

# FRESH HORTICULTURE PRODUCTS

## Analysis of the determinants of prices and costs in product value chains

### FRESH HORTICULTURE – OVERVIEW

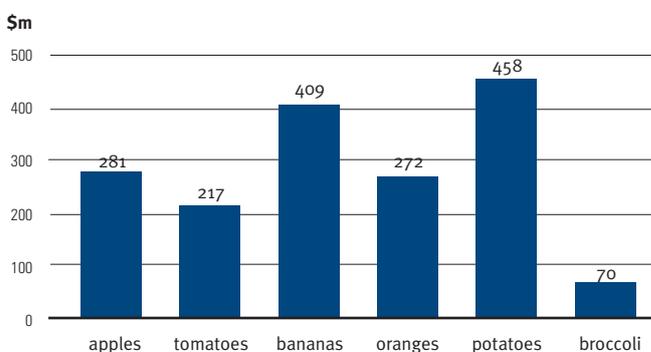
#### Background

Fresh fruit and vegetables are a major food category and an important aspect of a study of food pricing in the context of the Australian food industry.

#### The industry's product mix

It is estimated by HAL that the gross value of production of all fruit and vegetables in 2001 was \$4.6 billion. The estimated gross value of production of the major lines that have been covered in the analysis are estimated by HAL as follows, representing lines which collectively make up 37 per cent of the horticulture sector.

Figure 49. **GROSS VALUE OF PRODUCTION, FRUIT AND VEGETABLES, \$m, 2001**



Source: HAL 2003

#### Supply factors

There have been changes over time in the structure of many commodity sectors, with increasing farm sizes, a greater prevalence of irrigated farms and migration of production away from close proximity to urban areas. There are few major restrictions other than quarantine on the importation of fruit and vegetables – freshness and perishability remain key limitations but this is being overcome in certain areas with key import competition expected from New Zealand (apples) and Southeast Asia (pineapples, bananas).

#### Demand factors

- Fresh fruit and vegetables are the most frequently purchased, freshest items in the shopping basket. Despite the profile given to the fresh produce industry, it is estimated at only 4.5 per cent of consumer food expenditure.
- Increased spending is due to better range and availability, and increased focus on health and nutrition in food, yet per capita consumption is now flat after a period of growth.
- Time-poor consumers are driving the need for more convenient products (less preparation required) and convenient shopping locations.
- Consumer expectations continue to rise with the growing availability of high quality alternative health and snack food offers.
- There is a challenge for the fresh produce sector to retain consumer loyalty, especially amongst the young, as there is a wide array of new health, snack and other product alternatives supported by highly competitive marketing.

## Supply chain management

Wholesale markets remain a major function within the chain where the majority of prices through the chain are set or directly influenced. This is despite an increasing percentage of business direct to supermarkets to support their fresh product image and customers, and to obtain greater stability of returns. This practice varies by category based on the volume of individual commodity lines and the scale and sophistication of the enterprises.

The size of the consumer markets accessed by major supermarket chains has applied pressure for coordination of facets of supply activity (for example, quality management). However, the range of buying options reduces the scope for other forms of integration between producers (such as the use of open-price supply agreements and mixing supply between direct sources and purchases off the market floor). Seasonal competition exists subject to availability – though this is less of an issue these days as crops of major lines tend to be available all year.

Main drivers of prices through the chain:

- Retail prices are influenced by the seasonal costs of supply but also by the level of spending by the consumer. The consumer is sensitive to the cost of fresh food items that go into the shopping basket.
- The wide range of factors that drive the retail pricing of any food category over time are set out later in the report.
- As with other categories, retailers seek a target margin to achieve corporate and/or business targets but also to cover losses associated with produce spoilage, clearance discounting and the labour-intensive business of putting fresh food appeal into practice with stock display replenishment and adequate turnover of bay space.
- Wholesale prices (where the grower sells produce to a wholesaler who on-sells or sells on the grower's behalf to a retailer) are generally set in the fresh wholesale market system which exists in capital cities and limited other major urban centres. The increasing practice of producers directly supplying retailers to bypass wholesale markets are nonetheless set with reference to such prices.
- Seasonal crop variations resulting from climatic change and other natural events or causes are generally the greatest single production factor to affect prices. Such variations affect:
  - higher/lower output than the normal crop;
  - smaller/larger fruit size;
  - climate/storm damage; and
  - crop disease and pest damage.
- The wholesale price setting mechanism is not set to pay the highest for best quality but to clear all product that is supplied. At times it pays low prices for high quality and vice versa.
- A major weakness in the fresh food market system is the lack of discipline that is sought by the supplier to the market and the general lack of complete information as to the supply and satisfied demand at any point in time.
- Market pricing is therefore open to manipulation by the intermediary and to a lesser extent by major buyers due to the lack of total market visibility. A major fresh food market is a place for the well informed buyer and seller in this day and age. Otherwise participants are exposed to price/return risks, regardless of product quality.
- Supply is still the largest driver of price. Markets are relatively uninformed with minimal credible forecasting data or an understanding of the volume/price relationship. This leaves much trade occurring in commodity conditions.
- More organised fresh categories which provide participants with good information as to total crop forecasts, market conditions and product availability over a season are far better at managing the risks that arise from poor information.

Figure 50. **FRESH FRUIT: MAJOR DRIVERS OF PRICES AND COSTS**

The fresh fruit category is highly diverse in terms of the product groups, scale of enterprises in farm production and extent of integration that exists through the chain. The sector is strongly driven by the competition at retail level between major supermarkets and other outlets for a share of the consumer dollar.

**1. Farm production factors**

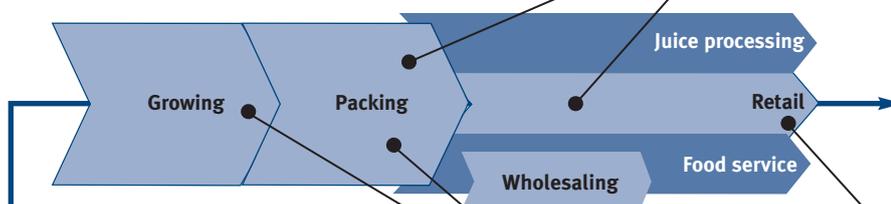
- Production volume highly volatile and seasonal which has a major bearing on the volumes coming to market, resulting in large fluctuations in wholesale and retail prices.
- High perishability and limited shelf life of product requires timely access to market once crops are planted and picking time committed.
- Pressure for water-use efficiency has improved yields over time.

**2. Value-chain integration**

- Increasing scale efficiency and integration of growing/packing and brand marketing activities by larger growers.
- Increasing incidence of direct supply by integrated growers/packers to chain retailers, providing stable pricing in order to secure long lines of consistent quality product.
- Pressure on wholesale/agency enterprises through growth in direct supply business.
- Juice fruit availability and returns have strong bearing on returns to citrus sector.

**3. The marketing approach**

- Increasing branding of product by grower/packer has impact on market access to more stable returns at retail and wholesale.
- Increased use of fresh food retail themes and systems by major chain retailers as a point of differentiation has driven strong supply and quality management disciplines back through the value chain to suppliers and logistics systems.
- Limited branding of fresh food at point of retail sale.



**4. Regulation and compliance**

- Increasing costs of doing business in farm enterprises to meet environmental, product integrity and food safety demands.
- A few other regulatory barriers to value-chain profitability.

**5. Trade impacts**

- Export volumes are increasing in scale but based on market windows into premium fresh markets in Asian cities.
- Potentially strong impact of imports in certain areas (bananas, pineapples, table grapes, apples) is currently adversely affecting confidence for further investment to maintain economies of scale in production enterprises.

**6. Technology and innovation**

- Increasing capital intensity in large-scale production and in packing house efficiency is changing operating cost structures.
- Limited transparency of market prices and costs through the wholesale market sector.
- Greater investment in innovation to improve production consistency and quality, varietal performance and handling efficiencies in harvesting, grading, transport and packing.
- Innovation in minimal processing and pre-preparation of fresh fruit for more convenient end use in home and food service.

**7. Retail market dynamics**

- Strong competition at retail level between major chains and between chains and other forms of convenience and specialty retail.
- Competitive pressure from food service.
- Greater demand for convenience and lifestyle solutions in meals and food preparation.
- Greater preference for consistency of product availability and quality in retail presentation.

Figure 51. **FRESH VEGETABLES: MAJOR DRIVERS OF PRICES AND COSTS**

The fresh vegetable category is highly diverse in terms of the product groups, scale of enterprises in farm production and the extent of integration that exists through the chain. The sector is strongly driven by the competition at retail level between major supermarkets and other outlets for a share of the consumer dollar.

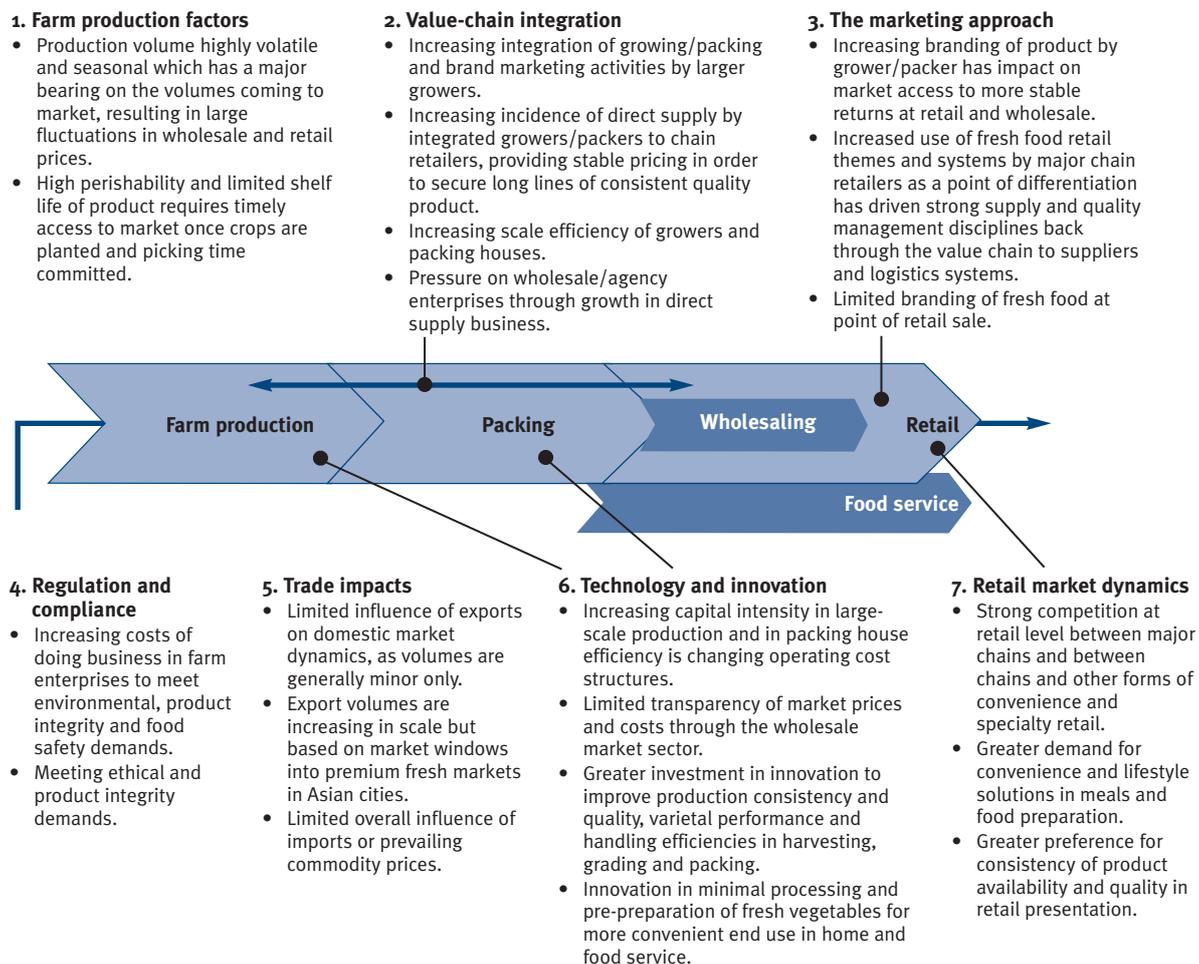


Figure 52. FRESH FRUIT AND VEGETABLES, GENERIC, SUPPLY CHAIN MAP

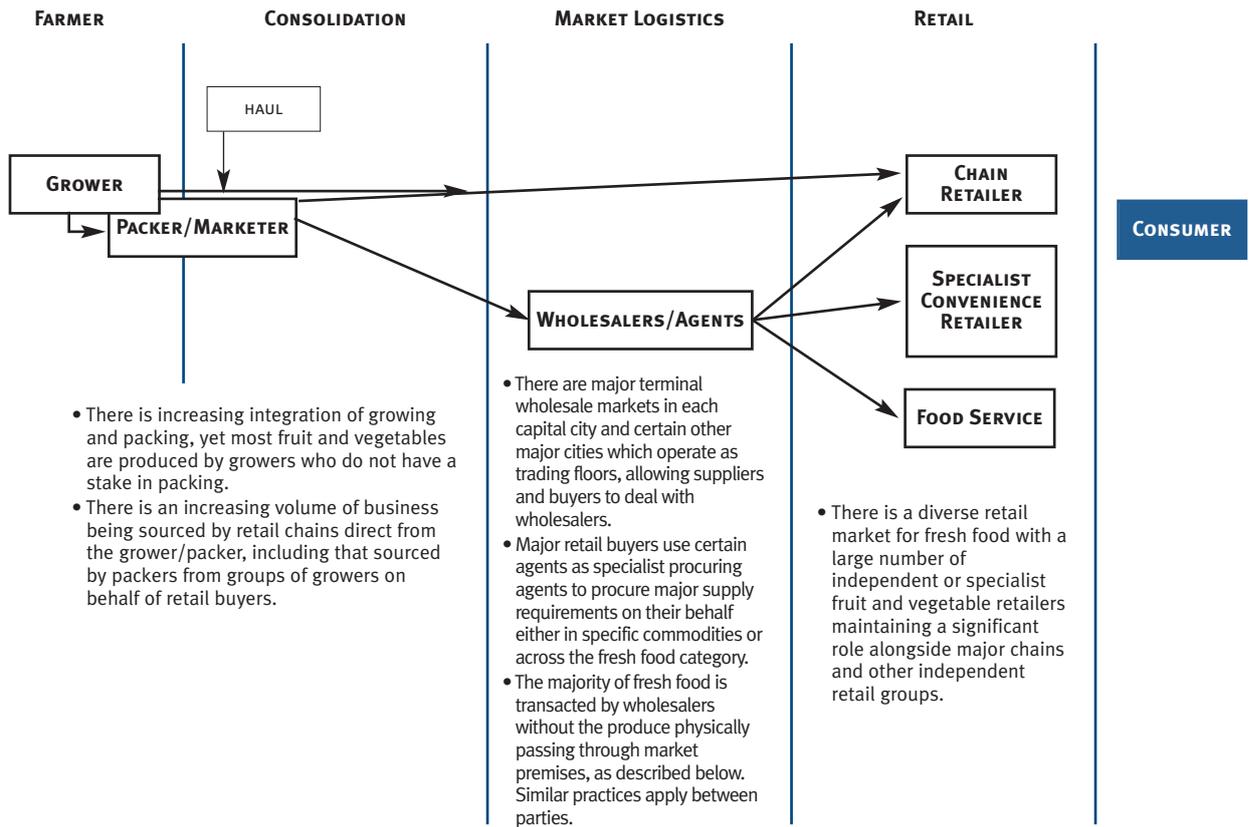
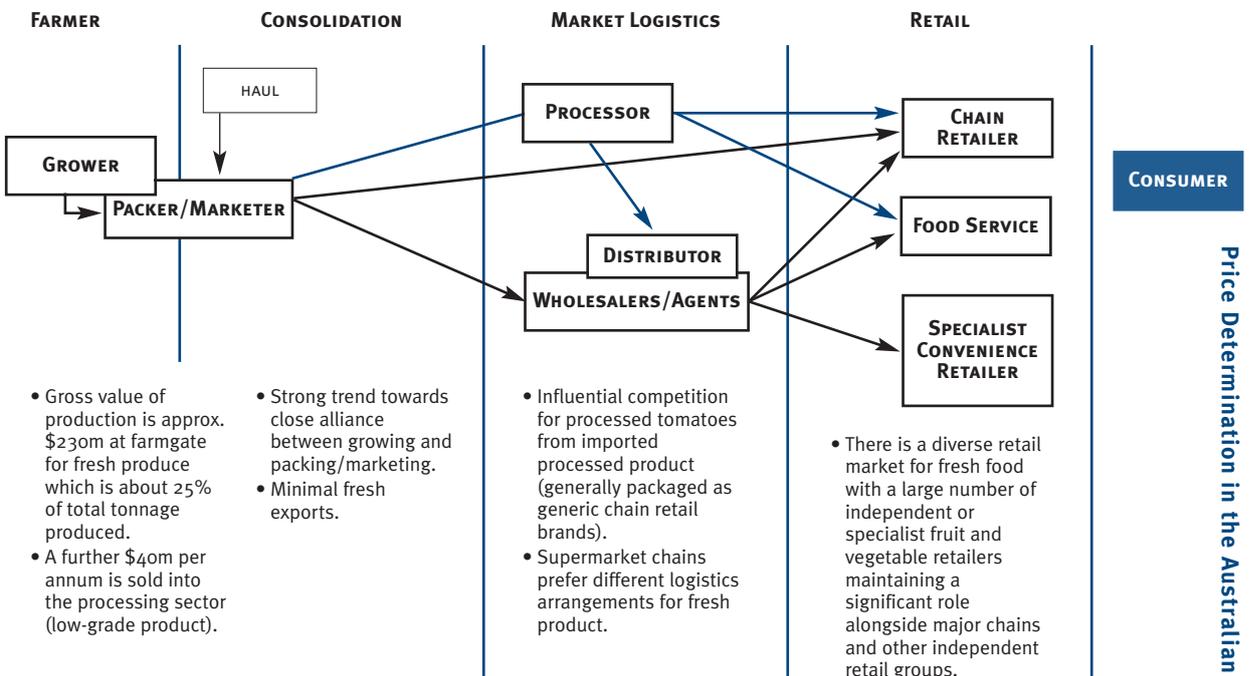


Figure 53. TOMATOES, APPLES, SUPPLY CHAIN MAP



## FRESH HORTICULTURE – WHOLESALE MARKETS

### Price setting in wholesale markets

There have been many allegations from the production sector of the horticulture industry that wholesale markets are the source of profit-taking at the expense of fresh produce suppliers.

There has not been a study of the practices in and through use of the markets, yet the work has drawn on the input of a limited number of participants and reviewed a number of published works that have identified and analysed the problem.

The wholesale markets are claimed to be the best example of what is called ‘the perfect market’, where price discovery occurs with the fair and free exchange of information about supply and demand. The major difficulty that faces many participants supplying fresh food markets is that the state of competition in the fresh food sector requires much more skill on the part of a seller than in the past.

Modern trading conditions require not only that a producer has the obligation to ensure that the quality and presentation of their fruit is of highest possible quality but that they make themselves fully aware of the market conditions prior to the time of harvesting and packing. It is clear from the nature of the information available that it is not enough to simply read the market reports that are published daily – it requires a close relationship with the traders working on the floor of central market facilities, as well as having one or more options for the sale of fruit to the retail market.

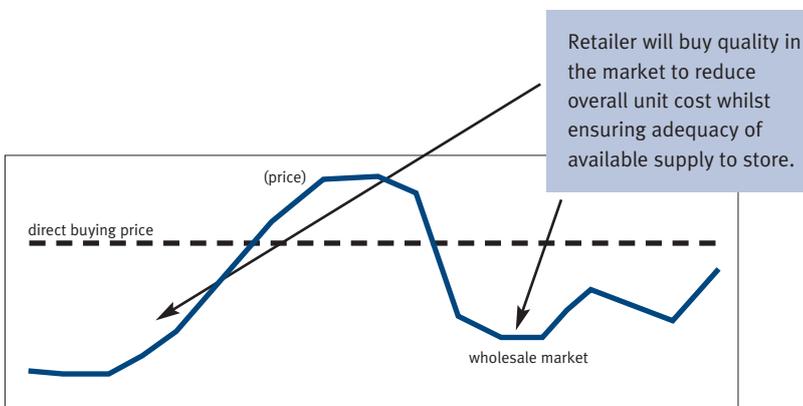
### Ongoing relevance of the markets

It is arguable also that the wholesale market system does not accurately reflect consumer demand. Markets are driven by short-term pressure to clear the fruit which is on the floor and does not respond directly to consumer demand for fresh food. This frequently creates demand aberrations (oversupplied or poor quality non-preferred apples, oranges or other perishables become in demand through short-term price discounting) which flow through into the retail product.

Wholesale markets continue to maintain a relevance to new forms of retail supply and supply chain management. It is largely against a wholesaler’s interest to bypass his investment in the wholesale market structure by helping to improve the quality of the connection between supplier and retailer.

Supermarkets maintain significant facilities in wholesale markets to support procurement and distribution of many major lines of fresh fruit and vegetables while it suits their risk management in terms of cost, security of supply and quality. They will do so as long as direct supply of produce fails to provide the security of quality, volume and cost.

Figure 54. **RETAILER RISK MANAGEMENT**



## Different marketing options

A supplier to fresh markets can opt to seek any one of a number of positions regarding the sale of their produce. Figure 55 outlines the potential corresponding wholesaler positions that a supplier will face when using the markets.

Those in the know are able to exist in comfort. Those who have inferior quality, few or no market relationships or do not have their own source of market intelligence are exposed to manipulation by the trade. It is suggested that this is the source of most complaints about the fairness of market practices.

Figure 55. **FRESH FRUIT AND VEGETABLE MARKETS – THE PRACTICES**

This example is based on the observed practices on the Sydney fresh food market floor. The prevailing market price for top quality on the day is \$16 per 12kg carton of fruit.

TYPE OF SUPPLIER	SUPPLIER'S POSITION	WHOLESALER'S ACTION	RETAILER'S POSITION
<b>A</b> <b>Top quality</b> Reliable high quality with brand, consistent volumes, loyal with good personal relationship	Strong relationship with wholesaler, in touch with market mood and daily prices, trusts wholesaler will achieve best price.	Highly values supplier's custom. Has lined up buyer at \$16 ahead of product arriving on the floor. Offers \$16 less 10–15%. Fruit moves quickly off floor.	<b>Major chain</b> Has sourced 50–70% direct from suppliers. Will seek to top up with supply from A or B, depending on price and volume.
<b>B</b> <b>Good quality supplier</b> Usually reliable quality, seasonal volumes, loyal supplier	Reasonable relationship with wholesaler, knows market prices, trusts wholesaler will achieve best price.	Will make a judgement call based on the state of the market but likely to make a safe call at \$12 to achieve a reasonable margin based on the overall level of activity and volume out of A suppliers.	<b>Independent</b> Where a close relationship exists, sale will have been pre-agreed on availability of A produce at \$16. Will buy lower depending on quality stance.  Where weak or no relationship, will buy B to D based on price, quality stance and general price position.
<b>C</b> <b>Average quality supplier</b> Usually reliable quality, seasonal volumes, loyal supplier	Has a supply relationship with wholesaler, is broadly aware of market prices, relies on wholesaler to achieve best price.	Cautious as to proceeds based on quality and buyer capacity. Avoids commitment to price and suggests 'wait and see'.	
<b>D</b> <b>Poor quality supplier</b> Usually unreliable quality, seasonal volumes, not a loyal supplier	Selects wholesaler based on previous custom. Fruit arrives with limited notice. Takes assurance 'will do the best I can'.	Cautious as to proceeds based on quality and buyer capacity. Avoids commitment to price and suggests 'wait and see'.	<b>Outcome may be \$4–8 to grower</b>

## FRESH HORTICULTURE – ANALYSIS OF PRICING

### Data on prices

A significant amount of data assists analysis of pricing in the horticulture sector:

- retail prices observed by industry groups;
- reported wholesale market prices which have been purchased from market reporting agencies for a three-year period; and
- specific industry price monitoring (in the case of bananas).

There are a number of problems with these data sets. As with any wholesale market in the absence of regulation, there is no compulsion to report wholesale information in the market. Reporting services operate to improve the transparency for buyers and sellers who need to refer to prevailing price indicators. There are three reasons for the inaccuracy of reported prices:

- reported wholesale prices are generally based on very wide ranges;
- methods of collation are only based on what the wholesaler tells the collection agency; and
- the key feature of such reporting services is a subjective ‘most sales at’ reported price.

It has been frequently alleged in anecdotal information provided to this study that reported market prices are subject to manipulation. The accusation is that the natural inclination of those who provide information to the reporter is to understate the price. This dampens the expectation of the seller and creates greater scope for margin to be won in the selling price. It also creates the impression of lower income levels to the wholesaler.

A further major weakness affecting the reliability of the overall wholesale returns is the increasing tendency of major retailers to source direct supply at prices which are generally higher than the wholesale price in order to obtain the necessary commitment to consistent volume and quality.

### Approach taken

Across a number of sectors of the fresh horticulture industry, the work has included the following:

- compared reported wholesale prices to observed retail prices across periods where both sets of data are available;
- taken care to match variety in this comparison;
- ensured the accuracy of the unit size, converting carton sizes to get appropriate like-for-like comparisons;
- consulted with industry groups as to likely direct supply prices to major chain retailers; and
- calculated apparent shares of the retail value of key product lines.

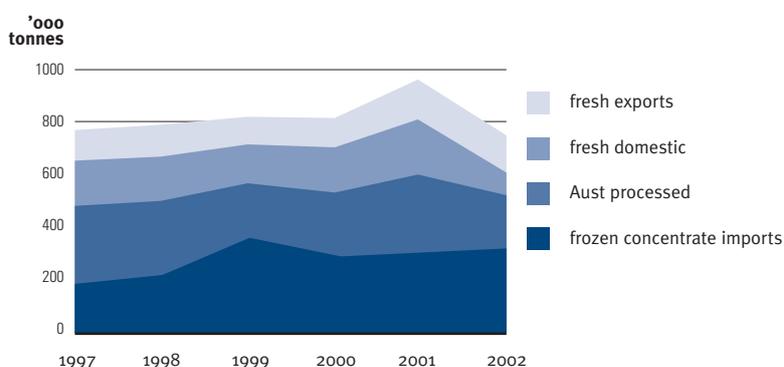
In addition, a tracing of selected products has been made over a period of time through the markets to provide an illustration of price setting in real time.

## ORANGES – ANALYSIS OF PRICING

### The industry's product mix

The importance of fresh orange exports to the sector has grown: export markets have typically returned far more to marketers in recent times. With exports now representing about one-quarter of production, they provide about half of value at farmgate due to the low level of value of processed fruit.

Figure 56. **ORANGE PRODUCTS**

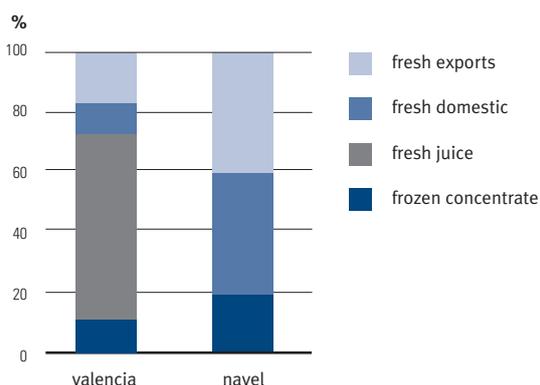


Source: ABS

### Factors affecting prices through the chain

- It is necessary to read these comments in conjunction with those on juice, as approximately half of the annual crop of oranges is processed into juice.
- The influence of the mix of product that goes into each of the end uses has a bearing on the prices available to each major variety.
- The industry has moved to focus on varieties that are strongest in relevant market segments, such as navels in fresh markets. It is estimated that 80 per cent of navels are sold into fresh markets, half into exports. Navels typically earn a much higher return than valencias due to their taste and typical end use as a juice fruit.

Figure 57. **END USE OF ORANGE VARIETIES**



Source: ABS

- As with many other sectors of horticulture, seasonal production variations are one of the biggest drivers of prices and returns, though the increased role of frozen orange juice concentrate in the industry has changed the overall dynamics of returns. Frozen concentrate typically soaks up the supply that is left over from the fresh market.
- Key export market opportunities exist in seasonal windows in the United States and Asian markets.
- Export returns are affected by a range of factors including the presence of major competitors in target markets, as well as the various approaches taken by the Australian industry to secure

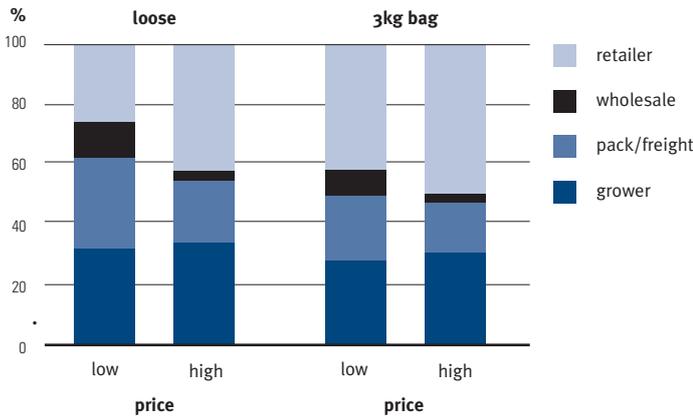
market access – in the United States market the industry sells through a single importer arrangement, yet in many other markets there is a competitive approach which typically results in a lower return.

- At retail, oranges compete with other fruits and refreshments. Seasonal availability can provide advantages but there is increasing availability of a range of other fruits across the board which removes such advantage.

An illustration of the pricing of product through the chain for juice oranges has been undertaken in recent times in the Productivity Commission’s review of the industry arrangements regarding the use of export control powers.

Prices of valencia oranges that are received at farmgate will fluctuate significantly over time due to the use of a significant portion of fruit in processing. This affects available supply onto the fresh market. Any illustration of the sharing of retail margins has to take account of such variation:

Figure 58. **SHARES OF DIFFERENT RETAIL PRICES, VALENCIA ORANGES, LOOSE AND 3KG BAG**

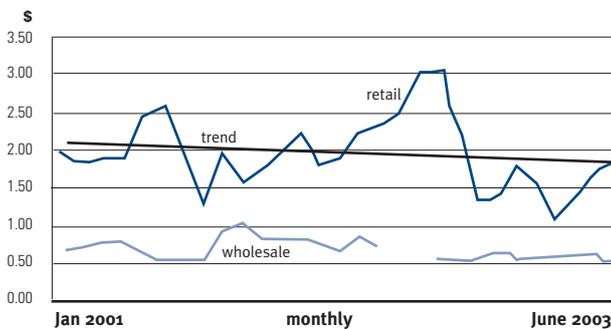


Source: Retailworks 2002

The analysis above for loose fruit was based on retail prices of (low) \$1.50 and (high) \$1.80/kg, whilst bagged fruit achieved a sale price of \$0.66/kg, concluding that most business is undertaken on this latter basis. Bagged fruit is sought by the consumer at this price for home juicing. Margins captured through the chain may vary widely depending upon the position taken upon the sale of fruit by grower and packer. A packer may be able to extract a higher margin by buying fruit at a packing shed price and taking the market risks of placing that fruit into either juice or fresh markets.

The analysis of reported market wholesale prices contrasted against the assessed major chain retail values for valencia oranges shows the wide variation in prices over time.

Figure 59. **PRICES OF VALENCIA ORANGES, 1KG, \$/KG, BRISBANE**



Source: Ausmarkets and HAL

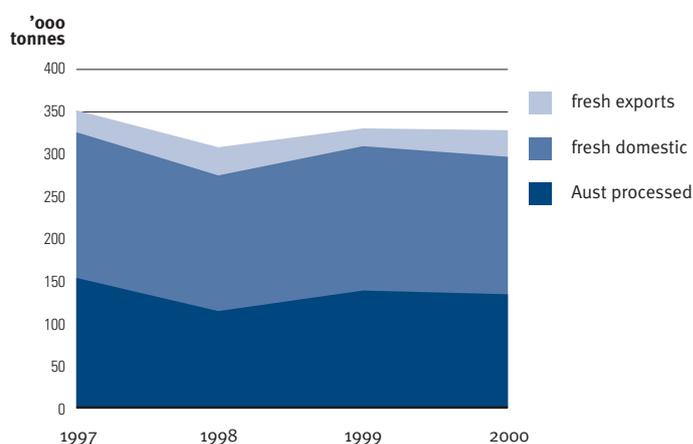
The analysis of margins can be undertaken on a similar basis in the case of navel oranges where a higher proportion of fruit is sold fresh.

## APPLES – ANALYSIS OF PRICING

### The industry's product and market mix

There has been an insignificant change in the total volume of Australian apple production over the past decade. There has been a modest increase in per capita apple consumption in recent years (for example, 1995 = 12.3kgs, 1999 = 15.3kgs). Both fresh sales and juice sales have shared the increase.

Figure 60. **TOTAL INDUSTRY PRODUCTION, APPLES, '000 TONNES, 1997–2000**



Source: ABS 2002

Exports remain small in importance to the total industry with minimal influence on overall returns.

By far the bulk of Australian retail apple sales are in a loose, undifferentiated form. Small amounts are bagged (generally small sizes of main volume lines). Some fruit (for example, pink lady) is sold from single layer trays. The emergence of new apple varieties (such as gala) has added some upward pressure to values but in general the slow industry change away from old, less preferred varieties (for example, red delicious) has increased downward pressure on prices.

### Factors affecting prices through the chain

- Seasonal production variation is the biggest driver of prices and returns.
- At retail, apples compete with other fresh fruit lines such as stone fruit and bananas. Seasonal availability can provide advantages but there is increasing availability of range across the board which removes such advantages.
- Other key in-season fruit items (mainly oranges, mandarins and bananas) affect the choice of apple purchases based on their relative value and quality during the apple season. Over time, other snack food options have also greatly affected the demand and potential returns for apples.
- The apple industry still suffers from a reputation for having highly variable quality and availability between and during seasons. Variations in region, time of season, retailer and variety also cause much fluctuation in apple retail pricing and adds to consumer uncertainty and confusion.
- Varietal prices vary greatly depending on consumer preference and supply.
- There are currently no apple imports into Australia to affect market supply and demand. The main issue is the restriction on the import of New Zealand apples due to quarantine concerns about fire blight.
- The New Zealand fire blight issue has recently become affected by a successful United States challenge in the World Trade Organisation. This may increase pressure in the medium term to allow access of New Zealand apples into Australia. This would have a significant impact on the Australian market and industry restructuring.
- Currency has a highly significant impact on trade each year. Significant flows of apples move in and out of export each year due directly to currency-affected export competitiveness. For example, a 10 per cent export volume change causes a 3,000 tonne movement of apples in or out of the local market.

## The industry's product mix

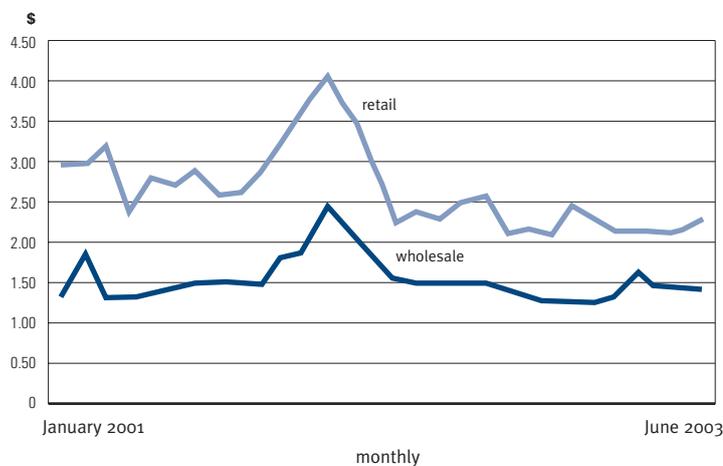
The key price references in an analysis of apple pricing are the main established apple varieties (red delicious – 30 per cent of total apple volume, granny smith – 28 per cent) sold by the main retail sellers.

Analysis of red delicious retail prices during 2001–03 shows:

- a wide price range of \$1.82–4.70/kg during the period;
- low prices in 2001, high prices in 2002 and relative price stability in 2002–03;
- a decline in prices over the 2001–03 period; and
- a general pegging of wholesale and retail margins but also continual short-term variations in the margin between wholesale and retail prices.

Sydney market pricing over the last three years shows a comparison between retail and reported wholesale market prices.

Figure 61. **PRICE OF RED DELICIOUS APPLES, 1KG, \$/KG, SYDNEY, 2001–2003**



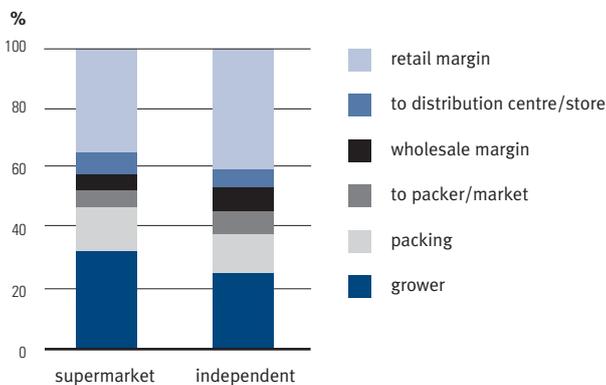
Source: Ausmarkets and HAL

While there has been a declining price trend, there have been marked seasonal differences in prices as well as price fluctuations during the season.

## Factors affecting prices through the chain

There was a decline in real grower returns for apples over the 1995–96 to 2000–01 period. Across all apple categories, gross returns fell from \$1.09/kg to \$0.86/kg. This reflects both fresh apple and processing returns. Gross returns are typically 20 per cent higher than farmgate prices, reflecting the approximate level of wholesale margins.

Figure 62. **SHARE OF RETAIL PRICE, APPLES**



Source: Industry sources

The assessment of margins through the chain, based on recent retail and wholesale levels, are in the table.

## PRICING ANALYSIS

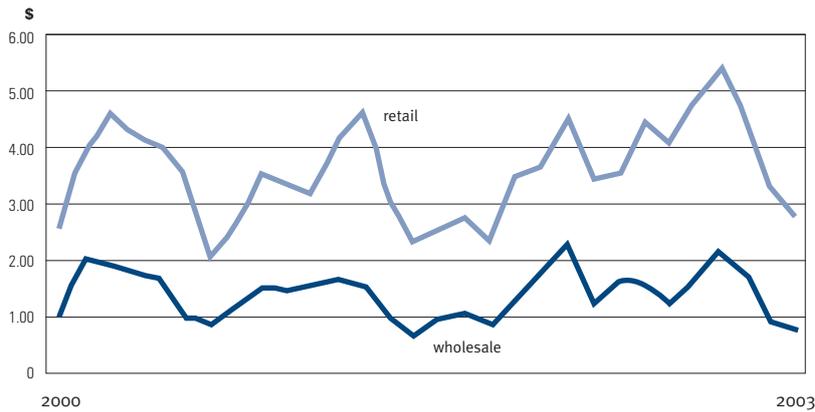


Figure 63.  
**PRICES OF FIELD GOURMET TOMATOES, 1KG, \$/KG, BRISBANE**

These charts provide examples of the analysis of data that is typical of the differences between the **reported wholesale data** and industry data that is collected from **supermarket retail sales**. It is dangerous to make assertions about the share of margins that is obtained from this comparison because of the weaknesses in approach in collation of the wholesale data and the growing portion of retail buying which is direct into warehouse at prices which are different from those wholesale values shown above. The only valid means by which a comparison can be made is via traced sales through the markets into the retail market to ensure there is like-for-like comparison of the price points.

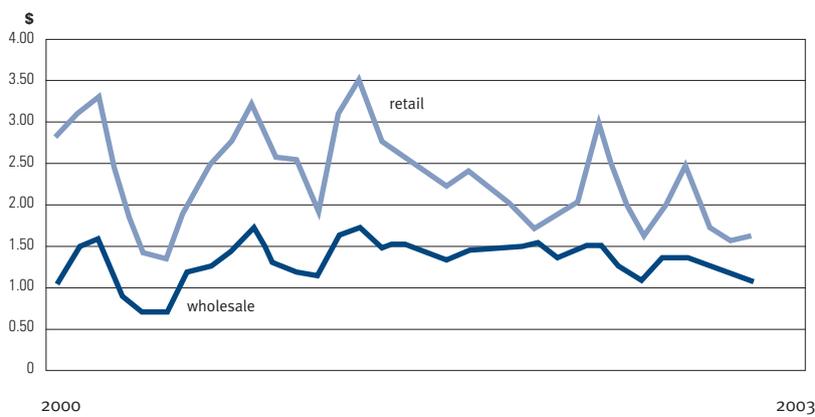


Figure 64.  
**PRICES OF CAVENDISH BANANAS, 1KG, \$/KG, MELBOURNE**

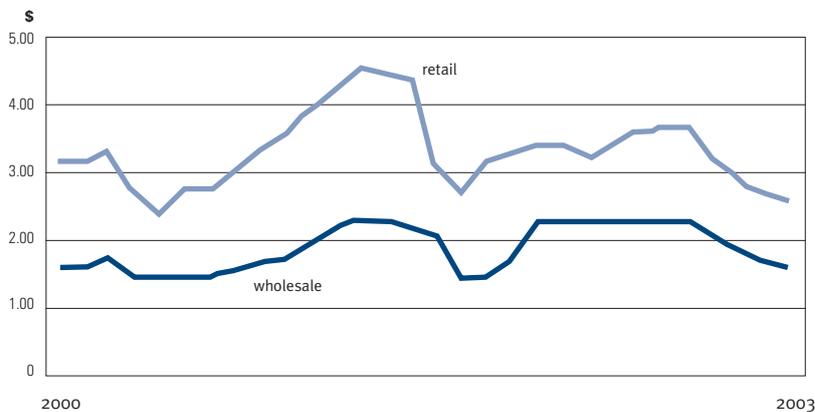


Figure 65.  
**PRICES OF GRANNY SMITH APPLES, 1KG, \$/KG, MELBOURNE**

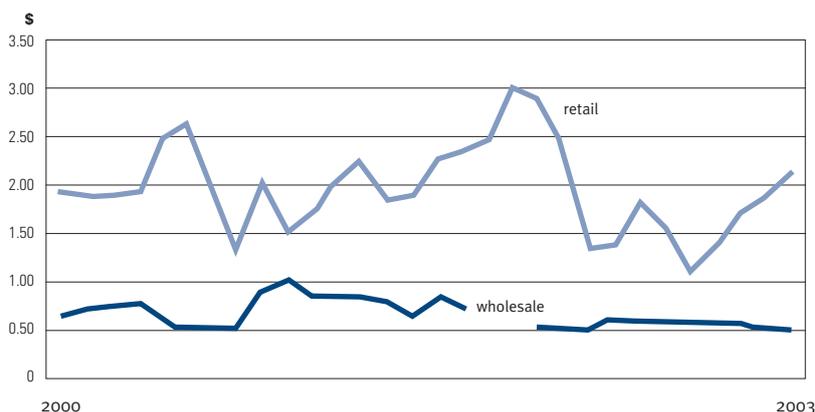


Figure 66.  
**PRICES OF VALENCIA ORANGES, 1KG, \$/KG, BRISBANE**

Source: Ausmarkets and HAL.