ECN230 File of Previous Exams, 2010 -2014

ECN230 Final exam retake from 2014 (June 2015)

Part 1. Explain whether the following statements are true, false, or whether it depends. If depends is your answer, be sure to explain upon what it depends. (25 points)

1.1 A tariff and a quota that result in the same volume of imports will have identical effects on prices and domestic net social welfare.

1.2 Suppose a country experiences economic growth over time which has been pro-trade. This would suggest that the country's terms of trade has improved over time.

1.3 Economies of scale are an important a factor making international markets monopolistically competitive.

1.4 A change in a country's willingness to trade will affect the country's terms of trade regardless of the size of the country.

1.5 The case for or against free trade often rests on a cost-benefit analysis. The optimal export subsidy will be the rate that maximizes national welfare (in the exporting country) that results from the benefits arising from the new terms of trade.

Part 2. Briefly answer the following questions or respond to the specific statements. Relate your answers to concepts discussed in class and avoid unnecessary information (45 points)

2.1 It is often argued that globalization in a North-South context (i.e., international transactions between richer and poorer countries) has negative economic consequences. As a result, policymakers either apply restrictions on trade in goods or limit the movement of labor across borders. Consider the basic lessons of the Heckscher-Ohlin-Samuelson (H-O-S) 2x2x2 trade model as presented in class and the implications of free trade in goods between North and South when answering the following (hint: assume a two-country world for simplicity):

2.1.1 What are the economic implications for North of freeing North-South trade in goods? That is, how might freer trade affect the goods markets, trade, employment in different sectors, and wage rates? Explain - make your assumptions clear. 8 pts

2.1.2 What would be the economic implications for North of freeing labor migration from South? That is, how might migration affect the goods markets, trade, employment in different sectors and wage rates? Explain - make your assumptions clear. 7 pts

2.2 It is often argued that trade policy instruments are applied by governments because they are politically easier to enact (i.e., to pass parliament or congress) than domestic policy (policies that do not directly affect trade). Think about the economic implications of trade policies restricting imports of some good when answering the following:

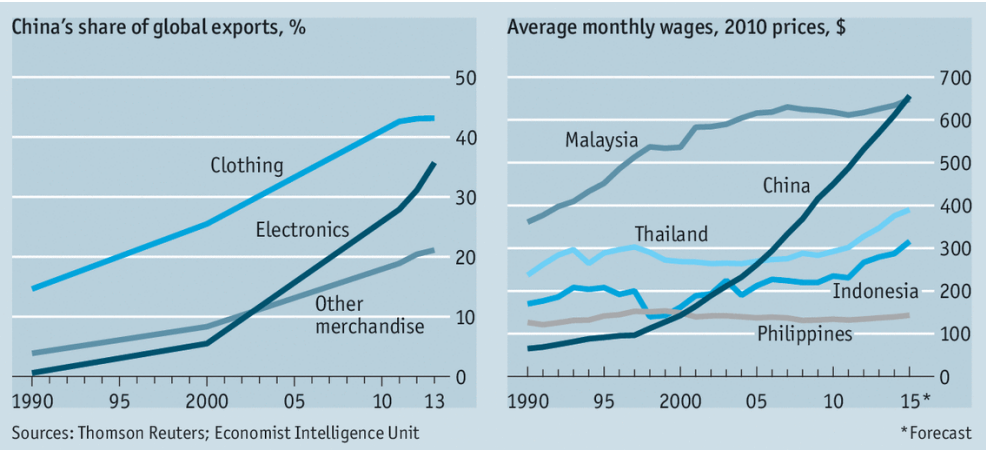
2.2.1 *List* the potential economic objectives of an import restriction. Be specific. 5 points

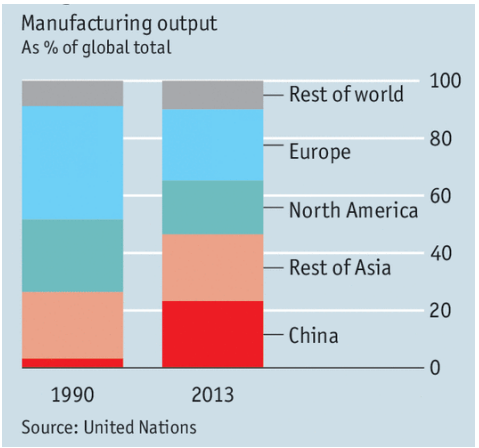
2.2.2 Suppose a government's intention is revenue collection and is considering a tariff, import quota or consumption tax. Rank and explain the effectiveness of each. 10 pts

2.3 China transformed its economy and the world with it by making manufactured goods and exporting them to foreigners. In 1990, China produced less than 3% of global manufacturing output (by value) and by 2015 its share was nearly 25%. For countries starting to industrialize, clothing can be a natural sector to target: the sectors tend to be low-skill, low-cost and highly transportable goods. Electronic goods, by contrast, tends to be in sectors that require more

advanced manufacturing. Consider the data presented in the charts below when answering the following (*Economist*, "The future of factory Asia: A tightening grip", 14 Mar 2015, p. 61-2):

2.3.1 Relate the data to concepts such as comparative advantage and specialization. 5 pts
2.3.2 Focus on the share of manufacturing output as a percent of the global total. What does de-industrialization imply for Europe and North America? What could be the causes and consequences of this process? List specific factors. 10 pts





Part 3. Answer the questions related to the policy scenario described in the paragraph below. Be specific and explain your answers to the best of your ability. Label graph(s) clearly and explain them. Define concepts you think will support your answer. (30 points)

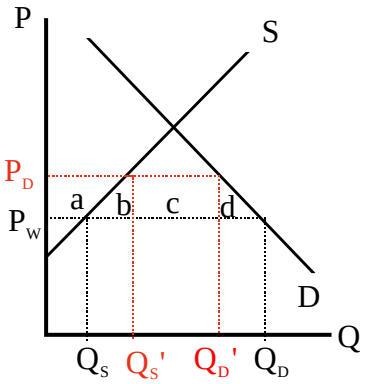
3. For a small country, consider a quota and an equivalent export tax that permit the same initial level of exports. The market is competitive, and the government decides how to allocate the quota permits to domestic exporting firms, without resources used in the process. There is now an increase in domestic demand. The initial tax rate is unchanged, and the export quota quantity also remains unchanged. Think about the economic implications of the change in demand given the trade policy choices that are involved when answering the following:

3.1 Show the domestic market implications and trade effects of an export tax and an export quota that result in the same level of exports. Explain how the net social welfare effects in this country might differ under the two policies. (5 points)
3.2 In a separate graph show and explain how the increase in domestic demand affects the domestic market and trade given the previous tax rate and quota volume. (20 points)
3.3 From the situation in 3.2, would the country lose its competitiveness on the international market? If so, explain why a country might use an export tax or quota. (5 points)

Summary Solutions – 2014 retake exam May 2015

1.1

T/D. A tariff and an equivalent quota in terms of import volume ($Q_D' - Q_S'$) can result in the same domestic price (PD) and net SW. The difference is the collection of rents in the domestic economy: under the tariff it is the government whereas under a quota the rents can be shared by government and/or by domestic firms. The DWLs are the same and so is the ΔCS. If, instead, the quota rents can be collected by foreigners, then the tariff and quota will not generate the same net SW effect.



1.2

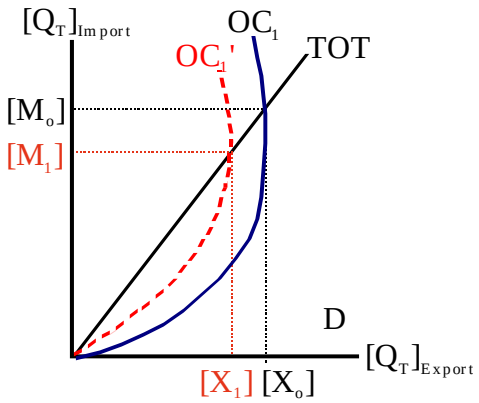
F/D. Pro-trade growth implies that as GDP increases, the % of GDP that is made up of export and import increases. This can be caused by either increased exports and/or increased imports. An improvement in the TOT implies an increase in the price of exportables relative to importables. Economic growth can increase, decrease or leave TOT unaffected. For example, increased imports from an increase in GDP can be pro-trade but can worsen the country's TOT.

1.3

T. Economies of scale are an explanatory factor for monopolistically competitive industries. Firm size increases with fewer firms, intra-industry trade and product differentiation are all features of the character of the industry structure.

1.4

F. A change in a country's willingness to trade (regardless of the reason, e.g., policy or changes in market situations) will affect a country's TOT in the large country case only. In the graph, the offer curve of country 1 shows the country's willingness to exchange X_o units of export for M_o units of import. A decreased willingness to trade, in this case, leaves the TOT (the foreign country's willingness to trade) unaffected only because country 1 is small. Changes by a large country will affect world prices.



1.5

F. It is true that the case for/against trade is often a cost-benefit analysis. However, an export subsidy is net SW reducing in the exporting country because it reduces the country's TOT. Hence, the optimal export subsidy is zero in terms of the benefits from TOT changes. An export tax could theoretically improve national welfare by increasing the world price of the exportable earning rents from importing countries.

2.1

Assumption: 2x2x2 world. North is K-abundant and L-scarce whereas South is L-abundant and K-scarce. One of the goods is more K-intensive and the other is more L-intensive in production.

2.1.1

North-South trade will result in lower price of the L-intensive good and relatively high price of the K-intensive good in North. The K-intensive sector will be better off and the L-

intensive sector would lose from increased import competition. Wages would fall in the import competing sector.	
Goods markets	Increased specialization. More production in K-intensive export sector, less production in L-intensive import sector.
Trade	Increased export and import
Employment	If export sector is K-intensive, then the increased prices in export sector could result in more employment, but the K-intensive nature of production would mean relatively small increase in jobs in that sector. Increased K-usage could make labor there more productive. In the import sector, the lower wages in South is a source of comparative advantage and would imply more L let go from production in North. If that labor does not find work in the export sector or service sectors, then increased unemployment is possible.
Wages	Wages in the export sector might increase (especially if labor is relatively immobile – cannot move from import sector to export sector) and returns to K increase. Wages would fall in the L-intensive sector and would lose from increased import competition. The benefits to the export sector, being K-intensive, would imply that on a macroeconomic level income inequality would worsen in North.

2.1.2

If L-migration was facilitated, then labor would move from South to North, particularly to the L-intensive sectors.	
Goods markets	L-migration would increase production of importable (L-intensive) goods. Increased L would push down wages in those sectors, perhaps displacing some local L. Unlike in the previous scenario, production would increase.
Trade	Imports would decrease because domestic production in import-competing sectors would increase. Trade in exports could be affected negatively if income in South decreases. South's exports can finance less imports because its exports to North decrease.
Employment	Less clear: L-migration and lower wages has a positive and negative effect. There would be more employment by new arrivals, but it could displace local L. L-migrants would also create new demand, potentially creating jobs in other sectors.
Wages	Wages in L-intensive sectors would fall relative to K-intensive sectors. Without K-mobility, the returns to K are not great as in the previous scenario, and the income inequality would not be as severe.

2.2

2.2.1

Increased production
Increase employment or use of domestic resources (inputs into production)
Increased tax revenue
Decreased imports
Decreased consumption
Trade restriction as a policy response to unfair trade or as a response to some other social policy objective

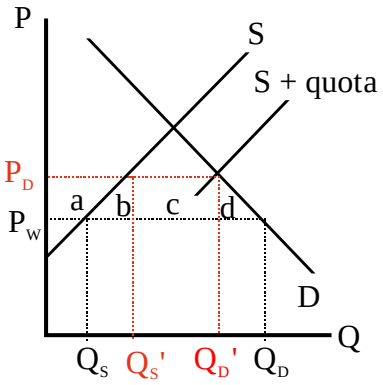
2.2.2

The government's policy objective is to collect revenue. The ranking in terms of effectiveness is as follows:

1st : consumption tax; 2nd: tariff; 3rd: import quota

Consumption tax	Tax base is much broader; collecting revenue on each unit consumed rather than just on imports
Tariff	Tax is collected just on imported volume
Quota	Rents can be collected by government and/or firms. The larger the country is the more unpopular will be an import quota. Large country import quotas often are set up as "voluntary export restraints" on the part of exporters as a means to compensate them for lost export revenues.

In the graph, a consumption tax would result in tax collection equal to (a+b+c) with d as a DWL. A tariff would only earn the government area (c). So would a quota if the quota was auctioned off under a perfectly competitive auction.



2.3

2.3.1

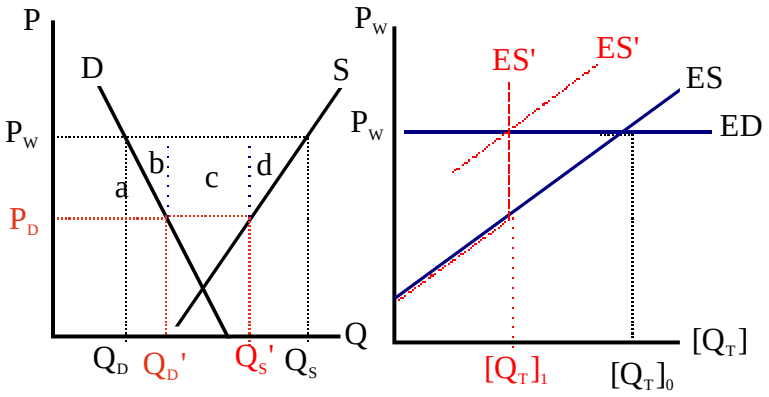
Global exports of clothing increases fast at the beginning suggesting clothing is L-intensive and wages are low. Specialization in this sector is relative easy because K requirements are low. Export of electronics increase after 2000. Electronics being more K-intensive take longer to develop. Even as the sector is targeted by the government it take a bit more time master more advance production. Suggests an improvement in the use of capital (even as wages in China have increased over time). Other merchandise exports have increased more slowly. All of the trends suggest a transformation of the economy away from clothing (L-intensive, low-wage based trade) toward more sophisticated production that is relative more K-intensive and where low-wages are not the souce of comparative advantage.

2.3.2

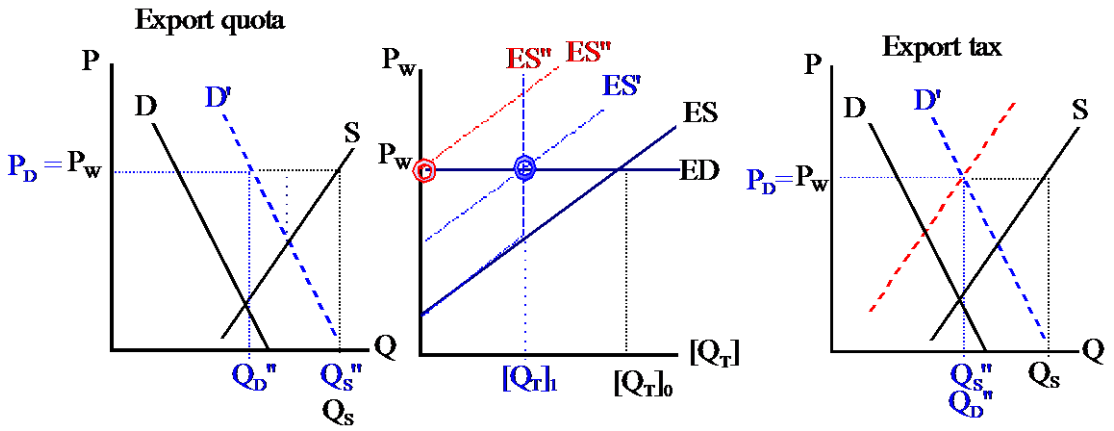
De-industrialization is the process by which manufacturing output (employment) decreases as a % of GDP over time. The relative decline in the sector has many potential sources: (a) North-South trade based on lower wages; (b) lower productivity in North relative to South; (c) regulations that are stricter in North relative to South; relative productivity improvements in manufacturing relative to other sectors (e.g., services which might be skilled L-intensive). Factor (d) is an important consideration. The manufacturing sector in many cases have not decreased absolute production, but rather, relative production. One unit of labor works with more capital than before and can produce more output. The serves sectors might have a harder time increasing L-productivity, but not all services sub-sectors are low-wage industries.

3.1 Export tax vs quota

Graph below shows export tax and equivalent export quota resulting in $[Q_T]_1$ units of import after the restriction is applied. The quota results in a kinked ES curve and the tax in a parallel shift of the ES curve. The small country case shows that P_W is unaffected by the reduction of the country's export volume, but the domestic price falls in the exporting country (reducing production and encouraging consumption – both of which help to reduce the exportable surplus). The net SW implications can be the same if the revenue/rents (c) remain in the country. Consumers gain area (a) producers lose area (a+b+c+d) and gov't earns area (c) as tax revenue or from the quota. Society loses area (b+d the DWLs). Any differences in the tax and quota are in the set up on the quota. Domestic firms could get part of area (c).



3.2



Under the original quota with an increase in domestic demand, it is still possible for the equilibrium volume of exports to remain the same (the way it is shown in this case). A larger increase in demand would make the quota non-binding (a volume less that $[Q_T]_1$). Under the original tax, the increased demand would cause export volume to be reduced. In this case it is shown to be zero. Higher domestic prices is driven by higher demand. No exports implies gov't collects no revenue. Exports not possible because $P_D = P_W$ – the export tax would make exports non-competitive.

3.3

The country is more likely to lose its competitiveness on the international market from the export tax rather than the quota. Domestic prices increase because of increased domestic demand, but the tax is then added to the higher cost, making exports less competitive. Under a quota, there is no additional tax, making it more possible to export. A country applies an export tax to collect tax revenue from commodities with inelastic foreign demand and to lower the domestic price. A country uses a quota on exports to have greater control over trade and to stabilize the domestic market.

Solutions ECN 230 Final exam Fall 2014

Part 1. Explain whether the following statements are true, false, or whether it depends. If depends is your answer, be sure to explain upon what it depends. (25 points)

1.1 A negative terms of trade effect resulting from a country's economic growth is associated with the production and specialization in a commodity rather than the production of an industrial or manufactured good.

1.2 The international flow of productive resources (e.g., inputs such as labor or capital) is considered a substitute for international trade in goods.

1.3 Economies of scale are likely to lead to imperfect competition unless the economies of scale are at the level of the industry as a whole rather than to a particular firm.

1.4 The law of one price holds under particular conditions, such as no transportation costs. The relative price inelasticity of excess demand and excess supply will determine whether more of the cost of transport is borne by the importer or the exporter.

1.5 A dual economy situation (where there co-exists a modern and a traditional sector) in a developing country's macroeconomy could be the result of restrictive trade policy.

Part 2. Briefly answer the following questions or respond to the specific statements. Relate your answers to concepts discussed in class and avoid unnecessary information (45 points)

2.1 There are some persons who have a fear or skepticism of globalization because of the economic implications it might have. Consider the meaning of globalization in an international economics context when answering the following:

2.1.1 List the principle types of cross-border transactions that relate to globalization. (5 points)
2.1.2 List some concerns that are usually associated with globalization in developed countries with more mature economies. Be specific. How do these concerns relate to the typical arguments in favor of government intervention in these countries? (10 points)

2.2 The basic Heckscher-Ohlin-Samuelson (H-O-S) trade model argues that trade is based on factor endowment differences because the underlying technology is such that production is intensive in the use of particular factors. Consider some other assumptions underlying the H-O-S model and the trends and emerging patterns that are currently developing on the international economy when answering the following:

2.2.1 What does the basic H-O-S model predict in terms of production, consumption and trade? (5 points)
2.2.2 How and why are the current trends in international trade and patterns of specialization different from what is predicted under the H-O-S model? Be specific. (10 points)

2.3 Consider a two-good world (consisting of countries with an agricultural sector and a manufactured sector) as developed in class. An increase in demand for the agricultural good on the international market affects international prices of goods as well as factor prices (labor and capital) on domestic markets. Explain how the change in demand would affect trade, factor prices and factor allocation in an agricultural exporting country under the following situations:

2.3.1 Identify by listing the different types of persons in society (e.g. economic agents) in the agricultural exporting country who are affected by the increased demand for agricultural goods. (5 points)
2.3.2 Who are the winners and losers in this country when all factors are relatively immobile in the agricultural exporting country? Be specific and explain. (5 points)
2.3.3 Who are the winners and losers in this country when some factors are freely mobile between sectors? Be specific and explain. (5 points)

Part 3. Answer the questions related to the policy scenario described in the paragraph below. Be specific and explain your answers to the best of your ability. Label graph(s) clearly and explain them. Define concepts you think will support your answer. (30 points)

3. Two competing trade theories have been put to the test in the growth and development strategies of some developing countries, one being import-substitution industrialization and the other being export-led growth. Assume that a country's economy consists of two sectors, an agricultural and a manufacturing sector, and that natural resources, labor and capital are factors of production. Think about the economic implications and trade policy choices that are involved with strictly following such growth and development strategies when answering the following:

3.1 Suppose a developing country initially open to trade strictly follows a strategy of import substitution industrialization (ISI). Which trade policy or trade policies might be employed as part of that strategy? Explain. (5 points)
3.2 Use your answer in 3.1 to analyze the partial equilibrium economic, trade and welfare effects of this country moving from an open economy to strictly following ISI. (10 points)
3.3 Show the general equilibrium effects of what your partial model shows in 3.2. (10 points)
3.4 In the early 1950s, Japan was a relatively poor nation whose economy was based on exporting basic products such as textiles and toys. The government was also active in supporting infant industries in key sectors of the economy, e.g., the steel-producing sector and the automobile industry. These industries later came to dominate world markets. Think about how the policy choices taken by the Japanese government might have differed from ISI in the short run. How would the long-run economic and trade implications of the Japanese model be different from ISI as in 3.2 and 3.3? Be specific. (5 points)

Summary Solutions ECN230 2014

1.1

F. A neg TOT is a decrease in the price of a country's exportable(s) relative to its importable(s). Economic growth can ↓ TOT if ↑ Q of the exportable → ↓ P (i.e., an ↑ S r.t. D). This can happen whether the good is a commodity or an industrial/manufactured good.

1.2

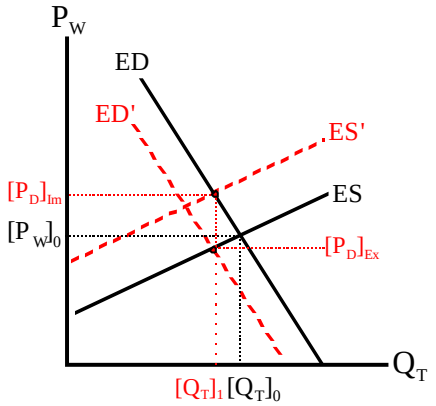
F/D. The theory is not clear on the relationship between int'al L or K and trade in goods. The flow of L or K across borders can be associated with either an ↑↓ trade. For example, if K flows across border, it can result in ↑ trade (either as intra-firm trade and/or as the K-importing country becoming an export platform for the parent company). Or, the K-flow can be a means of increasing production in foreign mkt to serve that mkt, displacing the firm's exports to that mkt.

1.3

D. EOS can occur at the level of the firm (in which case ↑ Q → ↓ AC) or at the level of the industry (in which case an ↑ industry Q → ↓ AC). EOS at the firm level will imply that there are advantages to ↑ size, ↓ number of firms and imperfect competition. EOS at the industry level can imply a cluster where the industry can become more vertically integrated, a level of concentration that makes the industry imperfectly competitive.

1.4

T. The more price inelastic is either ES or ED, the larger share of the cost of transport will be borne by either the exporter or importer, respectively. In the figure, ED is more inelastic. Adding a fixed transport cost per unit causes the domestic prices to diverge until $[P_D]_{Im}$ - $[P_D]_{Ex}$ which is equal to the transport cost. Relative to the initial price, $[P_W]_0$, a larger share of the cost of transport is added to the importer's new domestic price, $[P_D]_{Im}$ than to the exporter's new domestic price, $[P_D]_{Im}$.



1.5

T. Policies designed to favour the modern sector (manu and more urban) will improve wages there relative to the more traditional sector (agriculture). Policies designed to tax the ag sector has the same effect in general eqlbm terms. The higher wages in the modern sector could signal for labor to move to the manu/urban sector from the ag sector, resulting in the high urban unemployment that might exist.

2.1.

2.1.1

Globalization in cross-border transactions: trade in goods, trade in services, international labor mobility, international capital mobility

2.1.2

Developed countries with more mature economies are often concerned with:

- Low-wage trade with LDCs
- Weak-regulated trade with LDCs
- Trade with subsidized production in other developed countries
- Flight of K from developed countries to developing countries – de-industrialization

The first two of these concerns often give rise to use of import restrictions (tariffs) to ↓ competition with economies. The argument is that trade with these countries results in an externality (↑ unemployment, de-industrialization, and/or a weakening of domestic regulations) and a loss in comparative advantage. The third concern is more related to the need to remain competitive in high-tech sectors or other sectors that might require more R+D or other fixed costs. The last concern listed can give rise to K restrictions or regulations to prevent the movement of K abroad.

2.2

2.2.1

H-O-S predictions in terms of production, consumption and trade come from relevant theorems: factor proportions, Stolper-Samuelson and factor-price equalization theorems.

Production	Consumption	Trade
• Resources allocated to where they are most efficiently employed • Specialization in sector in which country has a comparative advantage • Returns are greatest to where factors are abundant and intensively used intensively	• Increase in consumption possibilities • Increase in real income	• Specialization is necessary for trade and trade requires specialization • Gains from trade greater than the cost of adjustment from trade

2.2.2

Emerging trends (intra-industry trade, international factor mobility and economies of scale) suggest trade not entirely based on factor proportions theorem and give rise to imperfectly competitive int'al market situations. The implications are that international trade and patterns of specialization are more unpredictable because:

- Factors can move implies that technology transfer can occur faster and K-scarce countries can pursue industrialization
- Sectors where unskilled labor is intensively used can be filled by immigrant or seasonal labor as a means of substituting away from trade
- EOS without economies of scope imply that despite lower AC over a limited range of goods a firm cannot produce the fully range of like goods under one factory, giving rise to intra-industry trade
- Int'al value chain is becoming less centralized changing the relations between input suppliers and manufacturers, perhaps making EOS in production less important than other strategic factors.

2.3

2.3.1

Identification of individuals (or economic agents) in society:

* Ag land owners * Ag labor * Consumers of A * Ag input suppliers
* K owners * Labor in manufacturing * Consumers of M

2.3.2

An ↑ in int'al demand for agricultural good that is traded → ↑ $[P_A]_W$ which is an ↑ TOT from the agricultural exporting country's perspective. If factors are relatively immobile, then factors cannot move to the ag sector in response to ↑ P. Output prices will ↑ by more than factor prices in ag prodn (particularly L) because there are no or limited productivity increases from reallocation of L, K to the ag sector. Ag land owners and ag input suppliers would be better off as would any resources in the ag sector (maybe from working over time). The ↑ TOT means that any individual in the A-sector who consumes the M-good are better off because M is relatively cheaper. The M-sector overall is made worse off.

2.3.3

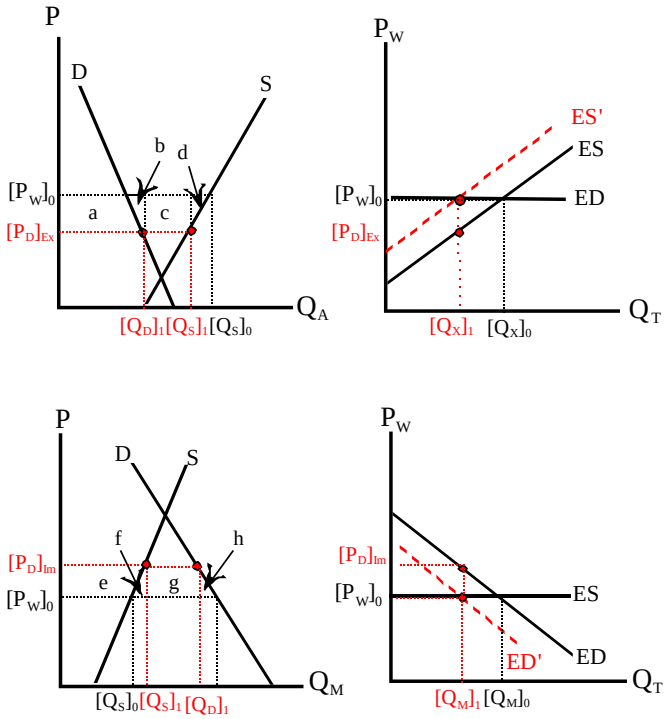
Factors that are free to move to the ag sector are made better off. The number of winners increases because there will be an ↑ prodvty gain in A-prodn (factor prices increase in response to ↑P_A → ↑ Q_A → ↑ returns to factors employed in A-sector). The losers are still resources employed in the M-sector and K owners and those who consume A goods.

3.1

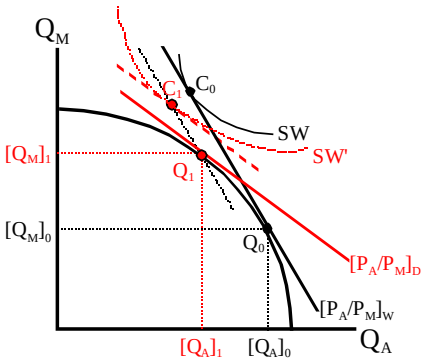
ISI: Historically, countries interested in ISI intended to reduce dependency of A-sector for long-term sustainable economic growth and development. This implied shifting resources from the ag sector to the manu sector as a means of industrializing. Given the patters of comparative advantage and factor endowment in the country, this required some form of gov't intervention, often in the form of trade policy. The ag sector which earns foreign exchange was taxed which could be income redistributed toward the manu/industrial sector and the import-competing sector targeted for development would require some protection and support. Thus, the ag sector exports could be taxed (export tax) and the import competing sector, manufacturing, could be protected with a tariff.

3.2 and 3.3

Export sector (agriculture)



Import sector (manufacturing)



General Equilibrium

Welfare effects	Export sector (export tax)	Import sector (import tariff)	Gen'al eqlbm
ΔCS	+ (a + b)	- (e + f + g + h)	The gov't collect taxes from both sectors perhaps with the intention of redistributing the rents to subsidize the manufacturing sector. Increased production in manu sector and less in ag sector is consistent with decreasing dependency. Trade dependence as shown to fall as trade triangle is smaller. SW is reduced (ignoring the benefits from reducing exposure to unstable ag mkts or the L-R TOT decline in ag prices.
ΔPS	- (a + b + c + d)	+ (e)	
ΔG	+ (c)	+ (g)	
ΔNSW	- (b+d) < 0	- (f+h) < 0	
	The reduction in welfare in both sectors are related to the DWLs in production and consumption in both sectors.		

3.4

The situation in 3.2 and 3.3 is an inward-oriented ISI strategy that does not necessarily result in export sectors. The more trade policy was used to achieve the ISI goal the less likely “infant industries” in the manu sector would graduate to become exporting firms able to compete without gov’t support and/or protection. The Asian miracle was based on much more than ISI and restrictive trade policy aimed at substituting away from importing and moving toward self sufficiency. The industrial policy under the Asia miracle allowed relatively liberal trade regime in terms of imports of raw materials and inputs into manufacturing, high savings, export oriented, access to credit to targeted sectors and high investment by gov’t in infrastructure and R+D.

Solutions ECN 230 Final exam Fall 2013

Part 1. Explain whether the following statements are true, false, or whether it depends. If depends is your answer, be sure to explain upon what it depends. (25 points)

1.1 The theory supporting international economics argues that migration of labor across borders and international trade in goods and services are substitutes.

1.2 Suppose two countries had identical relative prices in autarky (i.e., in a closed-economy situation). A standard trade model would predict that no trade would occur even in the presence of economies of scale in production.

1.3 In international trade situations where there is imperfect competition resulting from factor endowment differences, policy intervention is more likely to be an improvement over free trade.

1.4 The objective of an import tariff can be to improve the welfare of an importing country. However, for a small country, the optimal tariff would be zero.

1.5 In a world in which trade patterns are determined by factor endowment differences, the gains from trade would be primarily the result of production gains.

Part 2. Briefly answer the following questions or respond to the specific statements. Relate your answers to concepts discussed in class and avoid unnecessary information (45 points)

2.1 The standard Heckscher-Ohlin-Samuelson (H-O-S) trade model assumed that factors were immobile across international borders. It can be argued that technological change and more liberal policies have made international capital increasingly mobile. Keep in mind the implications of international capital flows when answering the following:

2.1.1 *List* different examples that illustrate the reasons for international capital crossing borders in the form of foreign direct investment (FDI). Be specific. (10 points)

2.1.2 Using your list in 2.1.1, explain why FDI might occur in some industry sub-sectors more than others. Could this have negative consequences for the macroeconomy of the capital-importing country? Explain. (5 pts)

2.2 The Lerner Symmetry Theorem suggests that a tax on exports has similar general equilibrium effects as an equal tariff on imports. To consider what symmetry might imply in this context, think about how these two trade policies affect the *domestic* economy, welfare and trade. Assume a simple 2-sector economy, e.g., manufacturing and agriculture, in a small country. (Graphs are not required, but you may use them if you find it useful for your purposes.)

2.2.1 What would it mean for a tax on exports to have similar general equilibrium effects for the domestic economy as an equal tariff on imports? Be specific. (10 points)

2.2.2 Would your answer to 2.2.1 be consistent to the meaning of an offer curve? Explain. (5 points)

2.3 An indicator of a country's involvement in trade is its trade dependence, as measured by the total value of exports plus imports divided by nominal GDP (national product). The table below provides trade dependence data for selected countries. Think about the determinants of trade and consider what the indicators measure when answering the following:

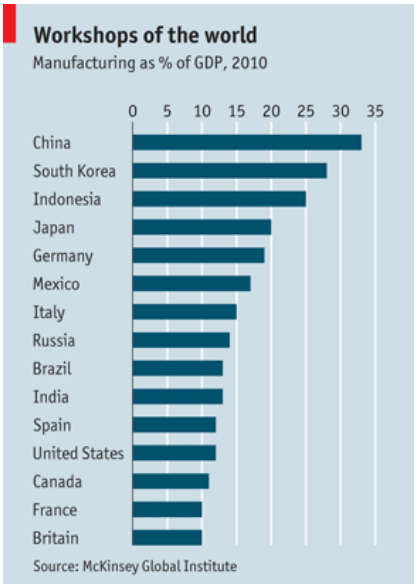
Country	Average trade dependence, %			% change over periods		
	1970-79	1990-99	2000-07	1970-1990	1990-2000	1970-2007
Hong Kong	169	264	342	57	30	103
Taiwan	85	89	116	4	30	36
Japan	23	18	25	-20	37	10
China	10	39	58	311	48	510
Brazil	10	17	26	58	58	150
United States	15	22	26	48	16	71
Norway	76	72	73	-6	1	-5
Denmark	61	72	92	17	28	50
Bulgaria	72	93	128	29	38	79

Source: Bowen, Hollander and Vianene, *Applied International Trade*, 2012

2.3.1 *List* factors that might explain a low indicator value for trade dependence. (5 pts)

2.3.2 What would it mean for a country to have a trade dependence value greater than 100%? (5 pts)
2.3.3 Would large economies be expected to have lower trade dependence values? Explain. (5 pts)

Part 3. Answer the questions related to economic growth described in the paragraph below. Be specific and explain your answers to the best of your ability. Label graph(s) clearly and explain them. Define concepts you think will support your answer. (30 points)



In 2013 emerging markets accounted for more than half of world GDP for the first time (*Economist*, "Emerging economies", 27 Jun 2013, p. 17-9). In the past 10 years, the share of world output provided by the emerging economies grew at more than 1% per year. The most impressive GDP growth rates were in the four biggest: Brazil (4%), Russia (5%), India (8%) and China (9.5%) [source: tradingeconomics.com]. GDP grew in different ways and for different reasons: in Brazil it was driven by natural resource exports and high commodity prices, manufacturing and the domestic consumption of consumer goods; in China through investment and manufacturing for export. In 2009, China ranked as the biggest exporter of goods, 9.6% of the world total, and ranked second in imports of goods, 7.9% of the world total, accessing raw materials from around the world and sending out manufactures of many kinds in return. Brazil's share of world exports and imports was less than 1%, its trade dependency ratio is less than half of China's (see table above), and the country has a negative balance of trade. Think about how economic growth affects sectoral development (e.g., agriculture versus manufacturing), production, consumption, trade and welfare when answering the following:

3.1 How does the Rybcyzinski theorem relate to economic growth? How might the data and information provided explain changes in China's production possibilities from growth? (10 pts)
3.2 Using a simple two-good H-O-S general equilibrium model, show China's economic growth, highlighting trade's role in that growth. What does your model suggest about China's trade strategy? (10 pts)
3.3 In Brazil, more recently, there has been a tendency for increased imports of goods, particularly consumer goods, while exports of raw materials and intermediate goods have increased. Why might Brazil's manufacturing sector be so much smaller than China's as a share of GDP (see chart entitled "Workshops of the world")? (10 pts)

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Summary solutions: ECN230 exam Dec 2013

Part 1

1.1

F. The theory is *not* clear on the relationship between international labor flows and international trade in goods/services. One can argue that L inflows could result in production of more L-intensive goods at home and hence substitute for trade (import) in those goods. However, L could work in non-tradable sectors in which case it might have no effect on trade. Finally, L could work in the export sector in which case it would complement trade.

1.2

F/D. A closed economy could mean a smaller market and the inability of domestic firm(s) from benefitting from economies of scale. So, opening to foreign trade could imply a larger market whereby it would be possible to benefit from economies of scale (EOS) in production, e.g., lower avg costs per unit and lower prices. If there were preferences for more choice in consumption, then EOS could suggest product differentiation and intra-industry trade, which would likely imply that prices would differ upon opening to trade.

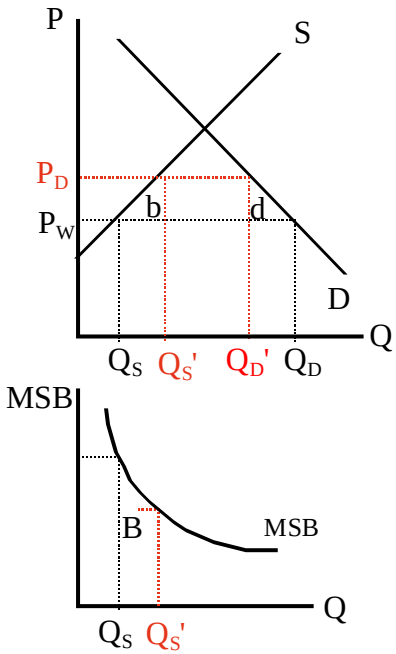
1.3

D. Imperfect competition resulting from factor endowment differences would imply a country is large in an international context. If that country was using its mkt power on the int'al mkt, then P_w would not be a competitive price, and policy intervention (domestic or trade policy) might be a means of improving welfare. If the large country were not using/abusing its mkt power, then P_w could be a competitive price.

1.4

T/D. Improving welfare from a tariff comes through international income transfers (i.e., the ability to affect P_w). An import tariff by a small country results in internal transfers (from consumer to government and consumer to producer) and dead-weight losses. Hence, welfare is reduced by the value of DWLs.

If there were other public goods related to production of the importable(s) good, then marginal social benefits could exceed the DWLs. That is, the value of areas (b+d) would be less than the value of area B, which is the benefits associated with the public good related to the increased production of the importable good (from Q_S to Q_S').



1.5

F. Trade results in gains in production and consumption as well as in factor use and allocation. The degree of the gains from trade will depend on supply and demand-side considerations. Trade liberalization in the import sector could be argued to be primarily consumption-related gains even though there would be production-related gains as well

Part 2.

2.1

2.1.1 Int'al K (FDI) moves across border to work with:

* immobile L (less skilled L in L-int sectors).
* mobile L (management)
* non-tradable services sectors (hotel, dental/medical care)
* extraction of minerals or natural resources that is K-intensive
* a subsidiary to serve the local market or that serves as a export platform.

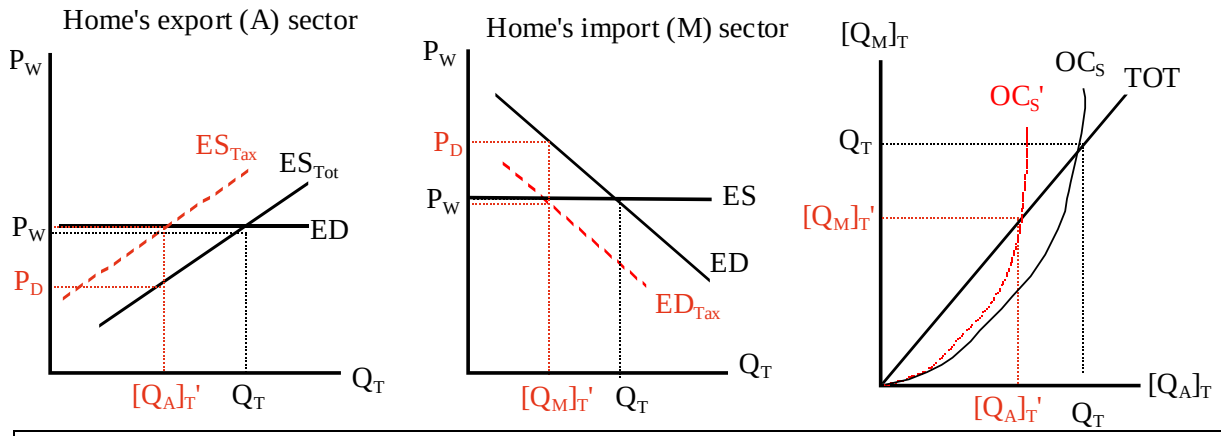
2.1.2 The list shows that foreign K might move for sector-specific reasons. The more that foreign K is restricted to limited sub-sectors (natural resource extraction such as oil), the more likely wages and profits in those sectors will increase relative to sectors that remain under-capitalized and inefficient. This can create uneven economic growth and unequal income equality. The more concentrated K is in the home market, the more the macroeconomy can become dependent on one or few sub-sectors (and more vulnerable to Dutch disease) or where exports are limited to few products and few markets.

2.2

2.2.1 A tax on exports (Ag good) reduces the volume of exports, $[Q_A]_T'$ and lowers the domestic price of the exportable good (P_D = Pw – tax) in absolute terms and relative to the importable good, e.g., $[P_A/P_M]_D < [P_A/P_M]_W$. A tax on imports reduces the volume of imports, $[Q_M]_T'$, and increases the domestic price of the importable (P_D = Pw + tax), and relative to the exportable good, e.g., $[P_A/P_M]_D < [P_A/P_M]_W$. Hence, the gen'al equilibrium results are similar in either case because the ratio of relative prices would result in similar economic effects (production and consumption), trade volume, and welfare (DWLs). This would hold more in the case of a small country because P_W are unaffected.

2.2.2 Yes, consider the offer curve. The OC suggests how much a country is willing to trade (export for import). If we limit how much export we are willing to take to the market, it can limit how much import we can buy. If we limit how much we import, then effectively can constrain how much export is needed to exchange for the import.

2.3



2.3.1 A low value on the indicator of trade dependence implies a low degree of trade reliance (either because exports are low and/or imports are low). This could be because:

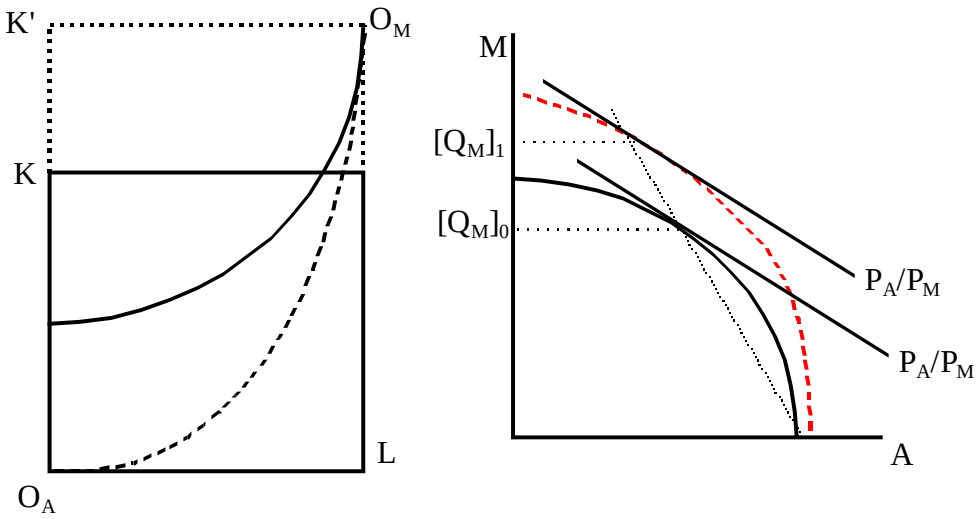
* transport/transactions costs are high
* trade policy is restrictive (tax on exports/imports)
* there is a strong domestic preference in consumption for the exportable good
* domestic policy is geared toward self-sufficiency
* imperfectly competitive firms restrict access by foreign firms or to foreign mkts

2.3.2 A trade dependency value of greater than 100% would imply the domestic mkt is highly linked to the int'al economy, e.g., globalized (intra-industry trade, intra-firm trade), that the economy is an important link in global supply chains, and that there might be high degree of mobility of labor/capital. It would suggest that import / export was large and that domestic consumption would be low. Recall the accounting statement of the macroeconomy: Y = C + I + G + (X-M). If (X+M)/Y > 100%, it means that the trade sector value is large relative to (C+I+G), the domestic macroeconomic activity.

2.3.3 It would make sense for larger (and richer) economies to have a lower trade dependence because the domestic economy is served by domestic economic activity (services account for a larger share of GDP). Larger economies have greater macroeconomic activity that do not rely on or require trade, i.e., (C+I+G) can be quite large.

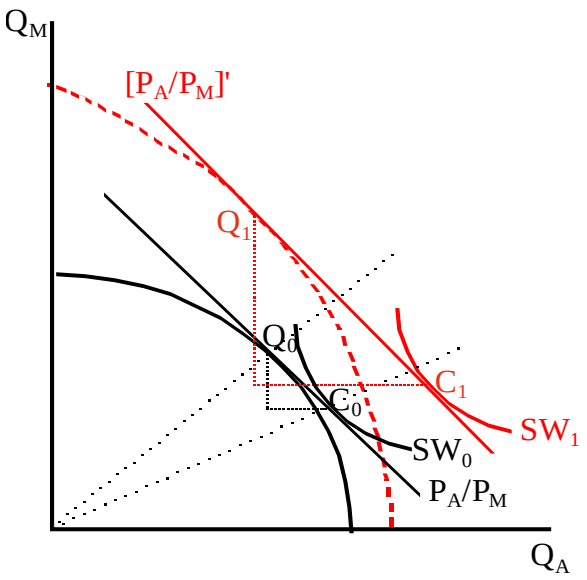
Part 3

3.1 The Rybcyzinski theorem relates to economic growth in that it predicts how the PPC would shift as a result of a change in a factor given input and output prices, tech, factor intensity and preferences. It predicts that if there was an increase in L, where trade is based on factor endowment differences, then there would be a disproportionate change in the prodn of the L-intensive good (A) and the shift in the PPC would be sector-specific. In China, from the info provided, the GDP (Y = C+I+G+X-M) growth appears to be in I and X (from Q in manufacturing). Thus the PPC would be sector-specific toward L-intensive M-sector.



3.2 The economic growth is non-neutral, i.e., skewed toward the M-sector, and the value of trade dependence increases suggesting pro-trade growth in production and consumption. The strategy would appear to be export-led growth through high investment (high savings/low consumption), import of raw materials, production of and export of manufactured goods. High investment could be domestic (high saving), foreign or both.

Capital accumulation implies increased efficiency in production and in L use, but unless there is an increase in total factor productivity, there would be expected to be some slow-down in growth as K/L ratios in China approached that of more advanced economies.



3.3 In Brazil, I is low, C is high and (X-M) is small. Hence, Brazil has a more closed economy than China. Brazil's GDP growth is more driven by production for domestic consumption. Brazil's trade dependency is low and there is a negative balance of trade (M>X). The decrease in the share of manufacturing could be the result of faster growth in the raw material (strong int'al commodity mkts) and intermediate goods. It is not necessarily a sign that the M-sector is in decline, but rather that other sectors have been more important (e.g., services and other domestic, non-tradable oriented economic activity). It could be that Brazil's manufacturing sector is competing directly with China and that it is less competitive than China. The difference in investment and access to K in M-sector could also be an important factor.

Solutions ECN 230 Final exam Fall 2012

Part 1. Explain whether the following statements are true, false, or whether it depends. If depends is your answer, be sure to explain upon what it depends. (25 points)

1.1. Suppose a country's trade volume has almost no effect on world prices. Such a country is at a higher risk of experiencing immiserizing growth (i.e., worsening welfare from growth) than if its trade did have an effect on world prices.

1.2. The increased volume of goods traded under intra-industry exchanges would be evidence that factor-based trade is an unimportant form of international commerce.

1.3. The standard Heckscher-Ohlin model and its underlying assumptions would predict that most research and development activity would be undertaken in industrialized countries.

1.4. A country can only be competitive in the long-run if it can match other countries' level of productivity.

1.5. A negative change in the terms of trade of a country must imply that its trading partner experiences a positive change in its terms of trade.

Part 2. Briefly answer the following questions or respond to the specific statements. Relate your answers to concepts discussed in class and avoid unnecessary information (45 points)

2.1. Import substitution is a development strategy that emphasizes production of goods at home that would otherwise have to be imported. Some have argued that it has resulted in inward-oriented economic development. Consider the role trade policy can play in such a development strategy when answering the following (15 points):

2.1.1 Provide a *list* of trade policies that might be applied under import substitution such that it results in inward-oriented economic development and briefly explain what the policy objectives might be. (9 points) Structure your answer using a table as below.

Trade policy by sector	Objective of the trade policy

2.1.2 How might the trade policy listed under 2.1.1 affect the level of domestic competition, employment and income equality? Explain. (6 points)

2.2. If product differentiation were the basis for international trade, there would likely to be more winners and fewer losers in the economy of a country that shifted its trade policy regime from being highly restricted to more liberal (i.e., towards freer trade). Consider the implications of trade based on product differentiation when answering the following: (15 pts)

2.2.1 Provide a *list* of reasons why the above statement might be true. (10 points)
2.2.2 Which of the reasons you listed in 2.2.1 is arguably the most important? Briefly explain. (5 points)

2.3. Suppose a country currently prohibits any foreign direct investment (FDI) inflows into its economy. The Ministry of Economy and Trade (MET) is leading the government's effort to liberalize its investment regulations to permit foreign participation. Suppose you are a consultant hired to provide background information on the possible effects of inward FDI. Use the Heckscher-

Ohlin trade framework as developed in class to help you structure the implications of FDI inflows in regards to the following concerns: (15 points)

2.3.1 Explain to MET officials what the Rybcyznski theorem predicts from a change in a country's factor endowment in a general equilibrium context. (7 points)

2.3.2 Suppose the announcement of the government's intention to liberalize regulations to permit foreign participation produces opposition from the domestic industry. Why might the domestic industry oppose greater liberalization in investment regulations? Explain whether their concerns amount to a defense of their special interests or whether their opposition might also be in the national interest. (8 points)

Part 3. Answer the questions related to the policy scenario described in the paragraph below. Be specific and explain your answers to the best of your ability. Label graph(s) clearly and explain them. Define concepts you think will support your answer. (30 points)

Ukraine is a major grain producing country that historically has been able to produce a surplus of grain for export. Suppose Ukraine is deciding on a trade-policy strategy to complement its other reforms for promoting economic development. Provide models that demonstrate the economic implications, *from Ukraine's perspective*, of the two policy alternatives that are being considered below: (30 points)

3.1. Analyze and explain the economic and welfare effects for Ukraine of a tax on Ukraine's grain exports. (10 points)

3.2. Analyze and explain the economic and welfare effects for Ukraine of the formation of a grain cartel together with the US, Canada, Argentina and Australia, the other principle grain exporters. (10 points)

3.3. Discuss the limitations of each strategy. Considering the likely underlying policy objectives would you recommend either of these strategies? Explain. If no, could you provide an alternative strategy? (10 points)

Part 1. Summary solutions Autumn 2012

1.1

F. Immiserizing growth comes from ↑Q → ↓ P_W such that negative TOT effect is > positive real growth effect. This would imply that the county's increased prodvty (or growth) had an effect on P_W. Therefore, a large country would be more at risk of experiencing immiserizing growth.

1.2

F/D. Intra-industry trade, or trade within a specific product sub-category (e.g., exchanges of cheese for cheese or autos for autos) are driven by product differentiation and/or EOS, but factor-based trade can still be an important aspect of this trade. For example, the production and trade of assembled autos might require trade in car parts and the raw materials that go into producing car parts (steel). Japan, a major manufacturing country, still depends on imports of commodities that go into manufacturing.

1.3

T. R+D is argued to be either a human or physical capital intensive activity. The H-O-S model is usually specified as more industrialized countries (North) being more endowed with capital (human and physical types) and developing countries (South) more endowed with labor and/or natural resources. The CA that North might have in capital intensive manufacturing or more sophisticated prodn activities tends to be based on relatively cheap human or physical capital which itself is function of R+D, which tends to be developed in the North.

1.4

T/D. Investment, or accumulation of K-stock increases the likelihood of changes in technology which increase prodvty: ↑ Q and ↓ cost/Q (AC). However, simply copying other countries tech → fast growth until convergence in the K/L ratio occurs. Beyond that, ↓AC is no longer possible and wages increase. The only way to achieve a long-run sustainable advantage is to increase total factor productivity relative to other countries.

1.5

T. A negative TOT for a country implies either that the price of its exports decrease on the world market (making them cheaper for foreigners to buy) and/or an increase in the price of the country's imports (making them more expensive to the country). Both of these situations reduce the country's purchasing power relative to trading partners. From the perspective of the trading partner, purchasing power increases, implying a welfare improvement.

Part 2

2.1.1

Trade policy by sector	Objective of the trade policy
1. Import tariff – manu sector	↓ M; ↑ P_D; ↑ Q_{manu}; ↑ use of local raw materials in manu; ↓ competition, ↑ mkt share by locals; tax collection to help support gov't effort to industrialize.
2. Import quota – manu sector	Same as above only that rather than gov't collecting a tax, the local firms might collect quota rents for them to use to establish themselves for the long run.
3. Export subsidy – manu sector	The intention of the gov't could be to become a net exporter of manu goods rather than just substituting for imports of such goods. In this case the argument could be that gov't assistance through a subsidy can facilitate exports until the firm's "learning-by-doing" stage is over and exports can be made commercially (without gov't support). This would ↑ P_D → ↑ Q_{Manu}, exports
4. Export tax – agri sector	The intention could be to reduce dependence on agricultural prodn and trade (or raw material or commodity exports). The export tax on A is a source of tax revenue that can be transferred to the manu sector and ↓ P_A→ ↓ costs of local raw materials that could be used in ↑ Q_{manu}.

2.1.2

The gen'al eqlbm effect of such a policy is intended to move country away from agriculture (A) to manufacturing (M), or from Q_A to Q_M. The trade policy achieves this by ↓ P_A and ↑ P_M on the domestic market. If A is L-intensive and M is K-intensive, then ↓ P_A → ↓ Q_A → ↓ L_A and ↑ P_M → ↑ Q_M → ↑ L_M. However, if ↓ L_A > ↑ L_M then there could be increased unemployment. The trade protection provided in the M-sector helps local firms, implying the sector is less competitive and there is a less competitive mkt situation. If manu is K-intensive and the country is not endowed with capital, then any K-inflows that are directed to the M-sector will increase wages in the M-sector while wages in the A-sector fall (because ↓ P_A). This could case Y-inequality, more unemployment and less competitive mkts in the economy, resulting in a dual economy situation.

2.2.1

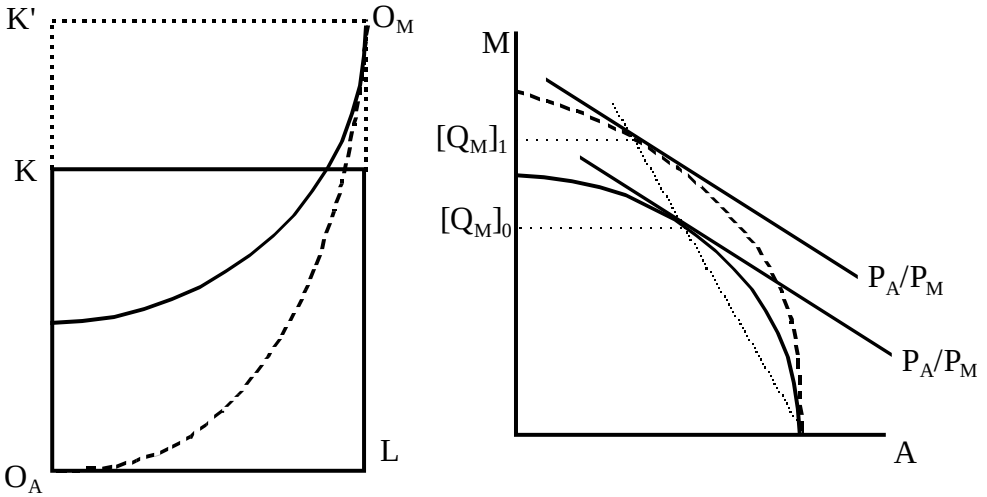
* Trade is not based on tech differences
* Countries with similar K/L ratio can trade (trade not based on wage differentials)
* Product differentiation could be related to EOS and ↓ AC
* Product differentiation means consumer preferences drive trade
* Greater market size, choice and competition
* Trade between more similar countries (with more similar regulations and standards)

2.2.2

Discuss the trade implications of any of the above factors. Basically the motive for trade is greatly enhanced over a factor endowment-based motive for trade. Should be greater trade opportunities and could be less trade friction because economies at similar level of development can trade.

2.3.1

Rybcyznski's theorem suggests that the increase in one factor (all H-O-S assumptions in place) results in a disproportionate increase in the production of the good that uses that factor intensively. So, if K is used intensively in manufacturing, then ↑ K → ↑ Q_M. This would result in the PPC shifting outward disproportionately toward manufacturing relative to agriculture. It would have the same sort of effect as sector-specific growth directed at manufacturing. Whether the relative ratio of prices, P_A /P_M, is affected by the K-inflow depends on how big the country is and whether any trade policy is distorting trade in goods.



2.3.2

By allowing foreign K, the idea is that K comes in the form of physical K and human K. Local firms might not appreciate the increased competition by foreigners on the domestic mkt. If there are tech differences between prodn methods by locals and foreign firms, then local firms could be at a disadvantage. Also, if foreign firms have more access to K than local firms then local firms might have difficulty in responding to the dynamics of the market. Foreign firms based in the local market might make input costs higher for local firms too. The concern by local firms could be a defense of their special interest (not lose mkt share, not lose revenue, sales or profits), but there could also be national concerns with foreign firms buying out local firms, displacing local products, changing national tastes, ownership of sensitive or strategic sectors of the economy.

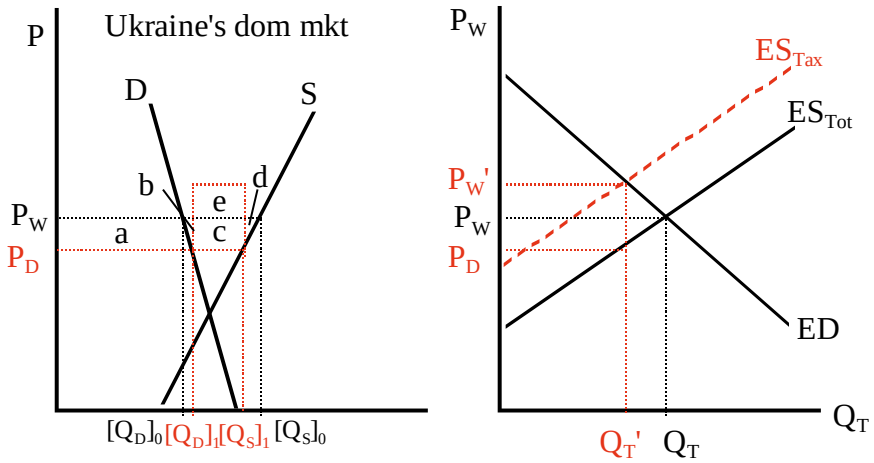
Part 3.

3.1

A tax on train exports lowers the domestic price, reduces production and export (but increases consumption). This results in a tax equivalent on producers, a support equivalent on consumers (internal transfers) and a tax collected by the gov't, which is in part an internal transfer from producers to gov't but also an international transfer from importing countries because the ↓ X by a major exporter → ↑ P_{grain} on the world mkt.

Welfare estimates:

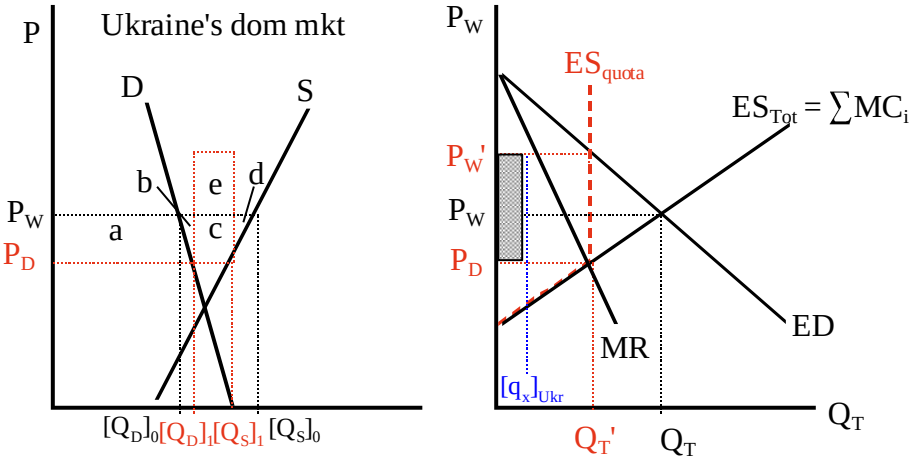
ΔCS = (a+b+c+d)
ΔPS = -(a)
ΔG = (c+e)
ΔNSW = e-(b+d)



3.2

A restriction on exports by an int'al grain cartel will be similar to the effect of the tax but it would resemble an export quota by a multi-plant monopoly. The eqlbm situation would be where the monopoly equates MR = sum of MC of all the cartel members. The optimal amount of export would maximize joint quota rents and the share of the rents would be distributed according to Ukraine's share of the exports (shaded area). This would improve welfare of the exporters relative to importers. The welfare analysis assumes that the quota rents go to the producer/exporters and not the gov't.

Welfare estimates:
ΔCS = (a+b+c+d)
ΔPS = -(a)+(c+e)
ΔG = 0
ΔNSW = e-(b+d)



3.3

The limitation of an export tax by a big country, acting alone, is that other countries can simply take away market share from Ukraine if they do not play along with Ukraine's export restraint. Importers over time could try to increase prodn and become less reliant on Ukraine for imports of grain. Finally, the export tax has the effect of lowering domestic price, which discourages production. Long-term taxing of the sector could discourage production and investment in the sector, resulting in long-term loss of competitiveness.
The limitation of the cartel is that it is unstable. Each member of the cartel has an incentive to cheat because P_W' is greater than MC_i for each member. Increasing exports by one member would increase their share of the rents at the expense of all the other members. An institutional mechanism would have to be in place to ensure cheating did not occur and what credible sanctions would have to be taken if a member was caught cheating.
A temporary export tax might be preferred to the cartel. A tax results in revenue to the gov't which could be used for useful social purposes. A cartel results in quota rents to the firms, which typically do not involve useful social purposes. Neither of these trade policies is a viable long-term policy option. A more targeted policy response would depend on what the policy objective one argues is the gov't's intention. If the gov't's intention is to address of domestic policy issue, then trade policy is rarely the correct policy response.

Solutions ECN 230 Final exam Fall 2011

Part 1. Explain whether the following statements are true, false, or whether it depends. If depends is your answer, be sure to explain upon what it depends. (25 points)

1.1 An export subsidy by the government of a large net exporting country would improve that country's balance of trade (i.e., the value of exports relative to the value of imports) because it would result in greater exports.

1.2 Consider the policy of Saudi Arabia and other oil exporters to restrict their exports of oil. It would be hard to argue that Saudi Arabia would have been better off under free trade.

1.3 Consider an agreement reached between a net exporting and importing country to restrict the volume of a traded good. The likely loser of such an agreement would be the importing country.

1.4 Suppose a country experiences an increase in the stock (i.e., the total amount) of its scarce factor for some reason. The increase in the stock of the scarce factor of a country would mean a reduction in trade even if this occurred in a small country.

1.5 The factor proportions theorem predicts that countries with factor endowment differences would engage in trade. Therefore, it is unlikely for trade to occur in the real world between countries that have similar factor endowment.

Part 2. Briefly answer the following questions or respond to the specific statements. Relate your answers to concepts discussed in class and avoid unnecessary information (45 points)

2.1 Think about the lessons from the simple Ricardian model of trade in regard to the importance of the relative labor productivity and the process of specialization. Chinese labor productivity across manufacturing sub-sectors (e.g., production of clothing, automobiles, steel, etc.) remains relatively low in comparison to that in the US or the European Union. Nevertheless, China has become one of the world's largest manufacturing producers and exporters. The table below compares relative productivity on a per worker basis and relative total output for China and Germany. Consider the meaning of absolute and comparative advantage and relative productivity differences when answering the following:

	China's output per worker as a % of Germany's	Total Chinese output as % of Germany's
All manufacturing	5.2	71.6
Clothing	19.7	802.2

Source: Krugman, Obstfeld and Melitz, 2011.

2.1.1 Define the difference between absolute and comparative advantage. How do the data in the table relate to those concepts? (10 points)

2.1.2 How can you explain that China is a net exporter of manufactured goods despite having an average relative labor productivity that is lower in comparison to the US and EU? What would you expect to happen over time? (5 points)

2.2 Labor and capital are becoming increasingly internationally mobile. Consider what the trade implications of international factor mobility might be when answering the following (15 points):

2.2.1 *List* economic reasons why labor and capital cross international borders. (8 points)

Reasons for labor movement	Reasons for capital movement

2.2.2 Suppose that international labor is now more mobile and that it substitutes for international trade. What would be the economic and trade implications for a "labor-importing" country, and how would this be different from trade liberalization in goods where there was no international labor mobility? (7 points)

2.3. Greater instability of international commodity markets is causing concern for governments. Consider the nature of food commodity markets and relate these factors to the sensitivity of excess supply and demand to changes in world prices (i.e., price elasticity) when answering the following questions: (15 pts)

2.3.1 *List* reasons why you think excess demand (ED) and excess supply (ES) of food commodities are price elastic or inelastic. (10 points)

Reasons why ED is price elastic/inelastic	Reasons why ES is price elastic/inelastic

2.3.2 Suppose that there is greater relative scarcity on international commodity markets because of increased demand for food from fast-growing, large population countries on the world market. How does your answer in part 2.3.1 matter for price stability on the world market? (5 points)

Part 3. Answer the questions related to the policy scenario described in the paragraph below. Be specific and explain your answers to the best of your ability. Label graph(s) clearly and explain them. Define concepts you think will support your answer. (30 points)

3. The Minister of Finance of a developing country is considering a tax-collection strategy by which the government's revenues will be made up primarily from taxes on traded goods. The Minister thinks that taxing traded products is a good source of revenue because international trade accounts for a large percentage share of the value of this economy. The Minister of Economy and Trade (MET), upon hearing this, hires you as an external consultant to analyze the economic and trade implications of such a revenue-collecting strategy. The MET recognizes the need for the government to collect more revenue for its fiscal policy purposes (e.g., paying public sector workers, building schools, roads, etc.), but the MET wants to know how the policies could affect specialization, trade and longer-run economic development.

3.1 Model the partial equilibrium effects of the tax-collection strategy in the domestic market of this country for both the export and import sectors. Do it for this country only. (10 pts)
3.2 Use the results from 3.1 to model the general equilibrium effects and explain how specialization and long-run economic development could be affected. Be specific. (5 pts)
3.3 From a tax-collection perspective, could it be argued that the strategy is effective because international trade accounts for a large percentage share of the economy? Explain. (5 pts)
3.4 Think about the partial equilibrium revenue-collecting implications of taxing traded goods if this were a large country exporter and importer. Could this be an argument in favor of taxing traded goods for revenue collection? To help you answer this, use offer curve analysis to capture the trade effects of the large country case of this country's trade policies. (10 points)

Summary solutions 2011

1.1

F/D. For two reasons. First, BOT is about the value of export relative to import – an export subsidy will only affect the export side of that BOT. Second, an export subsidy increases the volume exported but lowers the world price. The total value of export will depend on which of these changes more volume or price. If the world price falls sufficiently low and exports only increase a little, then the total value of export can decrease.

1.2

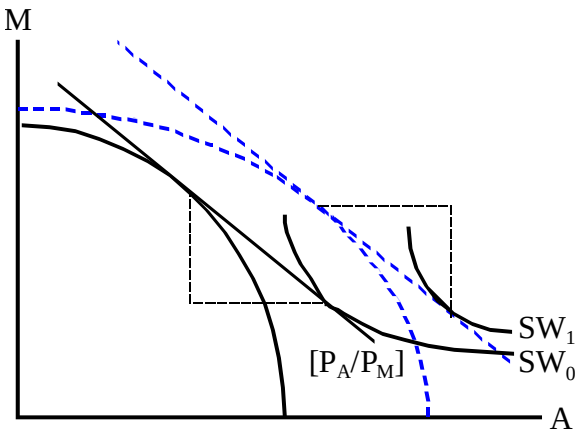
T. Saudi Arabia is a large exporter of oil and its economy depends on oil exports. By restricting exports, the large oil exporter can increase world price and improve its terms of trade and export earnings (and GDP). Under free trade, world prices would be lower and the TOT lower as well.

1.3

T. Trade policy by large countries result in international income transfers through the effect of the policy on the traded price. The agreement in this scenario would be like a trade quota whereby rather than the importer applying a quota the exporter agrees to "voluntarily" reduce exports. By letting the exporter administer the quota, its exporting firms can earn the quota rents that will be available by selling at a higher price in the importing country.

1.4

F/D. An increase in the stock of the scarce factor (L in the case presented) would mean an increase in the production of the importable good (A-good) that uses that factor intensively (Rybczynski's theorem), but it is not clear how the "growth" effect of the increase in the factor affects the demand side. In the graph provided, the trade triangle after growth is shown (for a small country) identical to that before growth. The trade triangle could have been greater than or less than the initial triangle, depending on preferences (willingness to export M for imports of A), despite the increase in A produced.



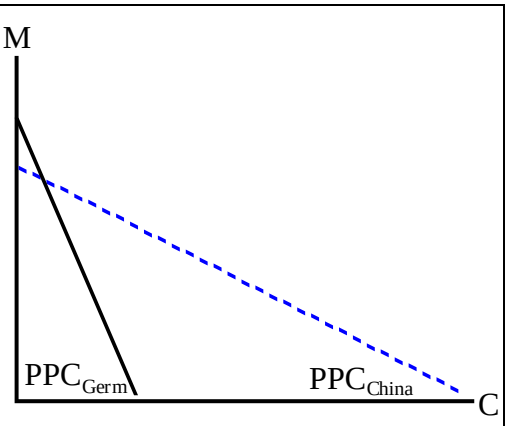
1.5

F. Countries with similar factor endowment can engage in trade through the presence of economies of scale and product differentiation. Trade between developed economies is increasingly through intra-industry trade rather than based on factor endowment differences.

2.1

2.1.1

AA says something regarding the use of existing factors (and technology) to produce one unit of output. The country that can produce more units of M or C per unit of time is said to have the absolute advantage. Comparative advantage involves a comparison of the relative costs to produce one unit of output. The data would suggest that China can out-produce Germany in clothing, i.e., an absolute advantage in the production of clothing (8 times as much) but Germany has the absolute advantage in manufacturing overall (30% more than China). However, the comparative advantage lies in clothing because the relative output per worker as a % of Germany is so much higher in the clothing sector. The data suggest that China uses much more L-intensive processes of production (because it is endowed with much labor implying relatively cheap labor). The Ricardian representation of the data suggests China has a comparative advantage in clothing as labor is relatively more productive in that sector of manufacturing. China would do better to specialize is some manufacturing sectors and not seek to manufacture everything because they will not have a CA in the production of all manufactured goods.



2.1.2

First, China is not a net exporter of all manufacturing sub-sectors. Some sub-sectors have higher productivity (or less of a relative disadvantage) than others and China will specialize in those sectors, leaving the possibility of importing in other manufacturing sectors. Second, differences in productivity will also reflect differences in wages. Where productivity is high and wages are low, China will have a bigger relative cost advantage. Over time, more capital will be employed to work with labor. As L-productivity levels increase, wages should increase (even if by a lesser percentage), reducing some of the low-wage cost advantage that China benefits from currently. This will strengthen the pressure to specialize within specific manufacturing sub-sectors (those less dependent on cheap labor). In time, higher productivity (Chinese workers that work with more – sophisticated – capital will earn higher wages and China's economy will be less based on cheap labor. This amounts to, in time, China's K/L ratio converging to that of the US and EU (putting pressure for convergence on factor prices, P_L / P_K). This will ensure specialization even within manufacturing sectors. This was seen in the S. Korean context and is happening with some manufacturing moving from China to Viet Nam.

2.2

2.2.1

Reasons for labor movement	Reasons for capital movement
* L moves in search of higher wages * Skilled L moves in search of K * L moves because K is mobile * L moves in search of land * Change in gov't policy * Technology facilitates L mobility	* K moves in search of higher interest rates or rates of return * K moves in search of cheap labor * K moves because L is immobile * Investor moves K to diversify portfolio * Change in gov't policy * Tech facilitates K mobility

2.2.2

If labor is more mobile thru either changes in immigration laws, or technology (transport and/or communications) and that such factor mobility substitutes for international trade, then goods that are currently traded because of factor endowment will be less tradable. The stock of labor increases and wages decrease in the labor- importing country (especially in sectors that use the more mobile types of labor). The effect on wages should be very similar to that under free trade without international L-mobility, but more of the importable good would be produced in the home market. See the graph in 1.4. In this case, it could be that the trade

triangle decreases as a result of the immigration (L-importing country becomes less trade dependent). If it is a large country importing lots of labor, then the TOT of the L-importing country could increase as the L-intensively produced good is demanded less.

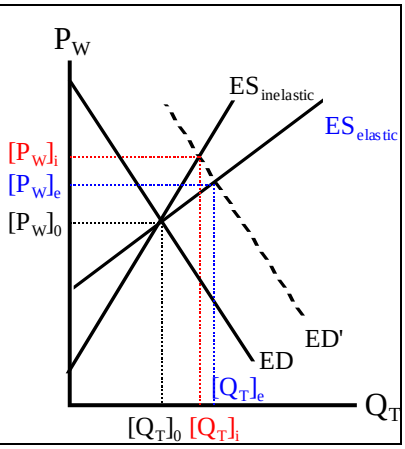
2.3

2.3.1

Reasons why ED is price elastic/inelastic	Reasons why ES is price elastic/inelastic
Price inelastic: * No good substitutes for ag commodity (rubber, cloth) or mineral commodity (oil, rare earths) as an input into a final good * No good substitutes for food ag commodity	Price inelastic: * Biological constraints for ag commodities * High fixed costs, esp in mining-related commodities

2.3.2

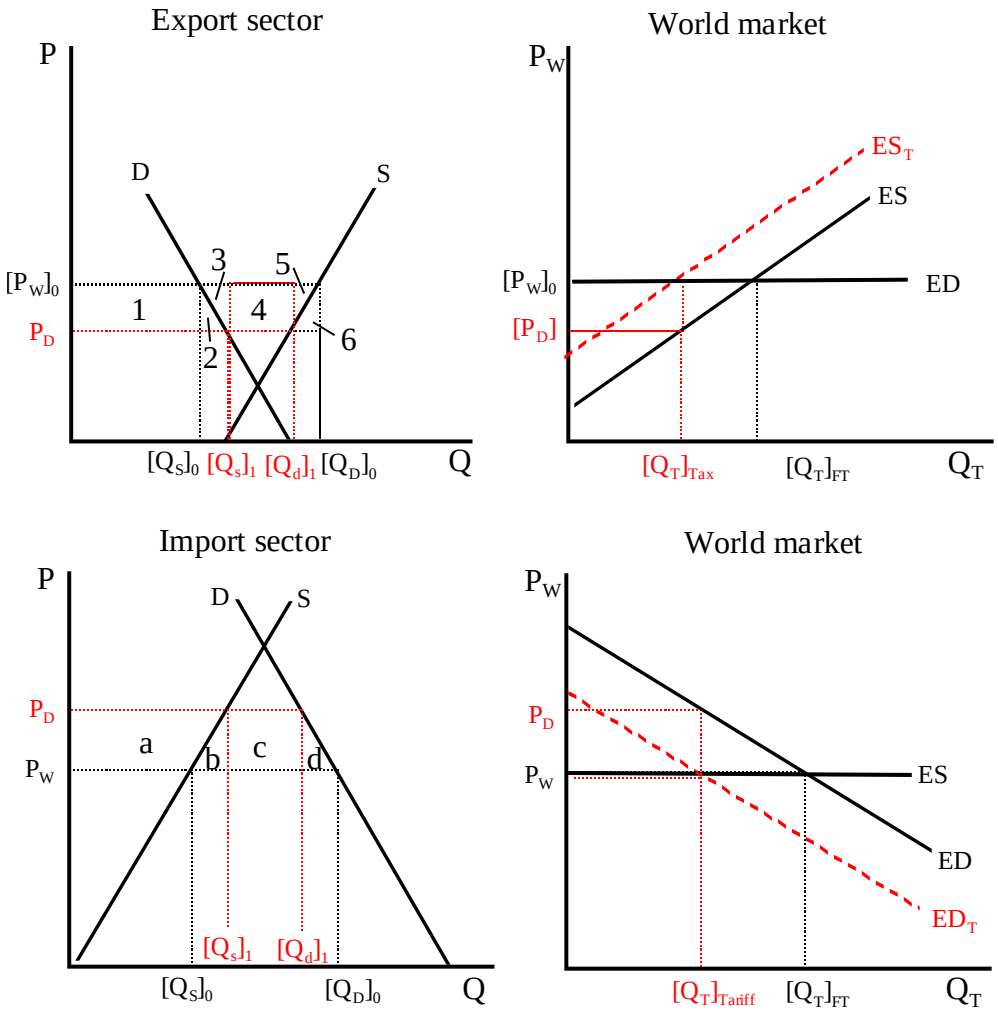
For a given change in ED on the international market, the more inelastic is ES the greater will be the increase on the international market. Given that many ag commodity markets are so thin, changes in ED and the policy response to higher world prices will cause greater market instability. Even small changes in ED or ES will cause P_W to increase or decrease to a greater extent.



Part 3.

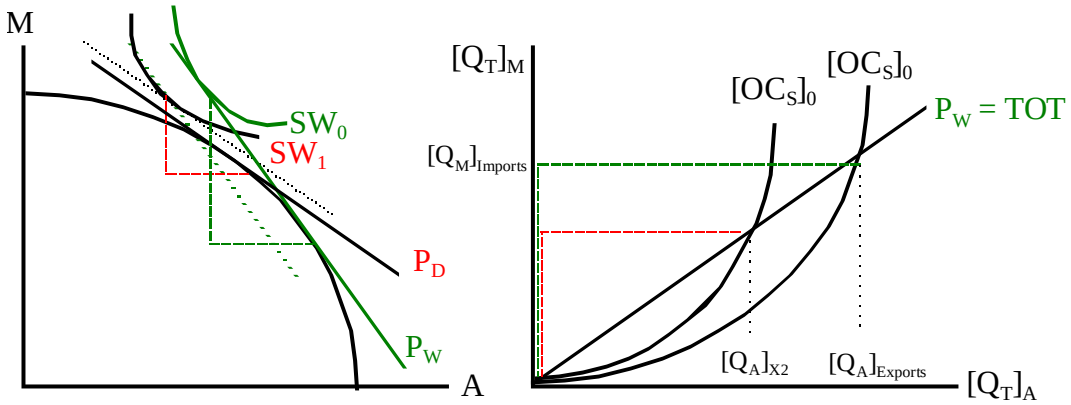
3.1

The area representing revenue collection from the tax on exports is area (4) and from the tax on imports is area (c). The net welfare implications of an import tariff and an export tax is the DWLs equal to areas (2+6) from the export sector and areas (b+d) from the import sector. Otherwise, the rest of the welfare implications are internal income transfers between consumers and producers and the revenue collected by the government. The trade in both products decreases.



3.2

Trade in both the exportable and importable good decreases leading to a more closed economic situation. In the accompanying graph, the trade triangle decreases from free trade (in green) to the new policy regime (in red). The relative price ratio increases because $[P_A]_D$ decreases and $[P_M]_D$ increases.

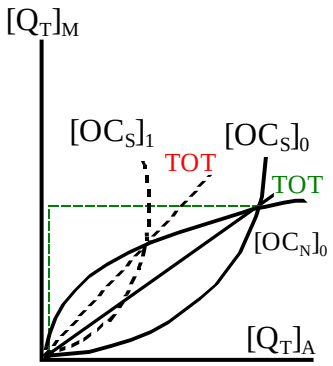


3.3

Certainly one could argue that the areas (4+c) will be larger because the share of trade is a large part of the overall domestic market, by definition. But consider the effect of the tax on tradables. The distortion in domestic prices results in more resources going to the import-competing sector and away from the export competing sector. The tax on tradable goods results goes counter to specialization and toward diversification and less trade reliance. A more neutral tax would be to tax all consumption and not trade. In this case the relative prices of the exportable good and importable good are taxed in the same way (some % value) and the relative prices are the same, rather than lowering the domestic price of the A-good and increasing the price on the M-good.

3.4 Think about the partial equilibrium revenue-collecting implications of taxing traded goods if this were a large country exporter and importer. Could this be an argument in favor of taxing traded goods for revenue collection? To help you answer this, use offer curve analysis to capture the trade effects of the large country case of this country's trade policies. (10 points)

If this were a large country then areas that represent revenue collected would be greater in both sectors with part of the revenue coming from a TOT effect by raising world prices on both the importable and the exportable goods. This is not likely to be an argument in favor of taxing traded goods. The higher TOT would hurt foreigners and it is unlikely that those gov'ts would ignore the TOT effects. In addition, the degree of distortion would be greater because this is a large country applying trade policy measures. The value of trade would greatly decrease as would the economic benefits from trade. The DWLs would be much greater.



Solutions ECN 230 Final exam Fall 2010

Part 1. Explain whether the following statements are true, false, or whether it depends. If depends is your answer, be sure to explain upon what it depends. (25 points)

1.1. If there is an increase in the factor that is already abundant in a country, then the expected result would be a pro-trade production effect.

T/D. It depends on factor intensity and factor allocation. However, if the production of some goods requires the intensive use of the abundant factor and the country is specialized in production of goods in which it has a comparative advantage, then the increased supply of that factor should result in greater production of exportables (and a greater relative proportion). The greater relative proportion of production in the export sector implies a pro-trade production effect.

1.2. If industrialized countries are becoming increasingly similar in their level of technology and the productivity of their capital and labor, then trade disputes between such countries are less likely to be the result of low wages or unenforced labor standards.

T. Similar technology and productivity implies K/L ratios across sectors are more similar as are relative factor prices, $[P_L/P_K]$. Trade would be based more on product differences and intra-industry trade. International competition and market shares would likely be the function of future production efficiency, innovation, marketing and consumer-oriented strategies, and value-added activities rather than on cheap wages or weak (enforcement of) labor standards.

1.3. One reason for the factor-price equalization theorem not holding in reality is that tradable products are differentiable (i.e., the goods are not homogeneous).

T. The assumptions underlying the "law of one price" are that markets are competitive, no gov't intervention, no transactions costs, and that the good is homogeneous. If the goods are not homogeneous, then substitutability is reduced and complete price convergence is not expected. If output prices do not converge across markets, there is no reason for the factor prices to equalize across countries (assuming that L and K are not mobile across markets).

1.4. "Engel's law" says that people tend to spend a smaller share of their budget on food as their incomes rise. This would imply that specialization in agriculture sooner or later will slow economic growth.

F. Engel's law does suggest that people would send less as a % but not in absolute terms. Hence, if agribusiness (a sector that uses agricultural goods/services intensively) is dynamic and able to evolve from simple production of a commodity to undertaking more value-added activity and marketing functions, then there is no reason to expect economic growth to slow from specialization in agriculture.

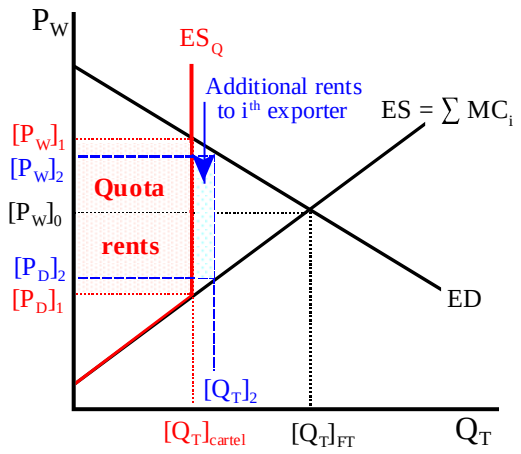
1.5. The presence of economies of scale in production would be expected to result in a higher level of international specialization than that predicted under a basic factor proportions trade situation (i.e., under a trade model which assumes no economies of scale).

T. The presence of EOS could result in intra-industry trade and an international market that is more consumer-oriented where product differentiation matters more. If economies of scope do not exist, then greater specialization would result in trade in similar but not identical goods.

Part 2. Briefly answer the following questions or respond to the specific statements.

2.1. Think about the motivation for forming an international export cartel for a commodity such as coffee, cocoa or oil. Answer the following questions keeping in mind the behavior of firms in the world's important exporting countries that would enter such an arrangement:

2.1.1 How would the formation of an international commodity export cartel affect trade volume and prices (relative to a competitive free trade situation)? Explain in detail. (10 points)



Firms in a cartel would abuse market power to maximize profit. An international cartel would be like a multi-plant monopoly with each plant having a different cost structure. So, the industry profit would be maximized subject to the costs at the different plants. The volume of trade would be restricted as a means of increasing the world price (an increase in the exporters' TOT). The result would be an export quota that maximizes rent transfer from the importers who experience a worsening TOT.

2.1.2 Would it make sense to argue that such international commodity arrangements are generally unstable? Explain and be specific. (5 points)

International commodity arrangements such as a cartel are unstable because there is every incentive to cheat, i.e., $[P_W]_1 > MC_i$ for every exporter. Hence, an increase in export by the ith exporter will increase their rents at the expense of the rest of the cartel's members.

2.2. Some economists argue that consumers can shape trade policy directly in the marketplace through their socially conscious purchasing decisions (e.g., by choosing to buy products that are consistent with their views on environmental sustainability, human rights or animal welfare). Suppose this is true. Think about the economic implications of such consumer-driven purchasing behavior when answering the following:

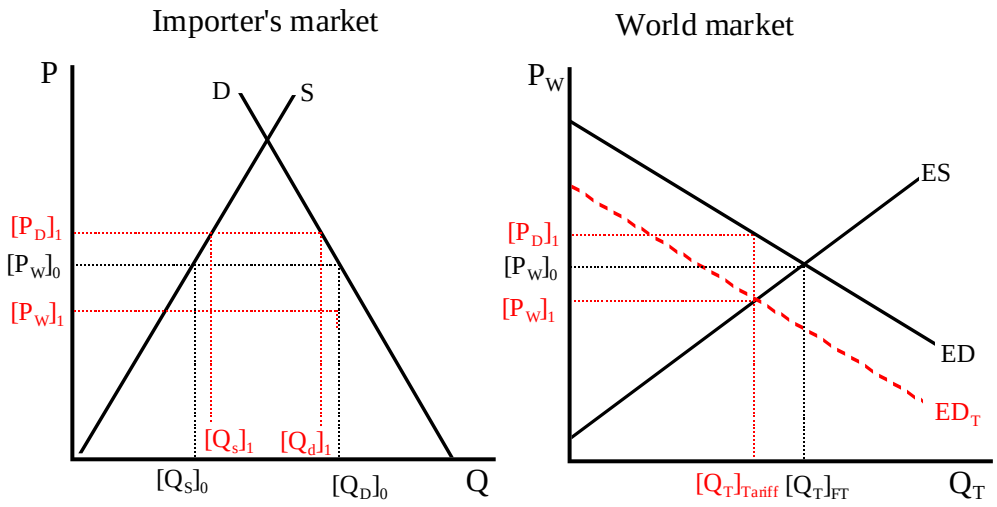
2.2.1 If it is consumers in the net-importing countries that make socially conscious purchasing decisions, then what might be the implication for the international market of these products and how would trade be affected? Be specific. (5 points)

Market becomes more consumer-driven. Firms must ensure their product meets the standards of the consumer and must provide info on how the good is produced. Product differentiation is important as is innovation, business organization, production method, processing, etc. The implication for the market is that it might become more important for a firm to have greater control over the marketing channel, logistics and to have oversight over the entire production process through ownership (vertical integration) or contractual arrangement. If consumers are serious about their conscious, then goods produced to a higher standard would receive a price premium and those that do not will be heavily price discounted. An independent body might have to ensure that goods are produced according to some internationally agreed criteria.

2.2.2 Suppose the importing country's producers already meet a higher standard. Would the market work more effectively by having consumers make such purchasing decisions directly rather than having the government use a more traditional trade policy instrument (for example a tariff) to force foreign production to a higher standard? Explain and be specific. (10 points)

Show the effects of a tariff on the importer's market (small or large country). The tariff results in a higher price in the domestic market where presumably producers are subjected to the consumers' high standards. Hence, the argument by the import-competing sector might be that domestic producers are at a disadvantage relative to foreign producers and so a tariff is an appropriate means of protection. The tariff results in an increase in domestic production, but also reduces quantity demanded. The reduction in consumption is probably not what the gov't intended but is a consequence of the policy. In addition, and more importantly, a tariff by a large net importer would depress P_W, which would not be an appropriate signal for foreign producers to produce at a higher standard. If the industry could label products and a certification body can ensure that a good is produced to a higher standard, then market price signals can encourage producers to meet higher standards desired by consumers (who are willing to pay for a good that meets the higher standard).

2.3. The benefits from trade (i.e., improvements in social welfare), in large part, are the result of changes in relative



prices, i.e., the terms of trade (TOT). Refer to the standard Heckscher-Ohlin-Samuelson (H-O-S) 2 x 2 x 2 trade model, presented and discussed in class, when answering the following:

2.3.1 Explain the Neoclassical argument that trade liberalization (e.g., a change in trade policy from autarky, or no trade, to freer trade) increases welfare through an improvement in the TOT. (10 points)

Gains from trade as reflected in increased SW are from prodn efficiency, more efficient resource allocation, and consumption efficiency. There is increased prodn of exportables and decreased in prodn of importables precisely as the exportable is valued higher on the international market and the importable is relatively cheaper means an increase in purchasing power. You could show the effects of a small country with a gen'a eqlbm model.

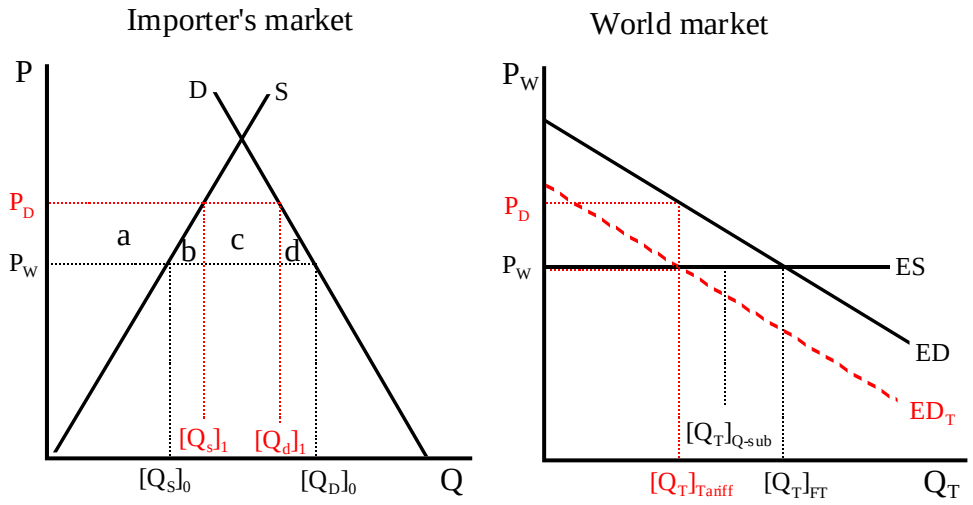
2.3.2 How is it that technological change, which improves factor productivity, could negatively affect economic growth? Be very specific. (5 points)

Tech Δ has two effects: a real effect, ↑ Q (from the same amount of L, K used - ↑ productivity) which is positive for the economy; and a TOT effect, which if ↑ Q is large enough can affect price. That is, ↑ Q → ↓ P_W. If the ↓ P is sufficiently large, then the negative effect from the TOT could make the country worse off, i.e., that the TOT effect > real effect (in absolute value terms).

Part 3. Answer the questions related to the market scenario described in the paragraph below. Label graph(s) clearly and explain them. Define concepts. (30 points)

Suppose your country has an import-competing sector in a market that is growing. Domestic producers have an effective association that is lobbying the government for protection and/or support. Think about the economic implications of two different policy instruments being considered: (1) an import tariff or (2) a production subsidy. You are the head of an inter-ministerial commission to assess which policy is more appropriate to help this sector at the least cost to society (i.e., taxpayers and consumers). Answer the following related to this scenario.

3.1. Using a free trade equilibrium solution as the initial situation, provide a simple partial equilibrium trade model to analyze the changes to the domestic market and the trade effects of the policy that your commission prefers (***do not*** model the economic effects on the exporting country). Explain how your policy choice relates to the policy objective and relate this to your model. (10 points)



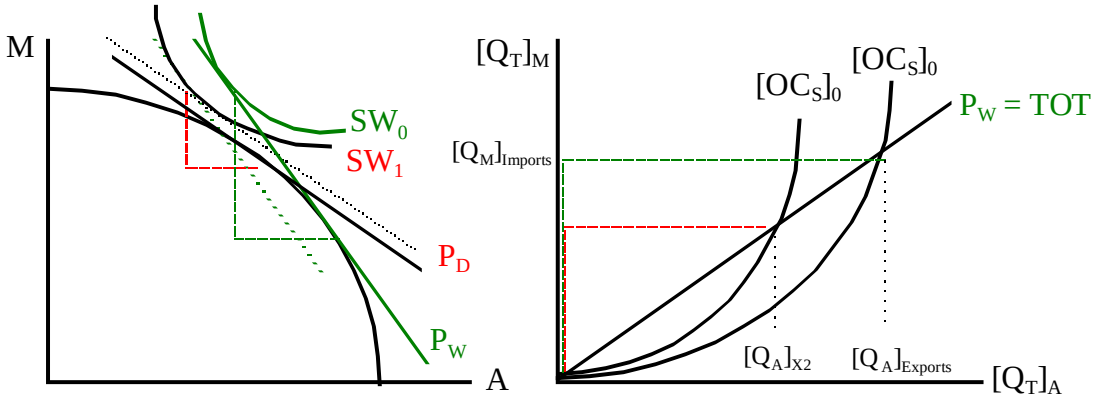
The policy choice is the production subsidy and not the tariff. The intention is to provide support to producers equal to (a+b). Producers receive a subsidy based on the higher price, P_D, and produce more, $[Q_S]_1$. The price consumers pay is P_W which means consumption is not affected. The higher domestic production means the import volume is reduced, from $[Q_D]_0 - [Q_S]_1$, but consumption remains at $[Q_D]_0$ because consumption is not taxed as in the case of a tariff that raises the domestic price to P_D.

3.2. Show the area representing the welfare changes from free trade to trade under the policy intervention regime. Compare the welfare differences between your preferred policy and the alternative policy. How would the welfare implications compare, i.e., would the welfare effects be greater than (>), less than (<), equal to (=), or is it not possible to determine (?)? Summarize your answer in a table similar to the one below. (10 points)

Welfare changes	Area representing the welfare change from the policy the commission prefers relative to free trade	Compare the welfare change from the alternative policy: indicate whether it is >, <, = or is ? relative to the preferred policy.
Δ Consumer surplus	0	< - (a+b+c+d)
Δ Producer surplus	a	=
Δ Government	- (a+b)	> + (c)
Δ Net social welfare	- (b)	< - (b+d)

A prodn subsidy helps producers without taxing consumption of the good. The taxpayer pays for the support to the producer not consumers. Under the tariff the consumer finances the support to the producer and the gov't also collects a tax from consumption of the foreign product. The NSW result shows that there are DWLs in both production and consumption from the tariff, but only in production in the case of a production subsidy. The subsidy is a more targeted policy than the import tariff and is more efficient.

3.3. Consider the general equilibrium implications of the policy intervention your commission chose. What could be the economic consequences to the domestic economy and the implications for trade? Explain and be specific.



At least show how the offer curve is affected for a small country. The H-O-S diagram is a bit advanced, but the answer should discuss trade and production effects. Trade is reduced because there is a reduction in the willingness to pay. There would be shift in production to the import sector and some discrimination against the export sector. Resources would be reallocated to the sector in which the country has a comparative disadvantage. Hence, there is a reduction in SW. The change in consumption will depend on the response by consumers to the change in relative prices, which requires some knowledge of the preferences behind the SW function.