

Assessment Schedule – 2014

Agricultural and Horticultural Science: Demonstrate understanding of how market forces affect supply of and demand for New Zealand primary products (91530)

Evidence Statement

Achievement	Achievement with Merit	Achievement with Excellence
“Demonstrate understanding” involves explaining how market forces affect supply and demand for New Zealand primary products.	“Demonstrate in-depth understanding” involves explaining in detail how market forces affect supply and demand for New Zealand primary products, with quantitative data.	“Demonstrate comprehensive understanding” involves analysing how market forces affect supply and demand for New Zealand primary products, with a focus on the significance and impact of the market forces.

Question One: Market forces affecting the supply of primary products

N0	No response; no relevant evidence.
N1	ONE market force partially explained.
N2	TWO market forces partially explained with reference to specified product.
A3	ONE market force explained in general terms with reference to specified product.
A4	TWO market forces explained in general terms with reference to specified product.
M5	ONE market force explained in detail, using quantitative material where appropriate.
M6	TWO market forces explained in detail, using quantitative material where appropriate.
E7	TWO market forces explained in detail, using qualitative and /or quantitative material where appropriate, and partial justification, using both qualitative and quantitative material where appropriate.
E8	TWO market forces explained in detail, using qualitative and /or quantitative material where appropriate, and a full and comprehensive justification, using both qualitative and quantitative material where appropriate.

Q1	Evidence
(b)	<p><u>Seasonality</u> Explanation should state how seasonality influences a product's pattern of supply. This could include the impact of weather, the use of biological processes such as mating, or the manipulation of growing conditions. The explanation may state little effect of seasonality in controlled environment production.</p> <p><u>Price trends</u> Explanation discusses price influencing supply over time (3–5 years). Could include either price at the final point of sale, or more likely the manipulation of schedule prices. Actual prices need to be stated.</p> <p><u>Exchange rate</u> Explanation should refer to current trends in the exchange rate, and how the exchange rate has influenced the supply of the product in recent times.</p> <p><u>Political intervention</u> Includes sanitary / phytosanitary regulations, tariffs / quotas, and Resource Management Act restrictions. Candidates are expected to state actual figures to support their answer / explanation.</p>
(c)	<p>The justification of one market force over another must provide evidence of the merits of each market force as they impact on the quantity of the product supplied by the producer.</p>

Question Two: Market forces affecting the demand for primary products

N0	No response; no relevant evidence.
N1	ONE market force partially explained.
N2	TWO market forces partially explained with reference to specified product.
A3	ONE market force explained in general terms with reference to specified product.
A4	TWO market forces explained in general terms with reference to specified product.
M5	ONE market force explained in detail, using quantitative material where appropriate.
M6	TWO market forces explained in detail, using quantitative material where appropriate.
E7	TWO market forces explained in detail, using qualitative and /or quantitative material where appropriate, plus partial justification, using both qualitative and quantitative material where appropriate.
E8	TWO market forces explained in detail, using qualitative and /or quantitative material where appropriate, and a full and comprehensive justification, using both qualitative and quantitative material where appropriate.

Q2	Evidence
(a)	<p>Note: Product selected must be different to that used for Question One.</p> <p><u>Consumer preference</u></p> <p>Explanation should state the actual trend(s) in consumer preference that have occurred, and:</p> <ul style="list-style-type: none"> • how they have differentiated the price received for the product, and link this clearly to the price data. <p>OR</p> <ul style="list-style-type: none"> • identify that it is simply a greater quantity demanded (or a maintaining of quantity demanded in the face of other competing products) by consumers, with no price change. <p><u>Promotion</u></p> <p>Explanation should include how demand (price or quantity) for the product has been influenced by actual promotional campaigns [campaign must be named, and data on its effect on demand given (more than generalisations of TV advertising)].</p> <p><u>Product attributes (quality requirements)</u></p> <p>Differentiated from consumer preferences, answers are to include quality requirements of buyers (processors / exporters) and link these to a differentiated price / grading schedule.</p> <p><u>Price</u></p> <p>Explanation should state the actual price or price trends of the product, and how this has influenced the consumers' demand for the product.</p>

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| (b) | The justification of one market force over another must provide evidence of the merits of each market force as they impact on the price New Zealand producers receive for the product, using both qualitative and quantitative material where appropriate. When discussing price, actual prices must be stated. |
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Question Three: Impacts of market trends on supply of and demand for primary products

N0	No response; no relevant evidence.
N1	The market trend for possum fur/skins is partially described, using the resource provided.
N2	The market trend for possum fur/skins is described and the relationship to consumer preference is identified.
A3	The link between increased possum fur demand, and price is described, <i>OR</i> the market trend for the selected primary product is explained.
A4	The link between increased possum fur demand and price is described, <i>AND</i> the market trend for the selected primary product is explained.
M5	The link between increased possum fur demand and price is described, <i>OR</i> the market trend for the selected primary product is explained in detail.
M6	The link between increased possum fur demand and price is described, <i>AND</i> the market trend for the selected primary product is explained in detail.
E7	The impact and significance of market forces for either possum fur <i>OR</i> the selected primary product is fully discussed.
E8	The impact and significance of market forces for possum fur <i>AND</i> the selected primary product is fully discussed.

Q3	Evidence
	<p><i>Market trends for possum fur:</i></p> <ul style="list-style-type: none"> • Reached its high in the early 1980s. • Anti-fur protesting resulted in consumer preference moving away from animal fur products. • Recent promotion of “environmentally responsible” fur has made it acceptable to wear fur products again. • Possum fur prices have reached \$120/kg in last 5–10 years. <p><i>Impacts of these trends on possum fur prices:</i></p> <ul style="list-style-type: none"> • At its peak, possum skins received \$27 each. • Substantially reduced demand resulted in total exports dropping to \$101,000. • Recent increases in demand, especially from China (buying as much plucked fur as it can), means prices have risen to \$120–150/kg. <p><i>Compare market trends and the significance of the forces affecting them:</i></p> <ul style="list-style-type: none"> • Market trends for selected products are described and explained in detail. • Selected products are exported in significant volumes. • The significance of market forces is implied or commented on.

Cut Scores

	Not Achieved	Achievement	Achievement with Merit	Achievement with Excellence
Score range	0 – 7	8 – 12	13 – 18	19 – 24

Appendix: Examples of possible answers

Note: Underlined text signifies examples of detail, including quantitative data, for the award of Merit.

Question One: Market forces affecting the supply of primary products

Seasonality: Wool

Supply of wool peaks in Oct and Feb/March at around 12,000 tonnes/month offered for sale. The lowest months tend to be June/July at around 4,000 tonnes. In October, ewes are shorn as their lambs are weaned off them. Lambs are usually shorn just before Christmas. Ewes are often shorn again in late summer. These two harvesting times for the ewes allow the wool clip to reach the desired 75–100 mm length.

Price trends: Wool

The average farm gate wool price has climbed in recent years from its lowest recorded level – \$3.20/kg for crossbred wool, or just 6.2% of the comparative price prevailing at the peak of the Korean War wool boom – to around \$4.50/kg in 2009/10 and about \$6.60 in 2011/12. The price of crossbred wool has some influence on supply, as farmers have tended to see wool as a by-product (or even as a cost) of producing sheep meat. Consequently, their focus has changed to specialist meat breeds and ram selection, rather than dual-purpose meat and wool genetics. Wool supply has fallen, and exports dropped to 148,000 tonnes in 2009 and 110,000 in 2011; this trend has continued over the past four years, as the profitability of wool and sheep farming has continued to fall. The recent upsurge in price has not seen a corresponding increase in supply, due to the low numbers in the national sheep flock, largely resulting from land use changes (mainly dairy conversions).

The high New Zealand dollar was initially a significant contributor to a fall in crossbred wool prices, with international prices for crossbred wool actually improving compared to the previous year. With the New Zealand dollar strengthening against our major export markets for wool such as America, where the NZ dollar has moved from US\$0.55 to as high as US\$0.87, the returns at the farm gate are reduced, despite the international price increasing. The volume of wool produced has decreased as the profitability of wool and sheep farming in general has fallen, and producers of sheep meat convert to more profitable ventures such as dairying, where there are still good profits to be made, even with an unfavourable exchange rate.

Price trends: Milk

Recent market trends in the price paid to farmers for milk solids have had a greater effect on the supply of milk than either the exchange rate or seasonality.

Farmers are very responsive to farm gate prices. Dairy farmers have a number of options to quickly increase their level of production if the outlook appears favourable. The increase in payout over the past few years (Fonterra's payout in 2010/2011 was \$7.90/kg milk solids) has resulted in large-scale conversions from sheep, beef, and forestry operations over the past decade. The feeling that this trend will either continue or at least stabilise has resulted in the large capital investment required for these conversions. This has been a major factor in determining the supply of milk. Despite the increase in the \$NZ in April 2011, a factor that would normally reduce returns, the rise in price received to more than \$8.00/kg milk solids has negated the downside of the exchange rate, encouraging more dairy farm conversions/increases in farm cow numbers and higher production volumes. This year, dairying has further rallied, and the expected pay-out in 2014 is \$8.10/kg milk solids.

Exchange rates: Milk

While the exchange rate can play a large role in determining the payout farmers receive, in recent years, despite a strengthening \$NZ (up to \$0.83 against the \$US in April) the payout received by farmers has remained favourable. They would not be looking at changing their production, as they have committed financially and physically to this product, and any other product produced would need to be exported and would face the same unfavourable exchange rate.

Seasonality also affects milk production to some extent, with a peak in mid-to-late spring and most farmers drying off in winter. However, on an annual basis it is not a significant factor, with most of the production processed into non-perishable/less perishable products, so markets can continue to be supplied. Even the effects of the drought earlier in 2008 were partially offset by an increase in the use of new supplementary feeds, such as palm kernel, and this trend has remained as feeding

supplements and dairy grazing have become common practice for farmers to either extend their season or offset drought. Further, in South Island regions a small number of farmers have split calving patterns in Autumn and Spring to supply milk all-year around. The purpose of doing this is to take advantage of the additional premium payment of over \$3/kg/MS for winter supply, and so the milk supply curve is effectively "flattened" by these farmers.

Thus market trends, in terms of the price paid to farmers for milk solids, remain the most significant factor in determining the supply of milk on an annual basis.

Question Two: Market forces affecting the demand for primary products

Consumer preference: Apples

Changing consumer tastes and expectations regarding keeping qualities have resulted in consumers changing their preferred choice of apple varieties in recent years. The emergence of new varieties such as Jazz – with its deep red colour, crisp texture, dense flesh, medium size, and “strong” flavour – have seen consumers shift their demand towards them, and away from previous favourites such as Braeburn and Royal Gala. Quantities sold have increased significantly, and in 2009 just under 20,000 tonnes were sold – up from 7,500 tonnes in 2007. In 2012 Jazz is expected to top 2 million cartons, which is 12% total apples volumes.

Promotion: Kiwifruit promotion in Vietnam

Fresh Studio's marketing team, under the guidance of marketing director Mrs Sigrid Wertheim-Heck, has launched an extensive in-store sampling promotional campaign to build awareness of kiwifruit, grow sales, and generate Zespri brand preference. During the 2012 kiwifruit season, the Vietnamese market has increased its sales volume to 630 tonnes – up from 369 tonnes in 2012.

Product attributes (quality requirements): Potatoes

Potatoes for processing need to be large (> 75mm), oval-shaped, and with low sugar content. This allows large French fries to be made (which is a preference of the final consumer). Potatoes meeting these requirements get \$300/tonne. Potatoes more suited for the table/fresh potato market are smaller and more rounded, and fetch \$500/tonne.

Absence of PTP (potato tomato psyllid) is another quality requirement of processors, as it infects potatoes with liberbacter, which causes “zebra chip”. Potatoes infected with this cannot be processed, and so are dumped on the fresh market (zebra chip becomes evident with deep frying, not normal cooking), lowering the price of fresh potatoes to ~\$300/tonne.

Price, promotion, and consumer preference: Lamb

Price is the key market force that determines the demand for lamb – both locally and internationally. While promotion and consumer preferences have some effect, they are not as significant as price.

The price of lamb is often towards the top of the range of meat options available to consumers. From \$15–25/kg for chops and up to \$25/kg for a leg for roasting (\$40–\$55 per leg), it represents expensive meat when the fat/bone content is considered. Consumers are very sensitive to the price of meat, and when lamb prices are high (at times of high export lamb prices) there is a noticeable drop-off in lamb meat sales, and consumers switch to alternative meats, eg chicken (skin off breast) ~ \$15/kg. Television promotion by sportswomen has, according to Meat and Wool New Zealand, increased demand for lamb by approximately 5%.

Internationally, consumers have resisted high market prices in the UK, and the traditional Easter market in 2011 saw a decline in the quantity of NZ Lamb sold. What has maintained price is the reduced supply from NZ, due to the declining national lamb kill (~31 million estimated for 2011).

Promotion, such as campaigns like the TV ads featuring the Evers-Swindell sisters, Sarah Ulmer, and Sarah Walker, attempt to target the female/sporty sectors of society and increase demand from those sectors. However, campaigns tend to be neutralised by high prices.

Consumer preference for lamb as a popular barbeque meat – quick and safe to cook (unlike pork and chicken, which must be cooked fully) – remains, and there are still some traditional roasts being sold, especially for the UK Easter market. However, these are often bought as a special once-a-week/month meal, rather than for day-to-day consumption, due to its cost and to its cooking time not fitting into many people's busy schedules. Even so, it can still often have a higher fat/bone content than many other meat options.

Price variations have been shown to produce significant shifts in consumer demand, with high prices for lamb reducing demand, while demand for pork has increased. The promotional activities of Meat and Wool NZ have at best maintained market share in the meat trade, and while a minor 5% increase in New Zealand consumption is desirable, it must be remembered that 90% of lamb is exported. To greatly influence demand overall, an increased demand from overseas consumers is vital. Price is the most significant market force in the major export markets, except during times of major animal disease outbreaks, at which time consumer preference has had a significant impact on demand for NZ lamb.

Question Three: Impacts of market trends on supply of and demand for primary products

(a) Market trends for possum fur

Skin and fur trade increased demand in the early 1980s to a per skin price of \$27 and total export revenue of \$23 million. Then the anti-fur movement and stock market crash reduced export value to as little as \$101,000. Demand for possum fur is increasing again as the product attributes are recognised (warm, durable, and light), and it is seen as an environmentally responsible product – killing a possum saves our native bush.

(b) How market trends have affected the possum fur price

The price increased to a high of \$27 for top-quality skins in the 1980s, and then fell sharply until virtually no one trapped for skins any more. In recent times, possum fur (plucked) has averaged \$100/kg and gets up to \$120. It takes about 20 possums to collect 1kg of fur. This increase in price is because the attributes of the product are recognised when blended with wool products. In a world where people want to be environmentally responsible, they have an opportunity to go back to a fur product with a clear conscience.

(c) Compare with a product of your choice

Example: apples

The choice in apple varieties has changed over the last 30 years. Granny Smith and Braeburns, which are traditional varieties, have been replaced with Pacific Rose and Fuji, because of the increase in consumer demand for these apples from Asian consumers.

The growing Asian market segment has prompted a move away from green-skinned apples, towards the sweeter red-skinned apples. The driver for the market trend for apples such as Fuji and Pacific Rose is the sweeter Asian palette.

Fur has always been seen as a luxury good, and it was only because of extreme anti-fur protesting in the 1980s that its popularity ever decreased. Although there are many synthetic products on the market to try and replace the warmth and comfort of fur, they have never superseded it. In this instance, peer pressure and promotion had a significant impact on the demand for possum products.

Consumer preferences and promotion are the main driving force for the demand for both of these products.

The main contrast between these products is that animal products have welfare issues associated with them (eg the chicken and pork markets at the moment) that will often turn large groups of consumers away from them, whereas fruit and vegetables have no such issues and their demand usually only changes when substitute goods (eg a new variety of apple) come onto the market.