**Year 13 Agribusiness**

**AS 91530**

Demonstrate understanding of how market forces affect supply of & demand for NZ primary products

**Version 3**

**External Assessment**

**5 Credits**









Achievement Standard

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| **Subject Reference** | | | Agricultural & Horticultural Science 3.3 | | | | |
| **Title** | | | Demonstrate understanding of how market forces affect supply of & demand for New Zealand primary products | | | | |
| **Level** | 3 | | **Credits** | 5 | **Assessment** | | External |
| **Subfield** | Science | | | | | | |
| **Domain** | Agricultural & Horticultural Science | | | | | | |
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This achievement standard involves demonstrating understanding of how market forces affect supply of & demand for New Zealand primary products.

**Achievement Criteria**

| **Achievement** | **Achievement with Merit** | **Achievement with Excellence** |
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| * Demonstrate understanding of how market forces affect supply of & demand for NZ primary products. | * Demonstrate in-depth understanding of how market forces affect supply of & demand for NZ primary products. | * Demonstrate comprehensive understanding of how market forces affect supply of & demand for NZ primary products. |

#### Explanatory Notes

1. This achievement standard is aligned with *The NZ Curriculum*, Learning Media, Ministry of Education, 2007, & based on the outcomes in the *Teaching & Learning Guide for Agricultural & Horticultural Science*,Ministry of Education, 2011 at <http://seniorsecondary.tki.org.nz/>.
2. *Demonstrate understanding* involves explaining how market forces affect supply of and demand for New Zealand primary products.

*Demonstrate in-depth understanding* involves explaining in detail how market forces affect supply & demand for NZ primary products. The detailed explanation includes quantitative data.

*Demonstrate comprehensive understanding* involves analysing how market forces affect supply & demand for NZ primary products. The analysis focuses on the significance & impact of the market forces selected.

1. *New Zealand primary products* are primary industry products that either earn significant export revenue in unprocessed or processed form, or allow for self-sufficiency within New Zealand.
2. *Market forces* are factors internal and external to New Zealand that impact on supply and demand*. Market forces* may include: seasonality, quantity available, quality requirements, reliability of supply, prices, market manipulations, promotion, market trends, consumer preference, political intervention, phytosanitary regulations, exchange rate, weather events, production costs.

# MARKET FORCES

**Specific Learning Outcomes:**

At the end of this topic you should be able to:

1. Analyse the concept of a market

* Define a market
* Analyse market types
* List a range of products & bi-products for a primary product

1. Analyse the effects of market forces on the supply of a primary product

* Define supply
* Explain the general factors affecting supply
* Explain the market forces affecting supply
* Construct & recognise simple supply trend patterns

1. Analyse the effects of market forces on the demand of a primary product

* Define demand
* Explain the market forces affecting demand
* Construct & recognise simple demand trend patterns

1. Evaluate interactions between market forces operating on a primary product & its market

Evaluate & compare the effects of market manipulation on supply through:

* Political intervention
* Grower organisations

1. Explain the effect of market trends on primary production
2. Link aspects of production to aspects of marketing

**SUPPLY & DEMAND FOR PRIMARY PRODUCTS IN NZ**

**WHAT IS A MARKET?**

**Definition of a market:** all the buyers & potential buyers of a product who profess some level of interest in it & who can afford it.

##### THE EFFECTS OF MARKET FORCES ON THE *SUPPLY* OF A PRIMARY PRODUCT

***Definition of market forces:*** [Forces](http://www.businessdictionary.com/definition/force.html) of [**demand & supply**](http://www.businessdictionary.com/definition/demand-and-supply.html) representing the [aggregate](http://www.businessdictionary.com/definition/aggregate.html) [influence](http://www.businessdictionary.com/definition/influence.html) of [**buyers**](http://www.businessdictionary.com/definition/buyer.html) & [**sellers**](http://www.businessdictionary.com/definition/seller.html) on price & [**quantity**](http://www.businessdictionary.com/definition/quantity.html) of the [goods](http://www.businessdictionary.com/definition/goods.html) & [services](http://www.businessdictionary.com/definition/services.html) offered in a [**market**](http://www.businessdictionary.com/definition/market.html). In general, [excess-demand](http://www.businessdictionary.com/definition/excess-demand.html) [causes](http://www.businessdictionary.com/definition/cause.html) [**prices**](http://www.businessdictionary.com/definition/price.html) & **quantity** of [**supply**](http://www.businessdictionary.com/definition/supply.html) to rise, & [excess](http://www.businessdictionary.com/definition/excess.html) supply causes **prices** to fall.

***Market forces*** could include: seasonality, quantity available, quality requirements, reliability of supply, prices, market manipulations, promotion, market trends, consumer preference, political intervention, exchange rate.

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| **Market opportunities for Satsuma mandarins**  Image result for mandarins  **Local NZ Market**  This is a **commodity** local market.  The following supermarkets - Pak 'n' Save, New World, Countdown, & Woolworths / Foodtown run by Food Stuffs NZ & Progressive Enterprises are the major buyers of local NZ Satsuma mandarins. The local market can absorb approximately 600 tonnes of fruit per week before becoming saturated.  Preferred features of the fruit include:   * Large size – 65mm diameter * Easy peel, skin removal in one or two pieces * Brix acid ratio 7:1.2 * Cumulative blemishes 0.75cm2 (medium) 1cm2 Large * Defect tolerances ( shape, maturity, skin defects – colour, blemishes) 5% Tag 1-15% Tag 2   During the period of April/ May which is the export market window, all small, high grade fruit are picked & exported. All rejects are placed on the local market. Retail prices at this time tend to be low - $4.00/kg. On the shoulders of the season in March prices can reach $6.00 & in July August between $5 & $6/kg.  **Export Market to Japan**  This is a high end, high returns niche market. Export volumes total 6- 700 tonnes over the season, with a peak at 180 tonnes per week during early May.  Preferred features of the fruit include:   * Small size – 55-63mm diameter * Brix acid ratio 10:1 * Easy peel, yet tight skin, removal in more than 4 pieces * Cumulative blemishes – 0.5 cm2 * Defect tolerances 2%   The market window is only open April – May as Japan produces its own mandarins during the rest of the year. This window & market opportunity is only there because the fruit is perishable & can only be stored for 3 weeks at 8°C. Since fruit on the Japanese market are expected to have a shelf life of two weeks this only allows a week for storage. |

***Exercise:*** *Describe TWO market opportunities for Satsuma Mandarins:*

1. *Opportunity 1: The local market - where mandarins are sold & what features are required*

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1. *Opportunity 2: The export market - Japan - costs money to transport so cost more to buy there, what features do you think they need in comparison with the local market?*

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1. *Explain how these market opportunities are different from one another:*

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| **Market opportunities for Zespri kiwifruit**  Kiwifruit now accounts for 43% of NZ’s produce exports & had a turnover of NZD $1.664 billion in 2017 & it continues to grow. Zespri sells consistently high-quality, great-tasting, premium kiwifruit in more than 50 countries around the world.  The Asian markets of China (including Hong Kong), Korea, Japan & Taiwan are all showing an increased demand. Japan continues to be the premium revenue-generating market. There is a significant growth in China as a market. ZESPRI® GOLD has a higher Brix (13 & above) than ZESPRI® GREEN (7-11) which appeals to the sweeter Asian palate. A sweeter tasting green variety called Sweet Green appeals to the expanding Asian market & is increasing in volumes in this market.  Europe is the core region for ZESPRI® GREEN Kiwifruit selling about 60 percent of the crop. In Europe, ZESPRI® GREEN has, on average, a two point Brix advantage over competitor fruit meaning NZ fruit is noticeably sweeter tasting. Europe has showed an increase in volumes with Germany, The Netherlands & Spain being were the main recipients in this region. Other markets such as the UK show resistance to newer varieties.  A strong performance in North America is driven by the earlier supply of fruit & developing retail programmes.  South East Asia is another area where the potential for considerable & rapid growth. In the past year alone, GREEN & GOLD volumes have grown significantly.  **2016/17 season**  A remarkable 2016/17 season of increased yields & the largest-ever NZ crop helped lift total Zespri sales volume from NZ to a record 137.7 million trays, 18 percent up on the previous year. Sales of kiwifruit from Zespri’s Northern Hemisphere supplying locations also grew by 14 percent to 16.6 million trays, driven mainly by SunGold vines coming into production in Italy.  Zespri sold more fruit faster than ever before during the 2016/17 season, with global fruit sales revenue rising by 19 percent to $2.26 billion. Volume growth & continued strong investment by Zespri into marketing & market development helped to lift returns overall with the average return per hectare for NZ growers reaching $68,868.  The 2016/17 season was challenging in several respects. A sharp increase in Green volume & a late start to the season due to delayed maturity put pressure on pricing but record average yields of 12,281 trays per hectare meant the industry could achieve per-hectare returns of $53,555. This is the third season in a row that Zespri has delivered average Green returns of over $50,000 a hectare. The Green return per tray was $4.36, down from $5.13 per tray in 2015/16.   SunGold delivered an outstanding result. Zespri achieved an average per-tray return for the Gold pool of $8.64 – up from $8.21 in 2015 – despite supply increasing to 48.5 million trays from 32.6 million trays in 2015/16. Average per-hectare returns increased by 39 percent to $98,838. The customer & consumer response to SunGold continues to be very positive, supporting our confidence in market demand.  The average per-hectare return of $54,427 (2015/16: $52,917) for Organic Green is a record result for the category, supported by strong yields, although the return on a per tray basis fell to $6.86 per tray (2015/16: $7.18).  The return per tray for Green14 (Sweet Green) was $5.79 (2015/16: $7.01) but the average per-hectare return increased to $45,853, driven by higher average yields as orchards came into full production.  **2015/16 season**  The NZ kiwifruit industry, with Zespri as its marketer, has delivered strong results in a season marked by exceptional volume growth. Overall, the sales volume of the NZ crop increased by 23 percent, driven by the outstanding yield of large-sized Zespri Green Kiwifruit providing strong sales opportunities across our markets. The larger crop resulted in a later selling season for Green. The average yield for Zespri Green in 2015/16 increased strongly to 11,048 trays per hectare, up from 8,972 trays per hectare in 2014/15. An excellent growing season & good orchard management practices contributed to this 23 percent increase in productivity, helping to lift per-hectare returns to $56,673 – up slightly on the record per-hectare return achieved last year.  From a strategic perspective, the key outcome of the 2015/16 season was the positive reception of SunGold in markets globally. This gives Zespri confidence that provided the industry continues to maintain strong taste performance, the forecast strong volume growth of this product will be readily supported by their markets. SunGold volumes continue to grow strongly, with 27.5 million trays sold in the 2015/16 season, up from the 11 million trays sold in 2014/15. Gold returns reduced to $71,080 per hectare & $8.21 per tray, down from 2014/15 year’s $73,890 per hectare & $9.80 per tray. This reflects Zespri normalising Gold pricing as volumes recover from the impact of Psa & investing in promotion as markets grow strongly to absorb rapid supply growth. A very favourable market response to the product delivered strong sales run rates, resulting in a final per-tray return of $8.21, compared to the July 2015 forecast of $7.60–7.90.  The average orchard productivity of Organic Green also jumped, from 5,973 trays per hectare in 2014/15 to 7,373 trays per hectare in 2015/16. The total volume of trays supplied was 3.9 million trays – up by around 360,000 trays or 10.2 percent on 2014/15. Strong sales in Europe &  Japan towards the end of the season & a tidy close contributed to the increase in per-hectare returns in the 2015/16 season of $52,917 ($7.18 per tray), setting another record return for the category.  Sweet Green (Green14) volumes were 1.4 million trays in 2015/16, well ahead of the 0.9 million trays in 2014/15. The orchard gate return per hectare was $42,995 ($7.01 per tray), which is up from $29,682 in the 2014/15 season. Late in the 2015/16 season, Zespri advised growers that it continues to work on the positioning of Sweet Green. Zespri worked with Sweet Green growers to develop a 2016/17 season plan focusing on an early supply programme, which they expected to capture the benefit of this early maturing variety, with good ready-to-eat characteristics.  However, as the 2016/17 season has unfolded, Zespri has have seen particularly late maturity, so it is clear that they do not have all the information needed to form a fair view of performance. Zespri will therefore work with growers to take learnings from both the 2016/17 & 2017/18 seasons with a view to reviewing the performance & future of the variety in late 2017. |

***Exercise:*** *Describe TWO market opportunities for Zespri kiwifruit:*

1. *Opportunity one:*
2. *Opportunity two:*
3. *Explain how these market opportunities are different from one another:*

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**General Factors affecting Supply.**

***General factors affecting supply include:***

* Length of period to production
* Climate
* Environmental factors

1. **The length of the production period & product storage**

The ***longer*** the period of supply & storage the easier it is to:

* Plan to supply when prices are high
* Take advantage of shortages & avoid gluts
* Be less susceptible to fickle weather conditions

***Exercise:*** *Compare the length of production cycles & storage potential for mandarins, kiwifruit & your own product.*

***Mandarins***

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***Kiwifruit***

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***Another / Own product***

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1. **Climate**

The climate of a production site:

1. Determines crop & site selection:

* Where it can be grown in NZ
* Aspect of site (sunny/ sheltered) impacts on timing & meeting market windows
* If shelter is required

1. Affects crop production:

* Sunshine - Fruit ripening – brix levels
* Temperatures – Growing degree days available to ensure crop is supplied to meet market demand
* Frost – need for winter chilling &/or frost susceptibility of the crop
* Water supply – need for irrigation or irrigation control

1. **Environmental factors affecting supply**

Products can only be supplied to meet the market if the environment is manipulated to provide ***optimum*** ***productivity*** of the product.

***Exercise:*** *Describe the* ***environment*** *required to provide* ***optimum supply*** *for Satsuma mandarins & kiwifruit.*

***Satsuma mandarins***

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***Kiwifruit***

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| **MARKET FORCES AFFECTING SUPPLY** |

***Market forces affecting supply include:***

* Seasonality
* Quantity supplied
* Quality supplied
* Reliability of supply
* Prices & costs
* Technological improvements
* Political interventions

1. **Seasonality**

The variation in ***seasons*** affects:

* ***Timing of production***:

Growers plan the ***production process*** by developing a **Calendar of Operations**

This is drawn up by:

1. Setting the time of **harvest** to meet market demand
2. Listing the **management practices** needed to produce a quality product to meet market demand
3. Determining the **time** that these practices have to be used to ensure that the required **volume** of high **quality** product is ready at the **time** of harvest & demands

* ***Crop physiology***

The seasons dictate the ***biological cycles*** of crops: e.g.

* Leaf fall
* Flower initiation & production
* Fruit development
* Fruit ripening

These cycles impact on ***production timing.***

* ***Out of season production – Seasonal advantage***

NZ has the opposite ***growing seasons*** to the ***Northern Hemisphere***

If the ***seasonality*** of NZ production is managed well, crops can be produced to meet the lucrative Northern Hemisphere ***market window.***

**Northern Hemisphere** growers are contracted to grow NZ varieties when it is the NZ off-season to ensure ***continuous supply*** of freshly picked products throughout the year.

***Exercise:*** *Explain how seasonality affects the supply of NZ Satsuma mandarins to Japan.*

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| **Seasonality/ Reliability of supply**  Production of kiwifruit in NZ is seasonal with gold being produced from April to September & Green May to November. A remarkable 2016/17 season of increased yields & the largest-ever NZ crop helped lift total Zespri sales volume from NZ to a record 137.7 million trays, 18 percent up on the previous year.  **Zespri Global Supply (ZGS).**  *Italy • France • Japan • South Korea • Australia*  To maintain market share in an increasingly competitive market NZ is producing fresh fruit all the year round by growing kiwifruit in offshore partnerships in Northern hemisphere countries such as Italy, France, South Korea, USA, Japan & also Chile & Australia under Zespri quality standards. Sales of kiwifruit from Zespri’s Northern Hemisphere supplying locations also grew by 14 percent to 16.6 million trays, driven mainly by SunGold vines coming into production in Italy.  Non-NZ supply through the Zespri Global Supply business is a source of Zespri’s competitive advantage & a key part of Zespri’s “category management” work stream. Non-NZ supply is poised for strong growth in the five-year planning horizon, driven predominately by Gold3 recovery in Italy, & Zespri’ s ability to procure Zespri Green from Italy to meet rising global demand.  Zespri are especially looking to increase the volume of Gold Kiwifruit to meet the increasing demand & move into new markets with this product. Zespri Gold has a shorter storage life of four months than six months of Zespri Green & thus growing the variety off shore ensures high quality fruit available for a longer period. Zespri Gold is being grown in eight countries to meet the 12-month demand. The 2016/17 season saw the announcement of 1,800 hectares of SunGold licence allocated for Europe over the next three years, doubling Zespri’s offshore production of the variety to meet growing demand for 12-month supply.  Revenue from the NZ SunGold licence release is a significant driver of Zespri’s corporate income. A further 400 hectares was released through a tender to NZ growers this year & the Zespri Board will decide on a potential three additional tranches of 400 hectares each year up to 2020, subject to an annual review of performance after each selling season. |

***Exercise:*** *What impact does Zespri’s contract with Northern hemisphere growers have on the year round supply of kiwifruit?*

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1. **Supply Trends- Quantity supplied**

Sufficient ***quantity*** has to be supplied to meet ***market demand*** especially for ***export*** markets.

Retailers demand guaranteed volumes, of high **quality** product over a ***specific*** ***period.***

Growers must plan to meet this demand by:

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| ***Mandarins***  **Local Volume:**  **Satsuma mandarin local market volumes (kg/week) over the 2012 to 2017 seasons.**    A comparison of local market volumes from 2012 to 2017 is shown. The 2017 peak weekly volume of 779 tonnes is far less than the 2016 peak of 958 tonnes but more in line with the trends shown in previous seasons.  Total local production for 2017 (8,903 tonnes) was comparable to the 2016 season at 8,809 tonnes. The average local production per week during the 2017 season was 495 tonnes.  The average local volume over the survey period was 495 tonnes per week. The peak volume entering the local market was just over 779 tonnes in ISO week 23 (week 7 of the season). This was closely followed by 763 and 767 tonnes in ISO weeks 21 and 24 respectively.  Northland’s total local market crop was 4,258 tonnes while the Gisborne / BOP crop was slightly higher at 4,645 tonnes. Proportionally, 48% of the crop came from Northland and 52% from Gisborne, compared with 42% Northland and 58% Gisborne/BOP in 2016.  **Export Volume:**  **Satsuma mandarin export volumes (kg/week) for the 2012 to 2017 seasons.**    A comparison of export volume is shown in Figure 7. In 2017, export volumes peaked in week 19 at 80 tonnes. This season’s export volume was 5.5 tonnes more than last year’s. This year the total export was 218 tonnes (representing 2.4% of the total production – a slight decrease against the 3% represented in 2016). This is very similar to the 2016 season export volume of 212 tonnes but still well below the 620 tonnes exported in 2015. This was because the Northland season started later and export demand in Japan decreased.  The major export market was Japan (with 92% of the volume going to this market) with the other 8% going to the Pacific Islands.  All exports were from Northland as was the case in 2016 and 2015. The reason Gisborne does not tend to export satsuma mandarins is that fruit quality and size profile from this region does not tend meet export requirements and there is only a very narrow window to export fruit to Japan.  Export volumes totalled 212 tonnes over the 2016 season. This was a decrease of 408 tonnes when compared to the 2015 season export volume of 620 tonnes. This was because the season in Northland started later & fruit quality in the bulk of the crop did not meet export quality requirements. In 2016, the total export was 212 tonnes (representing around 2% of the total production – a decrease of 6% from the 2015 export volumes of 8% of total production). In 2016, total export volumes peaked in week 20 at 56 tonnes.  The major export market was Japan (with 93% of the volume going to this market) with the other 7% going to the Pacific Islands. In the 2015 season, only 1% of export volume went to markets other than Japan. 91% of the export volume was shifted offshore at the start of the season during April & May 2016.  100% of export was reported from Northland (Gisborne export volumes were nil this season) as was the case in 2015. The reason for the nil export from Gisborne was that fruit quality & size profile did not meet export demand & there is only a very narrow window for export to Japan. Gisborne fruit did not reach the export brix requirements due to a very wet summer & a larger size profile than normal (which is very unusual & not commonly seen in most seasons).  **Total Production for the 2017 season:**  This season’s mandarin production (monitored over 18 weeks) totalled 9,121 tonnes. This is very similar to (100 tonnes more) as in the 2016 production of 9,021 tonnes (monitored over 16 weeks).  **Value of the 2017 Satsuma mandarin industry:**  Based on the $2.33/kg weighted average (for local fruit) and a local production of 8,903 tonnes, this estimates a domestic Satsuma mandarin industry value of ~$20.8 million (which is virtually the same as the estimated $20 million in 2016).  **Year to year trends.**  Total local production was comparable to the 2014 season, at around 8,668 tonnes (& at 8,809 tonnes this 2016 season). The average local production per week this season was over 550 tonnes, which is comparable to the 2014 season where the average was 542 tonnes per week.  However, when the volume distribution is compared for these two seasons it shows the 2014 season’s volume was more evenly spread & as such, there was less of an impact on price. This demonstrates the need to be aware of seasonal spread & volume management as these factors have a large impact on grower returns. The two figures below show 2014 & 2016 local market volume against the price / kg for Tag 1 55 – 60mm fruit & the regional distribution between Northland & Gisborne. The large volume entering the market in week 4 of 2016 appears to have accelerated the drop in price when compared to the same period in 2014. |

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| ***Kiwifruit:***  **Export Volume**   |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **Vol (mil trays)** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** | **2016** | **2017** | | 92.4 | 100 | 98.6 | 98.1 | 109.1 | 101.3 | 95.1 | 95.2 | 117.0 | 137.7 |   The number of trays exported has increased since 2008 from increased new planting becoming productive as well as improved management practices such as vine training & girdling. This is a direct result of the increasing demand from existing markets such as Japan & new market opportunities such as Korea & Taiwan. Worldwide consumer demand for high quality kiwifruit is increasing as more evidence becomes available on the health benefits of kiwifruit.  2008 export volumes were up 12% on the 2007 crop due to slightly greater bearing area & higher than normal yield/ha due to good pollination.  2009 export volumes reached 100m trays, an 8% growth as a result of increased production/ha due to good crop management & despite hail damage in some areas.  2010 & 2011 volumes were slightly down with Zespri Green trays falling to 69.9 million from 71.9 million, Zespri Green Organic unchanged at 3.3 million, & Zespri Gold trays down to 21.1 million from 22 million. The results were good considering the challenges facing kiwifruit growers. The industry, however, was benefiting from strong growth in Asian markets.  Factors impacting on kiwifruit production & sales in 2010/2011 season were:   * a stuttering economic recovery, * rising oil prices, seasonal challenges, * the impact of Psa on Zespri's orchards in Italy * the confirmation of Psa in NZ orchards.   In 2012, there was an increase in production. Reasons for this increase was;   * Increase in world population & thus markets * Rising middle class able to buy fruit across Asia, India, Brazil & Russia * Increase in focus on healthy eating.   Despite continued economic pressure on consumers around the world, demand for premium-branded Zespri Kiwifruit remained strong. A dry summer in 2012/13 delivered smaller-profile, high-taste fruit that was well received around the world.  2013/14 was the year Psa had the biggest impact on the NZ kiwifruit industry. Gold volumes were down 55 percent from 24.6 million trays in 2012/13 to 11 million trays. With the majority of Hort16A (old Gold) growers grafted over to Gold3 & a significant number of growers also choosing to graft from Green to Gold3, there is now more than 4,000 hectares of this variety in the ground. Green volumes were almost unchanged at 68.9 million trays in 2013/14, slightly down from 70.4 million trays the previous year, with Organic Green volumes unchanged at 3.1 million trays.  The 2014/15 season was extraordinary due to the shortage of Chilean kiwifruit in the market, following a severe frost event in Chile. This shortage – together with strong end-of-season sales & great work from growers, the post-harvest sector, the Zespri team onshore & in the markets, & the retail & trade partners – meant a strong season for Zespri Kiwifruit.  Zespri delivered a strong season against the backdrop of a worldwide economy still struggling to gain momentum. Many high-income countries continue to grapple with the legacies of the global financial crisis, while growth in emerging economies was trending lower than in the past.  Zespri achieved several records during 2015/16. These include the highest-ever Green return per hectare, the largest-ever volume of sales in a season, & the biggest-ever total return to growers. A significant factor during the 2015/16 season was the exceptional yield achieved by Green growers. Average productivity was 11,048 trays per hectare, which helped to lift per hectare returns to an average of $56,673. Across the industry, NZ kiwifruit growers have responded to the challenge of growing in a Psa environment by improving orchard management practices. Combined with favourable weather conditions last season, the result was a very large crop. On the market side, strong sales performance in the final weeks helped to lift returns to $5.13 per tray. SunGold’s performance in the markets was very positive. The largest-ever volume was sold in excellent time with positive customer & consumer feedback & we achieved a return for the Gold pool of $8.21 per tray – well above our early season forecast.  **Total Volume of NZ grown Zespri Kiwifruit sold** |

***Exercise:***

1. *Draw a seasonal supply sketch graph for volumes of Satsuma mandarin production for the export & local markets.*
2. *Draw a seasonal supply graph for volumes of Zespri Green & Zespri Gold kiwifruit. These should be simple enough to be reproduced in an exam.*
3. *Summarise the trends of these FOUR crops in your own words to use as a part of an exam question. Remember to include values.*

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**3. Quality supplied**

***Quality*** is usually measured in ***grades***. This gives an indication to the ***buyer*** or ***consumer*** of the ***standard*** of the crop.

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| **Grading Satsuma mandarins – Grade specifications**  **Product specification:**  *Cleanliness*: Washed, waxed, free of all dirt  *Shape:* Oblate  *Stem:* Cut flush with fruit – no long stems   |  |  |  |  | | --- | --- | --- | --- | | **Grade standard allowances** | **EXPORT/Progressive** | **Tag 1** | **Tag2** | | ***Colour*** | Orange | 5% light green flashing | <20% green flashing | | ***Maturity:*** Brix | Av Brix>9.5 | Av Brix>8.5 |  | | Acid | <1.2 | 1.2 |  | | **Defect allowances** |  |  |  | | ***Major*:** Rots, physical, insect | NIL | NIL | NIL | | ***Minor:*** Blemish, sunburn, etc. | 0.5cm2 | 0.5 – 1cm2 | 1-2.5cm2 | | **Size -** diameter | **Export**: 45-65mm | **Local:** 65 – 80mm | | | **Shelf life after arrival** | **Export:** 2 weeks | | |   The two components in citrus juice that have the greatest influence on human taste perception are sugar levels (sweetness) & acid levels (sourness). NZ citrus can be the finest tasting in the world but picking & selling immature fruit can ruin its reputation. The industry must adhere to the fruit internal quality standards to prevent the marketing of an unacceptably sour product & loss of reputation & market share.  The quality of fruit is tested initially at the orchard before harvesting. Each consignment of fruit is subject to random testing. All fruit is checked manually & then graded through an electronically controlled grader.  Fruit is then packed, sealed & labelled with information tracing back to the grower. |

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| **Grading & quality control of Kiwifruit**  Increased competition within the global market place has demanded an increased emphasis on fruit quality as a means to develop competitive advantage.  Appearance quality factors include size, shape, colour & freedom from defects & decay.  Textural quality factors include firmness, juiciness & mealyiness.  Flavour (Taste) or eating quality depends upon sweetness (concentrations of sugars), sourness or acidity (percentage of acids) & aroma. These constituents in addition to starch, cell walls, minerals & seeds make up the kiwifruit dry matter (DM) content. Dry matter is used as a measure of taste.  Before fruit is harvested, it must be mature enough to ripen when it is off the kiwifruit vine. The fruit needs to have black seeds, meet the MTS, be the right colour, & reach a Soluble Solid Concentration (SSC) or brix (sugar content of an aqueous solution) of more than 6.2% for Green & 8% for Gold. When it is time to harvest, an independent company called AgFirst will test the kiwifruits maturity & if it meets the standard will give clearance to pick.  The Taste ZESPRI® Programme seeks to continually improve the taste of the kiwifruit - both GREEN & GOLD – to provide consumers with the best possible taste experience. Over the past year, growers have improved the overall taste of the crop by increasing the amount of dry matter. Market research shows repeat purchase of ZESPRI® Kiwifruit is influenced mainly by taste & consistency, rather than by price. To deliver a consistent supply of high taste ZESPRI® Kiwifruit to market, a range of smart on-orchard production techniques & robust post-harvest technologies are being explored & validated scientifically. Some examples are; root pruning & trunk girdling to increase dry matter.  **Grading:**   |  |  |  | | --- | --- | --- | | **Attribute** | **Zespri Green** | **Zespri Gold** | | Size | 32-18 per tray |  | | Colour |  | >0.42 | | Firmness | >11.8 | >11.8 | | Sugar (Soluble solids) | 6.2-7 Brix | 11-13 Brix | | Dry matter | >15% | 15% |   kiwifruit photos.jpg  Unacceptable shapes:  No fruit can be picked from a block until it has been tested by Zespri & passed as ready for harvest. Fruit is carefully checked manually at the pack house & random checks on Brix level & acidity made. The electronic grader sorts for size & weight so that each tray carries 3.6kg of fruit. The fruit is individually packed & sealed for export. Kiwi fruit is stored at 1°C 90% humidity to ensure quality is maintained. |

The grower has to ***plan*** to produce a crop with the ***quality*** required by the market they have chosen.

Different markets have different ***quality*** requirements e.g.

***Exercise:***

* Export niche: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Local commodity:

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The management practices within the ***production process*** have to be manipulated to ensure the ***quality*** is produced e.g.

* Tyrek mulch under mandarin trees because it \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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* Trunk girdling kiwifruit vines because it \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Ensuring a high quality product is consistently supplied to consumers is essential for maintaining markets. Explain in detail, how quality assurance programmes at production stages ensure that a high quality product is supplied to consumers for Satsuma mandarins & Zespri kiwifruit.

***Satsuma mandarins***

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***Zespri kiwifruit***

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1. **Prices & costs**

There are TWO prices:

* Prices to the grower (Grower returns)
* Prices paid by the consumer (this may be the retailer or exporter)

1. ***The price of the product***

As the prices increases, it becomes more profitable for the supplier to produce the product.

HOWEVER, if the price is too high, demand may decrease, OR if increased product is supplied, this decreases the “rarity” value & the price becomes lower.

Price trends can be demonstrated over a season (short term) or over three years (long term).

These trends allow the grower to plan:

* When to release their product to gain highest returns
* Whether growing the crop has long-term viability or if diversification is needed (e.g. sticking with Green kiwifruit, or top working some of the vines into gold or considering diversifying into new kiwifruit varieties).

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| ***Satsuma mandarin price trends***  **Short term price trends**  The wholesale weighted average price over the 2017 season is presented below. Based on the weighted average over the season the highest price received for Tag 1 65-70mm fruit was $2.72. This was 50 cents more per kg than the smaller (Tag 1 55-60mm) fruit of $2.22. The weighted average price for the 65–70mm Tag 1 fruit was 17 cents more than the 2016 season – where the weighted average was $2.55/kg for this size grade. The graph shows that Tag 2 fruit received a considerably lower weighted average price than Tag 1 & prepack bags over the 2017 season.    **Figure 1:** Average wholesale weighted prices for 55-60mm, 60-65mm, 65-70mm Tag 1 and 1kg prepack fruit.  This is the average wholesale price for all fruit sent to retail - regardless of grade or size. This was averaged over the 18 weeks to give an average wholesale price of all fresh fruit over the season. For 2017, this was calculated at $2.36/kg. The range of average wholesale prices across the season for all sizes and grades was $1.82 to $4.12/kg.  **Long term price trends**  Wholesale prices (for Tag 1 55–60mm fruit) from 2012 to 2017 are shown below. On average wholesale prices were 16 cents lower than the 2016 season. The lowest recorded wholesale price for Tag 1 55–60mm fruit in 2017 was in week 29 of $1.78, compared with the highest price of $3.96 in week 17 at the very start of the season.    **Export prices:**  Returns follow the volumes pattern where growers supplying on the shoulders of the season – Mid April or late May are more likely to gain higher returns of $4.41/Kg while returns in the peak of the season - mid May – will be lower – down to $2.05/Kg. |

***Exercise:*** *Draw sketch graphs that you can use in the exam of:*

* *Short term prices of mandarins (local & export)*
* *Long term prices of mandarins (export)*

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| ***Kiwifruit price trends***  **Domestic kiwifruit prices**  Domestic kiwifruit prices are generally at their lowest in June & July. Both domestic & export prices peak around March each year when domestic supply is short – just before most harvesting begins. Small volumes of higher-valued other kiwifruit exports influence the peaks of the export price. Fruit is supplied from cool storage between December & March to meet demand. About one-third of exports occur in April & May, which corresponds with the bulk of harvesting, & then decrease towards the year’s end. Our biggest export market by volume of kiwifruit is the European Union, while the biggest export market by value is Japan.  **Export kiwifruit prices**  As the majority of kiwifruit is sold offshore & Zespri has total control over the release of the fruit into the market, growers are paid on an annual basis rather than during the season. They are paid an “interim” payment to cover costs but there is then a “final pay-out” at the end of the season, when all the deductions have been made by Zespri for managing & promoting the export market. Thus, there are no real “short term trends” other than on the local market, which is small & subject to the competition from other seasonal fruit.  Following strong returns in the early 2000s, Green supply increased rapidly from 49.9 million trays in 2003 to 77.2 million trays in 2011 – an increase of 55 percent in eight years. This rapid growth in supply, combined with the commercialisation of Zespri Gold, saw Green OGR per tray fluctuate between $3.00 & $4.00 (at seven-year FX rates) for most of the decade.  **Long term trends for Export prices.**  **NZ Grown – average orchard gate return (OGR) NZ$ per tray to the grower.**   |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | **05/06** | **06/07** | **07/08** | **08/09** | **09/10** | **10/11** | **11/12** | **12/13** | **13/14** | **14/15** | **15/16** | **16/17** | | **Green** | 3.47 | 4.09 | 3.11 | 3.68 | 3.70 | 4.21 | 3.80 | 4.62 | 5.23 | 6.01 | 5.13 | 4.36 | | **Gold** | 5.48 | 5.18 | 4.45 | 5.41 | 7.73 | 8.89 | 7.66 | 10.45 | 12.91 | 9.80 | 8.21 | 8.64 |   The price received for kiwifruit has fluctuated over the last twelve years mainly due to seasonal production differences & the fluctuation NZ dollar.  In the **06/07** season, growers received a higher price because of improved in-market pricing & reduced offshore fruit losses.  In **07/08**, returns to growers were down due to the high exchange rate against the euro & the yen & the global financial crisis (GFC).  In **2009** prices for ZESPRI® GREEN decreased but increased for gold due to high demand & the value of the NZ$ had decreased. Even with a flat market due to the recession, the demand for kiwifruit remained high. Gold kiwifruit continued to extract a premium from the market over ZESPRI® GREEN despite an increase in the production. This high price reflected the superb quality of the fruit & the fact that consumers prefer Gold kiwifruit compared to other fruit. The demand for Gold kiwifruit exceeded supply in 2009, which led to strong market pricing. Price increases in most markets was the major factor that contributed to the increase in per-tray returns but it was partially offset by the increase in fuel cost.  As in **2009/10**, economic conditions were challenging, with the effects of the GFC lingering, particularly in European economies & the United States. By contrast, the Asian economies grew strongly. Domestically, growers faced challenges as well.  Demand in **2010/2011** continued to be strong for ZESPRI® GREEN in all markets. In Asia, demand for high-quality produce was being driven by economic growth & the continued emergence of a relatively wealthy middle class. Because of ZESPRI’s ability to deliver high quality fruit to market, ZESPRI® GREEN returns per kilogram still remained much higher than those of competitors. The health & taste platforms was critical for the continued differentiation of premium ZESPRI® GREEN. The 2010/11 result reflected a strong performance in Japan & across the Asia region. This was boosted by very high levels of dry matter (the key indicator of great taste- brix), which drove repeat purchases by consumers, & partial price recovery in most markets following the 2008 GFC. ZESPRI has ambitious goals for future growth & profitability underlined by a strong focus on marketing, health & nutrition research, product innovation, & supply chain development. However, the Psa incursion in NZ was potentially very damaging at both an individual grower & an industry level. As a result, the industry was confronted with a period of horticultural & financial uncertainty as it developed the expertise & technical tools to manage Psa in NZ. The 2010/11 ZESPRI® GOLD season was characterised by short supply volumes & very strong demand. Demand was driven by both increased demand from new markets & increasing penetration of GOLD in existing markets. The short supply resulted in higher pricing across all markets & this pricing, coupled with a strong Yen, were key drivers of the higher per-tray returns in 2010/11.  The **2011/12** ZESPRI® GREEN season was characterised by high yields with average volumes per hectare increasing from 7,660 to 8,709 resulting in an increase in total trays sold to 73.3 million. Slower maturity meant that we were about one week later to market than is usual & the season was characterised by steady sales in Europe, with strong growth in China & Southeast Asia. Very good fruit storage performance & a strong promotional programme enabled ZESPRI to increase pricing moderately, but this was offset by higher time-related costs, negative market mix, & foreign exchange impacts. These issues were further compounded by the significant impact of the record volume of fruit. This, combined with a late start to the season, meant a much later close in some markets. Per-tray OGR at effective foreign exchange rates were down from $4.21 to $3.80. The 2011/12 ZESPRI® GOLD season was characterised by significantly increased supply as volume sold increased by 8 million to 29.1 million trays, demonstrating strong demand. Demand increased in new markets & through greater penetration in existing markets. In particular, Europe increased from 5 million trays to 6.7 million trays. Southeast Asia, Taiwan, China, Hong Kong & Korea all showed considerable growth, taking an additional 4.7 million trays, increasing from 8 million to 12.7 million. Despite favourable growth in all markets, the large crop did mean the Zespri needed to sell later & this was supported by the excellent storage quality of the fruit in 2011. Per-tray OGR at effective foreign exchange rates were down from $8.89 to $7.66 due to an unfavourable US Dollar & Euro exchange rate, & a negative market mix due to the significantly increased volume.  A dry summer in **2012/13** delivered smaller-profile, high-taste fruit that was well received around the world. In 2012/13, Zespri balanced volumes in GREEN to avoid the record low of $3 per tray (high volumes, weak demand & high $NZ) in 2009 by:   * Encouraged the grafting of Green across to Gold & other varieties – around 450 hectares of non Hort 16A (mostly green) were grafted across to Gold 3. * Continued focus on marketing the health benefits of kiwifruit & the taste & quality of the Zespri brand to make Zespri kiwifruit a compelling “must have” regular fruit item for consumers.   The result an increase in returns per tray 82 cents despite an exchange rate impact of 48 cents per tray. Despite improvement, it is important to note that any gains were offset by the strength of the $NZ. Zespri Gold varieties contracted to a combined varietal volume of between 12 million trays in 2013, as significant Hort 16A volume was lost in heavily affected Psa areas. Gold 3 targeted the developing world as well as being maintained in established markets in Europe & Japan, based on consumer demand for superior tasting Gold. Around half of the total one million trays of Gold 3 were sold in Europe, this fruit was well received by consumers who have a strong taste preference for this variety of gold kiwifruit. The remainder was sold throughout Asia. A 55 percent reduction in Gold volumes due to Psa & ongoing foreign exchange volatility cost the industry around $280 million. This was partially offset by strong pricing & a favourable market mix, which meant at an individual level growers received record or near-record returns.  **2013/14,** ZESPRI® GREEN per-tray OGR was up 13 percent from $4.62 to $5.23 & Organic Green was up 14 percent from $6.18 to $7.07. Gold per-tray returns were at record levels – due to the short supply with the changeover to Gold3. These strong returns were due to actions right across the supply chain – growers delivering high-taste fruit that Zespri consumers value, the lowest onshore fruit loss ever recorded for Green, solid post-harvest performance, & strong pricing & tailored marketing strategies in each of the 53 countries where Zespri sells the fruit. With only around 500 hectares of Hort16A remaining at March 2014, growers had grafted or planted more than 4,000 hectares of Gold3, showing their confidence in this new Gold variety. Despite continued economic pressure on consumers around the world, demand for premium-branded Zespri Kiwifruit remained strong. Importantly, Gold3 was well received by markets & the learnings over the past year positioned growers well to deliver great tasting fruit.  An important feature of the **2014/15** season was the remarkable rebound in Gold kiwifruit production, driven by SunGold. The increase from 11.1 million trays in 2013/14 to 18.6 million trays in 2014/15 contributed to a reduction in per-tray & per-hectare returns, as the supply & demand balance stabilises. The story of Green kiwifruit over this season was startling for different reasons. Average orchard gate return per tray exceeded six dollars & growers achieved the highest-ever average per-hectare Green return for the industry of $53,884. This  outcome owes a great deal to sales performance & to productivity increases with average yields now at nearly 9,000 trays per hectare. The shortage of Chilean kiwifruit in the market, following severe frosts in Chile, also contributed to the strong Green returns. The anticipated recovery of Gold volumes & the subsequent rapid growth of Zespri SunGold (Gold3) means markets will invest heavily to grow demand for Zespri SunGold, while maintaining premium market pricing. Gold is a recognised category but there is strong competition from alternative Gold varieties. To maintain Zespri’s competitive advantage in the Gold category, it is critical that growers focus on growing great-tasting, high dry matter Gold fruit – for all markets that have come to appreciate the sweet taste of Zespri Gold Kiwifruit.  A significant factor during the **2015/16** season was the exceptional yield achieved by Green growers. Average productivity was 11,048 trays per hectare, which helped to lift per hectare returns to an average of $56,673. Across the industry, NZ kiwifruit growers have responded to the challenge of growing in a Psa environment by improving orchard management practices. Combined with favourable weather conditions last season, the result was a very large crop. On the market side, strong sales performance in the final weeks helped to lift returns to $5.13 per tray. SunGold’s performance in the markets was very positive. The largest-ever volume was sold in excellent time with positive customer & consumer feedback & we achieved a return for the Gold pool of $8.21 per tray – well above our early season forecast.  **2016/17** was the third season in a row that Zespri has delivered average Green returns of over $50,000 a hectare. The Green return per tray was $4.36, down from $5.13 per tray in 2015/16.  SunGold delivered an outstanding result. Zespri achieved an average per-tray return for the Gold pool of $8.64 – up from $8.21 in 2015 – despite supply increasing to 48.5 million trays from 32.6 million trays in 2015/16. Average per-hectare returns increased by 39 percent to $98,838. The customer & consumer response to SunGold continues to be very positive, supporting Zespri’s confidence in market demand. Zespri was satisfied overall with performance in the season, with a good result delivered despite the challenges of a sharp increase in supply & a relatively late harvest.  NZ kiwifruit continues to achieve premium prices over producers from other countries due to;   * Consistent supply of superior quality & taste fruit. * Consistent supply has come about by producing fruit all year by growing fruit to Zespri quality in eight countries. * Strong relationships between the industry & buyers. * Food safety regulations as all Zespri products are free from harmful microorganisms & contaminants & comply with accepted quality standards for hygiene & nutrition. * Establishment & monitoring of environmental management systems & their environmental impact. * Successful promotion of the Zespri brand & the range of products such as; Zespri Green, Zespri Gold, Zespri Organic & KiwiBerry (Zespri argute - a new bite sized kiwifruit). |

***Exercise:*** *Draw sketch graphs that you can use in the exam of:*

* *Prices of Zespri Green & Zespri Gold over the last 3 years (On the same axes)*

1. ***Competition***
2. **Substitutes**

A change in ***price*** may occur if a ***substitute*** product comes on to the market.

***Exercise:***

1. *Copy the graph of price trends shown for Satsuma mandarins on the local market over an annual cycle.*

1. *On the graph indicate where substitute fruit may affect the prices & name some of the possible substitute fruit.*
2. *Explain in detail how the substitute fruit could affect the prices of the Satsuma mandarins on the local market.*

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1. ***Competition from other growers***

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| **Grower competitors for Satsuma mandarins**  At present NZ has the monopoly in supplying Satsuma mandarins to Japan during the April- May period. The only competition comes from the local Japanese growers who cannot produce mandarins during this time. Other Southern hemisphere countries such as Australia, Chile & South Africa have not been able to produce mandarins of the quality the Japanese market requires at this time. If competition did arise, then the profitability of growing the crop would be reduced, as the market could be quickly saturated. The reputation of the crop could be lost if another country attempted to supply a crop of a slightly lesser quality. |

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| **Grower Competitors in the Kiwifruit market.**    The global production of kiwifruit has grown strongly over the last 10 years increasing by nearly 70%. NZ has managed to hold on to its position as the third largest producer despite the ravages suffered by Psa. The competitive environment for kiwifruit continues to increase with main competition from China, Italy & Chile in the Asian & European markets. Their current problems of quality & supply chain management are likely to be quickly overcome making these countries an increasingly strong competitor with NZ.  As green kiwifruit can be stored for up to 6 months at 1°C 90% humidity there can be an overhang of Northern Hemisphere green fruit spilling out into the Southern Hemisphere season.  World production of kiwifruit is expected to rise over the next few years as the consumption of kiwifruit is still increasing, despite static of falling consumption of most other fruit. Prices of NZ kiwifruit are expected to remain reasonably stable due to high quality standards & a good reputation & good market management.  NZ is estimated to account for around one third of the global trade in kiwifruit by volume, but captures a significantly high proportion of the value. This testament to the power of NZ’s brand, better market access, strong supply chain relationships & intellectual property in producing & exporting quality fruit.  **Other products.**  Kiwifruit is having to work hard to gain market share at higher prices against much cheaper alternative fruit e.g. cheap pip & summer fruit in the EU & a decreasing fruit consumption.  NZ kiwifruit will only remain competitive because of its ability to produce a consistent high quality product all year round under the Zespri brand. Zespri continues to carry out high profile marketing campaigns to attract consumers by using its position as the only quality grower of gold-fleshed kiwifruit to promote the green-fleshed variety. Despite Zespri’s global leadership kiwifruit represents less than 0.5% of global fruit consumption. This presents an enormous opportunity for growth within the fresh fruit category. It is therefore essential that NZ growers continue to produce consistently high quality tasty kiwifruit to maintain demand & the competitive edge in this increasingly competitive market & to ensure good returns to compete against low-cost competition from other countries & fresh fruit. |

**(c) *Prices due to gluts & shortages***

If the season produces high quantities of a product, it may not be economic to supply the market because the prices will be too low.

***Exercise:*** *Explain how being able to store fruit as opposed to a crop being highly perishable impacts on gluts & shortages (Use prices & volumes to back up your argument).*

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### Costs of production

A producer is generally ***not*** willing to supply a ***primary product*** *unless price of the product is greater than the price of production.*

***Exercise:*** *Why does the* **price** need to be GREATER than the **costs**?

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***Exercise:*** *Describe in detail (volumes & prices) how Satsuma mandarin growers must be careful when to release their crop onto the local market & how this impacts on covering the costs of production.*

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| ***Cost of production & kiwifruit returns***    Kiwifruit returns are influenced by many factors right from the orchard through to end consumption. NZ is fundamentally considered a high cost producer given our distance to market & higher cost of labour, transport & handling, compared to our main Southern Hemisphere rivals in Chile.  Costs directly affect grower returns  With the fluctuating NZ dollar, freight costs fluctuate with changes in oil prices. It is estimated these costs can save or cost the grower an estimated 33c/tray or $34 million across the export crop.The cost of inputs such as fertilizer & agrichemicals have stabilized reducing costs & improving returns to growers.  **Zespri Green Kiwifruit - Fruit & Service Payments 2013/14 (based on final results).**  The Holy Grail for orchard-gate returns is good price premiums, high yield, good sized fruit & good tasting fruit (high dry matter). Overall class 1 yield per hectare & fruit size are the most significant drivers of revenue & profitability for both major varieties (see distribution chart of revenue returns & make-up below). The taste grade is also a significant contributor too, but more so for Gold. In 2014/15, the taste grade payments make up 17% of total fruit & services payments for Green & 41% for Gold. In 2014/15 orchard gate revenue after postharvest costs averaged $53,884/ha for Green & $73,890/ha for Gold. For Green this was an all-time record driven by good in-market prices due to a shortage of Chilean product & low postharvest costs (lower fruit loss & packaging efficiencies in recent years), as well as higher yields. While average Gold orchard gate revenue was down for 2014/15, this did not represent a steady state with a still heavy Psa impact & many Gold3 canopies yet to reach full maturity (meaning lower than potential yields).  Deducting average post-harvest & on orchard costs shows average net orchard-gate returns of $27,200/ha for Green in 2014/15, which is well up on the five-year average of $12,700/ ha. Orchard prices averaged $300,000- $350,000 per canopy hectare for the 2015 crop. After deducting the expected returns for the 2015 crop, it implies a rate of return of between 7-8.5%. Of course, this was a record year for returns & medium-term prospects are expected to be closer to the $5/tray mark. This implies net orchard-gate returns closer to $15,000-$18,000/ha depending on yield assumptions, which implies a rate of return closer to 5-6.5%.  **Zespri Gold Kiwifruit - Fruit & Service Payments 2013/14 (based on final results).**  The top green growers (defined as top 20% for gross orchard revenue) have outperformed the average by nearly $36,000/ha over the last several years. This has generally been through higher yields, & better tasting & sized fruit. Generally, yield sets the top quartile apart, followed by orchard-gate return per tray. Cost structures are generally higher to achieve outperformance, but even if you were to factor in an extra $15,000/ ha of growing costs (it is considered $40,000/ ha to be the upper band for growing costs) the top green orchards could be delivering a rate of return that is up to 7% above the average.  While the Golden varieties seem to be more susceptible to Psa, their advantages lie in the ability to be able to extract a price premium above Green, as well as to produce more fruit per hectare for a similar cost structure. Assuming a medium-term price of $6.5/tray for Gold3 & average yield of 13,000/tray/ha this equates to gross orchard-gate revenue of $84,500/ha. A similar cost structure to Green implies net orchard gate returns of $53,800/ha.  Current orchard prices have averaged $425,000- $500,000 per canopy hectare recently (including the 2015 crop & license rights). Assuming a similar cost structure to Green & after deducting the expected returns for the 2015 crop it implies a rate of return of between 11.5-13.5%. |

**4. Technological improvements**

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| ***Technological improvements in Satsuma Mandarin production***  Image result for extenday  **Reflective mulch**  ‘Extenday’ reflective mulch placed under the trees reflects light up into the underside of the tree. This is placed under the trees at the end of December & is lifted at the end of March. This gives even light throughout the tree ensuring that photosynthesis is at its optimum throughout the tree, producing a high yield of fruit (a minimum of 15kg), at the high brix level of 10 & above, is ready for the narrow Japanese export market window of April/May to gain maximum returns. The mulch also stops rain getting to the shallow roots of the trees during deficit irrigation & controls weeds.  Image result for trickle irrigation system  **Controlled deficit irrigation**  Trickle irrigation is provided to the trees from October to the end of December. During this time, the fruit size increases. Deficit irrigation or no irrigation is provided from January to the end of March. This stresses the trees, which causes the Brix levels to increase to 10 & hardens the skins, preventing them from becoming too thick which overseas consumers do not like. Irrigation is resumed in April. This swells the flesh, which fills the fruit & makes the skins tight but remaining easy-peel, attributes preferred by the Japanese market. The later irrigation reduces the acid to 1%, which tends to build up during stressing. Thus fruit with the ratio 10Brix:1acid are produced by the end of April ready for export to Japan. |

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| Image result for hi-cane in kiwifruit***Technological improvements in Kiwifruit production***  ***Hi-Cane***  Hi-Cane is a chemical growth stimulant - hydrogen cyanomide. This reduces the effect of lack of winter chilling, stimulating flower production over a shorter period. The fruit produced tend to be uniform in size & shape having a high dry matter & are less likely to rub against each other forming blemishes. It is known to increase crop volumes by 40%. It is hoped that well-timed girdling & new cultivars of rootstocks will reduce the need for chemical flower stimulation.    ***Trunk girdling***  \\internal.stpauls.school.nz\Users\home\staff\k.allen\documents\Current AHS AS\AHS Level 3\Kiwifruit - Rick Jochem\Kiwifruit cultivars.jpgTrunk girdling of kiwifruit vines cuts the phloem cells in the stem. This prevents the movement of carbohydrates produced by the leaves being transported to the vines extensive root system for a period of time. The wounds close over in about 6 weeks. The effect of the girdling on the productivity of the vine varies with the time that it is done. Girdling in spring - September/October – stimulates flower production & reduces the need for winter chilling &/or the use of Hi-Cane. December girdling increases the size of the developing fruit, while autumn – March - girdling increases the fruit sugar levels to above 6.2 quickly also improving the dry matter /flavour (Zespri taste grade TZG Y & T grades), allowing for early harvest & entry in the export market possibly gaining premium prices. This activity can only be practiced on a vine for about three years at a time as it has the effect of reducing the vine vigour.  ***New varieties***  Zespri invests around $20 million a year in kiwifruit research & innovation. Continuing investment in developing new cultivars is critical. Around half of Zes pri’s innovation spend is on new cultivars. The development of new & proprietary kiwifruit cultivars will provide a fundamental platform on which to ensure Zespri can achieve higher returns & have a stronger market influence than other current & future kiwifruit producers. As new cultivars are released to the industry, an increased emphasis on research to support their establishment, sustainable production & market differentiation will be required to maximize the return on investment. For over 25 years now, Zespri have been working to this end together with The NZ Institute for Plant & Food Research. In close consultation with growers, researchers & customers, Zespri have set up the largest, most advanced plant-breeding programme in the world, involving no fewer than 70,000 kiwifruit varieties. Using a complicated (and 100% natural!) process of cultivation, selection & cross-fertilisation, Zespri looks for promising seedlings, which are then further cultivated by means of cuttings. If these meet the expectations, they are grown in small numbers & tested on the market. A natural plant-breeding process of this kind only yields results after six to ten years! During this period, the kiwifruit varieties are constantly assessed & tested, by both growers & consumers.  New varieties include:   * High nutritional value * Exceptional & differentiated flavour (each cultivar much have a unique flavour) * Good convenience attributes (longer eating window, more consistent eating experience, improved texture) * Plus production attributes – good size & shape, colour helps differentiate each cultivar, pest & disease tolerance, productivity/yields & storage potential   The priorities for breeding are improvements on existing Green & Gold cultivars such as consumer liking, yield etc., & Zespri is also very focused on commercializing the world’s best red kiwifruit & kiwiberries into the future. It takes over 10 years to develop a new cultivar, & only 1 or 2 will succeed within every 10-15 years, so it is a very robust programme to ensure that the successful cultivar has the attributes that deserve the application of a Zespri fruit label. |

***Exercise:*** *Explain in detail how technological improvements in the supply of Satsuma mandarins & kiwifruit affect the supply to export markets.*

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**Supply Summary Exercise**

**Price** is an important consideration for a grower when supplying their product. Rank **price** & TWO other market forces affecting supply in order of the effect they have on the **supply from producers of** either **Satsuma mandarins** or **Kiwifruit**.

Greatest effect

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Justify the ranking by explaining, in detail, the relative effect of each market force on the supply of the product. Note: State units & values where appropriate

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| **MARKET FORCES AFFECTING DEMAND** |

***Market forces affecting demand include:***

* Consumer preference
* Promotion, branding,
* The size of the market
* Quantity available
* Reliability of supply
* Quality required
* The effect of demand on prices
* Market trends
* Political intervention
* Exchange rate
* Grower organisations

1. **Consumer preference**

Most market research indicates that sensory characteristics (appearance, texture, taste, odour & flavour) are the primary reason consumers purchase a particular type of fruit. Consumer expectations vary with consumer age & ethnicity. Japanese consumers generally prefer sweeter fruit & European consumers more acidic fruit. Different age groups can also have markedly different preferences. Children tend to respond more positively to attributes of sweetness & flavour than adults who tend to respond to texture & sourness. Therefore, fruit quality should not be considered as an absolute, unchanging variable but, rather, a concept that can change with time as individual consumers expectations change. Failure to meet consumer expectations of quality may be detrimental to an entire industry as well as to a particular cultivar. Marketing of fruit-lines with particular attributes that appeal to consumers, such as guaranteed sweetness, has been shown to stimulate repeat buying &/or to command higher prices.

Consumer preference is driven by a number of factors:

* Advertising e.g. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Tastes or fashions e.g.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Climate e.g. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Previous quality e.g. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Availability e.g. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| **Consumer testing of grade standards for mandarins.**  Consumer preferences were determined for mandarins with different Brix & Acid levels. Sixty consumers assessed fruit from six treatments ranging from below to above the current grade standard.  The main findings were;   * All treatments were given high scores for overall liking, acceptability, & purchase intent.   There was considerable variation in liking & acceptability of individual fruit within a single treatment. For example, mean scores for individual fruit from Treatment 1 (Brix = 7.7 to 8.5; Acid = 0.77 to 1.5) varied between 2 (like very much) & 5 (neither like nor dislike).   * Consumers indicated that they were significantly less likely to purchase fruit from Treatment 1 (Brix = 7.7 to 8.5; Acid = 0.77 to 1.5) than Treatment 3 (Brix = 9.6 to 10.5; Acid = 1.04 to 1.19). There were no significant differences in purchase intent between other treatments. It is possible that the high scores given to the fruit by consumers reflect that the fruit had been harvested towards the end of the season when maturity would be optimum - hence flavour development was good. * The study suggests that consumer preferences cannot be met by a single target grade standard - the quality attributes that are preferred by one consumer may be disliked by another consumer. * This suggests that quality attributes beyond Brix & Acid may be influencing consumer preference.   Image result for grading mandarins  Japanese consumers prefer;   * Sweet fruit Brix >10 acid <1. * They are also particular about external appearance – size small 55 – 63mm diameter, easy peel, yet tight skin, cumulative blemishes – 0.5 cm2, & defect tolerances 2%. * Removal of skin in more than 4 pieces.   NZ local consumers treat the fruit as a commodity & are less fussy. They look for;   * large size – 65mm diameter as better value for money, * for convenience, they look for very easy peel, skin removal in one or two pieces, * like a tart flavour - Brix acid & are more tolerant ratio 7:1, & * are more tolerant of blemishes - 0.75cm2 (medium) to 1cm2 (large). |

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| **What consumers look for in kiwifruit.**      **Refer to “Ten fabulous facts about kiwifruit”** [**http://appforhealth.com/2013/09/ten-surprising-facts-about-kiwifruit/**](http://appforhealth.com/2013/09/ten-surprising-facts-about-kiwifruit/)  Taste & health issues along with sustainability are key drivers of consumer demand. There is an increasing demand for kiwifruit worldwide by health conscious consumers. Research has shown that consumers rate health as an important factor when purchasing fruit, kiwifruit in particular. Kiwifruit has a nutrition value, high in vitamin C & E other mineral, high in dietary fibre, low in calories sodium & fat & a good source of folic acid. With the increasing issues in food safety kiwifruit is seen as not only great to eat but also safe.   |  |  | | --- | --- | | **Variety** | **Vitamin C mg/average sized fruit** | | Zespri Green | 80-120 | | Zespri Gold | 108-162 |   Fruit with high dry matter >15% tastes better to consumers. Taste is a key focus for Zespri to producing consistent quality. This is reflected in a fruit quality standard & incentives paid for higher dry matter fruit. Market research shows repeat purchase of ZESPRI® Kiwifruit is influenced mainly by taste & consistency, rather than by price. Kiwifruit is a versatile product that can be easily eaten. |

***Exercise:*** Consumer preference is a major driver in demand for a product. Explain in detail, how consumer preference influences demand for both Satsuma mandarins & Zespri kiwifruit.

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1. **Market manipulations.**
2. **Promotion**

There is often a great deal of misunderstanding about marketing. People often consider marketing to be the same as advertising. It is not. Advertising is only one part of marketing. Very simply put, marketing is the wide range of activities involved in making sure that you are continuing to meet the needs of your customers & getting value in return.

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| Image result for mandarin packaging**Promoting Satsuma mandarins.**  Mandarins are a relatively small industry & rely heavily on low cost promotional strategies organized by suppliers such as First Fresh. Personal association with retailers has been an essential part of promoting mandarins in Japan. Growers initially went to Japan to meet with potential retailers & establish the exact market requirements. Potential customers were then invited to NZ to view orchard operations. This gave them confidence that NZ could fulfil large orders, that production practices were in place to produce consistent, high quality product & re-enforce the concept of the “clean green image”.  Image result for mandarin promotionThis association has been followed up with growers & managers often flying over with the first shipment in April to ensure that it is treated with care & arrives in top condition. The quality of the first Satsumas that go on the market will determine if consumers will return to buy the next shipment at a competitive price, which may be as high as $12/kg.  Local NZ promotions are through supermarkets. These include short-term low price offers for loose fruit - $3/kg & pre-packs of smaller (<60mm) fruit. |

***Exercise:***

1. *Explain why promotion is needed to sell products.*

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1. *What is “personal selling” & how is this used in promoting Satsuma mandarins in Japan?*

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| **Marketing & promotional activities of kiwifruit.**  Zespri will invest strongly in marketing over the next five years. They will sustain the advertising & promotion investment to successfully market & position Gold3 as the premium gold kiwifruit, & build consumer demand & trade acceptance & confidence ahead of volume growth. The increase in Hayward volumes has required additional investment driven primarily by volume growth. Concurrently, we will increase relevance of the Zespri brand & consumer engagement in the category.  Zespri’s marketing strategy aims to rapidly grow demand ahead of supply. It includes attracting new customers to the category, building penetration among fruit eaters & increasing consumption among occasional & trial users. They are also focused on increasing the overall frequency of consumption. In addition to the focus on growing the overall level of Gold demand, the consumer marketing objectives over the next five years aim to:   * Increase awareness & consumption through promoting the great taste, quality & health benefits of Zespri kiwifruit. * Activate kiwifruit consumption through a focus on digestive health benefits within the context of a positive halo of health & vitality. * Build high brand & preference by consumers for the Zespri Brand, underpinned by a taste & quality premium position & supported through emotive brand values of vitality, trust, enjoyment & care.   Successful marketing strategies have increased demand in Asian. This involves using popular Japanese actors in TV commercials with the aim of targeting the young Japanese market. The aim was to get younger Japanese to eat the sweeter gold Kiwifruit, which are ready early in the season, then to try the green & organic. TV campaigns are backed up with roadshows, in-store sampling, & demonstrations with target promotion on Kiwi day on September 1. Korea, China & Taiwan are increasing markets.  Another marketing strategy is to promote the health benefits of kiwifruit to enhance the body’s natural immunity as well as a way to improve your sex life because it has amino acids, which improved impotence.  In the EU, tailored marketing campaigns are delivered in each market through TV advertising using consumer contests & other promotions through school & community events (Green Groove’ programme). These campaigns have increased brand awareness by about 30%. In-store promotions of fruit label collections & shopping cart filling competitions have also been successful. On-line promotions through Delia Online & Mums.net have increased brand awareness & access to a larger audience.    **In-store impact & appeal drives consumption.**   * Prominent in-store display with Zespri brand * Positioned with mainstream fast moving fruits * Cut n Scoop imagery to showcase flesh colour * Health messaging * “Ready to retail” fruit firmness & quality management * Sampling activity (where possible) * Per weight pricing e.g. per kg * Consumer packaging with relevant messaging to activate consumers. |

1. *What are pull & push strategies & give examples of how each of these are used to promote Satsuma mandarins & kiwifruit.*

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1. *List the four methods of promotion & give examples of how Zespri has used each of these methods to promote kiwifruit recently.*

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1. *How has Zespri moved into the global advertising arena?*

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**Branding** is a form of promotion, which allows for **traceability** of the product.

e.g. Kiwifruit \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Mandarins \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The development of brands is the only way to remove a product from commodity status & price competition. A brand can be defined as a complex symbol that represents a variety of ideas & attributes. It tells the consumer many things including the quality that can be expected & where the product comes from (traceability). If a consumer has a good experience with a brand, they will return to buy more. Branding consists of awareness, recognition, & top of the mind awareness of the product amongst consumers; positive brand associations; perceived quality & brand loyalty. Branding will result in price premiums, consumer & trade loyalty, trade co-operation & joint marketing efforts & pride of ownership among a company.

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| http://www.raintree.co.in/assets/Uploads/EZYPEEL-2.jpg**Branding of Satsuma mandarins.**  **kerifresh.gif**  http://www.firstfresh.co.nz/assets/Uploads/firstlogo.pngThe Kerifresh & Ezypeel brands are marketed by Turners & Growers. Both brand names have an overseas reputation of consistent, high quality & reliable supply of mandarins to Japan. Orchards from Gisborne & Northland contribute to the volume, which is sold under this brand. The Kerifresh pack houses ensure that a consistent Tag1 product with >10 brix:<1acid, between 55 – 63mm diameter fruit, is sent to Japan through careful grading. This consistent supply of high quality product since 1995 has ensured that Kerifresh has the major market share of the Japanese market.  First Fresh as another NZ company which brands mandarins. This is family owned & based in Gisborne. First Fresh has been built over many years & comprises of long serving staff, growers & customers. The value of a business lies in its people & at First Fresh the grower & client relationship is paramount - both are seen as stakeholders jointly shaping the future of this ground-breaking Gisborne business. | |
| **Branding of Kiwifruit.zespri logo.gif**  Marketing for agricultural products has often been left up to single desk producer boards that have focused on increasing production efficiency, price competitiveness & product quality in order to develop a competitive advantage.  After years of poor returns & the inability of NZ producers to  differentiate their products or earn price premiums for superior quality,  Kiwifruit NZ (formally the Kiwifruit Marketing Board) developed ZESPRITM. ZESPRI International is a market-driven, consumer-led international marketing company &, as such, is structured from the market back to the orchard, rather than the other way round.  The brand challenge for ZESPRI International is:   * Every Zespri kiwifruit is the perfect combination of vitality boosting nutritional goodness & exceptionally rewarding taste that makes you ready to enjoy life. * Delivering a premium, consistent brand that delivers on our brand values of Trust, Quality, Care, Vitality, Enjoyment & Healthy. * Ensuring there is alignment between what they do inside the business & how they are perceived outside the business.     ZESPRI’s success is a direct result of the strength of the ZESPRI® brand, which stands for vitality, premium quality & great taste. Zespri continues to invest heavily in the brand through implementing brand architecture to position ZESPRI® kiwifruit as a premium product.  In Taiwan, the ‘Vitality’ campaign to communicate the health benefits of ZESPRI® Kiwifruit was perfectly timed to match a bicycle usage craze. This helped drive a 20 percent increase in brand awareness amongst the target audience.  **Traceability.**  Consumers also want to know where the crop is grown & under what conditions. Zespri crops are all traceable back to the grower through bar codes on boxes. In addition, product can be tracked the other way to the shelf. Consumers are demanding traceability of product right through the production process as part of the greater emphasis on food safety globally. Zespri was one of the first to use the pallet card to track fruit from the market to the orchard it was grown on. Zespri are again on the leading edge in the fruit industry by moving to pack level traceability to ensure visibility throughout the supply chain. EAN128 barcoding first introduced five years ago. Zespri can now track by pack rather than pallet. This series of audits & checks ensures the customer can have confidence in Zespri to meet their requirements & provide them with consistent product quality.  **In-market quality.**  Zespri in-market representatives sample product to ensure that Zespri standards are maintained up to point of delivery to customers. In-market results are fed back to growers to complete the quality cycle & drive constant improvement.  Image result for cut and scoop kiwifruitConsumer demand for organic produce continues to rise worldwide as they become more concerned with food safety. Consumers want to know the food they are eating is free of pesticides, additives, & preservatives & not genetically engineered. There is an increasing demand for NZ organic kiwifruit & the supply is expected to increase over the next five years. Organic Kiwifruit is a niche market, which would not be available under normal production methods.  In their established markets, Zespri found that their consumers perceived kiwifruit (relative to other fruit) functionally convenient. It is very easy to cut & scoop, there is relatively little waste or mess, & it requires few utensils. However, this is not the case for emerging markets or for non-kiwifruit consumers. The inconvenience of kiwifruit primarily relates to the unpredictable eating experience, difficulty, & lack of predictability in ripening. Zespri therefore has to teach them how kiwifruit can be convenient for them. Convenience is one of the top three global factors influencing purchase decision-making for kiwifruit. Zespri’s convenience programme aims to give the best eating experience across all Zespri varieties by ensuring the consumer can eat their kiwifruit at optimal ripeness & optimal taste. Zespri therefore promotes their cut & scoop story. |

***Exercise:*** Different promotional campaigns are used by producer organisations, processors & producers to increase consumer demand for primary products. The increase in demand can take the form of higher prices received by the producer, higher quantities sold, or both.

Using either Satsuma mandarins or Zespri kiwifruit as examples explain, in detail, how promotional campaigns have affected the demand for the product.

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1. **The size of the market**

The BIGGER the market, the BIGGER the returns. NZ population is small approximately 4.6 million. Therefore, consumer demand is small. Thus, horticulture in NZ relies on export for returns.

***Exercise:*** The NZ domestic consumption of kiwifruit is around 5-10% of the fruit produced. Using the information on the proportion of domestic Satsuma mandarin consumption compared with the volume exported in the supply notes. Explain in detail the difference in demand for the two products.

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1. **Quantity available (See supply for trends)**

Export market demand large volumes. Individual growers may find it difficult to meet this demand. Cooperatives or producer boards provide sufficient volume for large demand, often over a prolonged period of time. (Refer to Political Intervention)

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| Kerifresh/Turners & Growers are the major co-operative, which ensures 700 tonnes of high quality Tag 1 fruit are exported to Japan between April – June.  Zespri International is the single desk producer board that exports 489,000 tonnes of premium quality fruit to over 50 countries. |

1. **Reliability of supply – keeping consumer demand.**

If regular orders are to be made for a product from a grower, a large, consistent ***quantity*** of ***quality*** product must be guaranteed to meet market demand. If in one year, the grower fails to provide the quantity of quality product at the right time & price, the market may be lost. The reputation for reliability will be lost. It is very easy to lose a market. It is very difficult to regain that market.

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| **How Zespri ensures it meets market demand for kiwifruit.**    Over the past 10 years, NZ volumes sold have almost doubled from 51.8 million to 137 million trays. The size of the Zespri operation allows for some flexibility of supply.  **Non-NZ Supply**  The year-round supply programme supports ZESPRI’s brand & distribution strength by partnering with growers around the world to supply premium-quality kiwifruit to consumers outside of the NZ supply window. The programme supports NZ growers by securing year round shelf space & is core to the business.  About the turn of the century Zespri came up with the farsighted notion of growing kiwifruit in northern hemisphere countries to supply countries with fruit during the four months it did not come from NZ. So was born Zespri global supply (ZGS), with the first plantings in Italy but now in France, Spain, South Korea & Japan. Other countries are being sized up for their potential.  Although green kiwifruit still dominates, gold is fast overtaking it. In 2016, SunGold Italian production forecast was nearly 5 million trays & Green production was around 10.5 million trays, but by 2021 there ought to be 13-15 million trays of gold. |

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| **Satsuma Mandarin Import volumes to Satisfy Demand.**  A total of 2,190 tonnes of mandarins were imported from Australia. This is a small (378 tonne) increase on the previous (2016) season where import volumes were 1,812 tonnes. All imports were at the end of the NZ season in July (32%) and August (68%) with no imports during May and June. The August volume entered the market when the NZ satsuma season was ending and NZ supply had decreased.  **Meeting the market window: Satsuma Mandarins.**  In 2008, there was a very cold & wet winter, which resulted in late flowering of the mandarin trees in August. This resulted in the brix of the mandarins being slow to reach 10 by May 2009 & the brief market window to export 700 tonnes of Tag1 fruit during April to June was lost. The fruit were ready in June but the Japanese demand was gone. The potential returns of average $3.50/kg was not realised & the mandarins were put on the local market, which was oversupplied, & returns slumped to 10c/kg. In the 2010, the Japanese demand was hesitant as there had not been reliable supply in the previous year & confidence in reliability of supply from NZ had to be renewed. |

***Exercise:*** Explain in detail, using examples, how the demand for export **Satsuma mandarins** is dependent on reliability of supply.

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Explain in detail how Zespri International ensures the global demand for kiwifruit is met.

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1. **Quality required – attributes demanded by specific markets**

If the ***quality*** of a product is maintained by a supplier, discerning consumers will prefer to buy the product. With high quality reputation INCREASES. With high quality, demand INCREASES. This is the basis of a niche market. NZ has a global reputation for high quality product produced in a sustainable manner.

Different markets demand different types of attributes & different standards of quality. This may be due to;

* Ethnic preferences
* Level of disposable income
* Festivals & holidays (timing)

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| **Quality demands of Satsuma mandarin markets.**  **Local NZ Market.**  This is a commodity local market.  The following supermarkets - Pak 'n' Save, New World, Countdown, & Woolworths / Foodtown run by Food Stuffs NZ & Progressive Enterprises are the major buyers of local NZ Satsuma mandarins. The local market can absorb approximately 400-600 tonnes of fruit per week before becoming saturated.  Preferred features of the fruit include:   * Large size – >65mm diameter * Easy peel, skin removal in one or two pieces * Brix acid ratio 7:1.2 * Cumulative blemishes 0.75cm2 (medium) 1cm2 Large * Defect tolerances (shape, maturity, skin defects – colour, blemishes) 5% Tag 1-15% Tag 2   The consumers are looking for convenience – easy peel & perceived value for money in larger fruit >65mm diameter, as these fruit will be eaten as part of family meals or lunches. The NZ palate tends to prefer tarter fruit & thus the 7:1.2 Brix: acid ratio is more acceptable.  **Export Market to Japan.**  This is a high end, high returns niche market.  Export volumes total 6-700 tonnes over the season, with a possible peak at 180 tonnes per week during early May.  Preferred features of the fruit include:   * Small size – 55-63mm diameter * Easy peel, yet tight skin, removal in more than 4 pieces * Cumulative blemishes – 0.5 cm2 * Defect tolerances 2% * Brix acid ratio 10:1   The market window is only open April – May as Japan produces its own mandarins during the rest of the year. This window & market opportunity is only there because the fruit is perishable & can only be stored for 3 weeks. The fruit are purchased by Japanese higher income earners who have disposable income for luxuries. They demand a very high level of quality as the fruit are given as presents, often individually, & appearance is as important as taste (they “eat with their eyes”). The Japanese prefer sweet fruit & demand a minimum of 10 brix & low acid 1, which might be considered a bland taste to NZ consumers. |

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| **Matching quality & attributes to kiwifruit markets.**  To remain competitive Zespri NZ must continue to encourage NZ kiwifruit growers to produce the quality requirements for the specific market opportunities. Taste is an increasingly important part of the quality required by markets. In the Japanese market, taste is more important than fruit size & price. Consumers are prepared to pay premiums for fruit with a high dry matter as they have good flavour. Y band fruit is exported to Japan. Growers who produce high dry matter fruit with good taste are rewarded being paid a TZG premium.  Y band = 60c/TE  T band = 40c/TE  R band = 20c/TE  The preferred count size in all markets is 30-36 although the European market will not take small 32 count fruit.  **Quality Market requirements**   |  |  | | --- | --- | | **Market Opportunities** | **Market requirements** | | Export  Asia (Japanese) | * Gold colour grade >0.42 * Smooth haired * Sweeter 13 Brix & above * Size (Count 32 - 18) * Dry matter > 15% better taste & storage * TZG Y band | | Export  Europe | * Green /organic * Brix 6.2 at harvest for good storage & taste * Dry matter >15% for good taste * TZG Y or T band * Count size (33 - 18) * Oval shape * Chemical residue free Kiwi green fruit (traceability) |   Kiwifruit represents only 0.5% of global fruit consumption, retailers thus offer limited space for sale. It is essential that the best quality fruit fill the limited space offered. Therefore, it is important to meet the high demand for fruit, which maintains its appearance when it is displayed at the retailer, & a preference for sweeter fruit > 7 Brix. |

***Exercise:*** Quality standards are followed by producers in order to maintain product quality & help to maintain consumer demand for the product.

Explain, in detail, how **specific** quality standards have **maintained or increased consumer demand** for either Satsuma mandarins or Zespri kiwifruit.

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**The effect of demand on prices**

1. **The consumer income level**

A high-income level generally gives consumers disposable income encouraging a demand for high quality even if prices are high. A lower income level produces a demand for lower prices. The lower prices are for products of a lower grade quality. If a country goes into economic recession, the overall income is reduced & demand is reduced.

1. **The quantity available**

The smaller the quantity available, the higher the price gained, if the product is preferred by the consumer who is willing to pay. The price of perishable products tends to be high on the “shoulders” of the season when volumes are lower.

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| **Kiwifruit a less seasonal fruit.**  Kiwifruit can be stored at 1°C / 95% humidity in the case of Zespri Green for up to 6 months. Gold have a shorter storage life of around 3 - 4 months. The fruit keep their firmness 4-5 Kgf & sugar content 7 brix, well in controlled atmosphere.  This means that they can be released when the Northern Hemisphere competitors have cleared their stocks to ensure good prices of around $7/tray for green & $12/tray gold.  Quality is maintained by all year round supply through 30 million trays being produced through licensed growers in Northern hemisphere. |

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| **Satsuma volumes & prices.**  **Satsuma mandarin export volumes (kg/week) for the 2012 to 2017 seasons.**    **Satsuma mandarin wholesale prices ($/kg) for the 2012 to 2017 seasons (Tag 1 55 – 60mm fruit).**    On average wholesale prices were $0.16 less than the 2016 season. The lowest recorded wholesale price of $1.78 for Tag 1 55 – 60mm fruit in 2017 was in week 29, compared with the highest price of $3.96 in week 17 at the very start of the season.  Prices of $4.00/kg can be gained on the early shoulder of production in mid-April when only 2,000kg mandarins are available. Demand will be high as the fruit will be new on the market & there will be competition between retailers to get quantities of the early fruit. However, prices are reduced to $1.50/kg when 250,000 kg are available mid-May. |

***Exercise:*** When consumers purchase primary products, one of the significant factors influencing the quantity they buy is price. For either Satsuma mandarins or kiwifruit;

* Explain, in detail, why a **10 per cent increase in the price** of the product would have a **significant effect** on the quantity of the product consumers would purchase; or
* Explain, in detail, why a **10 per cent increase in the price** of the product would have **little or no effect** on the quantity of the product consumers would purchase.

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1. **Market trends**

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| The modern retail markets are characterised by concentrated retail buying power of supermarkets, demands for product traceability & increasing pressure on the margins at all stages in the commodity chain. Consumers also now have a greater range of choice in fresh fruits than was historically available, & such fruits are available year round.  Increased competition within the global market place has demanded an increased emphasis on fruit quality as a means to develop competitive advantage.  The highest value markets to the NZ industry are the Asian markets, particularly Japan. |

**Short & long-term trends.**

1. **Short term trends – Seasonality**

(Refer to quantity & quality graphs in supply).

Two main aspects of seasonal demand are:

* Climate - what is available
* Alternate seasons with the northern hemisphere - SEASONAL ADVANTAGE – fulfilling demand for all round supply

1. **Long term trends - Trends which fall over three years or more.**

(Refer to quantity & quality graphs in supply).

***Exercise:*** Refer to quantity & quality graphs in supply for Satsuma mandarins.

* *State & describe the major market for NZ Satsuma mandarins.*

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* *Describe the long-term trend for volumes produced.*

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* *Give TWO reasons for the trend patterns of this market.*

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* *Explain what threats there could be to the market.*

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* *Suggest how NZ growers could overcome these threats.*

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***Exercise:*** Refer to quantity & quality graphs in supply for Zespri Kiwifruit.

* *State & describe the major markets for Zespri Kiwifruit*

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* *Describe the long term trend for volumes produced & prices gained*

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* *Give TWO reasons for the trend patterns of this market*

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* *Explain what threats there could be to the market*

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* *Suggest how NZ growers could overcome these threats*

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1. **Political Intervention**
2. ***Trade barriers***

A country will not accept another countries produce because they wish to maintain their own production monopoly without competition.

Trade barriers may be imposed for biosecurity or phytosanitary reasons. This is when a country is known to have pest & disease & the potential importing country does not want it introduced as it may threaten those countries crops, e.g. NZ’s ban on honey imports to stop the entry of “American Foul brood”.

1. ***Tariffs***

The tax, which has to be paid by the supplier (exporter) before the produce, enters the country. This is another method of supplier protection.

Tariffs potentially cost individual commercial growers tens of thousands having a significant impact on the affordability of products in many of the offshore markets. Tariffs are a real cost of trade that hit the profitability of the NZ export industry while protecting domestic producers in these markets.

Quantifying these costs is a key step in dismantling them. These punitive tariffs add cost without adding value at the market end. Consequently, demand for NZ horticultural products is suppressed.

The benefits of Free Trade Agreements are illustrated in the Closer Economic Partnership (CEP) between NZ & Thailand.

Traceability through barcodes ensures automatically ensures that tariffs are collected from the country of origin.

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| **Tariffs Continue To Cost NZ Horticulture Millions**  <http://www2.nzherald.co.nz/the-country/news/article.cfm?c_id=16&objectid=11785890>  [Te Puke Times](http://www.bayofplentytimes.co.nz/) 4:00 PM Friday Jan 20, 2017  Horticulture has experienced a spectacular 40 per cent growth in export earnings since 2014, according to a new report, with tariffs on exported produce down by 22 per cent since 2012.  The NZ Horticulture Export Authority (HEA) & Horticulture NZ commission the report NZ Horticulture - Barriers to Our Export Trade every two years, with funding support from the Ministry of Foreign Affairs & Trade & NZ Fruitgrowers Charitable Trust.  The report says horticultural produce exporters paid an estimated $190 million in tariffs, a reduction of 22 per cent on 2012's figure of $241m.  About 60 per cent of NZ's total horticultural production of fruit & vegetables is exported, valued at just over $3.4 billion (to NZ’s economy). |

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| **Mandarins**:  No tariffs imposed by Japan the major importer thus profits are not eroded by payment of tariffs. |

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| **Kiwifruit tariffs.**   * In the 2008 free trade talks, China agreed to reduce tariffs from 20% to zero over the following 8 years. 2016 was the first year with no tariffs on kiwifruit. China to earnt Zespri $500m that season, selling 40m of the 140m trays harvested. “It has become a significant business in its own right, coming from only 10m trays back in 2011”. * Zespri has welcomed the NZ Government’s decision to go ahead with ratifying the Trans Pacific Partnership (TPP) Agreement, despite President Donald Trump’s to pull the US out of the TPP. “The TPP would eliminate tariffs on kiwifruit exports into all 11 Asia-Pacific nations & the most immediate impact would be in Japan, where kiwifruit growers paid around $25 million in tariffs last season,” says Lain Jager. “If this tariff relief was passed straight through to NZ growers, it would equate to savings of around $1900 for every hectare of kiwifruit grown in NZ.” * Zespri looks to expand into Korea with the latest round of tariff reductions under the NZ-Korea Free Trade Agreement, Trade Minister Todd McClay says. The value of NZ’s kiwifruit exports to Korea grew nearly twenty per cent in 2016 with further progress expected as the 30 per cent tariff on kiwifruit has now reduced to 22.5 per cent (half of what exporters were paying before the FTA). |

***Exercise:*** Describe the effect tariffs will have on the profit a kiwifruit grower can make

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Explain how this affects the amount of product a NZ grower will export. *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*

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**Tariff avoidance**

A grey market is the trade of a commodity through distribution channels that are legal but unintended by the original manufacturer. They are often used & are commonly relied on by international firms wanting access to Chinese markets & to avoid tariffs, difficult regulatory hurdles, & inefficient distribution networks. Grey channels employ "thousands of people" known as transporters, who are prepared to truck product from Hong Kong or ship it to the mainland ports in small boats, to distributors who then move it through the country. For food products, grey channels involve risks such as unreliability in delivery & inadequate cool chain management..."

Finch told The NZ Farmers Weekly that grey trading was "rife" & NZ exporters like Zespri & the meat industry were always concerned about perishable goods with their name on it being removed from a cool store chain to far-flung destinations. However, the trade source said even with the removal of import tariffs, VAT tax of 13 to 17% would still make it worthwhile for a grey trader to operate. Smuggling would only tail off when it became more expensive to truck untaxed product to a final destination than to pay duties.

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| **Kiwi skincare exporters use grey channel to reach Chinese market**  ANUJA NADKARNI  Last updated 05:00, June 12 2017  Small NZ cosmetics companies opposed to compulsory animal testing regulations in China are opting for a backdoor export channel using diagous, even if they do not prefer it.  Diagous, which translates to 'buy on behalf' are personal shoppers who sell products to individual Chinese consumers through social media sites like WeChat & Weibo & websites like Taobao (Chinese equivalent of Trade Me). Diagous can be small business owners or souvenir shops that stock NZ products, or Chinese students or immigrants that want to help friends & family or earn extra money. Linden Leaves chief executive Peter Allard said the diagous channels have formed despite NZ's free trade agreement with China because the non-tariff barriers like animal testing being implemented were stopping free access to the market. "The diagous channel doesn't sit well with us at all because we don't have the control over where we are sold, how we are sold & at what price. The discounting that goes on is just ridiculous," Allard said. "It's very much a case of 'if you can't beat them join them' because some of our competitors are very heavily invested in those channels & that gives them a competitive advantage over us in our domestic market."  Sales to diagous are counted as domestic sales, calculated in NZ currency; while sales made by diagous to Chinese consumers are generally use the Chinese renminbi.  Allard said the grey area here was that these products were being sold overseas making them technically exports, but they were still considered domestic sales. Export consultant Paul O'Brien said the diagou system in NZ was still small with only about 100 businesses actively selling to diagous. ​But many NZ brands were passively in the diagous chain because their products might be bought by individual customers & sold overseas. "Many Kiwi businesses try to find diagous, but in most cases, if a brand is doing well the diagous find them," O'Brien said. Businesses can gauge the success of their products based on the number of mentions, retweets, or direct comments on the social media sites. Allard said after discovering two diagous that had made purchases to ship to China but resold them locally, Linden Leaves began actively tracking all its products to its specific buyers with a marking system that alerted the company if the products had been resold into NZ. He said larger Kiwi businesses in the health & skin care industry were exempt from animal testing if they were manufacturing in China & then distributing there too. But Allard said this was not a possibility for many small & medium enterprises. "We have to sell it this way even if we don't like it, because eventually when the animal testing goes, which it will, we'll be far behind those that already have a presence in China," Allard said. O'Brien said the diagous market will not last long due to unpredictable Chinese regulations, but for the time being, it was a good way for small companies to test their market in China or beat animal testing regulations. "At first I was critical of the channel, but for small & medium businesses with turnovers of about $1 million that cannot afford to reach China it's a legitimate way of doing business. "If we don't take advantage of this channel that other countries are using, including Australia, we'll just lose out on growing our brand awareness in a huge market", he said.  **Kiwi exporters face trouble in China**  17 Feb, 2017 6:00am  For Comvita, an unofficial "grey" channel into China has played a big part in its success.  The company, NZ's biggest Manuka honey maker, has enjoyed a dream run for years, based on strong offshore demand - particularly from China. Cracks in that performance started to emerge last year, when the company reported tough trading conditions in the first four months of the year to June. Sales were significantly lower than in the prior year, resulting from a slowdown in the NZ & Australian informal channels into China. Making things worse, unfavourable weather means Comvita now expects its net profit to be just $5m to $7m, compared with $18.5 million in the 18 months to June 2016. It is not the only company to hit a snag in the so-called "daigous" channel - Chinese for "buying on behalf". The slowdown has hit other Manuka honey producers & played a part in the spectacular fall of Tasmania-based infant formula company Bellamy's. Health supplements company Blackmores has also suffered from problems in the grey market.  Comvita chief executive Scott Coulter says the company has benefited from the unofficial channels, which it has used to build its brand in China. For Comvita, the simplest unofficial channel has been through Chinese tourists buying product at a gift store or airport, helping the brand to build its reputation. |

***Exercise:*** *Explain in detail how grey trading affects market access for kiwifruit to china & why this system might have problems.*

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1. ***Quotas***

The maximum quantity of a primary product, which will be accepted by an importing country. This is used to protect the home producers. Satsuma mandarins & kiwifruit are not subject to quotas.

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| **Mandarins**  The mandarin market window is very small 6-8 week period April/May when 700 tonnes are exported. After which the Japanese mandarins become available & the premium price of $3.50/kg available to NZ growers will be reduced as the local product begins to compete on the market. |

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| **Kiwifruit**  At present there are no quotas for kiwifruit in the markets, which they are targeting. Over 489,000 tonnes of premium quality kiwifruit is sold to over 50 countries every year & the only restriction on volumes sold is from the consumer. Since kiwifruit are only 0.5% of the fruit consumed globally, the restriction to volumes will be from competition from other fruits & kiwifruit produced by other countries. However Zespri predict that the markets, particularly in Asia, are far from saturated & there is the potential for up to 200 million trays to be sold worldwide. |

1. ***Incentive Grants & Subsidies***

NZ removed any grants or subsidies in 1985-87 since there was not enough money to ensure “floor prices”. This forced growers to become independent & follow a business model. As a result, many small producers went out of business. NZ growers have to compete in the global market where subsidies are still paid e.g. in the US & China.

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| Beginning in 2008, the Shaanxi Fruit Industry Council first announced it would support kiwifruit farmers with a yearly cash subsidy of 300RMB for each Chinese “mu” harvested for kiwifruit (the equivalent value would be approximately $267 USD per acre based on the exchange rate of December 31, 2009). After an initial review of the program’s benefits over the last two years, the Shaanxi government reconfirmed support to maintain the program through to 2015. Shaanxi Province is China’s largest growing area for kiwifruit. In particular, Shaanxi Qinling mountain area is the most fertile growing area for kiwifruit, which can grow 96% species of kiwifruit known worldwide. |

***Exercise:*** *Subsidies can be money paid to the producer to grow a specific product for export. Explain why a government would do this?*

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*Or subsidies can be money paid to producers to raise the profit that they get for their product. Explain why a government would do this?*

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1. ***Tax concessions***

These are given to growers between the period of establishment of a crop & economic production; e.g., an orchardist is entitled to deduct expenditure on; cultivation, pruning, spraying, rates, insurance 🡪 recurring annual costs.

***Exercise:*** *Read the article written by David Carter – the then Minister for Agriculture & answer this question.*

*Zespri has become a world leader in horticultural production. Write out a balance sheet of what Zespri has done for NZ & what the government is prepared to give Zespri to encourage its growth.*

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| What Zespri has done | What the NZ government will provide |
|  |  |

## “What the kiwifruit industry can do for NZ”

David Carter – 19 August 2010

The kiwifruit industry is to be congratulate! You are part of an industry that other primary sectors can look to for establishing a benchmark for solid growth.  Since taking up the role of Agriculture Minister in November 2008, I have visited Zespri head office in Tauranga twice. I have also had the pleasure of touring your European distribution centre in Belgium, & a production centre in Italy. My impression is that Zespri runs an exciting & innovative operation, both here in NZ & internationally. When I talk to your board & senior management it takes me to those immortal words of John F Kennedy - & I paraphrase - you ask not what NZ can do for you, but what you can do for NZ. Zespri has succeeded in maintaining a high & steady price for NZ kiwifruit over the past 10 years. In addition, you have attained a premium over your competitors. The value generated by sales supports your considerable investment in branded marketing & research & development. In fact, the Zespri brand has been so successful; your overseas competitors have piggybacked on your efforts in international markets. As they say, imitation is the highest form of flattery. Zespri can proudly claim it invests more in innovation as a percentage of revenue than any other NZ primary industry. But Zespri's growth has not been simply the result of using more resources. It has been achieved through driving productivity gains. A statistic that deserves highlighting is that growers are producing more fruit & making more money for NZ from a land area approximately 70 percent of what it was 20 years ago. Like Zespri, this Government is also focused on growth. There are no exceptions - horticulture & the kiwifruit industry have a big role in turning our economy around. Your efforts over the past 10 years have led to the significant increase in kiwifruit's export volumes & revenue - from $464 million to more than $1 billion today. Zespri's promise to triple export earnings by 2025, to at least $3 billion is just the sort of ambitious goal this Government is calling on all exporters to strive for.

So what can the Government do for you, so you can do more for NZ?

With regard to primary sector growth, we have identified **four** key drivers to make ‘doing business' easier.

1. **First** driver is our **company tax rate** will fall to 28 cents in the dollar - lower than Australia. This will ensure we remain competitive, attract foreign investors & encourage exports.
2. The **second** driver is better business innovation. Innovation is about creating long-term benefits. Government & the kiwifruit industry both know this. We cannot continue to rely on research & development of previous decades. That is why last year we announced the Primary Growth Partnership innovation fund. On Tuesday, I announced two major projects that have qualified for $144 million from the Government fund. When coupled with the dollar contribution by industries, the total now committed to primary sector innovation over the past two years is $366 million. The good news is Zespri is a co-investor in two of the current PGP projects. & I understand it is also looking seriously at other programmes that may be eligible for PGP funding.
3. The **third** driver is our ambitious trade agenda. Free trade agreements will deliver more for NZ export businesses than anything else we do, short of completing the Doha Round. Our Free Trade Agreement with China is already paying dividends. In addition, we have signed agreements with Malaysia & Hong Kong, & we are in talks with India, the Gulf States, Trans-Pacific Partnership countries, Korea & Russia.
4. The **fourth** & final driver - the one that ensures a healthy & successful primary industry - is biosecurity. If there was a major incursion it would seriously jeopardise this country's growth plan.  Trade & travel volumes are increasing, presenting new & diverse types of biosecurity risk along the way. Consider this amazing statistic - 175,000 items a day come across our borders. A huge amount of money, three quarters of a billion dollars, is spent annually on biosecurity in NZ. Activities are undertaken by central government, regional councils, industry & private landowners.
5. ***International Commodity Agreements***

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| **What is The World Trade Organization (WTO)?**  The WTO is the only global international organization dealing with the rules of trade between nations. At its heart are the WTO agreements, negotiated & signed by the bulk of the world’s trading nations & ratified in their parliaments. The goal is to help producers of goods & services, exporters, & importers conduct their business.  The WTO is an organization that intends to supervise & [liberalize](http://en.wikipedia.org/wiki/Free_trade) [international trade](http://en.wikipedia.org/wiki/International_trade). The organization officially commenced on January 1, 1995 under the [Marrakech Agreement](http://en.wikipedia.org/wiki/Marrakech_Agreement), replacing the [General Agreement on Tariffs & Trade](http://en.wikipedia.org/wiki/General_Agreement_on_Tariffs_and_Trade) (GATT), which commenced in 1948. The organization deals with regulation of trade between participating countries; it provides a framework for negotiating & formalizing trade agreements, & a dispute resolution process aimed at enforcing participants' adherence to WTO agreements which are signed by representatives of member governments & ratified by their [parliaments](http://en.wikipedia.org/wiki/Parliament). Most of the issues that the WTO focuses on derive from previous trade negotiations, especially from the [Uruguay Round](http://en.wikipedia.org/wiki/Uruguay_Round) (1986-1994).  The WTO is attempting to complete negotiations on the [Doha Development Round](https://en.wikipedia.org/wiki/Doha_Development_Round), which was launched in 2001 with an explicit focus on developing countries. As of June 2012, the future of the Doha Round remained uncertain: the work programme lists 21 subjects in which the original deadline of 1 January 2005 was missed, & the round is still incomplete. The conflict between free trade on industrial goods & services but retention of [protectionism](https://en.wikipedia.org/wiki/Protectionism) on [farm subsidies](https://en.wikipedia.org/wiki/Farm_subsidies) to domestic [agricultural sector](https://en.wikipedia.org/wiki/Agricultural_sector) (requested by [developed countries](https://en.wikipedia.org/wiki/Developed_countries)) & the [substantiation](https://en.wikipedia.org/wiki/Substantiation) of [fair trade](https://en.wikipedia.org/wiki/Fair_trade) on agricultural products (requested by [developing countries](https://en.wikipedia.org/wiki/Developing_countries)) remain the major obstacles. This impasse has made it impossible to launch new WTO negotiations beyond the Doha Development Round. As a result, there have been an increasing number of bilateral [free trade agreements](https://en.wikipedia.org/wiki/Free_trade_agreements) between governments. As of July 2012, there were various negotiation groups in the WTO system for the current agricultural trade negotiation, which is in the condition of stalemate.  The WTO's current Director-General is [Roberto Azevêdo](https://en.wikipedia.org/wiki/Roberto_Azev%C3%AAdo),[[12]](https://en.wikipedia.org/wiki/World_Trade_Organization#cite_note-guardn-12)[[13]](https://en.wikipedia.org/wiki/World_Trade_Organization#cite_note-13) who leads a staff of over 600 people in [Geneva](https://en.wikipedia.org/wiki/Geneva), [Switzerland](https://en.wikipedia.org/wiki/Switzerland). A trade facilitation agreement, part of the [Bali Package](https://en.wikipedia.org/wiki/Bali_Package) of decisions, was agreed by all members on 7 December 2013, the first comprehensive agreement in the organization's history. |

***Exercise:*** *List the principles behind WTO:*

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**50-year import ban on Australian honey lifted**

5:00 AM Wednesday Jul 12, 2006

**Beekeepers fear imports will threaten their viability**

Australian honey is to be allowed into NZ, breaking a ban of more than half a century. Honey from Western Australia - which does not have European foulbrood disease in its bees - will be allowed to enter the country without treatment. Other Australian honey will have to be treated with heat & some other bee products may be treated with radiation.

**Will NZ apples ever be allowed into Australia?**

9:02 AM Tuesday Apr 13, 2010

NZ has won its long-running apple war against Australia.

A World Trade Organisation decision issued in Geneva early this morning ruled against Canberra's efforts to block imports of Kiwi apples. Australia has refused for 90 years to let NZ apples be sold there; claiming fire blight in NZ apples would infect its apple & pear orchards.

NZ’s pip fruit growers will be bitterly disappointed at the decision of the Australian Government to appeal a WTO ruling that would allow NZ apples into Australia, Labour Agriculture spokesman Damien O’Connor says. “NZ’s WTO victory should have allowed NZ apples into Australia & I know that the pip fruit industry was extremely excited by the news,” Damien O’Connor said. “I am deeply disappointed that Australia has decided to appeal. It is clear that the WTO ruling will now become a political football that will delay NZ pip fruit growers accessing a valuable market. “Access to the Australian market is expected to be worth at least $30 million a year to the industry. “The WTO process began in 2007 under Trade Minister Phil Goff & it is thanks to his efforts that NZ has gotten this far. I firmly believe that the decision by the Australian government is just delaying the inevitable. NZ Apples will be sold in Australia”.

***Exercise:*** *Explain how Australia has manipulated the agreement in controlling apple imports from NZ & NZ controls honey imports.*

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**Closer Economic Relations**

Closer Economic Relations (CER) is a [free trade](https://en.wikipedia.org/wiki/Free_trade) agreement between the governments of [NZ](https://en.wikipedia.org/wiki/New_Zealand) & [Australia](https://en.wikipedia.org/wiki/Australia). It is also known as the Australia NZ Closer Economic Relations Trade Agreement (ANZCERTA) & sometimes shortened to (CERTA). It came into force on 1 January 1983, but the actual treaty was not signed until 28 March 1983 by the [Deputy Prime Minister of Australia](https://en.wikipedia.org/wiki/Deputy_Prime_Minister_of_Australia) & [Minister for Trade](https://en.wikipedia.org/wiki/Minister_for_Trade_(Australia)), [Lionel Bowen](https://en.wikipedia.org/wiki/Lionel_Bowen) & the NZ [High Commissioner](https://en.wikipedia.org/wiki/High_Commissioner) to Australia, Laurie Francis in [Canberra](https://en.wikipedia.org/wiki/Canberra), Australia.

CER built on the earlier NZ Australia Free Trade Agreement (NAFTA), which was signed on 31 August 1965 & came into force on 1 January 1966. NAFTA had removed four-fifths of the [tariffs](https://en.wikipedia.org/wiki/Tariff) between the two countries & quantitative restrictions on trade across the [Tasman Sea](https://en.wikipedia.org/wiki/Tasman_Sea). However, it came to be seen as too complex & bureaucratic, & in March 1980, a joint Prime Ministerial communiqué was released that called for "closer economic relations". The two major sticking points in the negotiations were NZ's wish for better access for its [dairy products](https://en.wikipedia.org/wiki/Dairy_product) in Australia & Australia's wish for NZ to remove export incentives & quantitative restrictions. After the two hurdles were overcome, the [Heads of Agreement](https://en.wikipedia.org/wiki/Heads_of_agreement_(law)) was signed on 14 December 1982 & came into force on 1 January of the following year.

One of the most important results of CER was the Protocol on the Acceleration of Free Trade in Goods, which resulted in the total elimination of tariffs or quantitative restrictions between the two countries by 1 July 1990, five years ahead of schedule.

Other parts of CER include:

* A good that can be legally sold in one country can also be legally sold in the other.
* Anyone registered to practise an occupation in one country may practise in the other (with some exemptions including medical practitioners).
* Service providers may provide services in either country (except in certain areas such as airway services)

***Exercise:*** *List the advantages & disadvantages of CER to NZ growers.*

*Advantages \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*

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*Disadvantages \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*

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1. **Grower organisations.**

Single growers, however large, generally need Government legislation or other growers to ensure:

* Production of enough volume for export
* Ensure regulation of quality
* Find new markets & re-establishing old ones
* High quality promotion

## Grower co-operatives can:

* Share large grading/packing facilities.
* Fulfil very large orders for overseas export.
* Institute a level of quality control & grading
* Extend the seasonal supply from “shoulder” to “shoulder”
* Sell under a collective brand name
* Share transport costs

## Producer Boards

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| **zespri logo.gifZespri**  Kiwifruit are governed by Zespri, which is a single desk exporter – all the kiwifruit have to be exported through them.  The advantages of the grower organization Zespri NZ;   * Determine & set quality requirements to meet consumer demand. * Find markets & produce a range of products suited to. * Regulate supply by controlling the production of Gold so as not oversupply the market & maintain the product & the top end of the niche market. * Carry out research & development to improve production, dry matter % therefore taste & develop new products such as KiwiBerry. * Organise the transport of large quantities of fruit to reach markets on time. * Brand Zespri is well promoted & known around the world & is seen as a reliable high quality product produced under a set of monitored regulations. |

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| **NZ Citrus Growers Incorporated (NZCGI)**  Mandarins do not have a producer board, which governs sales. There is the NZ Citrus Growers Incorporated. NZCGI is NZ's national citrus growers' organization, operating to promote citrus grower interests, & the sustainable growth & profitability of the NZ citrus industry. NZCGI acts as a forum for the exchange of information & the discussion of issues that are relevant to the industry & seeks to improve the future of NZ citrus growers. Growers pay a levy to the association estimated on the size of their orchard to support the association.  The following are some examples of what NZCGI is involved in for the betterment of the citrus industry.   * Research & Development * Government Liaison * Holds meetings of growers where production & marketing developments are discussed * Monitors research & encourages members to take part/use research |

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| **The Zespri/Turners & Growers debate**  The [Herald editorial](http://www.nzherald.co.nz/opinion/news/article.cfm?c_id=466&objectid=10582713): July 2009  Zespri is the remaining produce export monopoly. The kiwifruit industry has operated a single-desk system since 1987, first under the Kiwifruit Marketing Board & for the past decade through Zespri. Those 10 years have been an undoubted success story, with impressive increases in volume & export value. Not profitable enough, however, according to Turners & Growers, which says it is time to allow competition “to release the potential of the kiwifruit industry”. …  Significantly, however, Fonterra does not have the status of a monopoly. It has to withstand competition that would increase if dairy farmers lost faith in its management or corporate strategy. Zespri should be no different. It is fundamentally wrong to prevent the likes of Turners & Growers striking out on their own in export markets if they are disenchanted with the present selling arrangements. Any grower that believes Zespri is inefficient or too cumbersome to react quickly to changing market conditions should be able to try to do better.  The Government surely recognises this. It also knows the history of producer boards, why they were deregulated, & that Zespri is the last of the line. Yet it seems content to take the course of least resistance. Agriculture Minister David Carter says the stripping of Zespri’s monopoly status is not on the Government’s agenda. It would be guided by what most growers wanted.  Mr Carter knows the answer to that, but that answer smacks of self-interest, not principle. Additionally, protectionism like this sits oddly with NZ’s championing of free trade. Turners & Growers & other growers confident of the quality & pricing of their produce should have the right to compete in export markets. If Zespri is on top of its game, it will be equal to this. Responses to “The Zespri Monopoly”  1. radvad (414) Says:  [July 6th, 2009 at 1:08 pm](http://www.kiwiblog.co.nz/2009/07/the_zespri_monopoly.html#comment-580620)   The last figures I heard were more like 95% support for single desk.  Growers who also grow apples tell a different story to what T & G would have us believe. They do not want T & G anywhere near their kiwifruit.  T & G are also being a bit precious by saying the industry needs innovation. Of course, it does but they imply, without actually saying, that Zespri are not delivering that. That could not be further from the truth with, I understand, approx. 4 new varieties currently field-tested & several more in the pipeline. It was, after all, Zespri innovation that delivered the outstandingly successful Zespri Gold variety.   1. david (1,523) Says:  [July 6th, 2009 at 1:40 pm](http://www.kiwiblog.co.nz/2009/07/the_zespri_monopoly.html#comment-580635)   It will be cold comfort to those remaining with Zespri when T&G stuff the market & potentially bankrupt the whole industry because they tried to cherry-pick the client base & piggyback on Zespri’s marketing. & don’t think that it would be only Zespri & T&G. Some growers will have a go on their own & will come a gutser over quality & supply issues, which will be damaging to the reputation of NZ sourced product generally. The single desk system was introduced for dairy because the buyers were playing suppliers off against each other to the detriment of returns to all dairy farmers. Unsurprisingly we have not seen any great leaps of innovation by Fonterra since its creation, quite the opposite & yet the investing public (whoever they are) wants to get in & play in the sandpit built by generations of suppliers.  In Zespri’s case, of course the product is even more homogeneous so as to be almost indistinguishable between growers which makes innovation possible in marketing only. Of course any attempt at T&G & Zespri “co-operating” in the marketplace (in the event of removal of the single desk) would have both of them in front of the WTO & countervailing duties applied in key markets further reducing returns.  You might ask then, why would growers supply anyone other than Zespri? The answer is sadly that there will always be idiots who look for short term advantage when playing a long term game & thereby will always be some who are big headed enough to think that they can screw around with what is successful for their own egos & gain at the expense of an industry.  I’m essentially a free-marketeer but when it comes to getting enough clout to make a difference internationally it should be NZ vs The Rest. |

***Exercise:*** *NZ exporters of primary products can be controlled by producer boards when selling their produce to foreign countries. Referring to either Satsuma mandarins or Zespri kiwifruit. Explain, in detail, how producer board control affects the quantity &/or quality of the product that can be supplied to a major market & discuss the advantages & disadvantages of this control.*

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**11. The NZ Dollar & Exchange Rate.**

The price of primary products on export markets is governed by the strength of the NZ$.

When the $ is high, it makes products cost more overseas. Therefore, importing countries buy less, returns go down. Importing countries look for better markets opportunities. NZ export contracts could be cancelled BUT cost of buying equipment, seeds etc. from overseas become less. Therefore, production costs become less.

When the $ is low, NZ products cost less overseas. Therefore, countries are willing to buy more (if quality, quantity, timing & price are right) BUT equipment, seeds etc. cost more, reducing profit margins.

***If*** NZ supplies a small ***niche*** market this is more vulnerable to fluctuation.

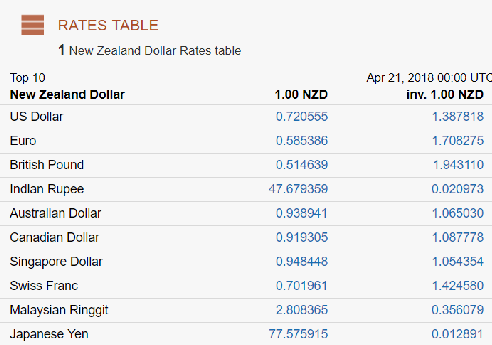
**Falling NZ dollar great news for Kiwi exporters**

Stuff January 2016.

Kiwi exporters benefit from sharp drop in NZ dollar. NZ exporters have had a stellar year thanks to the falling kiwi dollar, resulting in more cash in hand. The NZ dollar fell from above US78c in January to a low of US62.70c in September. It ended the year about US68c, below where it began.  Export NZ executive director Catherine Beard said it had been a positive year for exporters, who are remaining positive despite the slight increase to 68c. "Basically, it gives them more margin & therefore more profitability – it also gives them confidence. "They have really been battling for quite some time & then this year the pressure came off quite significantly. But because they have been battling for quite some time, I think they were in a really good position to take advantage of the lower exchange rate." Exporters would have "screwed down every bit of productivity that they could", Beard said. "So, essentially, they are extremely efficient otherwise they would have gone out of business."  Most exporting sectors had a great year, with manufacturing & food & beverage exports the clear winners. However, a couple of sectors were "challenged", she said. "There were categories that were challenged, such as dairy, where they had low commodity prices".

Westpac senior market strategist Imre Speizer said economists noticed a "short, sharp rise" in dairy prices as a result of the Kiwi dollar rising in the last four months. "The last third of the year was a rebound, which caught a lot of people by surprise – including us – & that was caused mainly by a sharp rebound in dairy prices. "That rebound in itself has stalled but it was quite a sharp rebound & was partly caused by fears of a drought, which people thought would see dairy prices pick up again." Accelerating the decline to the year's low were a couple of things that were unique to NZ, & one of those was the fall of dairy prices, he said. "In addition to that we had the Reserve Bank of NZ cutting interest rates, which was pre-empted quite a while ago. "So I'd say number one factor was the US dollar & two secondary factors being dairy & interest rates, which basically caused the Kiwi to go the same way."

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***Exercise:*** *Explain how the strong NZ dollar is less likely to affect the Satsuma Mandarin export market than the export kiwifruit sales & what exporters can do to continue to make a profit.*

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**Demand Summary Exercise**

There are a number of market forces that affect demand for nationally significant primary product; such as; consumer preference, market trends & exchange rate.

Rank these market forces in the order of importance of their effect on the **demand** of your selected primary product:

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Justify your ranking by explaining why your number (1) ranked market force has a greater effect on demand compared with ONE other ranked market force.

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