**H1 Economics 2018 – CSQ – Demand and Supply – Q4**

**The market for milk in Canada**



Source: Food and Agriculture Organisation of the United Nations

**Extract 1: The dairy industry - Turning sour**

Little over a year ago, New Zealanders were still talking about a “white-gold rush”. Strong prices for milk were prompting cattle ranchers who produce beef to convert to dairy farming, and Chinese firms were coming in to buy up agricultural land and milk processors. Inevitably, influx has led to glut. Prices have fallen to their lowest in more than ten years. Farmers in France, Britain and Belgium have recently been staging protests against low milk prices, but few places are as badly affected as New Zealand, whose dairy industry produces a quarter of its export earnings. Facing sliding incomes, New Zealand’s dairy farmers are expected to cull one-in-six cows this year.

There are two main reasons why the milk trade has turned sour. One is the economic slowdown in China, a giant market where consumption for dairy produce had until now been growing strongly. Another is the removal of the European Union’s (EU) dairy-production quotas earlier this year, which does away with limits on the amount of milk each farm could produce, encouraging big producers in Germany, the Netherlands and elsewhere to boost their output and exports.

Source: *The Economist,* 13 August 2015

# Extract 2: Protectionism in Canada’s dairy market

Critics of Canada’s dairy sector highlight that the protection of the industry via sky-high tariffs ensures that the Canadian market remains closed to all but a tiny wedge of dairy imports. Advocates of opening Canada’s dairy market to global competition from foreign firms insist it would be a boon to the farmers with potential to be more efficient, allowing them to grow by exporting their products internationally. But that fails to justify the painful fate that would likely await the vast majority of Canada’s 12,000 dairy farms. Having been sheltered from competition for so long, the relentless demands for lower costs and higher productivity would overwhelm most family-run dairy farms.

Those demands are only growing fiercer. The European Union’s move earlier this year to abolish milk production quotas is expected to lead to a surge in production in countries with the most efficient dairy sectors. Then there’s the United States, where industrial-sized dairy farms with more than 10,000 cows are not uncommon. (The average Canadian dairy farm has 77 cows.) At the Trans-Pacific Partnership talks, the United States is pushing harder than any other country for access to the Canadian dairy market. New Zealand’s dairy sector rode the Chinese boom until growth there flinched. China now has big stockpiles of whole-milk powder, leading most analysts to predict that low global milk prices will be around for a while.

That is likely good news for most of the world’s consumers, provided processors and retailers pass on those savings. But it’s bad news for large dairy-exporting countries such as New Zealand, which bet that China’s thirst for its milk would be unquenchable. Not only are European producers now eyeing the Chinese market. Domestic production is growing fast in China – one particular operation has 140,000 cows.

Were Canada to finally join the global milk market, consumers here (particularly the poorest ones) would benefit most. Dairy farmers, not so much. But that is what free trade is all about. As Adam Smith wrote in The Wealth of Nations: “It is the maxim of every prudent master of a family never to attempt to make at home what it will cost him more to make than to buy.” Countries prosper by focusing on what they do best.

Source: *The Globe and Mail*, 29 July 2015

# Extract 3: Should the government intervene in the dairy market?

Until quite recently, the production of many agricultural goods was local. But technology, including ultra-high temperature treatment, means milk can be kept for up to a year and shipped without refrigeration, turning milk from local into a global tradable commodity. Thus, it may be that Canada would be a better place if milk production moved to the countries that could produce it most cheaply allowing them to cut their costs so they could go head to head with global producers from China and New Zealand.

But knowing how markets work, it may be likely that losing much of the dairy industry to overseas competitors by removing tariffs would not bring food cost down much in the long term. The cost difference would merely be absorbed by some other part of the production chain. Meanwhile, the advantages of having a strong domestic industry are about more than the price of milk. Canadian dairy farmers remain in the country and don't move overseas so government’s tax revenue is not affected. In the current global shakeout in the dairy industry, it might be worthwhile hanging on to that industry at least until the shakeout is over. Maybe well-made Canadian milk products, without hormones, with love, will soon sell overseas at a premium.

Source: *CBC News*, 27 November 2015

**Questions**

(a) (i) Using the data in Figure 1, describe the trend of dairy prices from 2013 to 2015. [2]

(a)(ii) With reference to Extracts 1 and 2, assess the relative importance of demand

and supply factors in accounting for the overall trend of dairy prices. [6]

(b) With the aid of diagrams, explain the impact of “strong prices for milk” (Extract 1) on the resource allocation between the market for beef and the market for dairy. [4]

(c) Explain how the development of “ultra-high temperature treatment” technology (Extract 3) might change the price elasticity of supply for milk. [2]

(d) “It is the maxim of every prudent master of a family never to attempt to make at home what it will cost him more to make than to buy.” Countries prosper by focusing on what they do best. (Extract 2)

Using the concept of opportunity cost, explain why Canada is likely to import milk while countries like the United States and New Zealand export it. [6]

**Suggested Answers**

**(a) (i) Using the data in Figure 1, describe the trend of dairy prices from 2013 to 2015. [2]**

Dairy prices are generally falling over the period by 28%. However, prices initially increased from 2013 to March 2014.

**(a)(ii) With reference to Extracts 1 and 2, assess the relative importance of demand and supply factors in accounting for the overall trend of dairy prices. [6]**

Demand Factor (At least 1)

* “economic slowdown in China…a giant market…had until now been growing strongly” 🡪 ↑NI 🡪 ↑PP 🡪 ↑demand for normal goods such as milk
* **Eval:** Extent of increase in demand is likely to be small as there is a slowdown where the growth rate of income has decreased thus income is increasing at a slower rate.

Supply Factor (At least 1)

* “removal of dairy-production quota” (Ext 1) 🡪 with the removal of the production quotas in EU 🡪 producers in EU are no longer limited in the amount of milk they are allowed to produce 🡪 increase in supply of milk
* **Eval:** Extent of ↑supply is likely to be large 🡪 as many of the EU producers like Germany and Netherlands are “big producers” which contribute significantly to the global milk market.
* “increase in domestic production” in China (Ext 2) 🡪 further increase in supply
* Big stockpiles of whole-milk powder 🡪 PES>1 🡪 given a ↑price, qty ss would increase more than proportionately as producers will be able to use their stocks to raise quantity supplied to a greater extent.

Analysis of Price

* Market is initially at equilibrium at price P1 and output Q1.
* An increase in demand will lead to an increase in price while an increase in supply will result in a fall in price. The impact on price is indeterminate and depends on the extent of the shift in demand and supply.
* As explained above, the shift in demand is likely to be relatively smaller than the shift in supply 🡪 [Adjustment process] overall, there will be a surplus created 🡪 downward pressure on prices € new equilibrium at a lower price as seen in Figure 1 and question (ai)

Conclusion/Judgement

* As the fall in price is mainly due to the large fall in supply relative to the demand, the supply factors play a more important role in determining the overall fall in price.
* In addition, as PES>1, the increase in demand is also likely to result in a relatively small increase in price 🡪 demand factor is again not as important in explaining the change in price.

**(b) With the aid of diagrams, explain the impact of “strong prices for milk” (Extract 1) on the resource allocation between the market for beef and the market for dairy. [4]**

* Resources such as land for farming are limited and there are many “wants” for the land such as for the purposes of cattle ranching or dairy production. The beef market and the dairy market are in competitive supply.
* “Strong prices for milk” 🡪 suggests an increase in price of milk due to ↑demand 🡪 ↑output of milk 🡪 incentive for farmers to switch production away from less profitable markets such as beef to the now more profitable dairy production.

There is a fall in supply for beef as resources are reallocated from beef to milk production.

**(c) Explain how the development of “ultra-high temperature treatment” technology (Extract 3) might change the price elasticity of supply for milk. [2]**

* Evidence: “UHT milk can be kept for up to a year and shipped without refrigeration”
* This increases the shelf life of the milk allowing for producers to keep stocks of the milk 🡪 any ↑price 🡪 M.T.P. ↑qty ss as producers are easily able to respond to the price increase by increasing qty ss through the use of their stocks of UHT milk**.**
* Supply is likely to be more price elastic than before.

**(d) “It is the maxim of every prudent master of a family never to attempt to make at home what it will cost him more to make than to buy.” Countries prosper by focusing on what they do best. (Extract 2)**

**Using the concept of opportunity cost, explain why Canada is likely to import milk while countries like the United States and New Zealand export it. [6]**

The theory of comparative advantages states that trade can benefit countries involved if they specialize in producing and trading those goods in which they have comparative advantage in and the terms of trade lies between the domestic opportunity cost ratios of the 2 countries. Comparative advantage refers producing a good a relatively lower opportunity costs. Opportunity cost is defined as the next best alternative foregone. Canada is likely to import milk as it does not have comparative advantage in milk production while other countries like US and New Zealand do.

Given a country such as Canada which has the ability to produce either 20 barrels of oil or 10 units of milk given its factor endowment which are mainly natural resources such as oil deposits. It faces constant opportunity costs of 2 oil for 1 milk. US on the other hand can produce either 30 oil or 60 units of milk with its resources whereby it has relatively more resources suited for milk production. This is seen in extract 2 where the US farms have a relative abundance in milk related resources e.g.10,000 cows while Canadian farms on average have only 77. Its opportunity cost of 1 milk is 1/2 oil. This is illustrated by their PPC as follows:

The slope of the PPC represents the opp cost of producing oil (the good on the X-axis). Since US has the CA (lower opp cost) in milk it will specialise in milk while Canada will specialise in oil. They will select an acceptable TOT which lies between their opp cost ratios, ½ Oil<1 Milk<2 Oil. Assume the TOT is 1 Oil =1 Milk, both countries will now face a TPC with a slope of 1, which is the new opp cost for oil due to trade.

Both countries have benefitted from trade because (a) they can consumer greater quantities of goods and services on their TPC which is greater than their PPC and (b) they face a lower opp cost for consuming the goods. This raises their material SOL thus explaining why Canada imports milk and US exports milk.