

## ECN230 File of Previous Exams, 2015 -2019

### 2019 Final Exam

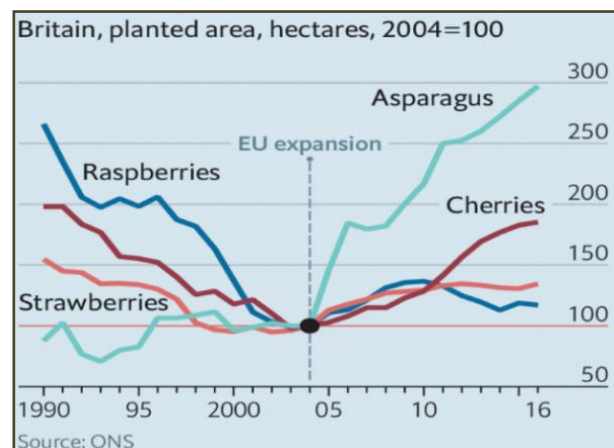
**Part 1.** Explain whether the following statements are true, false, or whether it depends. If depends is your answer, be sure to explain upon what it depends. (25 points)

- 1.1 If the law of one price, or the terms of trade, does not hold in practice, it is evidence of the limitations of the theory explaining why nations trade.
- 1.2 Economists accept that international trade results in income distributional issues within and across countries. Those effects would tend to be the same regardless of whether economies of scale in the production of traded goods exist or not.
- 1.3 Engel's law regarding the income elasticity of demand for agriculture and food products is a factor in explaining why a commodity-based economy of a developing country might experience immiserizing growth.
- 1.4 Even in industries that are intensive in the use of labor, countries with cheap labor, measured as low hourly wages per worker, do not always enjoy a comparative advantage.
- 1.5 The maximum-revenue generating tariff is an optimal tariff in the case of a small country.

**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 In a tweet in December 2018, US president Trump referred to himself as a 'tariff man' because of the billions of dollars of revenue that flowed into the US Treasury, a result of the tax on Chinese goods. Think about the economic, trade and welfare implications of a tariff when answering the following:
  - 2.1.1 Provide a *list* of the objectives of a tariff. (5 pts)
  - 2.1.2 Use the list provided in 2.1.1 to discuss and/or show the factors that might matter for the US to "win" from the tariff. Be sure to explain whether his self-appointed title of 'tariff man' can be justified based on the revenue. (10 pts)
- 2.2 Globalization involves cross-border trade in goods and services and flows of labor and capital. Keep in mind the theoretical relationship between cross-border factor mobility and international trade and use the information in the chart below to answer the following:

- 2.2.1 In 2004, the European Union (EU) expanded to include central and eastern European countries, allowing free trade and factor mobility across 27 member states. The chart reflects trends in production (as measured by planted area) in sub-sectors of Britain's agriculture before and after expansion. *List* relevant concepts covered in class that can help you to develop a narrative (i.e., a story) to explain the trends before and after 2004. (5 pts)



2.2.2 Use the list in 2.2.1 to describe the relationship between production, trade and labor mobility in the agricultural sub-sectors in Britain. Carefully explain. [You do not need to know anything about the actual situation of the UK's agricultural sector.] (10 pts).

2.3 The theoretical expectations in international trade from the Heckscher-Ohlin-Samuelson (H-O-S) model come from the underlying theorems such as the Stolper-Samuelson theorem. Think about the underlying assumptions of the H-O-S model and what the Stolper-Samuelson theorem predicts when answering the following:

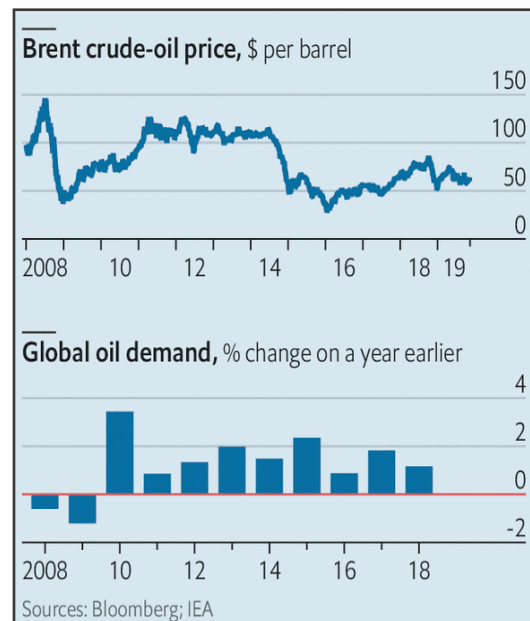
2.3.1 What evidence would you provide in support of the theorem? Explain. (5 pts)

2.3.2 If the theorem is not supported by the evidence, could weaknesses in some assumptions help explain why the theorem does not hold? Explain. (10 pts)

**Part 3.** Answer the questions related to the 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)

Concerns with climate change have led many to expect the demand for oil to decrease over time. However, presently global oil demand has been near its lowest since the global financial crisis of 2007-08. The Organization of the Petroleum Exporting Countries (OPEC) and Russia, which cooperates with OPEC, met in December 2019 to discuss a new plan to support world oil prices through production and export cuts. (*Economist*, "OPEC's waning power: Under pressure", 16 Nov 2019, p. 66-7).

3.1 Suppose that OPEC agrees to a plan to restrict the volume of exports. Provide a simple (two-country) model of *only* the world market showing the economic and trade implications of an oil export restriction by OPEC relative to a free trade market situation. [Assume only OPEC exports oil in the world.] Is the export restriction an abuse of market power? Explain using your graph(s). (15 pts)



3.2 In 2019, several geo-political events hit the global oil market: US trade sanctions restricted international transactions involving Venezuela and Iran (both OPEC members); instability in Iraq; a drone strike that temporarily knocked out half of Saudi Arabia's oil production; and oil tanker seizures in the Gulf. How would you expect the world market to be affected by such events? Do your expectations match the situation presented in the charts? Explain. (5 pts)

3.3 Now let the world market include oil exports by non-OPEC members. Use the information in the charts to model a change in the world market equilibrium (from a base period of 2010-14 to the 2015-18 period). [Hint: this is like a 3-country model with two exporters and all importers aggregated as one importer.] Provide a new graph of *only* the world market. Explain how the change in the equilibrium differs from that in 3.1 and discuss this in light of OPEC's new plan. (10 pts)

1.1 If the law of one price, or the terms of trade, does not hold in practice, it is evidence of the limitations of the theory explaining why nations trade.

F. The principle underlying assumptions of LOOP or TOT are that: (1) markets are competitive, (2) goods/services are identical, (3) government does not intervene, and (4) transportation or transactions costs do not exist. LOOP or TOT often do not hold in practice because any of these conditions might not exist. What is important is that if/when these conditions do not hold, that price convergence occurs up to the margin of whatever causes the price differential, e.g. rate of tariff, transport cost margin, monopoly power, markup for quality difference, etc.

1.2 Economists accept that international trade results in income distributional issues within and across countries. Those effects would tend to be the same regardless of whether economies of scale in the production of traded goods exist or not.

F/D. Trade is often seen as competition among workers and wage rates or returns to capital in one country relative to another. EOS implies many things, that trade can be based on product differentiation resulting in intra-industry trade. Countries with similar level of development (GDP, GDP/cap, % share of GDP by sector), more similar preferences and purchasing habits, and countries with similar K/L ratios (implying similar wage rates and labor stds) can compete. If trade is based on consumer choice and greater competition in product markets rather than low-wage vs high-wage labor, then it can be more likely that trade will result in more winners than losers. Trade among similar countries with similar wages and reg stds. Focus on how EOS might affect trade.

1.3 Engel's law regarding the income elasticity of demand for agriculture and food products is a factor in explaining why a commodity-based economy of a developing country might experience immiserizing growth.

D. Really depends what was said. Start with defining Engel's law: that income elasticity of demand for A-good is low, i.e.,  $\% \Delta Y > \% \Delta D_A$ . (not an absolute  $\downarrow$  expenditures on A but as a  $\downarrow$  share of overall expenditures). Immiserizing growth is when tech change or L,K migration creates economic growth that worsens SW. This happens when worsening of the TOT ( $\downarrow P_A$  r.t.  $P_M$ )  $>$  real effect ( $\uparrow Q$ ). First, Engel's law can lend a demand-side explanation for  $\downarrow$  TOT, but it only says something about the  $\% \Delta Y$  and not that  $D_A \downarrow$  in absolute terms. Second, many supply-side factors would matter too for the  $\downarrow$  TOT. There is no empirically observed relationship between "dependence on agriculture" and immiserizing growth. That an agricultural economy experiences  $\downarrow$  TOT does not necessarily imply that a country experiences immiserizing growth. Specialization in A-sector can result in graduation along the value chain (agribusiness) and linkages to other sectors (services, manufacturing) which are less subject to  $\downarrow$  TOT or unstable prices.

1.4 Even in industries that are intensive in the use of labor, countries with cheap labor, measured as low hourly wages per worker, do not always enjoy a comparative advantage.

T. Define CA or what gives a CA. Wage differentials reflect productivity differences; companies in low-wage countries often use more labor to produce a unit of output and might have less efficient communication and transportation systems. Hourly wages are not decisive in determining where a product is made. That is, comparative advantage is more than just a function of a low wage rate and depends on the cost of energy (and its reliance), quality of land and climatic conditions (for ag production) and the marketing system's ability to move a product or provide a service along a predictable channel. Could mention risk, lack of capital to work with or poor gov't policy (taxing the sector country has CA).

1.5 The maximum-revenue generating tariff is an optimal tariff in the case of a small country.

F. An optimal tariff is one where the value of the tax revenue collected by the gov't exceeds the losses faced by society from the tariff, i.e., DWLs in production and consumption. In a small country, there is no optimal tariff because the tariff only results in internal income redistribution and DWLs, i.e., the  $\Delta \text{NSW} = \text{DWLs}$  (b+d as per our graphs in class). The max-revenue generating tariff is similar to a monopoly firm fully utilizing its market power to raise P to  $[P_D]_{\text{Mon}}$  to extract rents from consumers. Instead, the gov't sets a tariff to raise  $P_D$  to  $[P_D]_{\text{Mon}}$ , which is not optimal because its goal cannot improve SW in the small country case.

2.1

2.1.1 Provide a list of the objectives of a tariff. (5 points)

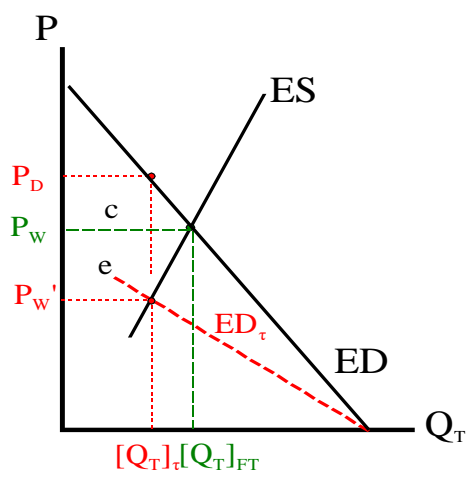
Objectives of a tariff  
\* Support local production:  $\uparrow P_D$ ,  $\uparrow Q_S$ ,  $\uparrow$  employ and resource use  
\* Protection of local good/firm:  $\uparrow$  dom mkt share,  $\uparrow$  self-sufficiency

- \*  $\downarrow Q_D$
- \* Revenue, BOT and BOP
- \* Large country: improve TOT and SW
- \* Retaliate against unfair behavior of a gov't (policy) or firm (use/abuse of mkt power)
- \* Some other social policy objective (infant industry, externality, mkt failure, etc)

2.1.2 Use the list provided in 2.1.1 to discuss and/or show the factors that might matter for the US to “win” from the tariff. Be sure to explain whether his self-appointed title of ‘tariff man’ can be justified based on the revenue. (10 points)

The main issue here is tariff justified on revenue.

The tariff applied by the US is an example of a large country. Trump’s pleasure with revenue generation suggests that part of the objective of the tariff is the tax. However, the tax collected is two-fold: a transfer from consumers and an international transfer from Chinese exporters. The only means for which Mr. Trump can claim a win from the tariff is if area ‘e’ is a large share of the overall revenue. Area ‘c’ is a tax on US consumers and cannot be claimed a win from the standpoint of SW. If area ‘e’ is large, then  $ES_{China}$  would have to be relatively price inelastic. If ‘e’ is large one should expect that China would seek to retaliate and as a large country it could hit the US economy.

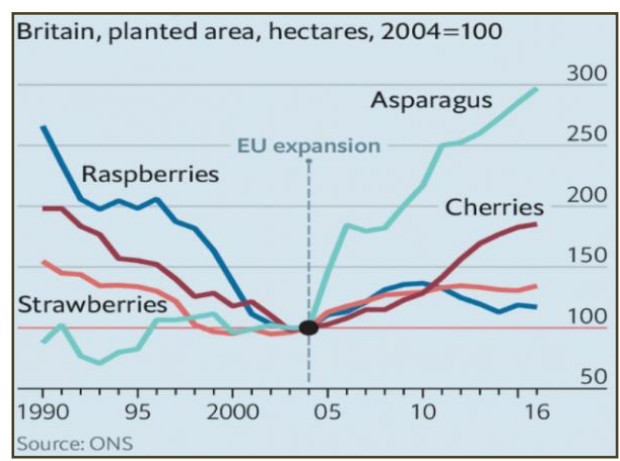


Other issues [not required]: The tariffs might help to reduce the bilateral trade deficit (it has not) because it protects and supports local production, raising the local share of domestic market. Consumption might go down for both imports and domestic goods and consumers pay the tax. Could generate employment in sectors hurt by trade (again this is debateable but no info was provided on this).

2.2

2.2.1 In 2004, the European Union (EU) expanded to include central and eastern European countries, allowing free trade and factor mobility across 27 member states. The chart reflects trends in production (as measured by planted area) in sub-sectors of Britain’s agriculture before and after expansion. List relevant concepts covered in class that can help you to develop a narrative (i.e., a story) to explain the trends before and after 2004. (5 pts)

- Relevant concepts:
- \* L-intensity in production
  - \* L scarcity and wages
  - \* L migration in agriculture
  - \* import substitution
  - \* Specialization in ag sub-sectors
  - \* Comparative advantage
  - \* Transport/marketing costs
  - \* Demand for local produced goods
  - \* Value-added products
  - \* Seasonality in demand



2.2.2 Use the list in 2.2.1 to describe the relationship between production, trade and labor mobility in the agricultural sub-sectors in Britain. Carefully explain. [You do not need to know anything about the actual situation of the UK’s agricultural sector.] (10 pts).

Prior to 2004, the area planted in the UK to each of the crops was on the decline or stagnant. This could be the result of high wages and L scarcity in the UK for crops that are L-intensive in production. After 2004, L mobility from the newly acceded countries may have moved to the UK to work in agriculture. L-migration permitted an expansion of production. While a case can be made for each of these crops being L-intensive, there is still a process of specialization, subject to comparative advantage. The choice of crop to produce is related both to supply and demand considerations. It could be that the conditions in the UK are most appropriate to asparagus production, but could also be related to demand-side factors (preference for asparagus). Moreover, there could be transport-related factors that make production of asparagus competitive relative to import-substitutes (e.g., marketing of fresh produce or seasonality-related factors). L-migration could have substituted for imports in some sectors; could be issues related to seasonality in demand.

2.3

2.3.1 What evidence would you provide in support of the Stolper-Samuelson theorem? Explain. 5 pts

- \* Anything showing that returns to the abundant factor increases in countries
  - $\uparrow P_L$  in countries with abundant endowment of labor and  $\uparrow Y$  equality (South)
  - $\uparrow P_K$  in countries with abundant endowment of K and  $\uparrow Y$  inequality (North)
- \* Anything showing that income across countries (North and South) converge with free trade

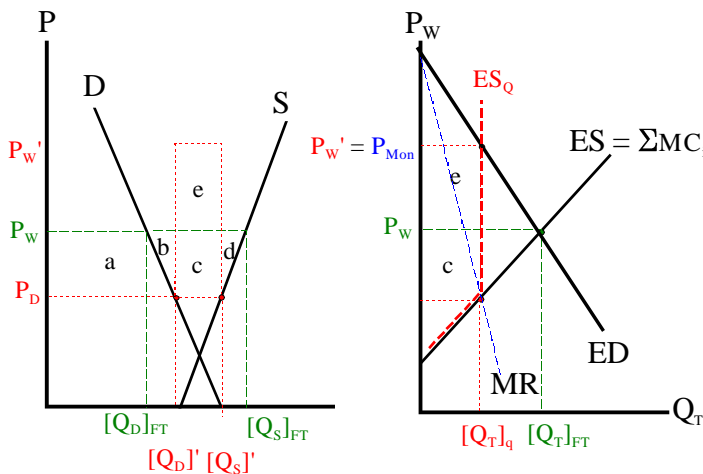
2.3.2 If the theorem is not supported by the evidence, could weaknesses in some assumptions help to explain why the theorem does not hold? Explain. 10 pts

- Depends what is argued:
- \* Listing assumptions would be useful: Focus should be on returns to factors, income equality in South and income inequality in North; convergence in income across countries.
  - \* model assumes L and K are not mobile across borders
- Selective movement of K, for example, from North to South to specific sub-sectors in South can make income inequality worse. If K moves to urban areas where there is manufacturing or services, then the agricultural sector will do worse (in terms of relative productivity)
- \* EOS do not exist
- With EOS factor endowment differences do not necessarily matter, which implies that the returns to factors would not be predictable in the way as expected.
- \* There are various factors that can affect  $P_L$  and  $P_K$  that are not related to trade
- K might go to manufacturing and services precisely because agriculture is risky and the likelihood of credit not being repaid is higher.
- \* Some argued Rybczynski's theorem and immiserizing growth to some effect.

**Part 3.** Concerns with climate change have led many to expect the demand for oil to decrease over time. However, presently global oil demand has been near its lowest since the global financial crisis of 2007-08. The Organization of the Petroleum Exporting Countries (OPEC) and Russia, which cooperates with OPEC, met in December 2019 to discuss a new plan to support world oil prices through production and export cuts. (*Economist*, "OPEC's waning power: Under pressure", 16 Nov 2019, p. 66-7).

3.1 Suppose that OPEC agrees to a plan to restrict the volume of exports. Provide a simple (two-country) model of *only* the world market showing the economic and trade implications of an oil export restriction by OPEC relative to a free trade market situation. [Assume only OPEC exports oil in the world.] Is the export restriction an abuse of market power? Explain using your graph(s). (15 pts)

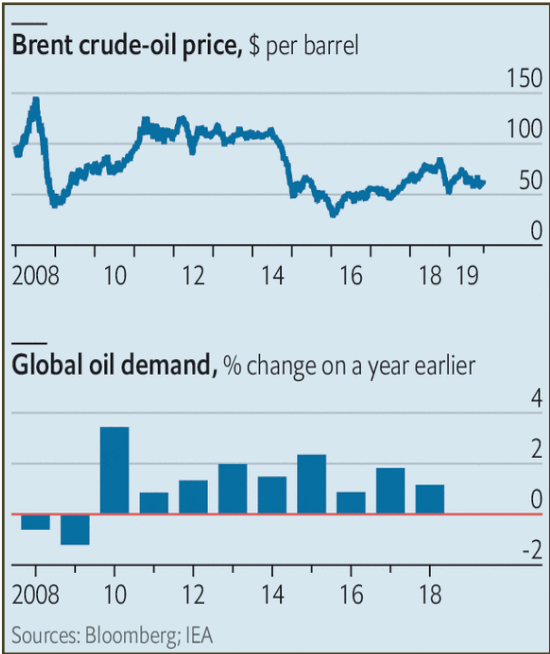
Graph shows the case of an export cartel restricting the volume of exports as an export quota to maximize profits, which is the same as the multiplicant monopoly situation. The use/abuse of the market power is shown as setting  $P_w'$  as an example of monopoly pricing whereby OPEC takes the monopoly quota rents.



3.2 In 2019, several geo-political events hit the global oil market: US trade sanctions restricted international transactions involving Venezuela and Iran (both OPEC members); instability in Iraq; a drone strike that temporarily knocked out half of Saudi Arabia's oil production; and oil tanker seizures in the Gulf. How would you expect the world market to be affected by such events? Do your expectations match the situation presented in the charts? Explain. (5 pts)

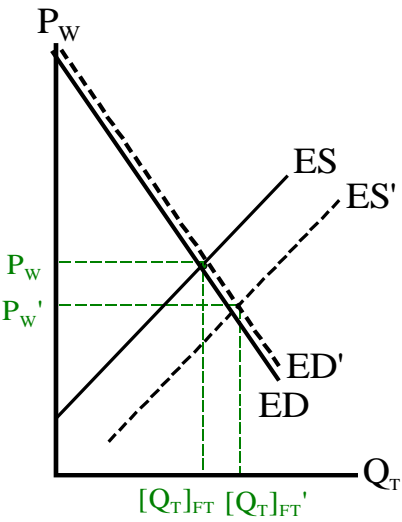


One would expect that such shocks to supply would raise prices on the world market. Nevertheless, prices are relatively low during the period presented. In the past, such shocks would have likely resulted in bigger price increases. For some reason the demand side remains weak (global recession or slow int'l growth) or there is some other factor not accounted for. Could have mentioned risk and uncertainty.



3.3 Now let the world market include oil exports by non-OPEC members. Use the information in the charts to model a change in the world market equilibrium (from a base period of 2010-14 to the 2015-18 period). [Hint: this is like a 3-country model with two exporters and all importers aggregated as one importer.] Provide a new graph of *only* the world market. Explain how the change in the equilibrium differs from that in 3.1 and discuss this in light of OPEC's new plan. (10 pts)

The existence of non-OPEC exporters makes the world market more competitive relative to the situation in 3.1. OPEC no longer can use or abuse its market power on the world market. Adding the non-members to ES shifts the ES curve and lowers price. The small increase in ED means that  $\Delta ES > \Delta ED$  resulting in lower prices in 2019 than in earlier years. The shift in ES is large given that more players participate in exports and the shift in ED is small given that demand is weak. OPEC's plan to restrict oil exports is weakened. Exports by OPEC taken up by non-OPEC.



## 2018 Final Exam

**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)

- 1.2 Trade is argued to have short- and long-term benefits to an economy, but if the dead-weight losses from restricting trade are so small in value, then the costs of restricting trade do not matter.
- 1.2 If trade were based on product differentiation rather than factor endowment differences, then there would likely be more winners and fewer losers as a country liberalizes trade.
- 1.3 The migration of workers across national borders would, in general, have an anti-trade effect (that is, migration results in less trade as a share of GDP).
- 1.4 An import barrier can be better than doing nothing in the case of protecting an infant industry.
- 1.5 A country whose trade sector has almost no impact on world prices is most at risk of experiencing immiserizing growth.

**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 International factor mobility has been at the center of the disagreement over the economic benefits of globalization. Think about the role that the different types of international capital flows may have played in integrating the economies of countries when answering the following:
  - 2.1.1 *List* the reasons why capital (of any or all types) flows across borders. (5 points)
  - 2.1.2 Which type of international capital would be most likely to flow from a country called Home to a country called Foreign if the industry receiving the capital in Foreign was the pharmaceutical (e.g., drugs) or electronics sector? Relate your answer to your list in 2.1.1, where relevant, and explain your answer. (10 points)
- 2.2 The study of international trade has had to move beyond factor endowments and factor intensities to understand the underlying causes of international trade. The recognition of the existence of economies of scale (EOS) in certain industries has helped economic theory explain trade behavior more broadly. Think about how EOS might change the results of the traditional Heckscher-Ohlin trade model when answering the following:
  - 2.2.1 Provide a *list* of concepts that relate to trade that arise once economists allow for EOS in production. That is, what must one now consider if trade is not based on factor endowment differences and intensities in production? (5 points)
  - 2.2.2 Differentiate between internal and external EOS; then, referring to your list in 2.2.1, explain how limiting “globalization” by a country might affect its domestic market. (Hint: use an example of a good whose production is subject to EOS). (10 points)
- 2.3 To many, export-led growth and industrialization are a means for economies to develop sustainably over time while ensuring that many within society participate in the benefits of economic growth. Think about the role trade has played in the economic growth strategies of developing countries when answering the following:

- 2.3.1 Explain the difference between industrialization through import substitution and through export-led growth as a means of achieving economic growth. How might the government policy supporting the strategies be different? Assume the economies have agriculture and manufacturing sectors. Make whatever additional assumptions you need and be specific in terms of explaining the objective(s) of a developing country's government. (10 points)
- 2.3.2 Suppose that either strategy is achieved through domestic savings and investment intended to lead to greater output and employment. *List* some risks for the economy of a government continuously pursuing this strategy. (5 points)

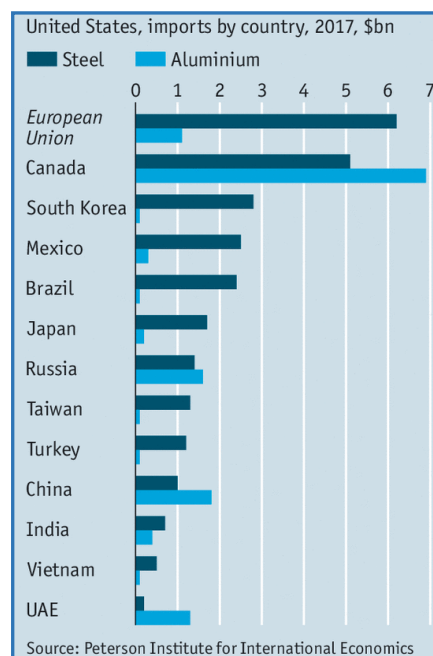
**Part 3.** Answer the questions related to the scenario described in the paragraph below. Be specific and explain your answers to the best of your ability. Label graph(s) clearly and explain them. Define concepts you think will support your answer. (30 points)

Early in 2018, the US fired the first shot in its trade war by raising tariffs across a variety of goods from friendly and rival countries alike. One battle front in the trade war was the announcement of trade restrictions on imports of steel and aluminum. The stated objective of the policy was based on a threat to US national security because the metal imports, amounting to one-third of domestic demand in 2017, makes the US military dependent on foreigners while US production of the metals was only at 72% of full capacity. The administration argues that US production should be at 80% of capacity. Critics argue that the US military does not require foreign metal for its purposes and that Canada, a friend, is the largest supplier of both metals combined, by value (*Economist*, "American trade: Donald Trump mulls restrictions on steel and aluminium imports", 22 Feb 2018).

Consider only the case of steel.

The US government presented three policy options:

- (1) a 25% tariffs on all imports of steel;
- (2) an import quota restricting the volume of steel; or
- (3) a mixture of tariffs and quotas, with quotas for countries that a negotiated deal to avoid tariffs, e.g., South Korea negotiated to limit its exports of steel to 70% of its 2015-17 average in exchange for no tariff.



- 3.1 From the US perspective, compare and contrast policy options (1) and (2) in terms of their economic, trade and welfare implications. Provide a graph(s) to support your answer. (15 pts)
- 3.2 Why might an exporting country negotiate with the US to avoid tariffs by agreeing to limit its exports to the US? Explain why the US and the exporter would agree to the arrangement and provide a graph(s) to support your answer. (10 points)
- 3.3 The US president has repeatedly argued that a trade war is easy to win. Use the information provided, and your previous answers, to prepare a *list* of reasons why such a trade war might not be so easy to win. Make whatever assumptions you want. (5 pts)



## Summary solutions ECN230 2018

1.1 Trade is argued to have short- and long-term benefits to an economy, but if the dead-weight losses from restricting trade are so small in value, then the cost of restricting trade do not matter.

F/D. The S-R benefits to trade are related to efficiency in prodn, consume, resource use, and exchange. If the DWLs are small, then the NSW loss from a trade restriction is also small. However, there are costs in terms of redistn of income between groups in society. In the L-R, the benefits are more dynamic and the costs would be much greater than the DWLs. Trade restrictions can affect broader economic integration, market size, EOS, consumer choice and competition.

1.2 If trade is more based on product differentiation than factor endowment differences, then there are likely to be more winners and fewer losers as a country liberalizes trade.

T/D. Trade based on product differentiation implies intra-industry trade which could explain N-N trade, i.e., countries with similar level of development (GDP, GDP/cap, % share of GDP by sector), more similar preferences and purchasing habits, and countries with similar K/L ratios (implying similar wage rates and labor stds). If trade is based on consumer choice rather than low-wage labor, then it can be more likely that trade will result in more winners than losers.

1.3 The migration of workers across national borders would, in general, have an anti-trade effect (that is, migration results in less trade as a share of GDP).

D/F. There are many reasons why L migrates across borders and the relationship between L migration and trade is not definite (can be substitutes, i.e., anti-trade, or complementary, i.e., pro-trade). If low-wage L crosses to work in L-int sectors, then it is possible that  $\uparrow Q$  of L-int goods  $\rightarrow \downarrow$  imports and is anti-trade. If L moves for other reasons it is possible the L is complementary to trade (pro-trade).

1.4 An import barrier can be better than doing nothing in the case of protecting an infant industry.

T. Theory of the 2<sup>nd</sup> best – government intervention can improve welfare in cases of mkt failure or externality. An import barrier can improve SW in the case of an infant industry if/when there is too little prodn in manufacturing. There can be an externality subjecting a country to too much  $Q_A$  and the instability of dependence on the ag sector, and/or too little  $Q_M$  and the inability for a country to industrialize and achieve more stable, sustainable growth.

1.5 A country whose trade sector has almost no impact on world prices is most at risk of experiencing immiserizing growth.

D/F. Immiserizing growth is when, for example, a technological development  $\rightarrow \uparrow$  prodvty such that  $\uparrow Q$  of exportable is so large that it negatively affects  $P_W$  and the TOT, and that the TOT effect  $>$  real effect of the growth, making the country worse off. Immiserizing growth is possible if a large country experiences the growth, or if a sufficiently large number of small countries adopt a technology. A country whose trade sector has no impact on  $P_W$  is considered small. So, for TOT to be affected, all small countries would have to adopt new tech to  $\uparrow Q$ ,  $X$  and  $\downarrow P_W$ . The risk of immiserizing growth is more related to competitive sectors where there is high P-inelasticity in supply and demand for the good that is mostly non-differentiable.

2.1

2.1.1 List the reasons why capital (of any or all types) flows across borders. (5 points)

Types of K: int'l loans/deposits – banking; FDI; FPI; intellectual property (intangible assets/capital – patents, trademarks, copyright). Reasons why K moves across borders is to seek higher returns through:

- \* K moves to work with a natural resource
- \* K moves to work with abundant immobile L
- \* K moves to get around trade restriction
- \* K moves as a means of selling/transferring intellectual property
- \* Financial service provider pursues EOS by expanding into int'l markets
- \* K moves to provide non-tradable service
- \* K moves to diversify asset portfolio
- \* K moves to be part of int'l supply chain

2.1.2

FDI. Depends on what you argued – pharma or electronics. Both pharma and electronics can be considered high-tech, R+D-intensive sectors. If there is intellectual property to protect, then firm might prefer to keep that intangible asset with the firm (and not share it). If drugs require compliance with nat'l regs, then FDI might be the means by which firm gets closer to the regulatory body and foreign consumers.

2.2

2.2.1 5 pts

- \* Product differentiation
- \* More specialization
- \* Intra-industry trade
- \* Trade driven by consumer choice
- \* Imperfect competition, size of firm, MNC
- \* ↓ AC/unit as ↑ Q or ↓ AC for industry
- \* EOS vs economies of scope
- \* Clusters vs vertical / horizontal integration/cooper

2.2.2 10 pts

Internal EOS: ↓ AC/unit as ↑ Q; External EOS: ↓ AC for industry  
 Globalization in economics refers to trade in goods + services and int'l L, K mobility.  
 Sectors subject to EOS: could be ag production (specialization in a particular crop) or manu production (e.g., cars). If globalization is limited then prodn is more limited to the domestic mkt. If int'l mkt is big part of total demand for a firm's product, then limiting trade affects cost advantage from EOS. Limiting trade will imply affecting size of mkt, consumer choice and competition. If EOS are external, then greater market integration might be important. Limiting trade or K-flows can block supply chains or the degree to which the industry benefits from a concentration of activity. The car sector very K-int and cars have many components which makes it harder to produce all parts and conduct final assembly under one roof or even in same country. Car mkt is probably most globalized good market because of the number of parts that make up the final good. Restricting trade or K-flow can limiting a car firm's access to int'l supply chain.

2.3

2.3.1 ISI vs export-led development 10 pts

Assume the country is “South”, abundant in L and ag's share of GDP and export earnings from ag are large. Country is concerned with dependence on agricultural commodity exports and want to capture more value added.	
<b>ISI: inward oriented</b>	<b>X-led development: outward oriented</b>
Development by producing manu or higher-valued goods once imported. Some gov't encouraged transition from ag to manu on the grounds that dependence on commodity export results in slow and uneven growth and development. Gov't can provide protection for the sector, provide subsidies. Gov't fosters linkages, country graduates along value-added chain. Focus is more toward producing goods to reduce imports.	Depends on what export goods are being targeted: could be high-valued exports of ag commodities (for which the country has a CA) or could be to facilitate the transition to manufacturing by promoting exports. The gov't's role is more in supporting rather than in protecting. To be competitive on world mkts, gov't will have to ensure important inputs enter at low cost and that investment increases productivity.

<p>Policy supporting ISI:</p> <ul style="list-style-type: none"> <li>* Tariff on manufactured good</li> <li>* Tax on commodity export</li> <li>* Tariff on inputs into manufacturing</li> </ul> <p>Objective: increase Q, dom mkt share, increase P and decrease imports</p>	<p>Policy supporting X-led growth:</p> <ul style="list-style-type: none"> <li>* Industrial policy – target sectors for investment and trade (tax break, ease credit)</li> <li>* No/low tariffs on imported inputs</li> <li>* Could be subsidies, but such countries often do not have funds for such programs</li> <li>* X must compete on P on int’al mkt</li> </ul> <p>Objective: increase Q+X, int’al mkt share, decrease cost</p>
<p>Risks:</p> <ul style="list-style-type: none"> <li>* Infant industry never grows up</li> <li>* Costs never come down even after “learning by doing”</li> <li>* Over-investment in sector that does not develop</li> <li>* Gov’t targets wrong industry (hard to predict winners)</li> <li>* Gov’t close to business (crony capitalism)</li> <li>* Discriminate against sector export</li> <li>* Discriminate against non-trade sectors</li> <li>* Can create a dual economy situation</li> </ul>	<p>Risks:</p> <ul style="list-style-type: none"> <li>* Infant industry never grows up</li> <li>* Costs never come down even after “learning by doing”</li> <li>* Over-investment in sector that does not develop; restrict credit access to un-targeted sectors</li> <li>* Gov’t targets wrong sector</li> <li>* Crony capitalism</li> <li>* Discriminate against non-trade sectors</li> <li>* Negative TOT effects from too much I,Q</li> <li>* TFP = 0, diminishing MP of factors</li> </ul>

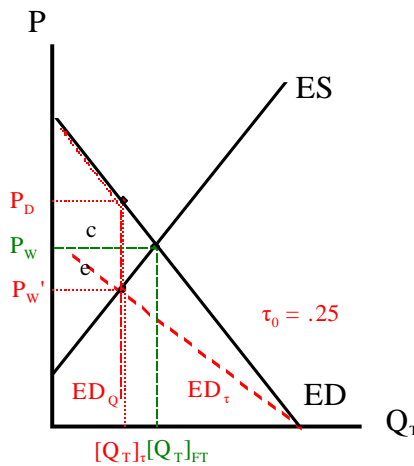
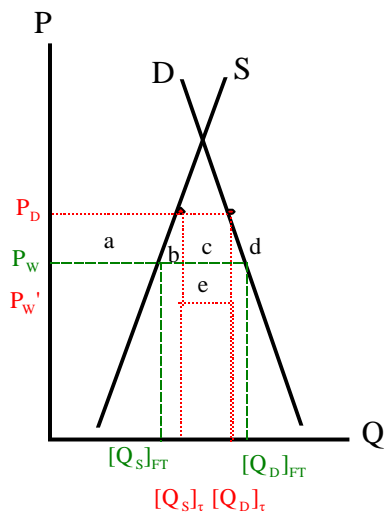
### 2.3.2 List risk factors associated with ISI vs export-led strategies 5 pts

<p>Risks:</p> <ul style="list-style-type: none"> <li>* Infant industry never grows up</li> <li>* Costs never come down even after “learning by doing”</li> <li>* Over-investment in sector that does not develop</li> <li>* Gov’t targets wrong industry (hard to predict winners)</li> <li>* Gov’t close to business (crony capitalism)</li> <li>* Discriminate against sector export</li> <li>* Discriminate against non-trade sectors</li> <li>* Can create a dual economy situation</li> </ul>	<p>Risks:</p> <ul style="list-style-type: none"> <li>* Infant industry never grows up</li> <li>* Costs never come down even after “learning by doing”</li> <li>* Over-investment in sector that does not develop; restrict credit access to un-targeted sectors</li> <li>* Gov’t targets wrong sector</li> <li>* Crony capitalism</li> <li>* Discriminate against non-trade sectors</li> <li>* Negative TOT effects from too much I,Q</li> <li>* TFP = 0, diminishing MP of factors</li> <li>* Discourage consumption (save to invest)</li> </ul>
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## 3.

### 3.1 Tariff – quota comparison (15 pts)

<p>Difference between tariff and quota on trade.</p> <ul style="list-style-type: none"> <li>* Quotas are less transparent (in terms price differential between <math>P_D</math> and <math>P_W</math>), less predictable (level of protection) and are more discriminating (inconsistent with MFN – cannot easily be applied in a manner that does not affect relative prices among trading partners). There are many exporters and a quota will have to discriminate among partners.</li> <li>* Quota offers the possibility of stricter controls over a mkt by an importing country.</li> <li>* Quotas affect private decision making to a greater extent because it limits quantity (a tariff still allows one to import as much as they want so long as the tax is paid).</li> <li>* Quotas are harder to administer and the effect depends on how it is allocated and to whom the right to import a specific volume accrues.</li> <li>* Quota rents are less transparent too - these rents can be substantial and the large players will capture the rents and are likely to behave non-competitively to get the rents.</li> <li>* Quotas are more political because of the rents – must be negotiated between partners to avoid retaliation. Tariff rents go to gov’t. The comparisons of the similarity in economic, trade and welfare are presented in the graph. Assumes equivalent quota to tariff.</li> </ul>
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Welfare effects, tariff:

$$\Delta CS = -(a+b+c+d) \text{ tax}$$

$$\Delta PS = +(a) \text{ support}$$

$$\Delta G = +(c+e) \text{ tariff revenue}$$

$$\Delta NSW = -(b+d) + e$$

Quota

$$\Delta CS = -(a+b+c+d) \text{ tax}$$

$$\Delta PS = +(a) \text{ support}$$

$$\Delta G = ? \text{ quota rents}$$

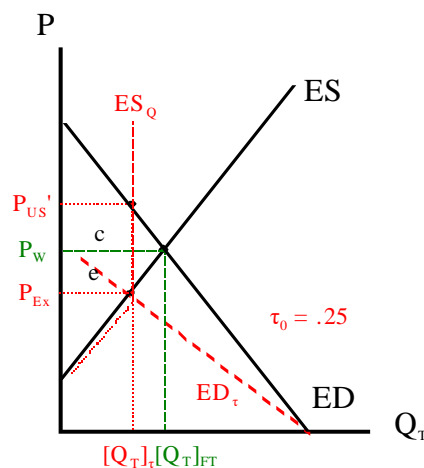
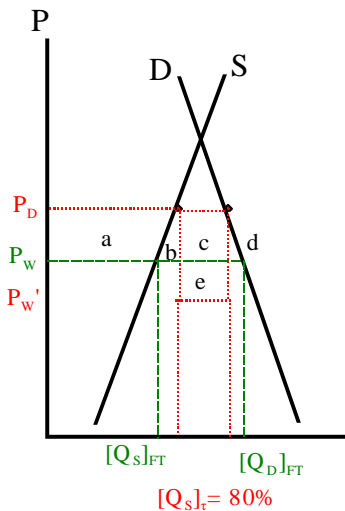
(c+e) can be shared by gov't and firms

$$\Delta NSW = -(b+d) + ??$$

Not clear who gets (c+e)

3.2 (10 points).

For the exporter, agreeing to limit exports is a means to allow its firms collect the quota rents. An export quota would satisfy Korea because some or all of the rents might go to Korea's exporting firms, e.g., area (c+e). For the US, it is easier to control the market and is less likely to cause trade conflicts or invite retaliation from trading partners. US "buys off" Korea with quota rents. The exporter might even be able to be made better off through the "voluntary export restraint". For the US it might allow the US to reach the 80% capacity utilization rate, which might be a policy goal (or reduce dependence on foreign steel).



3.3 The US president has repeatedly argued that a trade war is easy to win. Use the information provided, and your previous answers, to prepare a list of reasons why such a trade war might not be so easy to win. Make whatever assumptions you want. (5 points)

Identify potential losers and the negative short- or long-term implications of this part of the trade war:

- \* Quotas are harder to administer and all the quota rents likely go to foreigners making the US a loser in terms of DWLs and int'l income transfers. No revenue gain. If there is a revenue gain from US, the stronger will be the retaliatory action by US partners.
- \* Not all countries accept the offer to negotiate an export quota. Tariffs are likely to invite retaliatory response (US can potentially lose exports and jobs in export sectors).
- \* Steel is an input into several sectors. The  $\uparrow P$  steel in the US will mean a loss in

competitiveness across a broad range of production activities and potentially jobs in steel-using sectors. Even if the goal were hitting 80% of capacity, it is not clear that is a “socially” optimal level of output as it raises costs across broad range of econ activity.

\* The policy objective is wrong for the stated purpose of protecting national security. There is no dependence on foreign steel for the military industrial complex. The “externality” in this case is not corrected by the tariff or quota.

\* Policy affects friendly countries! Foreign policy error with other social welfare implications.



## Summary solutions to ECN230 exam, autumn 2017

**Part 1.** Explain whether the following statements are true, false, or whether it depends. (25pt)

- 1.3 An export subsidy by a small net exporting country would have an equivalent effect as a domestic production subsidy.
- 1.2 The factor proportions theorem under the Heckscher-Ohlin model provides a useful framework for analyzing modern trade patterns, for example, explaining why Japan exports automobiles, while the United States exports airplanes.
- 1.3 Price discrimination on the international market, where a firm sells a good on the domestic good at a higher price and sells the same good at a lower price on the export market, is most likely the result of government trade policy.
- 1.4 The tendency toward intra-industry trade suggests that countries trade more intensely with economies similar to their own.
- 1.5 If trade were based on differences in factor abundance across countries, then trade in goods would be a substitute for international factor mobility; however, if other determinants explain trade than factor endowment differences, then international factor movement can substitute or complement trade in goods.

**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 Historically, the international mobility of factors has occurred in waves. The mobility of labor and capital both increased in the late 1800s until the outbreak of the World Wars in the 20<sup>th</sup> century; factor mobilization then increased again in the latter half of the century. Consider the meaning of globalization and the economic motivation for a factor such as capital moving across national borders, when answering the following:
  - 2.1.1 There are different types of capital. Think about the different types of capital that flow across national borders, then *list* some ways in which that capital might work in the foreign country. Be specific. (10 points)
  - 2.1.2 Based on your reasoning in 2.1.1, discuss what you think the drivers are that has led to increased capital mobility. Focus on the *microeconomic* drivers of those changes and not macroeconomic factors such as the type of exchange rate regime, for example. (5 points)
- 2.2 Economists do not generally stress the income distributional effects of liberalizing trade. One lesson from studying the general equilibrium implications of trade liberalization is that import-competing sectors with immobile factors of production are likely to be disproportionately negatively affected. That is, freer trade would mean concentrated losses to the owners of capital and workers employed in those sectors. Keep this in mind when answering the following:
  - 2.2.1 *List* or outline the arguments that are made in favor of freer trade. (5 points)
  - 2.2.2 Suppose the import-competing sectors hurt by trade employ workers who earn the lowest wages in the economy. Some would argue that it makes sense to pursue freer trade only when it does not hurt lower-income people. Use the logic of the arguments for or against freer trade to address whether it would make sense to restrict trade in such a situation. Explain [Hint: it might help you by developing a scenario of such a sector of a particular country]. (10 points)
- 2.3 Consider trade policy by a small country and keep in mind the economic, trade and welfare effects of the policy when answering the following:

- 2.3.1 If an import tariff and an import quota have equivalent effects, then *list* reasons why economists and World Trade Organization rules prefer the use of a tariff to a quota? (7 points)
- 2.3.2 Could it be argued that the general equilibrium effects of an export tax are similar to that of an import tariff? Explain carefully. (8 points)

**Part 3.** Answer the questions related to the scenario described in the paragraph below. Be specific and explain your answers to the best of your ability. Graphs are only required where they are asked for. Label graph(s) clearly and explain them. Define concepts you think will support your answer. (30 points)

Consider the enlargement of the European Union (EU), taking place from the 1990s to the mid-2000s, from 17 countries (EU-17) to the EU-27 when it extended the single market to Central and Eastern European (CEE) countries. Economic integration under the EU rests on four basic principles of freedom: the free movement of goods, services, capital and persons. Think about how the EU's economy might have changed as a result of the enlargement. To simplify the analysis, let the economy consist of two types of goods (relatively capital-intensive goods and relatively labor-intensive goods) and two factors (labor and capital). Suppose that the economy of the EU-17 (taken as a whole) was relatively capital abundant and the economies of the CEE states were relatively labor abundant and that trade between the EU-17 and CEE was based on factor endowment differences. Keep this scenario in mind when answering the following:

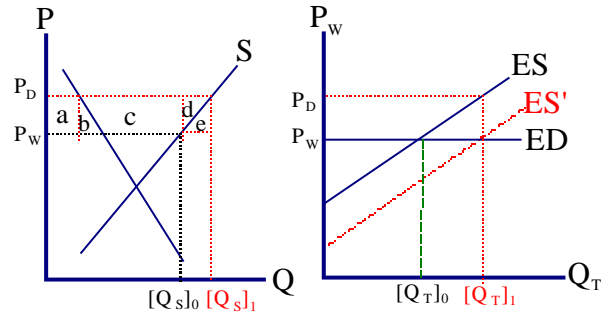
Additional notes: only focus on the effects of the EU as a whole and not individual countries. You do not need to know what actually happened – this is a simplified version of reality and just a thought exercise. In other words, keep it simple. ;-)

- 3.1 Recall how economic growth is an extension of the Heckscher-Ohlin trade model. Provide a graph showing how EU growth might have occurred with the enlargement from the EU-17 to the EU-27. In your graph, show how the relative output (production) of the capital-intensive good and labor-intensive good might have changed in the EU, before and after enlargement. That is, would the EU's enlargement have a pro-trade or anti-trade effect on production? Explain your answer. (10 points)
- 3.2 Explain the difference between the short-run gains from increased trade in goods resulting from the enlargement of the EU's free trade area and the long-run (dynamic) gains that might have been expected to come from free trade (goods and services) and free movement of labor and capital. Be specific [Hint: think about what enlargement might imply in terms of investment, productivity, scale and size of market, etc., then *list* factors that might now be more important]. (10 pts)
- 3.3 Keep in mind your previous answers. Consider now EU trade with the rest of the world (trade with non-European countries). Suppose that this trade is not simply based on factor endowment differences and that capital and labor move freely across the EU-27. How could enlargement and factor mobility have affected relative production within the EU and the EU's trade with the rest of the world (from EU-17 to EU-27)? Make your assumptions explicit. (10 points)

**Part 1.** Explain whether statement are true, false, or whether it depends. (25 points)

1.1

T/D. An export subsidy by a small country  $\rightarrow \uparrow P_D \rightarrow \uparrow Q_S$ . The subsidy has a cost of  $(b+c+d+e)$  and increases PS by area  $(a+b+c+d)$ . The area 'a' is financed by consumers who pay a higher price for the good, but area  $(b+c+d)$  is support to production financed by gov't.



1.2

F/D. Trade in Japanese exports of cars for US exports of airplanes are both K-intensively produced goods. In other words, both economies could produce such capital-intensive goods. Thus, The trade pattern would reflect other strategic factors other than abundance of capital (e.g., EOS, factor mobility, imperfectly competitive markets, R+D intensive sectors, preferences for product differentiation, etc.).

1.3

F. P discrimination can be the result of normal business practice of a firm and neither requires any form of government intervention nor unfair behavior on the part of the firm. Charging different prices in different markets can depend on differences in price elasticity of demand, or marketing factors of providing the good on the different markets. There would have to be a situation where transshipment is not possible and a suitable substitute product is not available that would make charging different prices in different markets impossible. It is true that trade policy (e.g., export subsidy) could result in a situation where  $P_D > P_W$  but it is not necessary.

1.4

T. Intra-industry trade involves export-import of like products (goods of a similar product sub-category). Countries that are very different (both in supply-side and demand-side considerations) would not likely be trading in like products. If trade patterns do reflect trade in similar goods, then it is more likely that the economies are similar, e.g., similar supply- and demand-side situations: K/L ratio, technology, income per capita, similar preferences, wage levels, employment patterns, etc.

1.5

T. Trade based on factor endowment differences across countries implies that a country produces and exports the good that uses the factor intensively, e.g., China exports textiles that intensively use low-wage labor. This would be similar to exporting cheap Chinese labor, implying that trade in textiles is a substitute for movement of cheap labor across borders. However, if other determinants explain trade other than factor endowment differences, then international factor movements can substitute or complement trade in goods. If FDI in Foreign is used as a platform by which to export to third countries, then K flows can complement trade. [Location of consumer/end user; location relative to input supplier; link within global supply chain, etc. can all be reasons why factor (K) movement can complement trade.]

**Part 2.** Briefly answer the following questions or respond to the specific statements. 45 pts

2.1

2.1.1

Types of K: int'l loans/deposits – banking; FDI; FPI; Aid/grants; intellectual property (intangible assets/capital – patents, trademarks, copyright). Reasons why K moves across borders is to seek higher returns through:

- \* K moves to work with a natural resource
- \* K moves to provide non-tradable service
- \* K moves to work with abundant immobile L
- \* K moves to diversify asset portfolio
- \* K moves to get around trade restriction
- \* K moves to be part of int'l supply chain
- \* K moves as a means of selling/transferring intellectual property
- \* Financial service provider pursues EOS by expanding into int'l markets

2.1.2

Recall that the types of capital include:

- \* loans/deposits (i.e., int'l banking/finance): drivers include IT facilitating transfers and deregulation of banking sectors and allowing foreign participation in providing banking services
- \* foreign portfolio investment: liberalization of equity markets and providing debt instruments to foreigners; if loans/deposits with foreign banks is undesirable then capital can be raised through stock markets or issuance of debt.
- \* foreign direct investment; intangible assets allows expertise and technical know-how to where it is scarce. More open economies (to trade) requires more capital and integration into global supply chains. Int'l trade in services is driven in part by deregulation (more services in commercial sector; privatization and foreign participation) and thru tech change allowing services to cross-borders.

2.2

2.2.1

Argument for free trade:

- \* Short-run efficiency: in prodn, specializ, factor reallocation, consume, exchange
- \* Long-run efficiency ( $\uparrow$  mkt size,  $\uparrow$  competition,  $\uparrow$  choice; potential EOS)
- \* Political economic argument: process captured by special interests and trade policy used rather than domestic tax or subsidy, a more direct policy measure to address a particular problem is more appropriate policy response

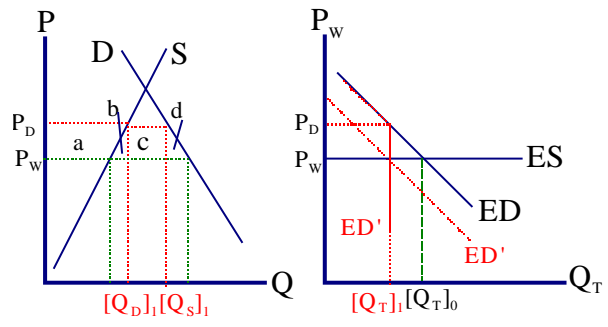
2.2.2

Argument against free trade rests with theory of 2<sup>nd</sup> best (L,K market failures; externalities; institutional failure; anything that makes market price inefficient – MC or MB  $\neq$  social MC or social MB). Trade increases foreign competition, which can result in a decrease in jobs and the wages for those who stay in those sectors. The problem is trade policy is not the appropriate policy response to the problem [political economy argument]. For importing competing firms to remain in such industries, capital often substitutes for labor to reduce the wage bill. Once tech allows K to substitute for L, trade restrictions will not likely bring back the jobs (though an  $\uparrow$   $MP_L$  could increase wages for those who do remain in the sector). Trade policy will not likely improve the situation for those in those sectors. Redistribution through taxes to subsidize employment might be a more targeted alternative. Funding for programs for workers to relocate or retrain workers could be another alternative to trade policy. If you argue that trade policy is appropriate, it was necessary to argue it corrects mkt failure problem or addresses an externality issue.

2.3

2.3.1

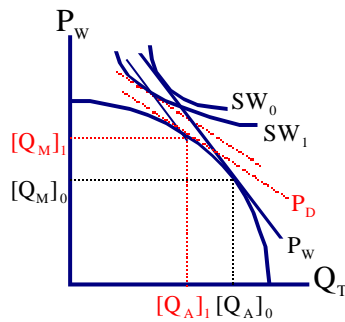
Tariffs and quotas have short-run equivalents in terms of their economic, trade and welfare effects. However, they are non-equivalent in their political administration, their effect on competition (rent seeking behaviour), in their ability to be applied in a non-discriminatory manner (consistent with most-favored-nation), transparency (price effect and measurable effect of support) and predictability (the degree of protection afforded over time). The quota in each case fares worse than the tariff. If the country has a long-run comparative disadvantage, then the quota will be more distortive in the longer term.



2.3.2

Yes, it is argued that the small country general eqblm effects of an export tax are equivalent to an import tariff of the same rate. This is the Lerner-Symmetry condition. Suppose it is South that considers taxing exports of A or imports of M. Either policy would result in movement along the PPC from  $[Q_A]_0, [Q_M]_0$  to  $[Q_A]_1, [Q_M]_1$ . The price implications would be as summarized below (in partial and gen' al eqblm)

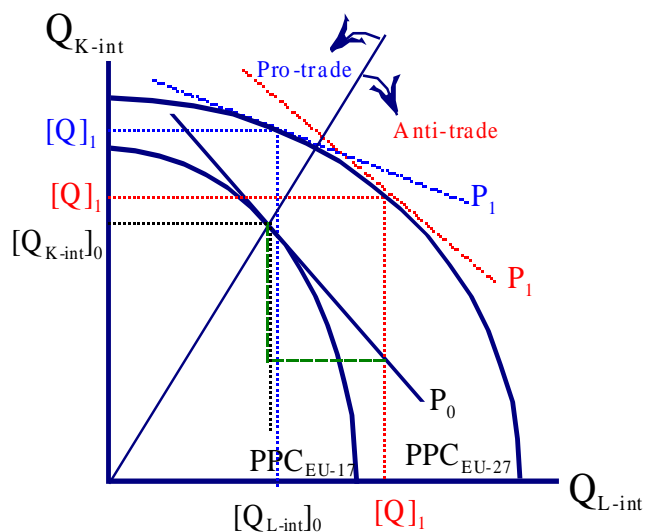
Export tax	Import tariff
Tax on A: $\downarrow [P_A]_D$ and $\downarrow P_A$ relative to $P_M$	Tax on M: $\uparrow [P_M]_D$ and $\uparrow P_M$ relative to $P_A$



**Part 3.** Answer the questions related to the scenario described in the paragraph below. 30 pts

3.1

EU-17 has relatively more K than L. The growth implication of enlargement of EU to include Central and Eastern Europe, which has relatively more L than K, would shift the PPC outward disproportionately toward the L-intensive good. How relative output changes depends on your assumptions/arguments and is a function of both supply and demand factors. If the relative price of the K-int good increases (perhaps from strong CEE demand), then relative prices could change in support of the K-int good. You could have mentioned Rybczynski's theorem to explain a shift toward production of the L-int good.





### 3.2

S-R gains are those from change in prices resulting from liberalization of trade and specialization (prodn efficiency, resource efficiency, and increased real purchasing power). Dynamic gains are those that result from increased competition, increased mkt size and scope, resulting from EOS that might be enhanced by L,K mobility through integration.

The strategic factors include:

- \* changes in industry and mkt structure in the EU
- \* importance of ownership advantages
- \* incentives thru either horizontal (across the EU) advantages
- \* vertical integration
- \* location-specific variables (backward and forward) that give EU an advantage
- \* other strategic factors (pricing, merchandising strategy, speed to respond to mkt changes, supply chains, infrastructure, etc.)
- \* policy and regulatory space.

### 3.3

The movement of factors depends on the scenario that is developed. L could move from East to West and capital from West to East Europe. However, the larger EU market, increased competition and increased choice could mean economies of scale that did not exist before, especially in the East. If economies of scale exist, then access to more L and K could result in proportionally more of both types of goods and could make Europe a bigger trader on the international market. Trade not based on factor endowment differences moves the focus toward EOS, intra-industry trade, and importance of preferences, and other strategic considerations. CEE could be a platform to trade with Asia, esp if better infrastructure was provided. Answer depends on which strategic factors you stressed. It also helped to maintain a consistent story throughout.

If effect in 3.1 was pro-trade ( $\uparrow Q$  of K-int good), then in 3.2 could have stressed the dynamic changes (EOS, location advantages, supply chains, horizontal/vertical integration) that supported prodn effect. If EU trade with rest of the world was based on IIT, then the dynamic changes to EU could have helped expand EU prodn and trade in K-int goods.

**No summary solutions to ECN230 exam, autumn 2016 – I was on sabbatical leave**

## Summary solutions to ECN230 exam, autumn 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 The more mobile is international capital, the more difficult it is to predict a country's comparative advantage, specialization and trade patterns.

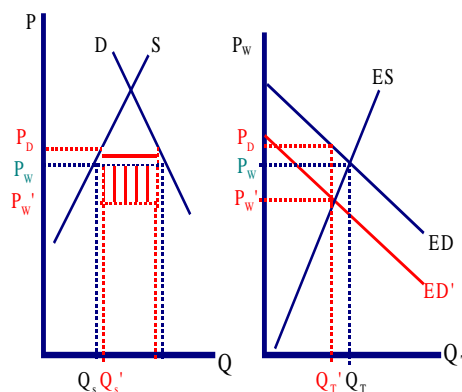
T. Basically, the H-O-S model predicts trade patterns, specialization and CA based on an assumption of no L,K mobility. If CA is related to factor endowment, then K mobility can affect a country's K/L ratio. A country with little domestic K-stock can import K goods, borrow from abroad, or allow foreign capital to participate in more K-intensive sectors affecting production patterns (i.e., specialization) and trade patterns (export manufactured goods that are relatively more K-intensive). This would be more plausible if production was characterized by EOS. How predictable is trade/specialization/CA under US-EU K-flows?

1.2 Suppose recent productivity gains have been higher in manufacturing goods relative to production of agricultural commodities. An improvement in the terms of trade of manufactured goods could reflect quality changes in the manufactured good.

T. In general, if relative prodvty gains experienced in manufacturing are higher than those in ag commodity prodn, then  $P_{Ag}$  should  $\uparrow$  relative to  $P_{Manu.}$ , e.g. a  $\downarrow$  TOT from manufacturing's perspective. Offer alternatives to explain the  $\uparrow$  TOT. If TOT improves from manufacturing's perspective, then it must imply that D-side considerations also matter, i.e.,  $\uparrow D_{Manu} \rightarrow \uparrow P_{Manu}$  relative to  $P_{Ag}$ . Quality changes in the manufactured good could be an indication why D increased.

1.3 The more price inelastic is the export supply of a particular good, the more effective is an import tariff for the importing country.

D. It really depends on the policy objective. In a strategic sense, the  $\Delta P_{Dom}$ , from  $P_W$  under free trade to  $P_D$  under the tariff, will be relatively small. The  $\Delta P_W$ , from  $P_W$  under free trade to  $P_W'$  under the tariff, will be relatively large, meaning the cost of the tariff falls mostly on the exporter. The tariff revenue collected is mostly comprised of an int'l transfer rather than a transfer from consumers to the importing government. If the intention is to limit imports, then the inelastic export supply and small domestic changes will not result in a big change in quantity imported (less effective support/protection for domestic producers).



1.4 The migration of highly skilled labor from a developing to a more developed economy would have a similar trade effect as the migration of less-skilled workers from the developed economy to the developing economy.

T/D. If CA is based on abundance of highly skilled labor (HSL) or low-skilled labor (LSL), then movement of the scarce factor to where it is abundant would increase trade. Trade is expected to increase the return to the abundant factor (when factors are immobile across borders). If CA is based on abundance of highly skilled labor (HSL) or low-skilled labor (LSL), then relative prices will depend on endowment of the two. The migration of HSL from South to North  $\rightarrow \downarrow [P_{HSL}]_N$  r.t.  $[P_{LSL}]_N$  and  $\uparrow [P_{HSL}]_S$  r.t.  $[P_{LSL}]_S$ . The migration of LSL from North to South  $\rightarrow \uparrow [P_{LSL}]_N$  r.t.  $[P_{HSL}]_N$ . This implies the effect could be the same on trade and relative wages.

1.5 In a sector with economies of scale, comparative advantage can result from government intervention rather than differences in natural resources or workers' skill levels.

T. Where there are EOS, K-requirements might be a barrier to entry and the gov't could facilitate the accumulation of K or provide credit to a firm to develop. Trade policy would be a means in which the firm is protected for a time until it learns-by-doing and can compete in the longer term without support/protection.

**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 Consider the meaning of the law of one price (LOOP) and the conditions or assumptions that must exist for LOOP to hold true when answering the following:

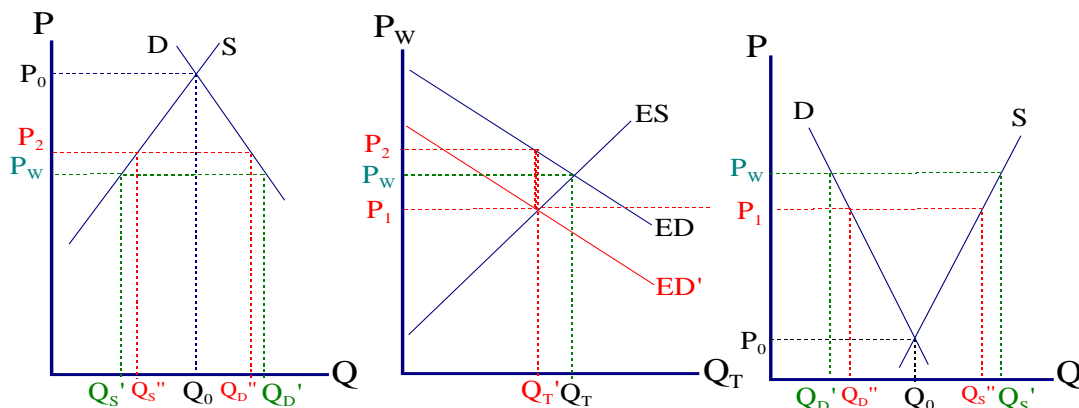
2.1.1 Explain how the LOOP holds in a two-country equilibrium market situation. (5 pts)

2.1.2 How does the equilibrium in 2.1.1 differ from a situation where there is a specific import tariff or a fixed transportation cost per unit? That is, how would the equilibrium under a tariff or with transport costs affect the LOOP? (10 points)

2.1.1. The 3-panel diagram shows how  $P_w$  equilibrates the domestic markets of the export and import country(ies) and the world market under the conditions of (1) competitive markets, (2) identical goods, (3) no transactions/transport costs, and (4) no gov't intervention. That is, there is complete P-convergence and all mkt are in eqblm ( $P_D = P_w$ ).

2.1.2. A tariff would restrict imports and affect the domestic market price of the importer, resulting in more supplied domestically but less quantity demanded. The domestic price would diverge from the  $P_w$  by the amount of the tariff ( $P_2 - P_1$ ), and the market is distorted. A transport cost could result in the same equilibrium as the tariff. However, TC means that the LOOP converges only to the point where  $TC =$  the price in market 1 – the price in market 2. The TC do not represent a distortion, just an inability to trade as much as when  $TC=0$ . The divergence between domestic and world prices are same and equal the tariff or TC per unit.

2.2 Suppose a country's economy was closed to the rest of the world, but nevertheless had internal markets that were highly competitive. In opening this economy to international trade, the size of markets increases, but there is now foreign competition and greater choice of goods. Most foreign products are essentially like products but not identical to the local goods, and for some foreign products now available, there is no local like product at all. From the perspective of this country, think about how production and consumption can be affected from opening to trade when answering the following:



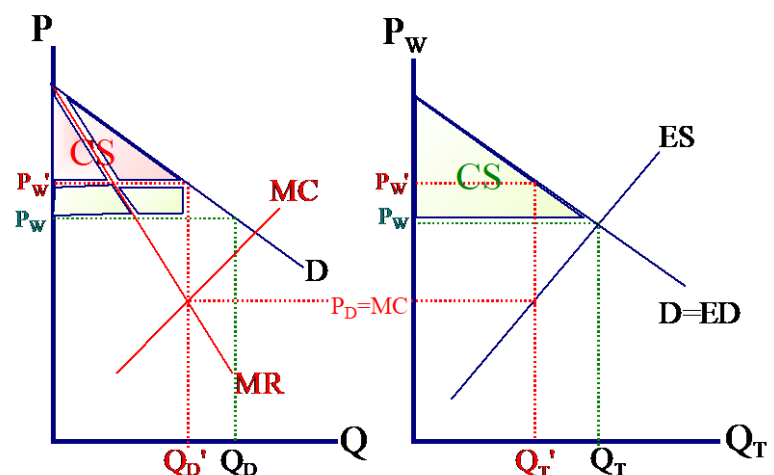
2.2.1 Consider how trade liberalization affects: (1) the potential trade patterns that develop, (2) the changes in industry characteristics (the structure of product markets), and (3) how supply-side and production-related factors are affected. Use a table as provided to structure your answer. List some important considerations under each. In the right column, briefly explain why/how the items on your lists under (1), (2) and (3) matter. (10 points)

Provide a list under each of the following:	Brief explanation for why/how these items matter (make any assumptions explicit)
(1) Potential trade patterns	
(2) Changes in industry characteristics (market structure)	
(3) Effect on supply-side and production-related factors	

Provide a list under each of the following:	Brief explanation for why/how these items matter (make any assumptions explicit)
(1) Potential trade patterns * Trade based on factor endowment differences * Trade based on intra-industry trade (product differentiation)	In closed economy, there was no specialization because the country produced most everything to satisfy the domestic mkt. In opening there is specialization and trade. For some goods, CA and trade is based either on <u>factor endowment differences</u> and the goods might tend to be <u>close substitutes</u> . For other goods, <u>product differentiation</u> might be a more important consideration and there could be intra-industry trade. Trade might be based on the firm's ability to convince consumers that its 'like' good is better than its competitors and <u>not a close substitute</u> . Consumer preferences and the <u>differences in preferences matter much more</u> for trade.
(2) Changes in industry characteristics (market structure) <u>Type of mkt from effect of ↑ size, ↑ competition, ↑ choice</u> * Perfectly competitive * Monopolistically competitive * Oligopolistic	In industries where the prodn is based on factor endowments, the <u>goods might tend to be more homogeneous</u> and closer to <u>perfect competition</u> (bananas from different countries). In other industries where <u>intra-industry</u> occurs, it could be that there are <u>EOS</u> but not economies of scope in which case there is <u>specialization within a sub-category of product</u> (small cars) rather than the ability to produce all sorts of cars (large, sports, family mini-vans, etc). With <u>EOS</u> the mkt becomes <u>imperfectly competitive</u> giving rise to monopolistic competition or oligopolistic.
(3) Effect on supply-side and production-related factors <u>Effect of imperfect competition on Q, L, K use and type of product</u> * Factor mobility * EOS (internal/external) * Product differentiation * Tech Δ and prodvty	Changing mkt structure means type of <u>good is more heterogeneous</u> , <u>firm has control over price</u> , <u>fewer bigger producers</u> and there are <u>other strategic factors</u> that matter for a firm competing in the market (e.g., marketing; invest in R+D; intellectual property –trademarks, branding, patents; tech and prodvty or quality improvement; EOS; and perhaps increase size thru mergers and acquisition [K-flow]; education and invest in human K).

2.2.2 In the case where a foreign product now exists in the home market for which there is no domestic like product (i.e., no substitute), explain what the change in consumer welfare represents as the country moves from no trade to free trade. Does it matter whether the good is sold competitively or whether foreign producer(s) abuse market power? (5 points)

A foreign product that enters the domestic market and for which there is no substitute or close substitute has no import competing production (no domestic supply curve). Hence, the D is same as ED. The ΔCS is the area above the world price up to the demand curve. If the price is competitive under free trade then CS is higher. If foreign producers abused market power, then they could limit trade to volume  $MC=MR$  and charge a  $P_w' > P_w$  under competitive free trade.



2.3 Globalization, from an economic perspective, involves trade in goods and services and international flows of labor and capital. Consider the political consequences of a country globalizing through negotiation of a free trade agreement (FTA). Think about the economic, trade and welfare implications of trade liberalization and the political lobbying against a trade deal by stakeholders (persons in society who would be negatively affected) in a developed country when answering the following:

2.3.1 Provide a *list* for the cases for and against free trade. (5 points)

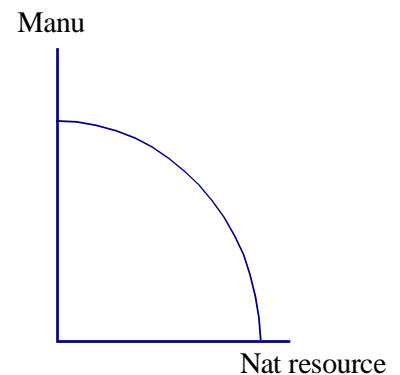
Case for trade	Case against free trade
<ul style="list-style-type: none"> <li>• Short-run gains from trade               <ul style="list-style-type: none"> <li>- SW, efficiency in prodn, consum, factor use</li> <li>- TOT: <math>\uparrow</math> purchasing power, real Y</li> </ul> </li> <li>• Long-run efficiency gains (EOS, <math>\uparrow</math> competition, <math>\uparrow</math> choice, L, K mobility in response to the above)</li> <li>• Case on political grounds               <ul style="list-style-type: none"> <li>- Policy making captured by special interests</li> <li>- Policy has ambiguous results and trade policy often used despite it not being most appropriate policy</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Externalities</li> <li>• Markets fail (either goods or factor mkts)</li> <li>• Institutions are weak</li> <li>• Imperfect competition</li> </ul> <p>Basically the issue was to indicate why <math>P_w</math> is not an efficient price signal.</p>

2.3.2 What might the political opposition be against a FTA negotiated between two developed countries? (Hint: think about what type of arguments might be made related to such trade or the type of trade dispute that might occur.) Explain. (10 pts)

Basically, needed to say something about what trade looks like between developed countries. K/L ratios tend to be more similar and intra-industry trade would characterize cross border trade. The types of arguments could be unfair advantages from gov't support or that foreign competition would hurt sensitive sectors or sectors considered strategic in terms of employment, high-tech and high value added or national security. For high tech, high value added sectors, the argument for protection/support could be based on the infant industry argument. The externality argument could also be raised in that because imports would come in that too little was being produced in the country and it has an effect on public good. Because K/L ratio are similar, Y/cap is similar, preferences might be similar or not, gov't will be called upon to apply some domestic regulation to protect against free trade (unfair trade might be argued to be the result of different regs and enforcement of regs).

**Part 3.** Answer the questions related to the 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)

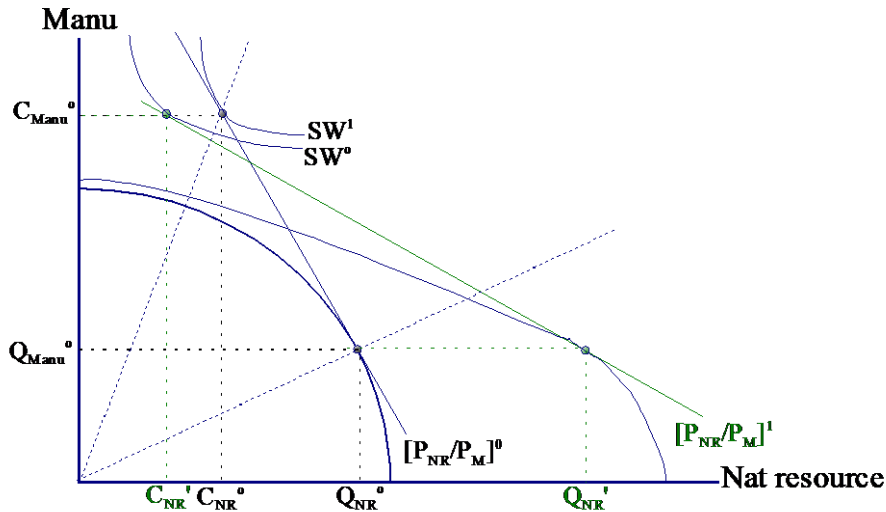
A country is a net exporter of natural resources and a net importer of manufactured goods. The development of a new natural resource sub-sector (e.g., a mineral ore such as copper or commodity such as oil or coffee) for export is argued to be bad for the macroeconomic situation of a country, which is already a net exporter of natural resources. This is because of the problems associated with reliance on natural resources for economic growth and the trade dependence that it encourages. Assume the macroeconomy (e.g., gross domestic product, or GDP) is comprised of natural resource-related economic activities and industrial output (manufacturing) as represented in the graph. Relate to this information when answering the following:



3.1 How can economic growth through the development of a new natural resource be bad for the macroeconomic situation of such a country? Discuss and graph the implications of sector-specific economic growth from developing the natural resource sector, and make reference to the relevance of the Rybczynski theorem. (10 points)

Immiserizing growth situation where the real growth effect (which is positive) is less than the TOT effect (which is negative), resulting in a  $\downarrow$  SW. For the same quantity of Manu imports, more Nat Resource must be exported after the growth. The Rybczynski theorem states that there will be a disproportional change in the good in which a factor changes. In this case, the growth is related to development of the NR-sector thru  $\uparrow$  prodvty.





3.2 Suppose that the growth from the development in the natural resource sector resulted in a pro-trade effect in consumption. To address the problem in 3.1, policymakers are now considering trade policy(ies) to support import substitution industrialization (ISI). List the trade policy(ies) that could be useful to support ISI in production and reduce the pro-trade effect growth had in consumption? Graph the partial equilibrium effects of one of the trade policies used (choose the trade policy you think is most important), and explain the general equilibrium outcome that the trade policy has on the macroeconomic situation of this country. (15 points)

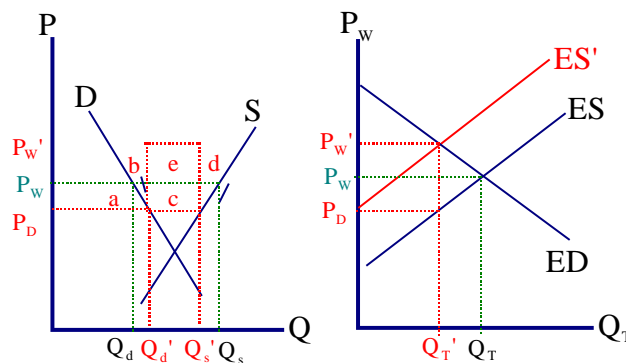
List of trade policies in support of ISI:

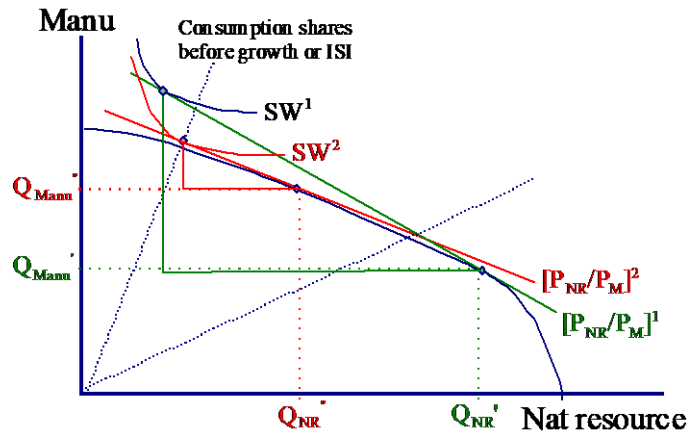
\* Tariff/quota on import of manu goods      \* Tax/quota on NR exports

Considered below is the partial eqblm effects of a tax on NR exports (to help offset neg TOT effects of the growth).

From the graph in 3.1, there are two problems occurring: (1)  $\downarrow$  SW because of immiserizing growth (TOT effect is negative such that  $P_{NR} \downarrow$  relative to  $P_{Manu}$ ), and (2) de-industrialization, i.e., a relative decline in manufacturing's share of GDP.

In the gen'al eqblm graph below, the original pre-growth consumption shares of M and NR are plotted. The PPC with growth is shown having a pro-trade effect in prodn and in consumption with SW at  $SW^1$ . The trade policy, either a restriction on imports or exports,  $\rightarrow \Delta$  domestic prices,  $\uparrow P_{Manu}$ ,  $\downarrow P_{NR}$  which in turn  $\rightarrow \uparrow Q_{Manu}$ ,  $\downarrow Q_{NR}$ . The trade policy reduces trade from the situation in 3.1 (trade with growth) and makes the country more inward oriented. The less export means less import too, reducing the pro-trade consumption effect (the country produces more manu goods so less reliance on their import).





3.3 How does reliance on natural resources relate to the concept of Dutch disease? What are the consequences for the manufacturing sector (e.g., manufacturing's share of GDP) and general employment if manufacturing is relatively more labor intensive than natural resource extraction (i.e., mining)? Explain. (5 pts)

Dutch disease is when one sector (typically a commodity) dominates the domestic economy of a country and its exports are a big share of its export earnings, encouraging factors to move to that sector and production to be proportionately high (high share of GDP). When int'l prices are high, the country's exports are high valued relative to imported goods and imports come to dominate consumption. The currency value is high because of the TOT effect and exports of anything other than the commodity will be expensive on the int'l mkt. This leads to less diversified economic activity. In the context of this scenario, the NR sector results in de-industrialization and under employment.