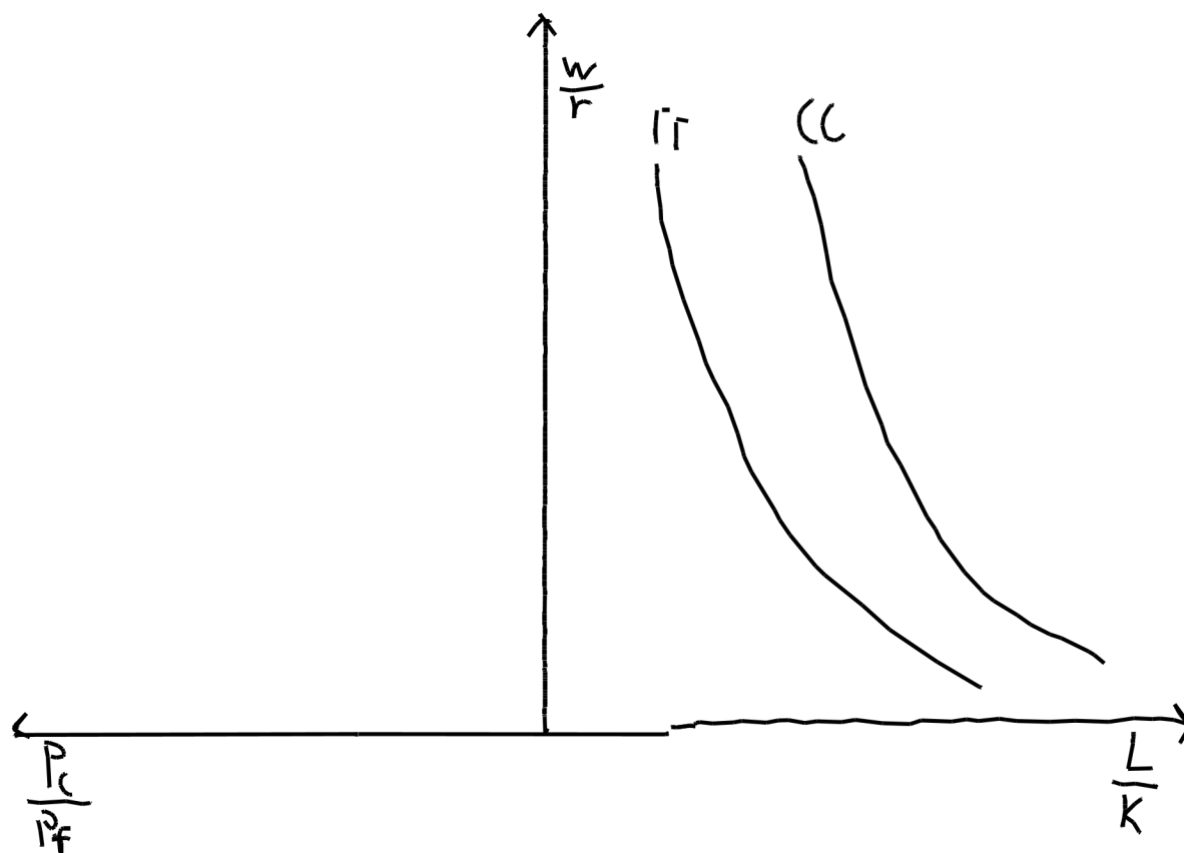# Question 1
Question 1.1

The plot shown above shows the relative factor prices of wage and rental rate on the y-axis
and the relative use of labor over capital on the x-axis. We see the curve to the right as the
relative factor demand curve of the labor intensive good, cigars. And to the left of that curve
the capital intensive good faucets. The reason for their relative placement is their relative
intensities of production of labor and capital. They are both downward sloping, because as
we move downwards of the y-axis the relative wages, the price of labor, decreases, which in
turns makes it cheaper to employ more labor. We see this as the relative labor to capital
increases out of the x-axis as the wage on the y-axis decreases. The economic decisions for
firms, will follow this substitution of these factors of production. A higher wage, will get
firms to substitute out some labor for capital, and vice versa.

Question 1.2
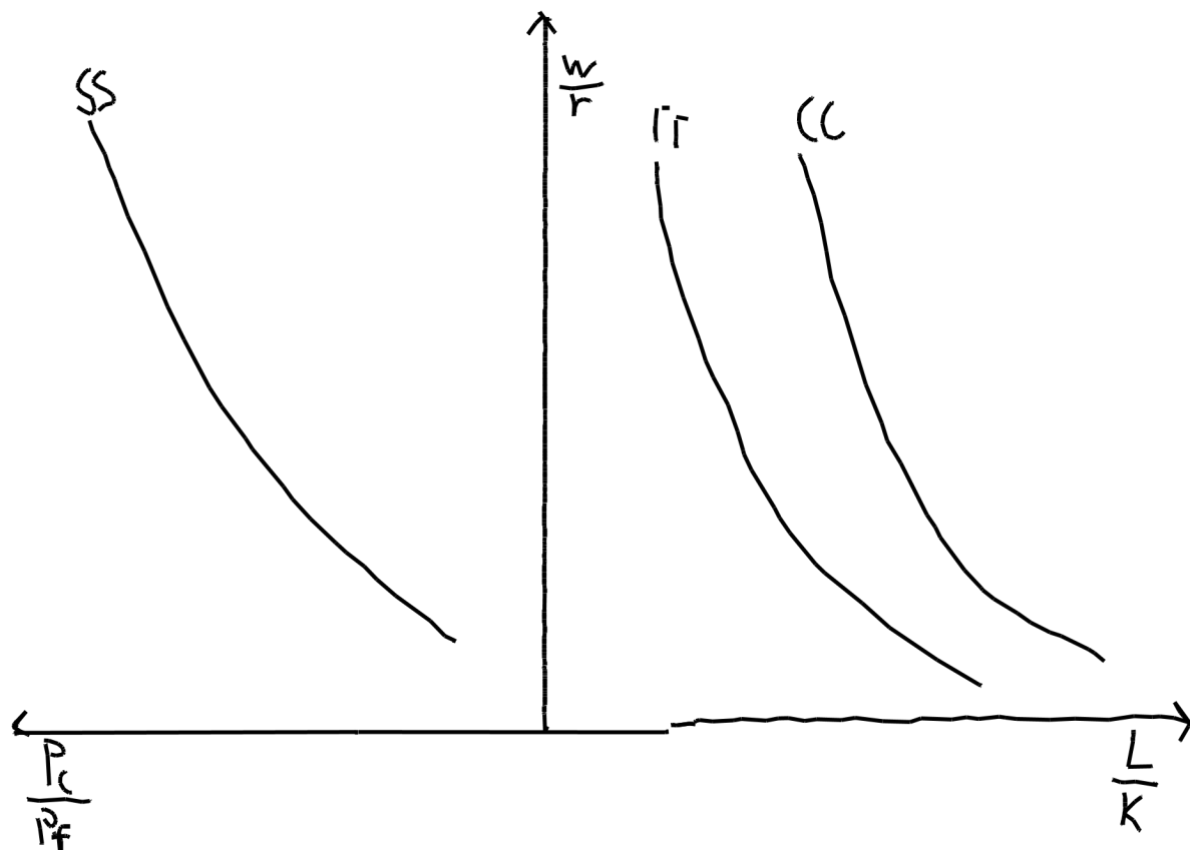
Above we see the ss curve on the left side of the Y-axis. With an x-axis of the relative price of cigars in terms of faucets. The upwards sloping relationship of higher relative price of cigars and higher relative wage rate, is because cigar production is labor intensive. Consequently, if the relative price of labor, wage, goes up, the good which uses labor intensively must also increase, this is cigars, so we see an upwards sloping ss curve. For this to be true, we also must assume full factor utilization and free labor mobility. ´

Question 1.3

We assume that both countries produce both goods in autarky. This means that Cuba has a market for the two goods. Furthermore, they have a combined factor market, as we are working with the variable-proportions version, the two factors can be substituted with each other. The same is applicable for Mexico, meaning that there are 2 goods markets and 2 factor markets in the world under autarky. However, when moving to free trade we assume that the countries specialize in producing one good, depending on their comparative advantage. So now, there is only 1 goods market and 1 factor market.

Question 1.4

The model assumes free labor mobility to reach the conclusion of equal wages and rental rates on home and foreign. The model therefore predicts that if home has a higher wage than foreign, the labor in foreign will migrate to home until, the wage is equalized between the two countries. The same is applicable for the capital and the rental rate of capital. However, in the real world, the empirical data of wages and rental rates of trading countries differ substantially. The U.S. and China trades substantially with each other, but the wages in the two countries differ just as substantial. The real world of labor mobility is much more complicated and restrictive than the model assumes. Even if there were allowed free labor mobility between US and china, culture, family relations etc. would restrict the amount of labor actually willing to move.

Question 2

Question 2.1

When a country like Argentina is large in a specific market, like the beef market, it has the ability to push down the world price. This is because as the Argentinian government introduces an export subsidy, Argentinian exporters of beef will increase their export of beef, as they can now earn higher incomes on the same amount of beef. However, since the Argentinian beef industry is large in the market, their increased supply will be so big, that it will push down the world price of beef, however, not as much entire subsidy.

The domestic price of beef will increase, as the domestic price is always the world price plus the subsidy $P_S = P_s{}^w + s$. And because the world price has falls less than the subsidy, this will be a higher price than the previous world price, before the subsidy.
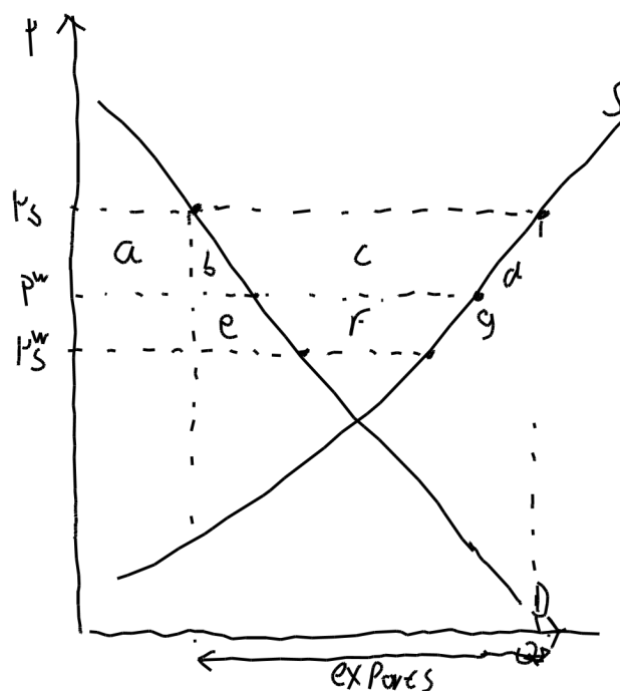
Question 2.2

To the right, I have illustrated the affected social welfare areas of the export subsidy.

Producer gain = a+b+c

Consumer loos = a+b

Government expenses = b+c+d+e+f+g

In the domestic market the welfare of consumers decreases by the area a and b, as they now face higher prices, however both these areas a captured by the producers, and therefore constitutes no net welfare loss. Furthermore, the export value of producers increases by area c, resulting in a net social welfare gain from consumers and producers. However, the government expenses needed to get this social benefits

are the areas b,c,d,e,f,g, and substraction the producer gain of c, from this. We see a net social welfare loss of Argentina of b,d,e,f,g. The net social welfare is therefore negative.

Question 2.3

The diagram to the right illustrates the affected social welfare areas.

The areas a and b are lost consumers surplus, redistributed to production surplus gain. The extra producer surplus gain is c, and has net cost of government expenses of b,c,d,e,f,g.
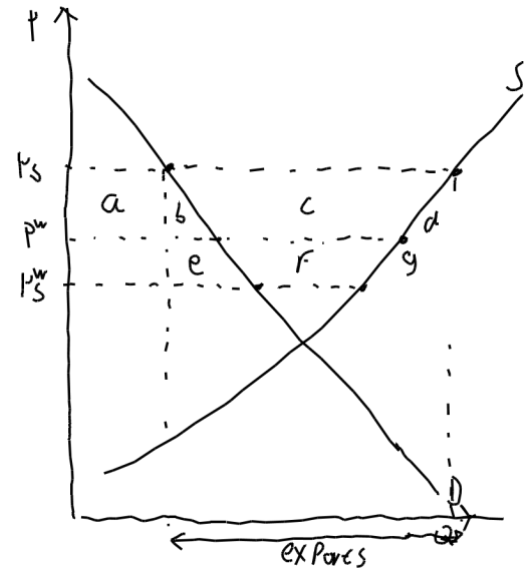
Question 2.4

The general effect is the same, however there is a transfer of welfare from the exporting companies to the domestic producing companies. The government expense would still be the same, there would still be a higher price for local consumers.

Question 3

Local demand faced by local monopolist

$$Q = \frac{S}{n} - S * b * (p - P)$$

Fixed costs $F = 100$

$b = 0,01$

$S_{Norway} = 400$

$S_{Denmark} = 2500$

Question 3.1

Marginal costs is equal to $2\ MC = 2$

The optimal prices and quantities of the Danish producers in autarky:

The local monopolist produce where MC=MR

We insert our values to determine the price expression of producers

$$P = c + \frac{Q}{(S * b)}$$

$$P = 2 + \frac{Q}{(2500 * 0{,}01)}$$

$$P = 2 + 0{,}04Q$$

We find the MR for local monopoly in Denmark

$$R = P * Q$$

$$R = (2 + 0{,}04Q) * Q$$

$$R = 2Q + 0{,}04Q^2$$

$$MR = 0{,}08Q + 2$$

Set equal to the MC

$$2 = 0{,}08Q + 2$$

$$Q = 0$$

$$P = \frac{0}{25} + 2 = 2$$

The same is done for Norway

$$P = 2 + \frac{Q}{(400 * 0{,}01)}$$

$$P = 2 + 0{,}25Q$$

$$MR = 0{,}5Q + 2$$

$$2 = 0{,}5Q + 2$$

$$Q = 0$$

$$P = \frac{0}{4} + 2 = 2$$

Intuitively the prices of Denmark should be lower than those of Norway, as they operate in a bigger market, and can produce further down their average cost curve. The number of raincoat varieties should also be higher in the Danish market due to the same reasons of increasing returns to scale.

Question 3.2

My quantities of question 3.1 are not possible to analyze with. But a decrease in the level of b from 0,01 to 0,0001 would increase the prices and thereby decrease the quantities produced. The economic intuition is that the firms become less responsive to their price compared to their competitor's price.

Question 3.3

High cost producers have marginal costs of 4

Low cost producers have marginal cost of 0

The inverse demand curve is $P = 40 - 2Q$

We start by finding the MR for high cost producers:

$$R = (40 - 2Q) * Q$$

$$R = 40Q - 2Q^2$$

$$MR = 40 - 4Q$$

We equal to the MC of high cost producers

$$4 = 40 - 4Q$$

$$4Q = 36$$

$$Q = 9$$

Their prices are

$$P = 40 - 2 * 9 = 22$$

Revenue of high cost firm is

$$R = 22 * 9 = 198$$

They have a fixed cost of 100 and a marginal cost of 4

$$Profit = 198 - (100 + (4 * 9)) = 62$$

Their markups are

$$m = 22 - \frac{100 + 4 * 9}{9} = 6,89$$

Now for the low cost producers:

$$R = (40 - 2Q) * Q$$

$$R = 40Q - 2Q^2$$

$$MR = 40 - 4Q$$

MC of low cost producers equal to MR

$$0 = 40 - 4Q$$

$$4Q = 40$$

$$Q = 10$$

Their prices are

$$P = 40 - 2 * 10 = 20$$

Revenue of low cost firm is

$$R = 20 * 10 = 200$$

They have a fixed cost of 100 and a marginal cost of 4

$$Profit = 200 - 100 = 100$$

Their markups are

$$m = 20 - \frac{100}{10} = 10$$

The low cost firms produce more at a lower price and have a higher operating profit and markup. This is because increasing returns to scale benefits the most productive firms, as the more quantities produces, the lower the average cost becomes, and thereby the lower the price. This allows companies to take a higher mark-up and still have lower prices, because they are producing so much more efficient.

Question 3.4

The MR is found

$$P = 39 - 1,5Q$$

$$R = (39 - 1,5Q) * Q$$

$$MR = 39 - 3Q$$

$$0 = 39 - 3Q$$

$$Q = 13$$

$$P = 39 - 1{,}5 * 13 = 19{,}5$$

$$R = 19{,}5 * 13 = 253{,}5$$

$$Profits = 253{,}5 - 100 = 153{,}5$$

$$m = 20 - \frac{100}{13} = 12{,}31$$

As the sneaker market has been integrated, its size have increased. This allows the firms to operate at a lower level of their downward sloping average cost curve, resulting in lower prices and higher quantities produced.

Question 4

Question 4.1

As mentioned in the article multiple times, Brexit has caused a significant drop of low skilled labors, meaning that the UK is left with a high demand for low skilled labor. This would intuitively put an upwards pressure on the wages of labor. This is also what we observe in the article, with many firms stating that they have either increased wages directly or introduced extra benefits, raising the wages indirectly. Furthermore, the text suggests that the supply chains are not operating good enough, which could affect the capital need in the low-skill industry. The demand for the low-skilled industries' products does not seem to have changed, so if we assume that the industry has enough capital for production, the low-skill workers would have to increase their productivity to meet the demand. The text seem to suggest, that both the wages and the productivity of low-skill workers will increase.

Question 4.2

In regards to the text it does not seem likely that the low-skilled labors can increase their productivity so much as to outweigh the decrease in low-skilled labor. This combined with possible reduction of capital due to supply chain issues also mentioned in the text, we can predict that the short-run production of the low-skilled industries will decline. We also see this in the text, where many firms state that they might need to lower production in both specific goods, but also decrease the varieties of goods that they can produce. As we assume that the capital owners are not willing to increase the prices to offset higher wages and

possible higher costs of capital, their welfare will decrease, as their profit per unit is lower, and their aggregated production is also lower.

Question 4.3

If there are no change in the restrictive international labor mobility, it is hard to determine if the UK in the medium run has gained enough low-skilled labor from their domestic supply. Based on the general knowledge of the UK economy and the text, the UK needs foreign workers to take the low-skilled jobs, meaning that I assume, that the UK is still undersupplied with low-skilled workers. This entails that the UK low-skill industries can maximum produce at the level of low-skilled labors supplied by the domestic market. In the medium run, we can assume that capital owners raise their prices to match the prices of production. This means that in the medium run low-skilled industries now produce less at a higher price.

The medium run effects on capital owners is ambiguous, but not as negative as in the short run. As the capital owners have now increased their prices, they only suffer the loss of production limitation created by the lack of labor, however, as there is free capital mobility, owners of capital might be able to move the capital elsewhere, eliminating the potential loss in the low skill industry.Workers, as stated previously gain a higher wage, but in the medium run, we have assumed that companies start to increase their prices. It can be very hard to determine the precise gain or loss, but there is a chance of increasing inflation due to wage increases, meaning that the workers are possibly not better off, in the medium run. The fact that the good is tradable or not, does not make a difference, the production is limited by the amount of labor available in any case.

Question 4.4

The theory of the second-best argues that the only reason to interfere in a free trading market is if there is a market failure that can be corrected. The policy goal of the UK government to increase domestic wages, was not founded in a market failure, but a normative idea. The lowskill industry was working correctly, so the theory of the second best do not justify Brexit.