trade that was developed in class. Economies of scale can be argued to have *two* important implications for international trade. Consider these effects, and explain whether they would imply a difference in trade patterns (relative to the patterns described or predicted under the H-O-S factor endowment theory). (15 pts)

- a. List two implications that economies of scale can have on international trade. (5 pt)

EOS implications: ❶ imperfect competition based on size and ❷ intra-industry trade.

- b. Discuss only one of the items from your list and explain whether economies of scales would imply a difference in trade patterns that were not described under the factor endowment theory. (10 points)

IIT means that trade in similar products (rather than identical products) is possible. This results in increased specialization and trade patterns based on consumers wanting greater choice and selection. Trade between countries that are more similar (in income and in factor endowment) can be explained.

3. Suppose a monopolist exporter was capable of price discriminating in foreign markets.

- a. Think about the profit maximization conditions of a monopolist to describe the strategy of the firm. What factors would allow the possibility that a firm can price discriminate on the international market? (10 points)

Focus on the relationship between price and the price elasticity of demand in various markets. The higher priced market will have more price inelastic demand. Other factors that are important are time, perishability of the product and other factors that prohibit transshipment between low-priced markets and high-priced markets from engaging in trade.

- b. Would price discrimination under such a scenario be considered an "unfair trade practice"? Explain. (5 points)

No, not necessarily. There can be market reasons to explain why prices differ in two markets. Price discrimination based on volume, timing, contracts in advance occur all the time and domestic competition policy does not prohibit this.

Part III. Answer the questions related to the following statements. Be very specific and explain your answers to the best of your ability. Label graph(s) clearly and explain. 30 pts

Certain industries decline because of shifting comparative advantage over time (i.e., resulting from changes in the long run). As such, declining industries appear to be particularly successful in evoking (i.e., bringing out) protectionist responses from government.

1. What explanation would you offer for why industries in decline are able to bring out a government response in the form of some trade policy measure? (5 pts)

Lobbying is an example of collective action which implies a cost; the benefits from collective action must be concentrated among the few. Employers and employees in a declining sector would be willing to lobby for protection. Why trade policy? Policy has ambiguous consequences and so trade policy at least can provide support without taxpayers having to finance the support (consumers do).

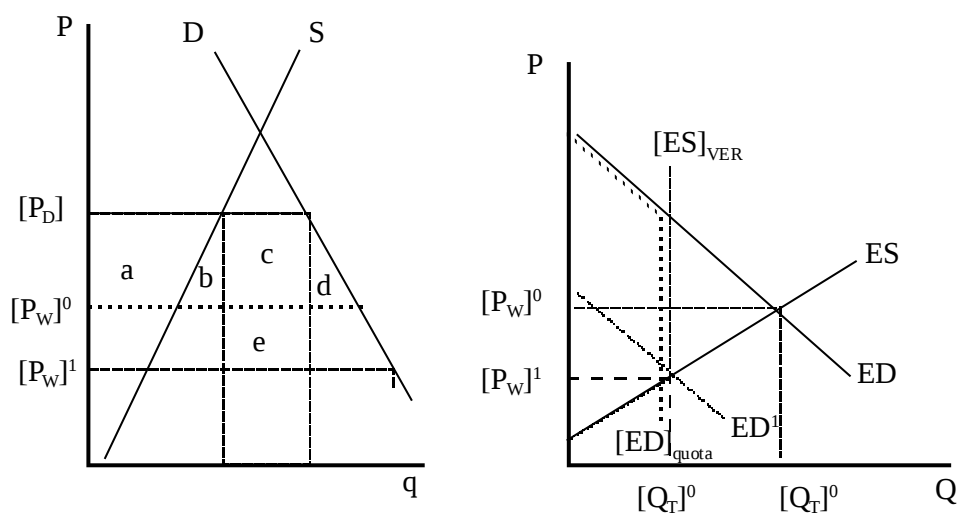
2. Different trade policy instruments (tariffs, quotas, voluntary export restraints) are used to provide protection in different circumstances. What reasons would a government have for choosing a particular instrument as a means of protecting a domestic industry?

Use a graph(s) to show the new world price, the domestic price, and areas relating to the welfare implications of an import tariff, import quota, and a voluntary export restraint. You only need to show the effects on the importing country. Summarize the results and explain differences if any exist. Structure your answer according to the table below. Make your assumptions clear. (20 points)

Report the information ONLY from the Importer's perspective!!!			
	Tariff	Quota	Voluntary export restraint
Reason for choosing the particular policy			
new world price			
domestic price			
consumer surplus			
producer surplus			
revenue implications			
net social welfare			
Explain differences if any exist			

Solutions below:

2.	Tariff	Quota	VER
Reason	Easy to administer; interest in collecting revenue	More control over volume imported; can support producer	Gives domestic industry time to adjust; revenue is not important factor
New world price	↓ if importer large country	↓ if large country	↑ if large country (if small country VER would be less relevant because quota rents are smaller)
Domestic price	↑ idea is to support producers	↑ to support producers	↑ to support producers
CS	↓ consumers are taxed	↓ consumers are taxed	↓ consumers are taxed
PS	↑ producers are subsidized	↑ producers are subsidized	↑ producers are subsidized
Revenue	gov't collects revenue and can transfer more income to losing sector	domestic firms are more likely to collect rents directly from higher prices	quota rents are provided to the exporting country so domestic firms benefit mostly from higher price
Net SW	depends on DWLs relative to TOT transfers	depends on DWLs relative to TOT transfers	DWLs and a TOT transfer to exporting countries
Differences	Protection and revenue collection	Control over volume imported; P-protection and quota rents to domestic producers	Protection with a bribe to exporters to limit trade volume.



3. Would the choice of policy differ if the decline in the industry were a matter of declining demand rather than a worsening in the country's comparative advantage? Explain without a graph. (5 pts)

If demand had been declining, then a quota or a VER would be less binding over time as imported volume would decrease. VER would be less interesting to exporters as quota rents would be smaller. Under a tariff, if the emphasis was also on revenue collection, then it would still be somewhat possible to collect tariff revenue even though demand was declining.

End of Dec 2003 exam

Part I. Explain whether the following statements are true, false, or whether it depends. . (25 points)

1. A country that restricts its exports will have the effect of reducing the internal market price of its exportable goods and increase the price of those goods on the world market.

D/T. If large country then both effects; if small country, then only internal market price of the good decreases.

2. Suppose policymakers in a net agricultural importing country are concerned about instability in food prices. An import quota on food imports will be an effective way to stabilize the domestic price of food (in the importing country) from changes occurring on the world market.

T. A change in supply on the world mkt will not be reflected in import country so long as the import quota volume is binding.

3. A decline in a country's terms of trade implies that the country is experiencing immiserizing growth (i.e., that growth is making society worse off).

F/D. If wealth effect of growth > TOT effect, then SW can increase in spite of a decline in TOT.

4. Economies of scale in production will imply that trade opportunities and international competition will be reduced because fewer producers will have control over a larger volume of product and therefore more control over price.

F/D. Opens up the opportunity for intra-industry trade which implies more competition, products and choice. D on the industry structure (e.g., number and size of the producers, type of product, barriers to entry, control over P, and other strategic considerations.).

5. Any trade policy measure by a small country will result in income transfers within that society. So, in general, the total welfare effects of trade policy are income transfers made by one group, e.g. consumers, which are received by another group, e.g. producers.

F. After all the transfers, there are DWLs (assuming S and D and not perfectly inelastic).

Part II. Briefly answer each of the following questions or respond to the specific statements. Relate your answers to concepts discussed in class. Avoid unnecessary and irrelevant information! (45 points)

1. The H-O-S model, which we developed in class and was presented in the readings, allows economists to predict changes in production, consumption and trade from changes in relative prices. Using this framework, consider the reasons for trade among nations and the gains that result from trade. In this context, *list* the characteristics of an efficient market and explain how allocating production and consumption globally will contribute to efficiency. Be specific. [Hint: you might want to structure your answer according to the table below.] (15 points)

Characteristics of an efficient market	Trade's contribution to efficiency
Resource allocation	input P equalized; resource abundance and factor intensity
Price equalization	P reflect global S+D conditions
Efficiency in production, consumption	specialization, CA

2. Smuggling is just another form of importing. The only difference between smuggling and ordinary importing is that smugglers capture the revenue that would otherwise go to the government. Discuss whether you agree or disagree with the statements above and provide a simple partial equilibrium model to defend your answer. Be neat, label your graphs clearly and make your assumptions known.

Smuggling is a form of importing, but it is not clear about the revenue. Suppose a small country has a tariff such that $[Q_D] - [Q_S]$ is imported, or $[Q_M]$. Gov't revenue would be equal to the area C, i.e., $[P_D - P_W] \cdot \{[Q_D] - [Q_S]\}$. If the smuggled amount exceeded $[Q_M]$, then the rents (or revenue) area would be different than area C because the domestic price, P_D would likely fall. The most that would be smuggled in would be the difference in quantity demanded and supplied at the world price, $[Q_D]_{FT} - [Q_S]_{FT}$. The FT notation denotes free trade. In this case, there would be no revenue to the gov't and the smugglers would not earn any rents. Different scenarios can be discussed. Risk associated with smuggling means $P_W < P_S < P_D$.

3. Suppose innovations tend to be concentrated in more developed countries because innovation is intensive in research and development. As a result, in the early stages of a new product's development the product is produced in the innovating country (i.e., the beginning of a product cycle). However, in time, production of the good is switched to another country (toward the end of a product cycle). *Explain* why a country with an abundant supply of low-wage unskilled labor might tend to produce goods at the end of a product cycle and not at the beginning of a product cycle. Provide an example in your discussion and make your assumptions clear.

Innovation is R+D intensive which is capital intensive. So, it makes sense that innovation tends to occur in developed countries, meaning new products are produced at the beginning of the product cycle. If production in scale is more labor intensive, (when innovations to the product become less important, more standardized, toward the end of a product cycle – and presumably less capital intensive), then it would make sense that this production move to where there is relatively more labor relative to capital. A more complete answer will involve some discussion of the following topics: factor endowments, K/L ratio, the prices of capital relative to labor, factor intensities, economies of scale, output prices, marginal productivity of labor and/or capital, factor adjustment and allocation, labor and/or capital mobility, FDI.

Part III. Answer each of the following questions related to the following scenario. Be very specific and explain your answer to the best of your ability. Label your graphs clearly and explain what your graphs represent. Define concepts if you think it will support your explanation. (30 points)

Suppose that developing countries are net exporters of agricultural (food) commodities and developed countries are net importers of agricultural commodities. However, developing country exporters face non-tariff barriers imposed by developed countries. The developing countries argue that the non-tariff barriers on trade affect them more seriously than they do the developed countries. Use a partial equilibrium model to demonstrate and explain the following:

Model the trade implications of the trade policy scenario described above to show the following. (30 points)

1. Graph the case of a change in policy state from free trade to a trade situation with a non-tariff barrier on agricultural goods and discuss the economic effects (price and quantity).

Non-trade barriers: quota, licenasing system, regulations (health inspections, sanitation, etc) and perhaps even subsidies. Easiest is to show the case of an import quota for a large country. Motivate the reasons for why a country would use an import quota or other trade restriction.

2. Show the welfare implications and interpret the meaning of each. Is it correct to argue that the non-tariff barrier hurts the developing countries more than the developed countries? Explain.

Welfare implications of a trade restriction by a large importer: $\uparrow CS, \downarrow PS$, no ΔG , ? NSW, depends on the rent transfers between countries. A tariff by large importer means TOT gains to DCs at the expense of LDCs. With a quota (NTB) a similar result could occur, but an NTB can be more restrictive in the long run. If the NTB you selected was a regulatory regime, then there would be no "rents" from the trade restriction, assuming that the internal price was merely reflecting the cost of the regulatory compliance. In this case there might not be a situation in which it favors developed countries more than developing countries.

- Are there any other benefits or costs to society that your model does not capture? Explain. (Hint: think about what the purpose of the non-tariff barrier was.)

Benefits to society are not captured by the model. If the quota is applied for the purpose of restricting trade and transferring income to domestic producers in the importing country, then no. If some regulatory regime was set up, then the benefits would be increased safety or an improvement in whatever other social objective was being regulated.

IØ 201 EXAM DEC 2002

Part I. Explain whether the following statements are true, false, or whether it depends. Defend your answers. If depends is your answer, be sure to explain upon what it depends. (25 points, 5 points each)

- Trade liberalization is expected to result in changes in production because of changes in relative prices. Incomplete specialization in production is the result of increasing opportunity costs.
- Suppose a small country has a restrictive trade regime, but its government decides to liberalize trade. Welfare would improve in this country, but the greatest benefits will be gained by its trading partners.
- Suppose a country experiences economic growth that is neutral in production and consumption. The economy of this country will become more trade dependent because trade as a percentage of gross domestic product is expected to increase.
- Suppose poorer countries tend to be endowed with more labor than in richer countries. The theory would predict that freer trade should reduce income inequality in poor countries and increase income inequality in rich countries.
- Suppose a country applies some form of trade policy to protect local producers. If the value of the producer subsidy equivalent is equal to the consumer tax equivalent, then this implies that the policy resulted in a pure income transfer from consumers to producers.

Part II. Briefly answer each of the following questions or respond to the specific statements. Relate your answers to concepts discussed in class. Avoid unnecessary and irrelevant information! (45 points)

- The H-O-S model, which we developed in class and was presented in the readings, allows economists to predict changes in production, consumption and trade from changes in relative prices. Why are relative prices (e.g., the price of manufactured goods relative to agricultural goods) more important for decisions about production and consumption than nominal prices? Describe a market scenario in one country using the H-O-S framework to illustrate the situation (a graph is optional). Be sure to state make clear your assumptions. (15 points)
- In a dynamic context, comparative advantage may change over time. Demonstrate and explain how trade based on technological gaps (differences in technology at a point in time) and changes in factor endowments and tastes affect comparative advantage over time. (15 points)
- Many developing countries attempted industrialization through import substitution rather than export promotion as their strategy for development. Consider the potential economic consequences of each approach to development when answering the following questions: (15 points)
 - Compare and contrast import-substitution industrialization and export promotion development strategies by *listing* the types of policies applied under each. Define short-run and long-run economic consequences and provide a *list* for each approach? Be very specific and make your assumptions clear. (10 points; format your answer according to the chart below.)

	Import substitution	Export promotion
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Type of policies		
Short-run consequences		
Long-run consequences		

- b. Can there be a relationship between import-substitution policies and high rates of inflation? Explain. Can there be a relationship between export promotion policies and high rates of inflation? Explain. (5 points)

Part III. Answer each of the following questions related to the following scenario. Be very specific and explain your answer to the best of your ability. Label your graphs clearly and explain what your graphs represent. Define concepts if you think it will support your explanation. (35 points)

Suppose there is a small country that is a net importer of agricultural (food) commodities. The country was initially engaged in free trade; however, as a matter of achieving some food safety objective, policymakers in this country decided to require special inspections on all imported food. However, the policymakers did not required these inspections on domestic production of food. Suppose that there is a fixed cost per unit (e.g., kroners per kilo of food) for the inspection and that the cost is passed on to the consumers. Use a partial equilibrium model to answer the following questions:

1. Model the trade implications of the scenario described above to show the following: (25 points)
 - a. Graph the case of a change in policy state from free trade to the importation under the new inspection procedures and discuss the economic effects (price and quantity).
 - b. Show the welfare implications and interpret the meaning of each.
 - c. Are there any other benefits or costs to society that your model does not capture? Explain.
2. How would the situation change if domestic producers were required to submit their production to the same inspection procedures? How would production, consumption and imports be affected? (10 points)

Part I. Explain whether the following statements are true, false, or whether it depends. 25 pts

1. The theory would predict that the benefits from trade will be greatest when each country has an absolute advantage in the production of a good because the degree of specialization would be greater.

False. Changes in prices as a result of trade liberalization will determine the degree of specialization, not whether a country has an absolute advantage in the production of a good.

2. Trade policy usually has economic effects that affect producers and consumers. For example, an import tariff is both a subsidy to producers and a tax on the domestic consumer.

True. Show the case of a tariff having a subsidy effect on producers (PSE) and a tax on consumers (-CSE). Part of the loss in CS is a gain in PS.

3. A firm's international strategy can be through exporting or through establishing a commercial presence (foreign direct investment, FDI) in the targeted foreign market(s). The increased ease by which capital can move across countries implies that FDI reduces the importance of exports as a firm's international strategy.

Depends. Foreign investment can complement or substitute trade (exports). If foreign investment results in greater intra-firm trade or if components of a good are exported for assembly and re-export, then it is possible for investment and exports to be complementary. Issues related to proximity to end user, economies of scale in manufacture and distribution or other marketing activities can explain the result.

4. Even if two countries were identical in every respect (supply and demand), there could still be a basis for mutually beneficial trade based on economies of scale.

True. Economies of scale could give rise to increased product differentiation such that there is trade in similar products as well as trade in different products.

5. Dead weight losses are greater when trade policy results in an increase in the domestic price rather than a reduction in the domestic price because consumers are not hurt when prices decline.

False. If the world price is the most efficient price, then even if trade policies reduce the domestic price to subsidize consumers it results in a DWL. It still distorts demand.

Part II. Briefly answer each of the following questions or respond to the specific statements. Relate your answers to the concepts discussed in class. (45 points total, 15 points each)

1. The H-O-S model allows economists to form expectations on how returns to factors, income distribution and wages are affected as a result of trade. Answer the two questions below keeping in mind the assumptions of the model developed in class.

- a. Under the standard H-O-S assumptions, factors are assumed to be perfectly mobile between sectors within a country. Suppose now that not all the capital factor is mobile in the short run. What would the theory predict would happen to the return to the immobile capital factor in the two sectors? What would happen to the return to the country's mobile factors? (8 points)

a. Assume capital is divided into mobile and immobile (in short run) and is used in the two sectors (agriculture and manufacturing). Trade liberalization (from the South's perspective) would cause ag prices to increase relative to prices on manufactured goods. As a result, more labor and capital would be demanded in the ag sector. However, if capital was not perfectly mobile, then the benefits to labor would be smaller because adding more labor will cause a faster reduction in marginal

product of labor as more labor is added to ag production. The real effect on labor will depend on spending patterns associated with the relative price changes in ag and manu goods. The real income of the immobile capital (which is scarce) increases in ag sector as it has more labor with which to work and falls in the manu sector. The immobile capital in the manu sector is reduced in terms of both products.

- b. Does the factor-price equalization theorem say that international trade will eliminate or reduce international differences in per capita incomes? Explain. (7 points).

b. The factor-price equalization theorem does not say that international differences in per capita income will be eliminated or reduced. It simply states that if the relative ratio of output prices converges (law of one price), then there will be a tendency for factor price ratios to converge. This does not imply same wages or per capita income.

2. Lerner symmetry states that there is a similarity in the general equilibrium welfare effects of a small country pursuing different trade policy. Refer to the H-O-S 2x2x2 trade model as developed in class and in the text book. You are being asked to consider the symmetry (that is, the similarity of welfare implications) resulting from the following pairs of trade policies:

- a. Suppose a small agricultural exporting country is considering the use of an export tax. What is the effect on the prices of the agricultural good and the manufacturing good and the effect on the relative prices? Could the welfare effects of an import tariff on manufactured goods be symmetrical to that of the export tax? Explain with or without a graph. (10 points)

a. Show the general equilibrium case of an export tax or import tariff. The domestic price of the ag product (the exportable) will fall relative to the domestic price of the importable (manufactured good) under either policy. As a result, the production mix will change and the DWLs will be identical.

- b. Suppose this country was instead considering an import quota on the manufactured good. Would the import quota have symmetrical effects as an export quota (of the same volume of trade) on the manufactured good where the quota was administered by the exporting country. (5 points)

b. An import quota and an export quota will not have the same results in a general equilibrium context both in terms of the economic implications and the political administration. The price and revenue implications are different.

3. A country introducing trade policy can be argued to be behaving strategically. You are asked to consider the following trade policies and discuss whether the use of the policies can be used in a strategic sense: (15 points)

- a. Can an export tax be considered strategic? List the possible objectives of the policy and explain whether this policy can be considered strategic or not. Make your assumptions clear. (7 points)

a. Export tax objectives: revenue (including rents from importers), redistribution of income to other sectors, subsidy to processing sector. The strategy would be related to whether the revenue or redistribution can result in more efficient production in the targeted sector in the future (infant industry that in fact grows up such that the production activity contributes positively to SW. If the processing sector can be created, then the increased demand could be beneficial to the agricultural sector. A large exporter could theoretically improve SW as income is transferred from importers.

- b. Can an export subsidy be considered strategic? List the possible objectives of the policy and explain whether this policy can be considered strategic or not. Make your assumptions clear. (8 points)

b. Export subsidy objectives: increase production, increase exports, increase market share, help producers. If in the long run, the gain in market share can drive out rivals or if there is learning by

doing, then it could be considered strategic. An export subsidy by itself is welfare reducing, especially if the country is large.

Part III. Answer each of the following questions related to the following scenario. Label your graph(s) clearly and explain what they represent. Define concepts if you think it supports your explanation. (30 pts)

Suppose there is a small country that is a net importer of agricultural commodities in the absence of government policy intervention. However, as a matter of achieving some social objective, policymakers decided to set a tariff on imported agricultural commodities at a rate such that the domestic price is higher than the autarky price (i.e., the domestic market equilibrium price under a closed economy). This would result in a trade reversal situation such that this country becomes a net exporter. Use a partial equilibrium model to show the effects of such a policy. Be very specific and make it clear what the welfare areas represent.

- What are the partial equilibrium implications of the tariff? (15 points)
 - Show the case of a change in policy state from free trade to the application of a tariff.
 - Show all the welfare implications and interpret the meaning of each.
- What is the total subsidy equivalent of the tariff? Be sure to consider the total economic effect of such a policy. Explain the meaning of the producer subsidy equivalent and the consumer subsidy equivalent. How do these concepts relate to the simple model presented in previous question? (10 points)
- How would your answer have changed had the country been a large country? Provide a list of economic implications, but be specific. (5 points)

1. Set tariff such that $P_D = (P_w + \tau) > [P^*]_{\text{closed}}$

$\Delta CS = - (a+b+c+d) < 0$ tax on consumers: (a) is transferred to producers as a higher price

$\Delta PS = + (a+b+e) > 0$ subsidy to producers: part domestic support and part export subsidy (b+e)

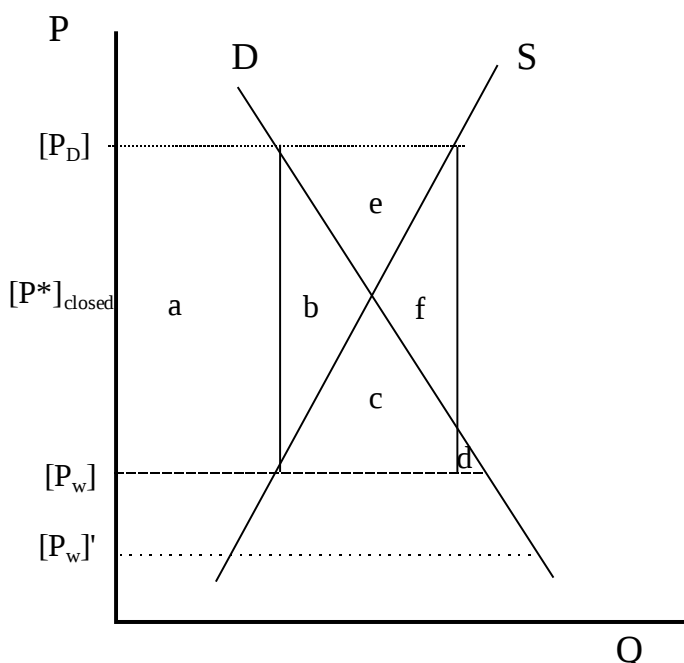
$\Delta G = - (b+c+e+f) < 0$ cost of the export subsidy paid by government

$\Delta NSW = - (b+c+d) - (c+f)$ which is the DWLs in consumption and production

2. CSE = - a

PSE = + (a) + (b+c+e+f) where a is the domestic support (price support) paid by consumers and rest is export subsidy paid by taxpayers.

3. Large country implications: World price would fall and the cost of the program would be higher to the taxpayer.



End of 2001

Part I. (25 points, 5 points each) For the statements below, explain whether the statement is true, false or whether it depends.

1. If the income elasticity of import demand for a country is less than one, then the country will be less reliant on trade as the country experiences growth.
2. Intra-industry (i.e., within industry) trade will be relatively greater (compared with inter-industry trade) the more similar are the capital and labor endowments.
3. Suppose a developing country has a regulation that requires local juice-processors to produce juice that is at least 75% from domestic oranges. Such a regulation would act as an import tariff on oranges.
4. Suppose a country exports an agricultural commodity. Consumers in this country who consume the commodity would prefer an export tax to an export subsidy.
5. Immiserizing growth in a developing country (the reduction in social welfare from growth) would be the result of instability in international agricultural commodity prices.

Part II. (45 points, 3 questions each worth 15 points) Briefly answer each of the following questions or respond to the specific statements.

1. The Minister of Agriculture in an emerging market economy is concerned about the effects of trade liberalization on the agricultural sector. You are asked to explain some basic theoretical concepts and to reinforce the theory with practical applications. In particular, the minister wants to know the following information.
 - a. Define absolute advantage and comparative advantage. Why is the difference so significant for economists?
 - b. What type of data and market information would you advise the minister to have collected in order for the ministry to analyze whether the country had a comparative advantage in some specific sub-sectors of agriculture?
2. You are asked to consider a scenario whereby the price of labor increases relative to the price of capital. Use the H-O-S 2x2x2 trade model developed in class to consider the economic implications of the change in relative input prices.
 - a. Explain how producers in the agricultural and manufacturing sectors respond. How is the capital-labor ratio affected in each sector?
 - b. Show this result using a general equilibrium diagram (H-O-S 2x2x2 diagram) from the perspective of the country with a comparative advantage in the agricultural sector. Make all your assumptions clear.
3. Consider the welfare implications of an export subsidy and its use as a policy tool.
 - a. Show the case of an export subsidy for an agricultural exporter using a simple partial equilibrium model. Specify your assumptions.
 - b. Discuss the circumstances under which such subsidies are in the national interests and be specific.

Part III. (30 points) Discuss the trade implications of different policies and use partial equilibrium analysis to support your answer. Be neat and label your diagrams. Define concepts to help support your explanation.

Different trade policy measures (tariffs, quotas, and voluntary export restraints) have been used by governments to provide protection in different circumstances. Discuss the trade implications of each by using partial equilibrium analysis. You can use the same diagram(s) for each case. What reasons would governments have for choosing each of these policy measures as the means of protecting domestic industries?

1. tariff
2. quota
3. voluntary export restraints

END of MAY 2001

Part I. (25 points, 5 each) For the statements below, explain whether the statement is true, false or whether it depends. If depends is your answer, be sure to explain upon what it depends. For the question below, provide a brief answer.

1. A large exporting country using an export subsidy can improve its net social welfare (relative to free trade) only if the increased market share from the additional exports is sufficiently large.
2. Intra-industry trade should result in fewer trade disputes regarding relative wages because such trade occurs in very similar products.
3. According to economic theory, only in the unlikely situation where a country does not have a comparative advantage in anything would the country be better off pursuing self-sufficiency.
4. A tariff and its quota equivalent are said to have identical primary effects, that is, the welfare effects are initially the same. This implies that the income transfers resulting from either the tariff or the quota will tend to be very similar both within the importing country and between the importing and exporting countries.
5. The law of one price suggests that price differentials for a similar product will tend to go to zero. What might explain the ability of an exporter to discriminate in international agricultural markets?

Part II. (45 pts, 3 x 15 points) Briefly answer each of the following questions or respond to the specific statements.

1. People who argue against trade often do so on the grounds that trade liberalization is disruptive to the economy and that it results in income distributional effects that are unacceptable. You are asked to compare/contrast these disruptive effects and income distributional effects of trade liberalization with that from some technological change:
 - a. Present a simple general equilibrium model to show the effects of trade liberalization on a country. Briefly explain the process by which the economy adjusts and discuss the income distributional effects (including wages) that result.
 - b. Present a simple general equilibrium model to show the effects of some technological change on a country (and assume trade occurs). Is the adjustment process similar or different from the situation you describe in 1.a? How does the technological change affect wages and prices of products?
2. The Prebisch-Singer hypothesis has been at the center of a long running debate among economists about relying on the agricultural sector for growth and development. The debate essentially rests on the nature of the terms of trade of agricultural commodities relative to manufactured goods both in terms of prices and quantities traded.
 - a. What is the logic behind the Prebisch-Singer hypothesis? The hypothesis implies that specialization in agriculture in order to exploit a comparative advantage in the agricultural sector is not useful for export-led growth and development. Why?
 - b. A new tendency being discussed is that de-industrialization is occurring. That is, there has been a relative decline in manufacturing relative to the services sector in most developed countries. What might explain this tendency? How significant is the effect of increased trade between developing countries and industrialized countries?
3. The argument in favor of trade rests on (a) the gains from trade, (b) the dynamic efficiency effects of trade, and (c) on political grounds. Explain what is meant in each case. Give examples if appropriate.

Part III. (30 points) Analyze the partial equilibrium effects of the scenario described in the following paragraph from the perspective of Country A, and answer the related questions. Be neat and label your diagrams. Define concepts to help support your explanation.

As part of the Balkan Stability Pact, countries in southeastern Europe are strongly being encouraged to enter into free trade agreements (on the idea that countries that trade with each other do not wage war against each other). Suppose two neighboring, small countries in the region (Countries A and B) decide to enter into a trade agreement such that each country offers preferential treatment on the other's exports. For example, say initially Country A has a 10 % tariff on the imported good coming from all exporting countries (e.g., Countries B and C). However, with the newly signed trade agreement, the import tariff on the imported good from Country B is 5 %, but for Country C the tariff remains at 10 %.

1. From the perspective of Country A, show the partial equilibrium analysis of a 10 % tariff on imports, and show the effect on the world market. Be sure to explain the welfare implications (producer surplus, consumer surplus, government revenue) relative to the free trade equilibrium. Make your assumptions clear. (10 points)
2. In a separate graph, show the effects of the trade agreement (from the perspective of Country A only). That is, show the change from a 10 % tariff on the imported good to a 5 % tariff on the imported good from Country B. Suppose that at the preferential tariff rate only Country B exports to Country A. Discuss the welfare implications of such a result. (10 points)
3. The Minister of Finance of Country A, relying on tariff revenue to supplement the national budget, has some reservations about reducing tariffs on the imported good from Country B from 10 to 5 %. The Minister asks you for some insight into how tariff revenue changes under the scenarios that follow (10 points):
 - a. How are Country A's tariff revenues affected when Country B can satisfy all import demand at the 5 % tariff (the scenario described in part 2)? Do tariff revenues increase, decrease or does it depend? Be sure to explain your answer very carefully.
 - b. How does your answer compare if Country B does not have the ability to supply all of Country A's import demand? In other words, Country A imports some of the good from Country C with a 10 % tariff and some of the good from Country B at a 5 % tariff. How does this change the welfare and revenue implications?

_____ End of Dec 2000 _____

IØ 201 Quick Summary Solutions DEC 2000

- I.1. F. Export subsidies cannot improve NSW regardless of size of country. Unless future mkt shares increase such that rivals are driven out of business (predatory behavior) and then monopoly profits can be earned, then it might be possible to improve NSW.
- I.2. T. The idea is that Intra-industry trade (IIT) is trade between similar countries with similar K/L ratios and so the argument of lost jobs from trade is weakened. Related concepts: economies of scale and product differentiation.
- I.3. T. A country is argued to have a CA in something unless the margin of disadvantage is the same across all products which is unlikely. Only in such a situation would trade not occur.

- I.4. F. Tariff rents always go to the importer's gov't. However, under a quota, the administration of the quota will determine who gets the quota rents. These can go to either importer/exporter or importer's/exporter's government.
- I.5. The ability of an exporter to discriminate in international ag mkts is related to the price elasticity of demand in the different importers mkts. Related issues: willingness to pay for quality and the importance of time of delivery.
- II.1.a. Show the case of moving from no trade to free trade with an H-O-S model from the perspective of one country. Discuss how output prices change and how input prices change and the relationship of output and input prices (wage = VMP). Discuss how production and consumption changes.
- II.1.b. Show a shift in the prodn possibilities curve to represent change in tech. Discuss how output prices change and how input prices change and the relationship of output and input prices. Make some assumptions about type of tech change and the implications for relative prices. This will determine how tech change is similar or different from trade liberalization.
- II.2.a. Discuss why demand for ag products/commodities is inelastic w.r.t. price. Discuss why supply for ag products/commodities is inelastic w.r.t. price. Demonstrate that price is more unstable as a result of the relative price inelasticity. Instability in P means dependence of the Ag sector can lead to unstable econ development and growth. Define and mention Engles Law. Related concepts: net barer terms of trade, commodity terms of trade, immiserizing growth.
- II.2.b. Discuss de-industrialization by explaining different reasons for why there might be a decline in manu jobs (e.g., relative prodvty in manu sector versus trade between north and south or DCs and LDCs). Discuss that jobs in the service sector are diverse and not all low paying. Discuss that measuring prodvty in the service sector is complicated. Make the case whether the decline in manu sector (in terms of jobs) is related to prodvty in manu sector or whether the decline in manu sector is due to trade with developing countries.
- II.3.a. Gains from trade are from increased utility from consuming more imports (increase in purchasing power) and from increased profits from the increased production of the exportable. This is a result of improved efficiency in production and consumption and thus an improvement in real income and SW.
- II.3.b. Dynamic efficiency is the result of increased competition, linkages of production with other sectors of the economy (e.g., from ag prodn to processing, for product manufacturing and related agribusiness activities higher along the mkting channel: grapes to wine), foreign direct investment, and economies of scale which result from specialization and exploiting comparative advantage.
- II.3.c. Policy, including policy designed to restrict, result in lobbying and special interests. Trade policy is often used as a tool to indirectly correct something that needs more direct solution (e.g., prodn subsidy rather than a tariff on the good). Easier politically

to use tariff than a prodn subsidy. Related concept: political lobbying involves collective action.

- III.1. Show partial equilibrium effect of a 10% tariff by a small country. Show PS, CS, G and change in NSW.
- III.2. On a new graph show the previous result as the starting point and show a 5% tariff showing the increased imports and the ambiguous change in tariff revenue. There is a net SW improvement because the lower tariff means domestic price is closer to the "world price".
- III.3.a. The tariff revenues can either increase, decrease or stay the same depending on the elasticities of supply and demand in the importing country.
- III.3.b. If the country imports from two countries then the real domestic price is an avg of the imports at the 5% tariff and the imports at the 10% tariff. The tariff revenue will be higher relative to the case in III.1.a. but total gov't revenue will be related to the additional volume imported at the 5% rate.

_____ **End of Dec 2000 solutions** _____

Part I. True, false, or whether it depends. Defend your answer in a max of three sentences, 25 pts

1. It is acknowledged that international trade has income distributional effects within a country. From the neoclassical trade models, one would predict that owners of a country's scarce factors will be among the winners from trade and owners of the abundant factor will be among the losers from free trade.
2. A country which experiences a growth in factors (e.g., say a doubling of labor and capital) and that has constant returns to scale (and which experiences no technological change) will experience a growth effect but no terms of trade effect.
3. Intra-industry trade tends to occur among countries with similar capital-labor ratios, when economies of scale are strong, and when the products are highly differentiated; therefore, this trade occurs without serious income distributional effects.
4. An optimal tariff for a small country is that tariff rate which is set such that the losses of efficiency are offset by the revenues collected by the government.
5. The theory of international trade would predict that two countries with identical endowments (i.e., the same resource abundance) and the same technology would not engage in trade because there could be no gains from exchange.

Part II. Briefly answer each of the following questions or respond to the specific statements. Be sure to relate your answers to the concepts discussed in class. Avoid unnecessary and irrelevant information as this adversely affects the quality of an answer! (30 points, 10 points each)

1. Suppose the government of an exporting country is considering the use of strategic trade policy. The idea is to promote exports by subsidizing the development of technological innovations as a means of increasing production. Should the elasticity of the excess demand curve (of importers) matter to the exporting government given this strategy? Why or why not? What does strategic policy mean in the context of a country's social welfare?
2. Suppose the government of a small developing country is a net importer of agricultural commodities and food products is considering a subsidy to help domestic consumers. Explain whether the social costs of an import subsidy on these goods are greater than if the government simply subsidized the consumption of these goods. (Ignore any administrative costs of implementing either subsidy.)

3. What is a producer subsidy equivalent? How would you interpret a negative value of a producer subsidy equivalent for some agricultural commodity? If the producer subsidy equivalent for some commodity were negative, would you expect the consumer subsidy equivalent for the related food product to be positive, negative or zero? Explain.

Part III. Answer each of the following questions related to the scenario described in the paragraph. Be very specific and explain your answer to the best of your ability. Use graphs to support your answers where appropriate. Define concepts if you think it will support your explanation. (45 points)

1. A developing trend is that there is greater North-South trade, i.e., commerce between developed and lesser developed countries. The increased trade is resulting in increasingly competitive commodities and food products (it is not simply tropical products for non-tropical products). Economic theory says trade is a good thing, including trade among these types of countries. Critics of trade say the theory misses the whole point. Some argue that trade with developing countries, where wages tend to be lower and work hours longer than in developed countries, is unfair and will reduce the number of jobs in the high-wage economies. Other critics argue that the very fact that underdeveloped markets exist in developing countries puts those economies at a distinct disadvantage relative to the developed countries. (25 points)
 - A. Use a simple $2 \times 2 \times 2$ H-O-S type framework to discuss trade between developed and developing countries. Suppose that initially the developed country is more open to trade than the less developed country. Make all of your other assumptions clear. (10 points)
 - B. What would the theory predict about the gains from trade? That is, would one country be a bigger winner from trade? Explain. (5 points)
 - C. What would the theory predict about the associated costs of adjustment from the dislocation of workers? That is, would workers in one country be expected to suffer larger costs from trade? Explain. (5 points)
 - D. What is the factor-price equalization theorem and how does it relate to the issue of wages and trade? Does the empirical evidence support the factor-price equalization theorem? Explain. (5 points)
2. In the 1970s and 1980s, interventionist policy by agricultural exporting developing countries chose to heavily tax their agricultural sector to support the manufacturing sector and help reduce imports. The results of this type of policy went counter to the economists' line of reasoning that a country should exploit and encourage the sector in which it has a comparative advantage. (20 points)
 - A. Show the partial equilibrium result of an export tax by a small agricultural exporting country. Be sure to show the areas representing the welfare losses and income transfers. Explain the meaning of the welfare losses and income transfers. (10 points)
 - B. Show a potential general equilibrium result given your results in part A. Note that you have to make some assumptions about the manufacturing sector. (5 points)
 - C. Would the general equilibrium results be similar to those in part B if instead of an export tax the government chose to use an import tariff? Briefly explain. (5 points)

END of MAY 2000

Solutions:**MAY 2000 exam**

1. F. The owners of scarce factors would be worse off because the price of importable is expected to decrease. The owners of abundant factors would be better off because the price of the exportable increases on the world market.
2. D. It depends on whether the country is sufficiently large. If sufficiently large, then a doubling of labor and capital as a result of growth (even without technological change) can still result in a change in relative world prices, i.e., a change in terms of trade. This could be the result regardless of the returns to scale.
3. T. If countries tend to be the same and intra-industry trade occurs because of product differentiation, then consumers benefit from greater variety and factor dislocation might be less severe because the import competing sector produces a "perceptively" different product. Import competition is not purely a function of price.
4. F. A small country has no optimal tariff. The DWLs are always greater than the revenue gain because there are no income transfers from the exporting country (as there is no TOT effect).
5. F. Differences in D can result in price differentials which can encourage trade. This can result even in the unlikely event that countries have identical endowments and the same technology available to them.

Part II.**(May 2000 solutions)**

1. a. Yes, the elasticity of ED should matter. The tech change will cause ES to shift and there will be two offsetting factors: $\uparrow Q$ but also $\downarrow P$. If the Q-effect (more export) is greater than the TOT effect (less export earnings), then SW $\uparrow$. Otherwise, SW $\downarrow$ and it is similar to immiserizing growth. The more elastic is ED the larger the $\uparrow Q$ r.t. $\downarrow P$ and SW could improve. If ED is inelastic, the subsidy is likely to reduce SW.
 - 1.b. Strategic policy must mean that the gov't can help overcome some mkt failure problem (perhaps tech innovation would not occur without a subsidy or can make it happen quicker) and improve SW. If the subsidy is simply a substitute for an export subsidy, then SW will not improve. It will simply result in transfers from the exporting country to the importing country. The subsidy must improve SW in a way that the private sector or market alone could not achieve the result, e.g., mkt failure, externality, infant industry.
 2. SW is higher if a consumption subsidy is used to help domestic consumers. The objective is to help consumers not hurt domestic producers in the process. Subsidizing imports would be similar to taxing domestic producers and hence will result in DWLs in production. see graph
 - 3.a. PSE is the value of subsidy or tax from a program or policy. A negative value of PSE would be a tax on producers, e.g., an export tax that results in a reduction in domestic prices or a tax on inputs.
 - 3.b. If the PSE for a commodity were negative because the objective of the policy was to transfer income to consumers, then the CSE would be positive. However, it is possible for the gov't to discourage prodn and consumption through some policy objective and this would result in - PSE and - CSE.
- III.1.a. Show the case of a large country and small country in general eqblbm.

- 1.b. The theory would predict the gains would be disproportionate to the country which saw the prices change the most, i.e., the small country (and the more closed economy). The gains from trade are a result of higher prices of the exportables and lower prices of the importables.
- 1.c. The theory would predict that the adjustment costs would be disproportionate to the country which saw the prices change the most, i.e., the small country (and the more closed economy). The adjustment costs would be greatest because as output prices change, factor prices change in order to encourage factors to move. However, if factors are less than perfectly mobile or occurs in the longer run, then it is safe to predict that S-R adjustment costs are greater in the smaller country.
- 1.d. Factor-price equalization theorem predicts that even with immobile factors across countries factor prices will still converge across countries because of the changes in relative prices of output prices. For example, wages will tend to increase in labor abundant countries and decline in capital abundant countries. So, unskilled labor will be made worse off in DCs and better off in LDCs – a converging effect. The evidence is difficult to prove because of aggregation problems and defining what skill vs unskilled labor is. While it might be true that wage inequality is increasing in the US (as might be expected), wage inequalities are not being reduced between DCs and LDCs. This might also mean that several factors might explain wages and not just trade.
- 2a. See diagram for a partial equilibrium result of an export tax by small ag exporter.
2. b. Show diagram for gen'l eqblm of the export tax on ag exports.
2. c. The gen'l eqblm results in b would be identical to the results of an import tariff. This is what the Lerner symmetry condition shows. The relative prices would be the same under a tax on exports or tariff on imports (assuming the same rate of ad valorem duty).

_____ End of May 2000 Exam solutions _____