

## NEW ZEALAND ECONOMICS ANZ AGRI FOCUS

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### BEES TO THE HONEY POT

**FEATURE ARTICLE: MANUKA HONEY – A GROWTH STORY**

Manuka honey is unique given its scientifically proven anti-bacterial and anti-inflammatory properties that are different to other types of honey. This opens up a wide variety of end-markets and product categories. Many products exemplify “value add” and its use for medical purposes offers significant potential. Manuka’s unique properties, combined with the fact that only New Zealand and parts of Australia are able to naturally grow Manuka, create some key defensible barriers to global competition. To increase supply, land-owners will need to invest and treat Manuka honey as a genuine crop. For land-owners it represents not just an opportunity to boost economic returns on erodible pastoral land, but also provides another land use option to throw into the mix to help comply with tightening regional council regulation for sediment run-off and water quality standards. Economically we find a Manuka plantation could deliver a return on marginal capital employed ranging from 10-15% and even more if a grant is used to reduce the establishment cost.

**THE MONTH IN REVIEW**

It has been a sluggish start to the 2015/16 season for pasture growth. Recent rainfall on the east coast has relieved dry conditions. Milk supply is tracking well behind the same period last year. The 2015 lamb crop is expected to be significantly smaller, largely due to lower breeding ewe numbers. Log exports remain under pressure, but lumber volumes have been steadier.

**RURAL PROPERTY MARKET**

The upcoming main marketing period for farms will test whether or not prices are going to set lower for dairy-aligned land. An improvement in the outlook for farm-gate returns will help confidence. However, cashflow remains constrained; there is heightened uncertainty for foreign investment following the Lochinvar decision; and credit growth was particularly strong in 2014/15, which restricts future borrowing capacity, especially with returns and cashflow under pressure.

**KEY COMMODITIES AND FINANCIAL MARKET VARIABLES**

In-market prices have bounced off extreme lows for dairy; however, most other sectors have seen a continued drift lower in prices. A weak NZD has remained supportive for farm-gate prices, providing an offset.

**BORROWING STRATEGY**

Indicative rural lending rates have continued to fall, matching falls in wholesale interest rates to near all-time lows. RBNZ OCR cuts have been an influential driver, as has the global environment, with inflation failing to fire and central banks generally sounding a cautious tone.

**ECONOMIC BACKDROP**

Momentum across the economy has slowed over the year, and we expect more of the same over the coming 12 months. The nucleus resides in lower terms of trade (export prices), flattening Christchurch activity and capacity bottlenecks in some sectors. It’s a deceleration, not a full-blown downturn, but this critically assumes the offshore scene stabilises; our eyes are on China.

**EDUCATION CORNER: NEW ZEALAND CRAFT BEER INDUSTRY**

We take a look at the emergence of the New Zealand craft beer industry and some of the key drivers. Export markets are opening up for New Zealand craft beer, complementing a domestic market with a thirst for big-flavour beer. Beer exports to Asia have doubled over the past two years and brewers tell us exports are just getting started. The craft beer industry is poised for an exciting future, but growth and new export markets bring challenges too.

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### SUMMARY

Honey export earnings have increased by 23% per annum on average over the last 10 years. Manuka honey is fuelling most of the growth and there are aspirations for it to be the next billion dollar earner.

Manuka honey is unique given its scientifically proven anti-bacterial and anti-inflammatory properties that are different to other types of honey. This opens up a wide variety of end-markets and product categories. Current products range from food & beverage through to cosmetics, nutraceuticals and medical, across a number of different markets. Many products exemplify “value add” and its use for medical purposes offers significant potential. Manuka’s unique properties, combined with the fact that only New Zealand and parts of Australia are able to naturally grow Manuka, create some key defensible barriers to global competition.

Manuka’s standing in the food & beverage category is such that New Zealand’s average export price is US\$18/kg, whereas most of the other major honey exporters are earning only US\$2-6/kg. Similar multiples can be demonstrated for retail prices in the main markets too. New Zealand is the third-largest global exporter of honey on a value basis behind China and Argentina. Many markets remain untapped and many of the categories have significant further development potential.

To increase supply, land-owners will need to invest and treat Manuka honey as a genuine crop. For land-owners it represents not just an opportunity to boost economic returns on erodible pastoral land, but also provides another land use option to throw into the mix to help comply with tightening regional council regulation for sediment run-off and water quality standards. Economically we find a Manuka plantation could deliver a return on marginal capital employed ranging from 10-15% and even more if a grant is used to reduce the establishment cost.

For the industry to meet its aspirations and get increased uptake from land-owners there are a number of areas that need further work and investment. The main areas include:

1. A common standard and definition for what constituents “Manuka honey”;
2. Improvement in the commercial arrangements between land owners and rest of the supply chain;
3. Some consolidation of companies, alongside investment in the supply chain;
4. Increased research and development for the establishment and management of Manuka plantations through to product development and marketing;
5. A single industry body with a shared vision of the future and a plan for how to get there;
6. More scientific investment to validate medical and other health claims;
7. Enforcement of domestic and international Manuka standards (once agreed) to stamp out counterfeiting; and
8. General knowledge sharing between industry participants.

### INTRODUCTION

**Identifying the next “big thing” that will bring about transformational change is a real challenge in today’s fast-paced world.** Constantly shifting consumer preferences with intense competitive pressure from multiple angles (both direct competitors and substitutes) means the goal posts are constantly shifting. However, identification of opportunity is just the first step. What follows is a lot of hard work across a number of business facets and regulation to realise the true potential of an identified opportunity.

**The honey industry – and specifically Manuka – is one sector/segment where identification of new opportunities has occurred** and the hard work is underway to try to realise its full potential. What follows is an overview of the sector and potential returns for land-owners.

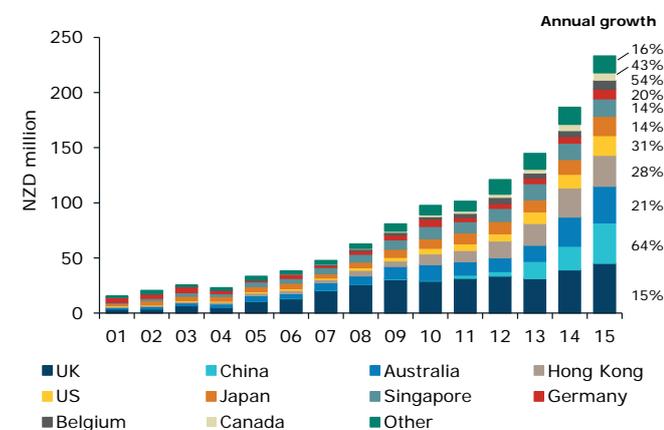
**The information contained within this report has been gathered from a wide range of sources.** These include: Waikato University and Professor Peter Molan’s pioneering work for which the industry has much to owe, Ministry for Primary Industries (MPI), several honey companies, Woodnet, Coriolis and the Manuka Research Partnership NZ (Primary Growth Partnership (PGP) project).

**The Government and a consortium of private sector companies through the PGP have ambitious plans to increase the annual value of New Zealand’s Manuka honey industry from an estimated \$75 million in 2010 towards \$1.2 billion by 2028.** Currently, total honey exports are \$242 million per annum, having experienced a compound growth rate of 23% per annum over the last 10 years. This makes it one of the fastest-growing primary sectors, and much of this has been fuelled by increased prices and volumes of Manuka honey.

**It’s also an example of how New Zealand’s primary sector is looking beyond dairying,** with many other examples including the likes of avocados, goat/sheep milking, hops and new varieties of pipfruit and kiwifruit, to name just a few.

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**FIGURE 1: NEW ZEALAND HONEY EXPORTS BY MAJOR DESTINATION (JUNE YEAR)**



Source: ANZ, Statistics NZ

The next steps, through the likes of the primary growth partnership initiative, is researching local ecosystems and Manuka genetic material and how both factors affect honey yields and quality. **The target is a 16-fold gain in productivity, and early results from the first three years of research are encouraging.** Combining improved genetics with optimum plantation management and bee-keeping practices could enable significant productivity gains in the likes of producing medical-grade Manuka honey, which can be sold for significantly higher prices than Manuka for food consumption.

**If achieved, such productivity shifts are transformational, especially when the targeted land resource is marginal, erosion-prone hill country.** There are many areas of unforested hard hill country that currently generate little to no return for land-owners. In addition, many of the smaller woodlots that were planted in radiata pine in the 1990s and are due to be harvested over the next 10 years are not expected to be replanted. This reflects poor returns due to high harvest and transport costs, and relatively low yields in many instances. There are some suggestions annual net deforestation has averaged around 10,000 hectares over the last several years already. Manuka would appear to be a viable alternative for replanting in some of these cases. Combined with nearly 340,000 hectares of forest on small woodlots (less than 100 hectares in size) this means there could be a large aggregate area of smaller blocks looking for alternative uses over the next 5+ years.

**Other potential benefits outside the available returns from Manuka honey include:**

- **Retirement of marginal land and erosion control to manage adverse weather events.** In many cases there are limited other economically viable options for erosion control, outside of forestry;

- **Riparian option that generates income** with many regional councils bringing in mandatory stock exclusion rules for rivers and water bodies;
- **Improved water quality** from better environmental outcomes;
- **Improved aesthetic value of the landscape;** and
- **Increased biodiversity,** as in many cases Manuka was the resident species a long time ago.

**In many areas tightening regional council rules for sediment run-off and water quality mean a wider range of different land use options will need to be considered to meet new regulatory requirements.** Manuka provides another option to throw into the mix, and a number of potential economic income streams in the form of honey, carbon and possibly tea tree oil.

### WHAT'S SO SPECIAL ABOUT ACTIVE MANUKA HONEY?

What makes active Manuka honey unique is its **scientifically proven anti-bacterial and anti-inflammatory properties that are different to other types of honey.** Every honey contains antibacterial properties due to hydrogen peroxide, an antiseptic naturally present in it. However, hydrogen peroxide is unstable and can be quickly destroyed by heat, light and body enzymes. Its unstable relationship with body enzymes reduces its effectiveness in treating human ailments and creates storage issues.

**Active Manuka has additional antibacterial activity in the form of a chemical methylglyoxal (MGO).** This leads to a different way of killing certain types of bacteria. MGO is formed by a chemical reaction that occurs after the bees have processed the Manuka nectar into honey. The component of the nectar from which the MGO is formed – dihydroxyacetone – is a sugar with no antibacterial activity. There is another component of this unusual antibacterial activity, as yet unidentified chemically, which has been found to occur only in Manuka honey. This component doubles the antibacterial potency of the MGO in Manuka honey.

**The MGO and the other antibacterial activity are often referred to as the non-peroxide activity.** High levels of this activity are what make genuine Manuka honey unique. A limited quantity of the same type of honey is produced in Australia (where it is called "jellybush honey") from *Leptospermum scoparium* (or Manuka in New Zealand) and other species of *Leptospermum*. This uniqueness helps create a defensible barrier to competition from other parts of the globe.

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**The non-peroxide antibacterial activity is also stable in different conditions, unlike hydrogen peroxide.** Most importantly from a medical point of view, non-peroxide activity in Manuka honey is not affected by most body enzymes. This means its potency in treating human ailments is not reduced like that of other honeys. It's been proven to be very effective against a number of infection-causing pathogens. However, despite there being a number of digestive products in the marketplace, there appears to be limited scientific evidence that it has antibacterial benefits when digested. This seems to be a common area of confusion for consumers.

**The levels of non-peroxide antibacterial activity in Manuka honey vary.** This variation is due primarily to the concentration of Manuka nectar that makes up the honey compared to other nectar sources (bees will forage for nectar from a number of plants), the location it is harvested from, soil types, and the different varieties of Manuka plants. It is also important to note that the non-peroxide levels in the honey increases as the product ages, both in the hive and in storage before processing. This has important implications for how and when the honey is assessed and valued in terms of apportioning payment to the different stakeholders (i.e. the land-owner, bee-keeper, and honey company).

### THE MARKET OPPORTUNITIES

#### By category

**One of the biggest attractions of honey, and specifically Manuka, is the wide variety of different product categories and end markets.** Many have significant further development potential too and are in segments where a price premium can be extracted. However, there is a need for more investment to validate scientific and other health claims, as well as to further develop products, brands and exposure in growth markets.

**There are four main product categories for Manuka honey: food and beverage, cosmetics, nutraceuticals/natural health products, and medical.** There are many different products under each category and also varying channels to market (i.e. retail, health stores, pharmacies etc).

**In the food and beverage category, it's not only being used on toast, or in home cooking, but also as a flavour additive** in a wide range of packaged food and beverage products.

**Under the cosmetics category, products range from skincare to sanitisers.** These include the likes of beauty creams, derma creams, soap and moisturising lotions.

**Under the nutraceuticals/natural health product category we find healthy snacks, infant formula, throat lozenges, children's cold medicine and elixirs.**

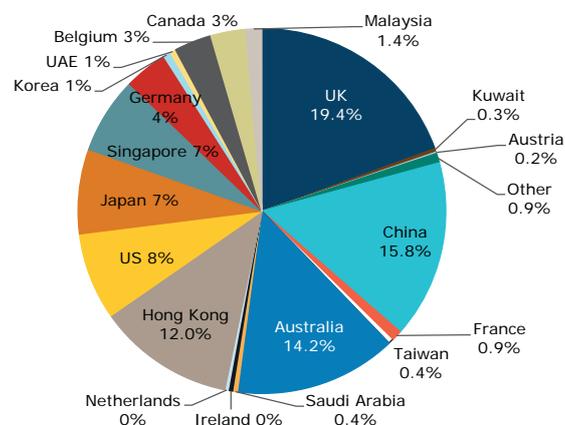
**The medical category is perhaps the most exciting,** especially from a potential returns perspective. Off-the-shelf medical products centre around creams and gels to heal wounds. **Medical grade products are being used in hospitals to heal wounds and skin infections that are non-responsive to standard treatments, such as bacteria that are resistant to antibiotics.**

**The available margins for each category are difficult to assess.** However, given the price escalation seen (see below) for the different grades of honey, one can make a broad generalisation: there are substantially higher margins for medical products, followed by cosmetics, nutraceuticals/natural health products and then food/beverage.

#### New Zealand's markets

**As we mentioned earlier, New Zealand honey exports now top \$242 million and have grown at a compound rate of 23% per annum over the last 10 years.** The vast majority of this is retail packaged product (94%), followed by honey in bulk form for further packaging/processing offshore (5%). These statistics are for all honey, but industry estimates suggest around 75-80% is Manuka honey. They exclude medical-graded product and packaged products where Manuka honey has been used as an additive in a particular food product or cosmetic. Statistics for these latter two segments are not available, unfortunately.

**FIGURE 2: MARKET SHARE OF TOP 20 EXPORT MARKETS IN 2014/15**



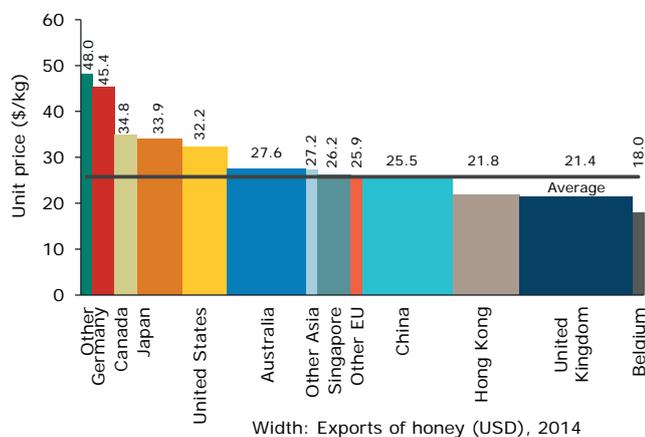
Source: ANZ, Statistics NZ

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The largest market is the United Kingdom, at \$45.2 million (19%), but China is fast catching up and holds second place with exports of \$36.7 million (16%). The other big markets are Australia (14%), Hong Kong (12%), US (8%), Japan (7%) and Singapore (7%). The top seven export destinations make up 83% of total export earnings. This makes it quite a concentrated marketplace at present.

**The UK is a fairly stagnant marketplace with a lot of price competition.** This is reflected in the fact that it has had the slowest growth rate of the major markets, at 8% per annum over the last seven years. **China and Hong Kong, followed by the US, have experienced the fastest growth.** China's growth is being driven by the use of Manuka as a natural remedy in a wide range of products. Natural remedies form an important part of Chinese culture and customs for treating many health problems. As they say, food in the Asian culture is viewed as "health first and nutrition second". This is the complete reverse of many Western markets. In the US growth is being driven by a shift in dietary preferences towards whole and naturally functional foods, a category in which Manuka honey fits well in a number of formats. There is a similar trend across other high-income Western markets.

**FIGURE 3: SIZE AND VALUE COMPARISON OF NEW ZEALAND'S MAIN EXPORT MARKETS IN 2014/15**



Source: ANZ, Comtrade

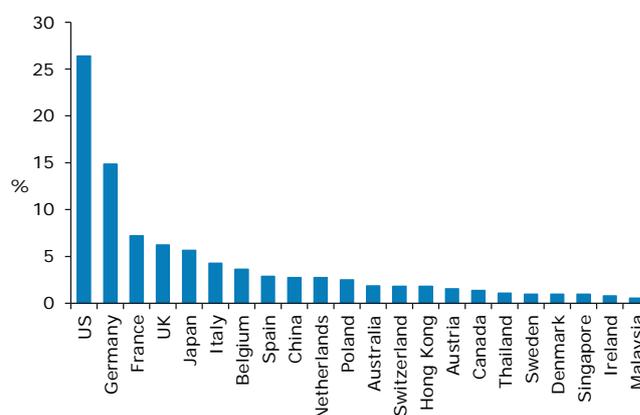
**New Zealand's highest-paying markets are the wealthier affluent markets** in the form of Germany, Canada, Japan and US. **The higher volume markets of the United Kingdom, China, Australia and Hong Kong tend to have a lower price point of \$21-\$28/kg.** The higher-value markets tend to range from the low \$30's to \$50/kg. There isn't a lot of volume traded above \$40/kg, but it has to be remembered the majority of these statistics capture retail packaged product for the food category, but exclude many of the other categories where Manuka honey is being used as an additive/flavour. Comments were passed that the likes of Medical grade Manuka is fetching up to NZ\$1,000/kg.

### International marketplace

**Globally, the majority of honey is still produced and consumed within the same market.** Global import demand is estimated to be around US\$2.1 billion. While New Zealand is the third-largest exporter on a value basis, it accounts for only 7.2% of total traded value. This is because New Zealand achieves a much higher price, but on low volumes. Indeed, on a volumes basis New Zealand ranks 16th.

The largest import markets are the US (26%), Germany (15%), France (7%), United Kingdom (6%) and Japan (6%). The top 20 import markets account for 92% of global import demand. New Zealand has high import penetration into Singapore, Hong Kong, Australia, China and Malaysia.

**FIGURE 4: TOP 20 GLOBAL IMPORTERS SHARE OF TOTAL IMPORT VALUE IN 2014/15**

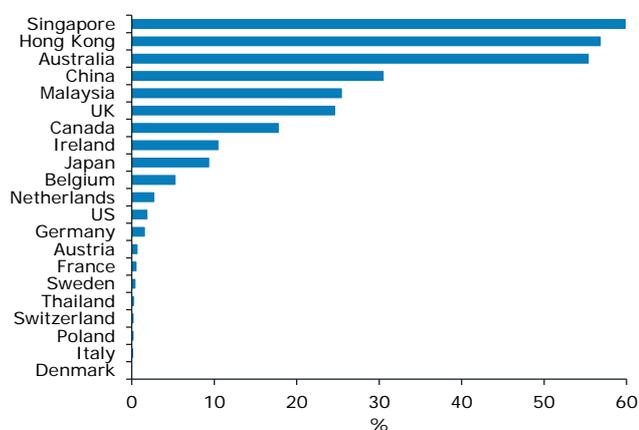


Source: ANZ, Comtrade

**The largest growth opportunities should New Zealand supply increase markedly would appear to be the US, Germany, France and other European countries, such as Belgium, Netherlands and Switzerland.** New Zealand has low penetration in these markets at present. There is high existing per-capita consumption of honey and they have the purchasing power to be able to afford Manuka. The two key constraints for further market development would appear to be limited supply and the need for further validation of scientific and other health claims. There also needs to be further product, brand development, and marketing to increase exposure both in New Zealand's current main markets and beyond.

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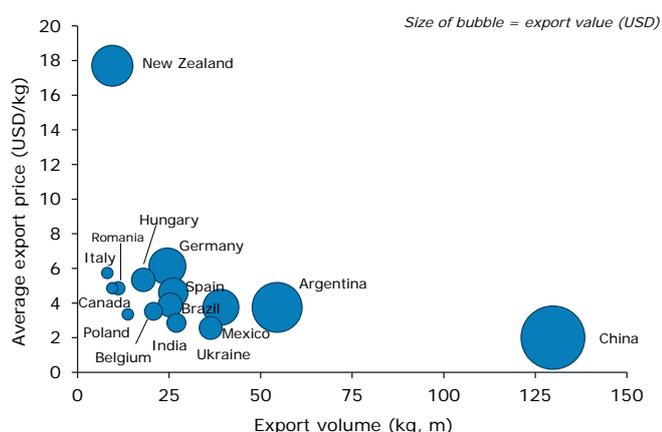
**FIGURE 5: NEW ZEALAND'S CURRENT IMPORT PENETRATION INTO KEY MARKETS**



Source: ANZ, Comtrade

In terms of the competition, the two heavyweight exporters are **China and Argentina**. They are followed by Germany, Mexico and Spain. However, most of this product is significantly lower value than New Zealand honey, with an average export price of US\$2-6/kg, compared with New Zealand at US\$18/kg. **Examining the retail price points of New Zealand honey in the main retail markets generally shows a similar premium, or multiple, as the average export prices.** This indicates New Zealand product is in a completely different category to that of nearly all other major exporters. This reflects not only Manuka's unique points of difference, but also the product/brand development and marketing New Zealand honey companies have undertaken.

**FIGURE 6: VALUE AND VOLUME COMPARISON OF TOP 20 GLOBAL HONEY EXPORTERS**



Source: ANZ, Comtrade

### RATING AND LABELLING OF MANUKA HONEY

The rating systems and labelling of Manuka honey remains an area of confusion and industry concern. Prior to MPI implementing voluntary labelling guidelines in July last year, there were various forms of Manuka honey being sold under a plethora of different quality and rating standards for food and beverage consumption. **The labelling guidelines have brought some clarification and standardisation, but there are still grey areas** that are the subject of further research.

The other area of concern, which stems from the lack of a widely supported, clear definition of Manuka honey, is limited industry and regulator enforcement of the guidelines and international codex standards<sup>1</sup> for honey in many key markets. This is important, especially with other countries' regulatory bodies now taking a closer look.

There are many recent examples of marketplace damage caused by poor labelling standards and a lack of enforcement of the rules. An example of reputation-damaging media coverage was a UK trade magazine called *The Grocer* publishing the results of a lab test of seven randomly selected jars of Manuka honey. Five failed to meet their claimed levels of antibacterial activity. The UK's Food Standards Agency also warned some ordinary honey may have been falsely sold as Manuka last year.

**Under the voluntary guidelines the main characteristics necessary for a honey to be labelled Manuka are:**

1. A colour greater than 62mm pfund.
2. A conductivity range of 347-867  $\mu\text{S}/\text{cm}$ .
3. A flavour typical of Manuka-type honey (mineral, slightly bitter).
4. An aroma typical of Manuka-type honey (damp earth, heather, aromatic).
5. Presence of Manuka-type pollen.
6. Presence of dihydroxyacetone (DHA) and MGO.

**The unique characteristic is the presence of DHA and MGO.** The likes of Kanuka honey (a close cousin) will pass all the criteria apart from this one. However, no lower limit is set for the presence of DHA and MGO, so honey blends could potentially meet the criteria. One limitation for the blended proportion is that the global codex honey standard states that for a honey to be labelled as non-floral (eg. Manuka honey)

<sup>1</sup> The Codex Alimentarius (Latin for "Book of Food") is a collection of internationally recognised standards, codes of practice, guidelines and other recommendations relating to foods, food production and food safety.

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it must be wholly, or mainly, from that particular source. The overlapping nature of the guidelines and international rules create grey areas. **Industry experts suggest the international codex standard implies that for honey to be labelled Manuka it would need to be more than 50% of this origin.** This sets somewhat of a bottom line for the Manuka proportion of a blend.

**The other important aspect of the guidelines is that therapeutic claims are not allowed on food labels. A therapeutic claim is any reference to the prevention, diagnosis, cure or alleviation of a disease, disorder or condition.** That's a problem for food/health products that boast about Manuka honey's antibacterial activity on their labels. The guidelines specifically state references to the following properties are unacceptable:

1. Peroxide activity
2. Non-peroxide activity
3. Total activity
4. Activity
5. Antibacterial activity
6. Bioactive.

**These references are considered misleading because Manuka honey has little proven antibacterial effect when eaten.** Grading systems that use the measure MGO are still allowed on labels as long as they're not used to imply antibacterial effect.

**Two of the main rating systems for Manuka honey have historically been the Unique Manuka Factor (UMF) and MGO.** But product has also been sold around the world using a variety of terms such as "active", or "bioactive". Many of these rating systems were based on the honey's hydrogen peroxide activity only, which all honey has.

**The MGO rating refers to the level of methylglyoxal in honey.** It is a trademark of Manuka Health New Zealand Ltd and can only be used on their products. However, there are limitations to measuring solely methylglyoxal, as it's not the only component responsible for the honey's special non-peroxide antibacterial activity. It therefore provides only an approximate measure of the antibacterial activity if one is looking to use the honey for some use other than food (i.e. medical).

**Unique Manuka Factor (UMF®) is an internationally registered trademark that can only be used by licensed users. Historically this reflected the results of testing the level of non-peroxide activity.** This was then compared and graded according to the varying concentrations of

non-peroxide against a standard antiseptic (phenol). This allowed a comparison of the honey's bacteria-killing power compared with that of a standard antiseptic. Manuka honey with a UMF of 12-16 was deemed effective against a wide range of bacteria. **However, with the introduction of the food labelling guidelines there appears to have been a recent change in the grading system, with more focus on MGO levels to derive the UMF grade.**

**So some rating systems are adapting, but there is still flaunting of the guidelines.** This is due to a number of factors: some grey areas in the guidelines, the need for further research, and a lack of consensus across the industry as to what the guidelines should be. Recent legal action by more legitimate companies to enforce the rules (both international and guidelines), and more action from MPI and industry participants should hopefully improve the situation.

### THE ECONOMICS AND PRACTICALITIES OF GROWING MANUKA ON MARGINAL LAND

#### The economics

**There are a number of factors that land-owners need to consider if looking at a Manuka investment.** While many land-owners are allowing marginal land to naturally revert and then harvesting the nectar from the entire available flora, **the real earnings potential is in treating it as a specialised crop. This involves applying more science and intensive management practices to increase the quantity, consistency and quality of the crop.**

The Primary Growth Partnership project is examining a range of factors to build up a better knowledge base on best-practice establishment and husbandry practices. This includes examining:

1. **Suitability of different seed-line/cultivars for various ecosystems;**
2. **Optimum planting densities** and techniques for different situations (i.e. plantation versus riparian strip);
3. **Optimum husbandry practices** for different soil types, hive management, fertiliser, companion plants, pests and diseases.
4. **Profile building of flowering and production characteristics** (i.e. quality, flowering times and length etc) **for different ecosystems.**

For land-owners, this is expected to deliver better knowledge on best practice, as well as further build the financial business case for commercial Manuka plantations.

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### Establishment

Key facets of current establishment regimes are:

1. **Picking a suitable area on which to establish the plantation.** Some are trialling different species and sites before fully committing.
2. **Planting a range of different cultivars.** Part of this is using a variety of genetics to extend the flowering window for the plantation. The usual flowering period is only 6-8 weeks.
3. **Planting densities of around 1,000-1,100 stems/ha,** or 3x3 metre spacings.
4. **Spraying around the planted area to reduce competition** from grass/weeds. This might need to be ongoing until plants are established (2nd year).
5. **Establishment of complementary plants/trees, as well as possible shelter belts** to reduce wind impacts, especially during flowering. Complementary plants/trees are required to provide food for bees when the Manuka isn't flowering. They are also required in the spring to increase the bee population (i.e. more bees to collect nectar) and in autumn to prepare for the winter period (store food).
6. **Pest control,** especially of goats, sheep and pigs.
7. **Current establishment costs range from \$1,600-\$2,500 per hectare, but there are some grants available.** The production lifecycle is around 25 years. Floral maturity is around the 6-8 year period, but most plants start flowering from the second year.
8. Establishment of suitable tracks to access and/or transport hives in and out.

This is a broad outline of the key establishment considerations. As always, land-owners would need expert advice on the finer points of the establishment process, such as the selection of the best Manuka cultivars for a chosen spot.

**There is a wide range of partnering options** between land-owners, bee-keepers and honey companies for the harvesting, processing and selling of product. **From a land-owner's perspective, each has its different risk and rewards.** The three most common arrangements for land-owners to partner with other participants are:

1. **Fixed price contract, usually per hive.** This provides no earnings risk/reward for quality, or quantity of honey produced. This tends to be the more common approach for naturally reverting Manuka plantations.

2. **Fixed price contracts based on production.** This can have a fixed base rate, plus extra compensation according to yields achieved. Or it can be a straight fixed price per kilogram of production. It provides direct earnings exposure to production, but less so to the quality of honey yielded and price movements. The latter depends on what extent current market pricing is reflected in the price paid for the honey produced.
3. **Proportion of total earnings from honey produced** – this can have a base component too. It provides earnings exposure to the quantity of production, as well as the quality and price movements in market.

**For the first option there is a wide range of contract prices available. Generally these seem to range anywhere from \$30 up to \$125 per hive.** At one hive per hectare this translates directly into the amount of income according to the size of a plantation. What is more interesting is looking at the possible returns available from treating it as a crop and sharing in the total earnings. Below is a simple model we have built to assess the potential returns across a number of key parameters. Generally these parameters would apply to a block size of 25 up to 100 hectares.

Key parameters are:

1. **Establishment costs of \$1,600 to \$2,500 per hectare.** As a generalisation, a larger block will cost less to establish per hectare.
2. **Annual honey production from 20 to 40 kilograms per hectare.** There is still quite a bit of variability being reported for the yield and quality of honey depending on the season – this is one of the key risks.
3. **Production lifecycle of 25 years, from floral maturity at 6-8 years of age.** We've assumed some honey collection begins in year four and increases to maximum potential in year seven.
4. **Annual average carbon sequestration over plantation lifecycle of 7 to 15 tonnes of carbon per hectare.**
5. **Carbon price of \$5 to \$25 per tonne.** All carbon credits earned are assumed to be sold in that year. All units sold throughout the production lifecycle of the crop are assumed to be repaid at end of life (i.e. assumed Manuka trees are cut down releasing carbon and creating a carbon liability).
6. **Share of annual apiary revenue for land-owners generally ranges from 15% to 30%.** This takes into account bee-keeping, processing, transportation and other incidental costs. The cost

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per hive for bee-keeping is generally considered to be around \$200-\$300. Land-owners who have their own hives will receive a larger proportion of total revenue if these costs are removed. More information on bee-keeping costs is available in MPI's annual Apiculture Report.

7. **Annual operating costs of \$20 to \$45 per hectare.** This includes things such as rates, any maintenance, pest and weed control and other incidentals.
8. **The price per kilogram of Manuka honey varies hugely depending on the MGO/ quality levels of honey.** For the lowest quality/ MGO purity, current prices range from \$18-\$22/ kilogram, for mid-range \$30-\$50/kg, and top range \$50-\$100/kg. These figures were derived from actual results for several honey companies. Of course the target from commercial crops is to generate more medical grade honey, which could have earnings potential of up to \$1,000/kg. But this type of research is still in its infancy and it's not clear what the potential yield is and size of market for medical grade honey.

**Obviously different combinations of the above assumptions can lead to a wide variety of economic outcomes over the lifetime of the investment.** We have created seven different scenarios to highlight some of the likelier possibilities at this stage. The internal rate of return is for the marginal capital employed (i.e. establishment cost) and doesn't include the cost of land. The cost of land would need to be factored in to derive a total rate of return, but as noted, alternative uses for the more marginal land in question are often uneconomic.

**TABLE 1. KEY RETURN METRICS UNDER DIFFERENT ASSUMPTIONS FOR A MANUKA CROP**

		1	2	3	4	5	6	7
Establish. cost	\$/ha	2,000	2,000	2,000	2,000	2,000	2,000	2,000
Honey yield	kg/ha	30	30	30	30	30	30	30
Honey price	\$/kg	20	40	60	40	60	40	40
Share of apiary revenue	%	20%	20%	20%	30%	30%	30%	30%
Carbon yield	tCO <sup>2</sup> -e/ha	7	7	7	7	7	10	0
Carbon price	\$/t	5	5	5	5	5	10	0
Operating costs	\$/ha	35	35	35	35	35	35	35
Annual net income	\$/ha	120	240	360	360	540	425	325
<b>Internal rate of return</b>	<b>%</b>	<b>0.2%</b>	<b>7.4%</b>	<b>11.5%</b>	<b>11.5%</b>	<b>16.1%</b>	<b>13.6%</b>	<b>10.4%</b>
Debt carrying capacity	\$/ha	857	1,714	2,571	2,571	3,857	3,036	2,321

Source: ANZ

The first three scenarios highlight the sensitivities of returns to the quality and price received for the Manuka honey produced. **Achieving an average yield of 30kg/ha at the lowest purity levels, or price point of \$20/kg, and receiving only 20% of the apiary revenue, is going to yield little return (internal rate of return 0.2%) when an establishment cost of \$2,000/ha is factored in. At floral maturity it would create net annual income of \$120/ha, which would be at the higher end of the spectrum when compared with fixed contract rates.** In comparison with average returns from hard hill country meat and fibre farms in the North Island, which have averaged \$160/ha over the last five years, it is \$40/ha off the mark. But it has to be remembered that in most cases the crop would be planted only on the non-productive erodible parts of a property, with an alternative return of close to zero in many cases. **Ultimately it's about finding the optimal use for a wide range of different land types on many hard hill country properties.**

Keeping the same assumptions, but increasing the honey price to mid-range of \$40 and high-range of \$60/kg (scenarios two & three), increases the internal rate of return to 7.4% and 11.5% respectively. Under scenario two this doubles net annual income at floral

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**maturity to \$240/ha and triples it under scenario three to \$360/ha.** Scenario four and five assume the same price and yield assumptions as scenario two and three, but increase the share of apiary revenue from 20% to 30%. When comparing scenario four with two this boosts the internal rate of return by 4.1 percentage points, and 4.6 percentage points when comparing scenario five with three.

**Scenarios six and seven look at the sensitivities of returns to the carbon price and returns.**

Scenario six has the same apiary earnings as four, but a slightly higher carbon price and yield. These small changes boost annual cash earnings by \$65/ha and the internal rate of return by 2.1 percentage points. Completely ignoring the potential from carbon reduces annual cash earnings by only \$35/ha and the internal rate of return by 1.1 percentage points (scenario seven).

**All up, looking across the range of assumptions and other industry estimates, it doesn't seem unreasonable for the rate of return on the marginal capital employed from investing in a Manuka plantation to range from 10-15%.**

As always, there will be variability according to an individual land-owner's particular situation. Key sensitivities to test are:

1. Establishment cost;
2. Yield and price of honey; and
3. Share of revenue and/or bee-keeping costs.

**For instance the table below shows the range of possible outcomes under different price and yield outcomes assuming a split of 30% of apiary revenue.** The middle-of-the-range assumptions for both parameters result in a 9-16% range. Outside of this there is a much wider range of possible outcomes.

**TABLE 2: RATES OF RETURN FOR THE YIELD AND PRICE OF HONEY ASSUMING A CONSTANT 30% OF APIARY REVENUE**

		\$ per kilogram						
		\$20	\$25	\$30	\$35	\$40	\$50	\$60
kg per hectare	20	0.2%	2.8%	4.6%	6.1%	7.4%	9.6%	11.5%
	25	2.8%	5.0%	6.8%	8.2%	9.6%	11.9%	13.9%
	30	4.6%	6.8%	8.5%	10.1%	11.5%	13.9%	16.1%
	35	6.1%	8.2%	10.1%	11.7%	13.1%	15.7%	18.0%
	40	7.4%	9.6%	11.5%	13.1%	14.7%	17.4%	19.8%
	45	8.5%	10.8%	12.7%	14.5%	16.1%	19.0%	21.5%

Source: ANZ

**The other measure we included under each of the scenarios was debt-carrying capacity for the marginal investment.** This was worked off

the annual income at floral maturity with an interest cover ratio<sup>2</sup> of 1.25, cost of capital at 7% (assumed long-run borrowing cost) and assumed effective tax rate of 25% (this will vary according to different situations).

**This shows that apart from scenario one, it shouldn't be too much of a push to debt fund the establishment cost of \$2,000/ha. The main issue would be the gap in income between establishment and the plantation reaching floral maturity (i.e. net income reaches assessed potential 6-8 years after establishment). This might mean an increase in the interest cover ratio applied toward 1.5+. If this were the case, the assessed debt-carrying capacity for scenarios three to seven would still be above the establishment cost of \$2,000/ha (with a range of \$2,320 to \$3,860/ha). For scenario two the debt carrying capacity falls to \$1,714/ha, making it more marginal.**

**Of course if you start looking at a more green-field type of investment that factors in purchasing land, this would become more difficult to debt fund.** This implies most land-owners will require a fairly solid starting equity position if looking to pursue a Manuka investment at present.

**The other way to help fund the initial establishment cost is accessing some of the grants that are available to plant erodible pastoral land in forestry or native bush.** Some of these are region-specific, but there is also the likes of the afforestation grant scheme (AGS). **The AGS provides \$1,300/ha to plant "new forest" on erodible pastoral land. Such a grant could reduce the establishment cost to \$600/ha for Manuka.** However, in exchange for the investment, the carbon credits accrued over the first 10 years are retained by the Government and cannot be traded. At the end of the 10-year term of the grant, and providing the forest has been maintained to the minimum standard, the owner of the plantation can then choose to enter the forest into the Emissions Trading Scheme.

**Even losing the carbon credits the reduction in establishment costs is still a significant boost for returns. For the likes of scenario one this boosts the internal rate of return from virtually nothing to 9.1%.** Under the assumptions of scenario four and seven this skyrockets the internal rate of return into the mid-20% range, which makes it a no-brainer. The 2015 funding round for the AGS is now closed with 5,820 hectares allocated. This means

<sup>2</sup> Interest cover ratio is: the number of times annual net income after tax covers the interest cost.

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there is still another 9,180 hectares of new planting that will be allocated from this fund over the next four years (or possibly a shorter time-frame).

**If you consider only economic outcomes, rates of return above the cost of capital (7% for long-run rural borrowing) should be the trigger point for investment. On this basis, Table 2 shows that under most outcomes, a green light is achieved.** While there still seems a lot to learn, if the PGP and other research and development can continue to improve productivity outcomes (targeting a 16-fold increase remember), this will make the business case more compelling as crop husbandry and other management practices evolve.

What we have highlighted is that it doesn't seem too difficult to make a Manuka investment stack up on paper at present, exceeding the cost of capital (7%) when using mid-range assumptions. **Add in other considerations such as a grant to reduce the establishment cost, the fact it is on non-productive erodible land with few other potential uses, and it becomes a much more attractive proposition to add into the mix of different land use options on a property.**

### The practicalities

**Outside of the economics there are always various practicalities that need to be considered too.** During the establishment period there are key considerations of cultivar and site selection. Then there is the need for complementary plants/trees to provide other food sources for the bees when the Manuka isn't flowering, as well as shelter belts if wind protection is required. There is also the need for a comprehensive weed and pest control program to ensure high survival rates when spending so much on establishment.

**Information on husbandry practices and the practicalities of looking after a Manuka plantation once established is regrettably scarce.**

This is probably a reflection of the fact that industry and commercial crops are in the development, or "start-up" phase. The likes of radiata pine is well understood after decades of intensive research, but there are a number of unknowns with regard to planted Manuka. Would it benefit from thinning or fertiliser? Would this change the nectar in any way? Only more research will shed light on this.

**A key consideration once harvesting commences is the bee-keeping side of things. If the bee colony isn't healthy, happy and in the right position, this can materially reduce the yield and quality of Manuka honey.** Other environmental conditions such as weather, or alternative nectar sources during the Manuka

flowering period, can also have an effect. Bees can forage up to 5-6 kilometres from a hive and supposedly prefer other nectar sources such as clover to Manuka. This might require some nearby grazing when the Manuka is flowering to maintain/increase the purity (quality) of the honey. It can create ethical and perhaps legal grey areas if neighbours have hives nearby too.

**Currently New Zealand bee colonies and keepers face a number of challenges from a variety of diseases, such as the varroa mite and American foulbrood.** In the case of the varroa mite there is increasing concern about resistance to current management techniques. Recent unexplained hive losses investigated by MPI have been linked to high varroa levels and the likely presence of miticide-resistant varroa. Managing the development of miticide-resistant varroa mites is likely to be a big challenge going forward. Globally there is concern about the decline in pollinators, such as native, bumble and honey bees. The mortality rate of honey bee colonies in the US is 30%, which is more than double the accepted rate.

**With bees being ultra-sensitive to changes in the environment and colony health, this is a critical element to delivering on the numbers outlined above.** In our scenarios we have assumed the land-owner teams up with an experienced and reputable honey company and bee-keeper to get the key harvesting facets right. This relationship involves a high level of trust between parties to make the arrangement work. This includes trust that:

1. The bee-keeper knows what they are doing and can maintain healthy hives and produce a consistent high-quality product.
2. The numbers of hives and production per hive are accurately accounted for.
3. The land-owner's honey is clearly traceable through the storage and testing process.
4. The value of the honey produced is accurately assessed; remembering that the MGO levels of the honey can vary over its age.

There will no doubt be other practicalities that need consideration, but getting the establishment and harvesting aspects right are two key ones. For most landowners the harvesting aspect can be navigated by teaming up with a reputable honey company and bee keeper.

## FEATURE ARTICLE: MANUKA HONEY – A GROWTH STORY

### THE INDUSTRY'S GREATEST CHALLENGES TO REALISING ITS POTENTIAL

**Manuka honey is an exciting raw product that already has many different end forms** under a multitude of consumer categories, ranging from food through to cosmetics. Many of the categories have significant further development potential and fit under the value-add umbrella. In terms of end markets it is a fairly concentrated marketplace (top 7 destinations accounting for 83% of total export earnings), but there is a huge pool of potential consumers yet to be tapped. Its use in medical products has the potential to take it up a couple more levels too.

**There is supposedly limited competitive pressure** as New Zealand and Australia are the only places where Manuka grows naturally with relatively low pest and disease issues. **From a land-owners' perspective, outside of the economics, there are many other environmental and biodiversity benefits.** Another plus is that compared with a radiata pine forest that can deliver similar environmental benefits there is no waiting 30-odd years for the main income stream.

**So there are a lot of things to like. Equally, there are a number of challenges and areas that require further work and investment if the industry is to achieve its potential.**

Key factors Manuka honey industry participants need to focus their investment and energy on are:

1. **A common standard and definition for what constituents Manuka honey.** This includes the measurement and valuation of the non-hydrogen peroxide antibacterial component. Once this is resolved it needs to be recognised in domestic legislation and by the international marketplace to avoid counterfeiting and consumer confusion. The guidelines established last year are a first step, but there is still widespread disagreement and general industry unhappiness with the definitions. Any tarnishing of the value of Manuka honey through misleading labelling or tainting of the product would be extremely difficult for the industry to come back from. It also has wider implications beyond the honey industry, and could harm the international reputation of other New Zealand food and beverage exports too. This means the industry and Government need to work closely together to resolve this issue and ensure products leaving New Zealand live up to the standards that consumers expect.
2. **Improvement in the commercial arrangements between land-owners, bee-keepers and honey companies.** This includes the likes of standardised contract terms, as well as agreed methods for measuring the quantity and quality of honey produced.
3. **Continued development of the bee-keeping industry.** Growth is occurring, with the number of hives growing 5% per annum over the last 10 years, now numbering just over 500,000 hives nationwide. Challenges remain though, and investment in infrastructure and knowledge around hive numbers, bee health and processing facilities needs to continue.
4. **There is a need for a single industry body with a shared vision of the future and a plan for how to get there.** It's great to have a goal to increase export earnings massively, but there needs to be an action plan to make it reality. A united vision, voice and centralised point of contact make it easier to influence regulation, as well as attract and direct investment. The first steps toward industry unification are underway with the two bee-keeper bodies, honey packers and exporters voting in favour of forming a single industry body recently.
5. **Some consolidation of the supply chain as it's fairly fragmented** with only a handful of larger-sized businesses but many smaller entities. Some consolidation will be needed as the industry grows to create some economies of scale and allow increased investment in key areas such as medical trials, product development and marketing.
6. **Coordination of the various research and development projects being undertaken, as well as the establishment of a centralised knowledge base.** This involves all key facets from plantation establishment and husbandry practices through to harvesting techniques. The PGP project should help build knowledge in a number of key areas, but there are other research initiatives being undertaken that can make a contribution to the current pool of knowledge too. Sharing of knowledge will be key to encourage uptake and investment from land-owners.
7. **More investment into science to validate medical and other health claims made of Manuka honey products.** There are a number of gaps that need to be filled, and quickly, to fully validate certain claims being made on many medical and health Manuka products. Medical products require clinical trials to validate claims, which come with a high price tag. More science is critical to maintaining product reputation, creating

## FEATURE ARTICLE: MANUKA HONEY – A GROWTH STORY

new products/innovations, and generating unique intellectual property that creates barriers for the competition. While such investment might be difficult to justify during the development phase, it is critical to the long-run reputation, growth and competitive advantage of the industry.

8. **On the back of more science, increased investment will be required to reconfigure and develop new products.** Then more marketing will be needed to share the story, as well as grow brand/product exposure in existing and new markets.
9. **Enforcement of domestic and international Manuka standards (once agreed) to stamp out counterfeiting.** This is critical to not only protect the industry's integrity, but equally to avoid market access restrictions, or other countries creating different rules. For example, Chinese authorities last year informed MPI that they estimated there is four times as much "New Zealand" Manuka honey being sold in China as is actually being sent there from New Zealand! That led to concerns on the part of Chinese regulators regarding the formal definition of what constitutes Manuka honey and the likely introduction of a certification scheme. It needs to be the New Zealand industry that determines the definition and its enforcement rather than offshore markets and regulators. The latter risks numerous definitions and multiple certification schemes for different markets. Such an outcome would create a significant compliance burden and barriers to trade, especially for the smaller companies in the industry.

**As we mentioned at the start, the Manuka honey sector represents a significant growth opportunity, but there is still lots of hard work to be done to achieve its potential.** With many regional councils looking to tighten environmental standards it presents another option outside of radiata pine for many erodible pastoral areas. The economics look solid too, with a marginal rate of return ranging from 10-15%, and even higher if a grant can be used to reduce the establishment cost. Combined with the environmental benefits it can bring, this makes Manuka a viable part of the land use mix for consideration by hill country land-owners. There are still a number of unknowns and issues to resolve that require further investment across multiple fields. However, as the knowledge pool expands and the legal framework and business models strengthen, sharing of this know-how and experiences with land-owners will be critical to boost uptake and fuel industry growth.

## THE MONTH IN REVIEW

### SUMMARY

It has been a sluggish start to the 2015/16 season for pasture growth, though recent rainfall on the east coast has relieved dry conditions. Milk supply is tracking well behind the same period last year, with lower cow numbers and less supplementary feed expected to weigh on annual production. The 2015 lamb crop is expected to be significantly smaller, largely due to lower breeding ewe numbers. This will weigh on wool production in 2015/16 too. Log exports remain under pressure, but lumber volumes have been steadier.

### MOTHER NATURE

Pasture growth has generally been sluggish this spring with many commenting the season is running 1-2 weeks behind normal. **Soil temperatures 1 to 3 degrees below normal appear to have been the main driver of the slow start.** Soil temperatures in the lower South Island have been particularly cool due to a number of frost and snow events.

The west coasts of both islands have received adequate rainfall throughout the season to date. This has left soil moisture conditions around normal levels. **On the east coast, many regions experienced below-normal rainfall into late September, leaving soil moisture levels below desirable levels.** This has increased anxiety about the potential effect of the fourth-strongest El Nino conditions ever recorded by NIWA and what the summer period might have in store. **However, in late September there was widespread wet weather that delivered anywhere from 100-300mm of rainfall across much of the North Island's East Coast and the top half of the South Island.** While there was some run-off due to the heavy nature of the precipitation, most soaked in, restoring soil moisture to normal levels. Some dry parts remain around Canterbury and Otago, but most now seem better placed for the second half of spring and start of summer.

### DAIRY

**It has been a slow start to the new season for milk supply.** Fonterra's latest update indicated year-to-date production was tracking 8-10% behind the same period last year. The slow start means peak milk supply is unlikely to be as strong as previous years, which will weigh on annual production. Nevertheless early season comparisons can often be misleading, especially given last year saw an extremely strongly start due to favourable weather conditions.

**Market expectations are for a 5-10% decline in annual milk supply, and we are at the lower**

**end of estimates at this stage.** Ultimately the weather will have a greater say this season with less use of supplementary feed and an industry focus on pasture as the lowest-cost feed source. **Lower cow numbers in milk this season will also have an impact. Many farmers have turned off low performers** over the last 12 months and reduced stocking rates. Total cull cow turnoff is running 24% ahead of last year and looks set to register a new record of around 1.16 million head. There is no split by origin, but the vast majority of the increase is reportedly dairy-sourced. The increase is expected to have reduced the number of cows in milk by 2.2% in 2015/16, the first contraction in the dairy herd for 10 years.

**There continue to be concerns about the possible impact of El Nino this summer.** At this stage it is a risk. It has to be remembered a "typical" El Nino pattern would affect only around 40% of New Zealand's milk supply, a large proportion of which is irrigated in the Canterbury region. Therefore, the effects could be quite localised and might not have an outsized impact on national supply.

### MEAT AND FIBRE

**Sheepmeat turnoff has been higher than expected throughout 2014/15.** This has led to a further 0.90 million head (4.5%) fall in breeding ewe numbers. Combined with tough tugging conditions, especially in many east coast regions, this is expected to reduce the 2015 lamb crop by 7.2%, or 1.8 million head. Anecdotally, lamb survival has so far been better than expected in many regions, which could reduce the final size of the drop. As long as El Nino doesn't bite too hard during the summer period, sheepmeat production is expected to drop by 8% to 442,000 tonne in 2015/16. This would be the lowest level of production since 2011/12, which should be price supportive, especially during the seasonal peak.

**Despite lower sheep numbers and summer dry conditions, wool exports still managed to increase by 1.4% in 2014/15.** China increased its market share to 57% (from 50%) at the expense of Europe (25%) and South-East Asia (8%).

### FORESTRY

**Log exports remain under pressure in 2015 with year-to-date output back 11% on the same period last year.** Weakness has centred on China, Japan and India. Overall China's import demand is back 20% y/y. All major suppliers have seen declines, but volumes from North America have been the hardest hit. **Lumber exports have been steadier.** A pull-back from China to more normal levels has been offset by better exports to the US and Australia.

## RURAL PROPERTY MARKET

### SUMMARY

Rural property prices have eased from recent highs, led by dairy-aligned property. Dairy farm prices were particularly weak in July/August, but a lot of this appears to be compositional and related to the time of year. The upcoming main marketing period for farms will test whether or not prices are going to set lower for dairy-aligned land. An improvement in the outlook for farm-gate returns will help confidence. However, headwinds remain: cashflow remains constrained; there will be heightened uncertainty for foreign investment following the Lochinvar decision; and credit growth was particularly strong in 2014/15, restricting future borrowing capacity, especially with returns and cashflow under pressure. For other farm types prices appear steadier and turnover has ticked up a touch.

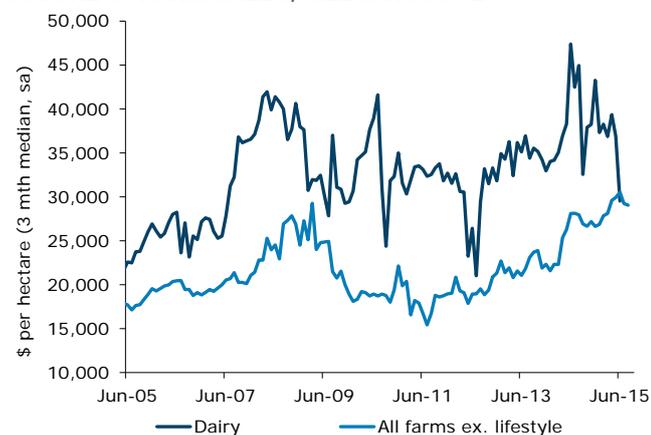
**The upcoming main marketing period for farms will provide the real test for where the rural property market is placed.** Anecdotally it seems there are going to be plenty of listings coming onto the market in the main regions over the second half of spring. Vendors who need to sell will have to meet

the market; others might choose to sit tight given an improvement in the outlook for returns.

**Two notable recent developments that could affect the buy side are the recent “no” decision on Lochinvar Station, and dairy sector credit growth.** The decision on Lochinvar station is likely to heighten uncertainty for foreign investment in the short term at least. Applying the same logic and analysis of this particular case to other foreign investment would suggest the hurdle for demonstrating “substantial and identifiable” economic benefit to New Zealand has increased. The other aspect is that dairy sector credit grew by \$3.25 billion (+9%) in 2014/15. This was the strongest rate of growth since 2008/09, highlighting the role lower interest rates and a competitive lending market has played in boosting land prices. It is little coincidence that dairy-aligned land prices rose by 10-20% over the last two financial years while credit growth was up 16% over the same period. This growth is likely to restrict future borrowing capacity, especially with returns and cashflow still under pressure.

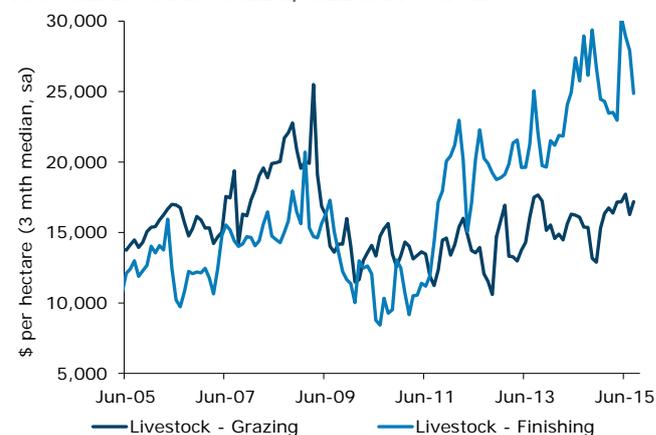
FARM SALES BY FARM TYPE								
3-Month Seasonally Adjusted		Current Period	Previous Period	Last Year	10-Year Average	Chg. P/P	Chg. Y/Y	Chg. P/10yr
Dairy	Number of Sales	48	61	57	66	↓	↓	↓
	Median Price (\$ per ha)	29,500	36,900	47,400	32,600	↓	↓	↓
Livestock – Finishing	Number of Sales	74	65	71	66	↑	↑	↑
	Median Price (\$ per ha)	24,900	27,900	28,900	16,700	↓	↓	↑
Livestock – Grazing	Number of Sales	193	180	212	203	↑	↓	↓
	Median Price (\$ per ha)	17,200	16,300	15,000	15,600	↑	↑	↑
Horticulture	Number of Sales	64	58	53	43	↑	↑	↑
	Median Price (\$ per ha)	217,200	255,000	143,200	154,700	↓	↑	↑
Arable	Number of Sales	35	36	39	20	↓	↓	↑
	Median Price (\$ per ha)	52,700	50,400	52,100	30,500	↑	↑	↑
All Farms ex. Lifestyle	Number of Sales	443	416	466	431	↑	↓	↑
	Median Price (\$ per ha)	29,000	29,200	28,000	21,700	↓	↑	↑
Lifestyle	Number of Sales	2,178	2,027	1,478	1,526	↑	↑	↑
	Median Price	557,000	549,000	522,000	456,000	↑	↑	↑

FIGURE 1. FARM SALES, MEDIAN PRICE



Source: ANZ, REINZ

FIGURE 2. FARM SALES, MEDIAN PRICE



Source: ANZ, REINZ

# RURAL PROPERTY MARKET

## REGIONAL FARM SALES FOR 2014 BY FARM TYPE

Region	Dairy			Fattening		Grazing		Horticultural	Arable
	Average sale price per ha	Average production MS per ha	Average sale price per MS produced	Average sale price per ha	Average sale price per stock unit	Average sale price per ha	Average sale price per stock unit	Average sale price per ha	Average sale price per ha
Northland/Auckland	32,200	469	53	16,400	1,254	9,400	221	164,600	–
Bay of Plenty	32,800	697	42	24,700	1,244	–	409	186,800	–
Waikato	43,100	788	47	17,900	1,259	10,900	1,120	161,300	–
Taranaki	45,400	750	52	15,000	899	7,100	478	267,300	–
Gisborne/Hawke's Bay	–	–	–	21,400	584	3,700	491	116,400	42,100
Manawatu/Lower N.I.	29,700	831	31	22,200	673	6,400	549	107,200	–
Canterbury/West Coast	27,500	749	37	24,600	1,538	7,400	1,236	144,800	35,800
Otago/Southland	38,300	1,052	36	20,500	1,334	4,100	14	129,100	37,300
New Zealand	37,800	823	39	20,600	1,101	7,400	199	158,800	37,500

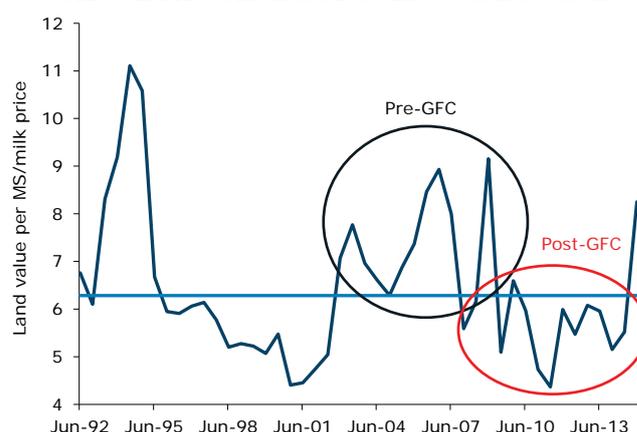
Source: ANZ, Quotable Value New Zealand

In this edition of the rural property section, we look at the regional differences in land values for different farm types. **There is a wide spread in regional prices and trends for the different farm types, which is not captured at the national level.** The differences are often associated with parameters such as weather, soils, contour, location, environmental regulation and productivity. We have used Quotable Value NZ data, which has just been released for the 2014 calendar year. While the data lags the current situation by eight or so months, it does offer an insight into the regional differences in farmland values. Comparisons with the REINZ data shouldn't be made due to different collection methods and definitions.

**The 2014 calendar year generally saw buoyancy in the rural property space for all regions and most farm types.** Much of the activity was driven by the record-breaking 2013/14 season for dairy and generally favourable seasonal conditions until the summer period. Lower interest rates and a competitive lending market were also important factors. Horticulture property prices lifted too, driven primarily by kiwifruit and Auckland activity. Grazing property prices were the only farm type to face downward pressure. Variable returns, tougher seasonal conditions in certain regions and changing regional council rules impacted on prices.

**The national average for dairy farmland sales averaged \$37,800/ha, or \$39/kg MS produced in 2014.** Using the nine-year average milk price of \$6.35/kg MS this gives a multiple of 6.2, slightly below the 15-year average of 6.4. The actual cashflow over the two adjoining financial years was slightly above this at \$6.70/kg ms, which gives an even more favourable multiple of 5.9. However, the regional split shows a wide spread in valuation metrics.

### FIGURE 3. LAND VALUE MULTIPLE TO MILK PRICE



Source: ANZ, QVNZ.

**On a per hectare basis Auckland took top spot from the Taranaki and Waikato at \$52,500/ha.** The lowest prices were in Northland at \$16,300/ha. When West Coast sales are excluded from Canterbury/West Coast, the average price was \$35,500 per ha, or \$39/kg MS produced. **On a per kilogram MS basis the five most expensive regions for dairy farms are Auckland, Taranaki, Waikato, Bay of Plenty and Canterbury, in that order.**

**When Auckland is split out from Northland, the average price was an unbelievable \$132/kg MS produced.** There were 28 sales so the result wasn't skewed by low turnover. The main factor was that production averaged just 354 ms/ha. This suggests that many of the properties had a strong lifestyle element, as well as future subdivision potential, where buyers/developers are looking to capitalise on future growth in the Auckland region, as opposed to farming. **The Taranaki region was the next highest at \$52/kg MS produced, or multiple of 8.2 on the nine-year average milk price.**

## RURAL PROPERTY MARKET

Interestingly, in Taranaki the average size of the farm sold was the second smallest at 49 hectares, versus a national average of 80 hectares. This suggests next-door neighbours purchasing adjoining blocks to expand existing operations. **The Waikato, followed by the Bay of Plenty, were the next most expensive regions on a MS produced basis, at \$47/kg MS and \$42/kg MS respectively.** The Waikato region has seen particularly strong activity in recent times and accounted for nearly a third of total dairy farm turnover in 2014. The Bay of Plenty's average farm size was the smallest at 40 hectares, suggesting similar dynamics to the Taranaki and Auckland region drove the market in 2014.

**At the other end of the spectrum Northland, Manawatu/Whanganui and the West Coast regions look to provide the best value for money.** The average price per hectare in Northland was the lowest at \$16,300/ha, followed by the West Coast at \$17,700/ha and then Manawatu/Whanganui at \$30,400/ha. Both Northland and the Manawatu/Whanganui were the best value for money at \$29/kg ms, a milk price multiple of 4.6. The West Coast saw a slightly higher price paid of \$31/kg ms, a milk price multiple of 4.9. There are a number of regional-specific factors that need to be weighed up, but given the gap in some of the valuation metrics these regions look to offer best value for money. The other region that needs a mention is the lower South Island, where valuation metrics were more middle of the pack at \$36/kg ms, a milk price multiple of 5.7. This was a big lift from the \$26/kg MS paid in 2013.

**The regional breakdown for fattening shows a defined split in valuations between different regions.** There were much higher valuations for the golden triangle of Auckland, Waikato and Bay of Plenty, as well as the dairy expansion hot-spots of Canterbury to Southland. **On a per hectare and stocking-carrying basis Auckland took out top spot.** Again the valuation per stock unit was an unbelievable \$3,400/SU. This was driven by similar dynamics to dairy in the region, and the lowest stocking rate of 6 SU/ha. The next highest value regions were the Bay of Plenty, Canterbury and Southland, with very similar per hectare prices, around \$25,000/ha. On the stock-carrying basis it wasn't so close, with Canterbury at \$1,520/SU, Southland \$1,440/SU and Bay of Plenty \$1,244/SU.

**At the other end of the spectrum are the more traditional and concentrated red meat regions of the East Coast of the North Island and Manawatu/Whanganui.** On a per-hectare basis they were not too much lower, at around the \$21,500-\$22,000/ha mark, but much higher stock-carrying capacity drives the valuation on this basis to around \$600/SU. This is less than half of the more expensive regions.

**For grazing properties there is a wide range of valuations. Lower turnover of just 148 farms means the sample size at the regional level is small and has skewed the results in certain areas.** The likes of the low valuation for Otago/Southland was skewed by just seven recorded sales, two of which appear to be larger high country/lease blocks, substantially reducing the valuation on a stock-carrying capacity basis. There were no surprises in the fact that Auckland was the highest-valued region, when split out from Northland. Northland actually had the highest turnover, accounting for a quarter of total sales. The valuation per hectare was high at \$9,000/ha, but higher stock-carrying capacity drove the price per stock unit to \$185. **The average size of the properties sold in Northland was the lowest, at just 71 hectares, implying a large lifestyle element. The more traditional grazing areas with good-sized blocks saw prices of \$6,000-\$7,100/ha and on a stock-carrying capacity basis, valuations of \$450-\$550/SU.** The Waikato and Canterbury were more expensive, no doubt reflecting a dairy influence.

**In the arable sector, 39 out of a total 49 sales occurred in Canterbury.** The average size of the properties sold was 90 hectares. A proportion of these would have been sold for dairy conversion. Of the remaining ten, Gisborne accounted for five, Manawatu/Whanganui four and Southland one.

**In the horticultural sector, the changing mix of sales always makes regional comparisons fraught with difficulty and less relevant.** Bay of Plenty is likely to reflect a larger proportion of kiwifruit blocks, but other areas, such as Auckland, provide fresh produce for the local or Australian export markets, and the East Coast cultivates a wide variety of produce. QVNZ recorded 282 horticultural business sales in 2014, which would appear to be more than other real estate data sources reported.

## ECONOMIC INDICATORS

### EXCHANGE RATES

	Current Month	3 Mth Trend	Last Year	Chg. M/3M	Chg. Y/Y
NZD/USD	0.64	0.67	0.82	↓	↓
NZD/EUR	0.57	0.61	0.63	↓	↓
NZD/GBP	0.42	0.43	0.50	↓	↓
NZD/AUD	0.91	0.90	0.90	↑	↑
NZD/JPY	76.8	83.2	87.5	↓	↓
NZD/TWI	68.5	70.2	75.6	↓	↓

### NZD BUYS USD

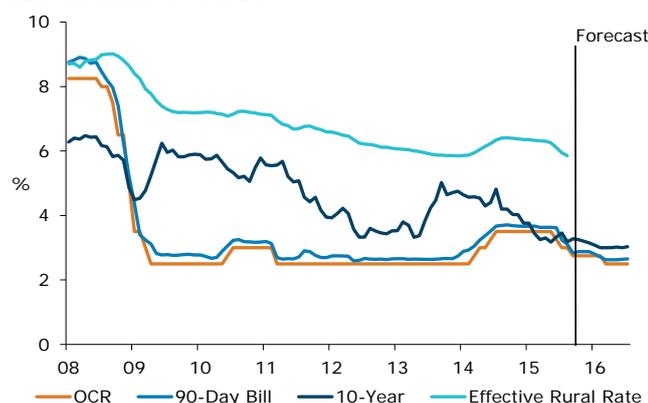


Source: ANZ, Bloomberg

### NZ INTEREST RATES

	Current Month	3 Mth Trend	Last Year	Chg. M/3M	Chg. Y/Y
Official Cash Rate	2.75	3.08	3.50	↓	↓
90 Day Bill Rate	2.84	3.32	3.71	↓	↓
1 yr	2.71	2.91	3.60	↓	↓
2 yr	2.47	2.87	3.76	↓	↓
3 yr	2.57	2.84	3.92	↓	↓
5 yr	2.70	2.97	4.04	↓	↓
10 yr	3.28	3.32	4.20	↓	↓
Effective Rural Rate	5.85	6.10	6.40	↓	↓
Agricultural Debt (\$b)	58.12	56.86	53.29	↑	↑

### KEY INTEREST RATES



Source: ANZ, RBNZ

**The NZD/USD is now trading below where we believe its long-run fair value sits.** However, it is trading here for valid reasons that we expect to persist for some time: world trade is declining; commodity producing countries are undergoing an income shock; China continues to try to rebalance its economy from a manufacturing powerhouse to a consumption-led one; EM stresses are extreme – witness the depreciation of the Brazilian real, Malaysian ringgit and Indonesian rupiah; and finally the USD remains strong as the case for US “normalisation” continues to be made. Thus, we continue to see the balance of risks as skewed toward further NZD declines.

**However, there are reasons for caution. For one, the NZD has already fallen precipitously.** The NZD has declined some 29% since last July. This is a significant revaluation. **Domestic pressures on the currency are easing.** Domestic fundamentals and ANZ proprietary indicators are showing tentative signs of stabilisation. This removes a source of downside risk for the NZD and provides potential for a rebound, should offshore settle.

**The NZD/AUD is likely to remain above long-run averages (averages are broadly clustered in the region of 0.84-0.86).** Australia is facing similar economic challenges to New Zealand (weaker commodity prices, terms of trade and China risks), but also faces a weaker fiscal position, and a weaker productivity story. ANZ expects the RBA to reduce its cash rate more than the RBNZ from this point in time, which will also support NZD/AUD.

**NZD/EUR probably has the most risk of rapid movement.** The euro region’s economic challenges remain. Short-term interest rates are negative across most of the region, and the ECB looks set to continue pressing its foot on the stimulus gas pedal. This should keep EUR capped and leaves risks to the downside.

**On the interest rate front it’s all about central banks, with the RBNZ part-way through its easing cycle, and the US Federal Reserve gearing up to tighten,** most likely in December (although recent labour market data have called that into question to a degree). Although we expect the RBNZ to leave policy on hold in October as it enters a period of “pause and reflection” after three OCR cuts in a row, we expect another cut next year. In addition, the global and inflation risk profiles suggest that the risk is we see more, rather than less, easing going forward.

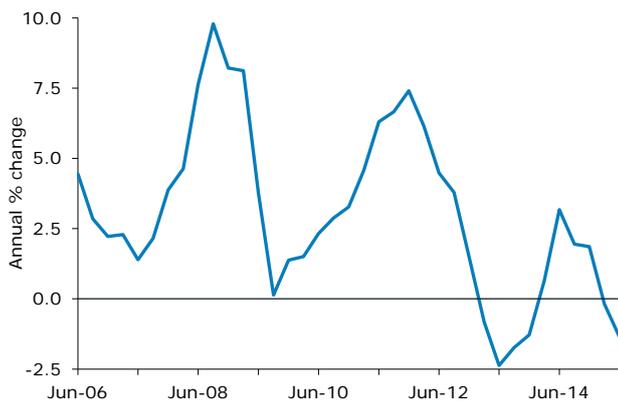
**Broadly speaking, we expect these policy changes to exert downward pressure on New Zealand interest rates and upward pressure on US interest rates.** However, with US rates more influential at the long end of the curve, the two forces are likely to offset one another, **leaving long-term rates reasonably stable.** With the short end by and large a local policy story, we expect short-end rates to fall, steepening the yield curve.

## ECONOMIC INDICATORS

### INFLATION GAUGES

Annual % change	Current Qtr	Last Qtr	Last Year	Chg. Q/Q	Chg. Y/Y
Consumer Price Index	0.4	0.3	1.6	↑	↓
Farm Input	-1.4	-0.2	3.2	↓	↓
Net Imp. Margins PPI	-17.1	-12.9	19.6	↓	↓

### FARM INPUT INFLATION GAUGE



Source: ANZ, Statistics NZ

**Domestic and global inflation trends remain subdued; so much so that key farm input prices are back 1.4% on the same time last year.** An offset from broad-based falls in global commodity prices is lower prices for many operating farm inputs, from supplementary feed to fuel. The magnitude of the downturn is also impacting on expansion plans for many sectors. This is reducing demand for capital inputs, such as farm machinery and equipment, which could lead to more favourable pricing down the track. The offset to reduced global prices is the lower NZD. The balance between the two is critical as to whether or not there is a reduction in farm-gate prices.

**The time it takes for these dynamics to feed through varies** depending on the extent of FX hedging, the frequency at which contracts are renegotiated, the degree of competitive pressures and how pricing decisions are made in each sector. The speed of pass-through from a lower NZD is reasonably swift for imported feed and fuel costs, although it is more gradual for general farm merchandise and larger capital goods. Many importers had been hedged prior to the sharp reduction in the NZD – delaying the impact. RBNZ estimates assume that the projected 15% fall in the NZD by next year will add about 3.5 percentage points to tradable inflation over the next year, offsetting the impact of a benign global cost base. The NZD TWI is currently tracking about 5% higher than the RBNZ assumed though. The flow-through from the low NZD is expected to be more muted too given some of the elements of low inflation are structural and firms have limited scope to push through cost increases in a sluggish demand environment. We also think domestically generated inflation will remain contained given the margin of spare capacity, and a benign wage and cost environment in most sectors.

### ANNUAL NET IMPLIED MARGINS PPI AG/FORESTRY/FISHING (OUTPUTS – INPUTS)



Source: ANZ, Statistics NZ

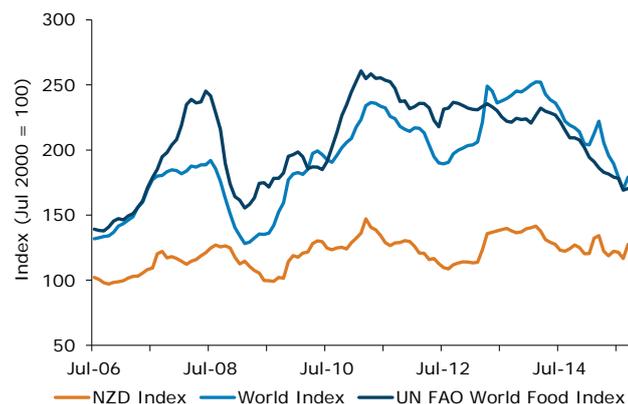
**The headline PPI margin for agriculture, forestry and fishing remained under pressure** in the second quarter, declining a further 3% to be down 16% y/y. Weakness continued to centre on output prices for forestry (-7.4% q/q) and dairy (-5.5% q/q). Fishing and aquaculture saw a 2% q/q decline too, whereas all the other sectors were largely unchanged. On the input side, trends remain subdued with a quarterly rise of 0.5%. This did break the downward trend evident since June last year though. There was a quarterly rise of 1.1% for sheep and beef farming and 0.9% increase for fishing and aquaculture. **Overall second quarter PPI margins were back -7.8% for forestry, -5.5% for dairy farming and -3.0% for fishing and aquaculture. The other sectors were back less than 1%.** On an annual basis dairying is back a massive -40% and forestry -9%. Most of the other sectors are little changed.

## KEY COMMODITIES: OVERALL INDEX AND DAIRY

### SOFT COMMODITY PRICE INDICES

	Current Month	3 Mth Trend	Last Year	Chg. M/3M	Chg. Y/Y
ANZ NZD Index	128	122	124	↑	↑
ANZ World Index	179	176	219	↑	↓
FAO World Food Index	170	173	209	↓	↓

### SOFT COMMODITY PRICE INDEXES

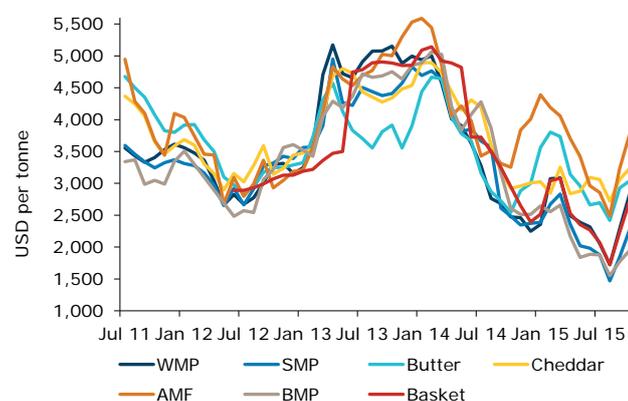


Source: ANZ, FAO

### OCEANIA DAIRY PRICE INDICATORS

USD per tonne	Current Month	3 Mth Trend	Last Year	Chg. M/3M	Chg. Y/Y
Milk Price YTD (\$ per MS)	3.70	3.40	5.20	↑	↓
Milk Price Forecast (\$ per MS)	4.60	3.85 to 5.25	5.30	↑	↓
Whole Milk Powder	2,824	2,021	2,473	↑	↑
Skim Milk Powder	2,267	1,730	2,486	↑	↓
Butter	3,037	2,679	2,544	↑	↑
Anhydrous Milk Fat	3,763	2,859	3,252	↑	↑
Butter Milk Powder	1,945	1,734	2,611	↑	↓
Cheese	3,234	2,947	2,921	↑	↑

### DAIRY PRODUCTS – NZ EXPORT MARKET PRICES



Source: ANZ, GlobalDairyTrade

**Global soft commodity prices have generally remained under pressure since our last update.** However, there are some signs of stabilisation starting to emerge after very tough year of broad based declines. That said, things are not expected to bounce back quickly for the majority with ample global supplies in most cases and a more subdued global growth backdrop. **Asia (which has been the epicentre of increased global import demand over the last 10 years) has seen economic growth slow.** This has led to slower demand growth for many base soft commodities. This at a time many had increased investment to boost supply. **El Nino remains the wildcard for many soft commodities, and generally it isn't favourable for Asian production,** which could be beneficial for New Zealand prices given our market position and linkages.

#### **Dairy markets have bounced off extreme lows.**

The main drivers have been a slow start to the season for New Zealand milk supply, an El Nino weather premium, substantially reduced GDT volumes and seasonal increase in China's import requirements. The catalyst for the initial improvement was driven by bargain-hunting, with New Zealand product priced substantially below other competing sources. More recently, the substantial reduction in WMP powder volumes being sold via the GDT platform has increased competition amongst buyers. Indeed, WMP powder auction volumes have been tracking at less than half the same time last year and at the most recent auction were 43% below guidance from less than eight weeks before.

#### **The market will remain hyper-sensitive to the evolution of New Zealand supply conditions and GDT offerings into the end of the year.**

Weather conditions will be important, but the supplementary feed market has shown some improvement in recent weeks. This suggests the improvement in the milk price outlook is bringing some supplementary feed back into play. Europe is currently in their seasonal lull, with cows indoors, but there appears to be plentiful supplies of SMP to export with production tracking ahead of last year. If higher pricing for WMP continues it is likely to see a production response from Europe at some point. All up, further price rises are expected into the end of year, but with New Zealand product being more fairly priced versus other competing sources and a still subdued demand background we suspect it could be more of a grind, compared with recent leaps. China remains the wildcard as always, seasonally import demand has improved, but to what extent this kicks-on into 2016 will be important for the sustainability of higher prices.

#### **Recent gains are creating further impetus for milk price forecasts to move back toward \$5.00/kg MS.**

Given the still subdued demand backdrop and potential for Europe to produce more powder at some point we would suggest taking a cautious approach to budgeting for now.

## KEY COMMODITIES: BEEF AND LAMB

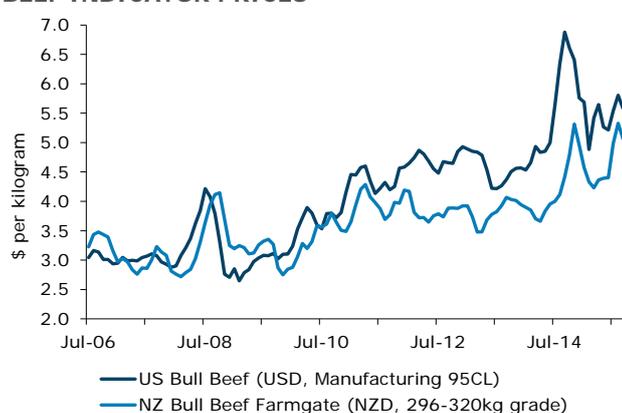
### BEEF PRICE INDICATORS

\$ per kg	Current Month	3 Mth Trend	Last Year	Chg. M/3M	Chg. Y/Y
NZ Bull Beef <sup>1</sup>	5.06	4.91	4.42	↑	↑
NZ Steer <sup>1</sup>	5.77	5.20	4.54	↑	↑
NZ Heifer <sup>1</sup>	5.21	4.64	3.97	↑	↑
NZ Cow <sup>1</sup>	3.73	3.60	3.04	↑	↑
US Bull Beef <sup>2</sup>	5.58	5.52	6.88	↑	↓
US Manu Cow <sup>3</sup>	5.02	5.02	6.52	↔	↓
Steer Primal Cuts	8.11	8.13	8.12	↓	↓
Hides <sup>4</sup>	55.9	59.7	72.0	↓	↓
By-Products <sup>4</sup>	55.3	52.9	63.7	↑	↓

<sup>1</sup> (NZD, 296-320kg Grade Bull & Steer), (NZD, 195-220kg Grade Heifer) (NZD, 160-195kg Grade Cow)

<sup>2</sup> USD, Manufacturing 95 CL <sup>3</sup> USD Manufacturing 90 CL <sup>4</sup> USD\$ per Hide

### BEEF INDICATOR PRICES



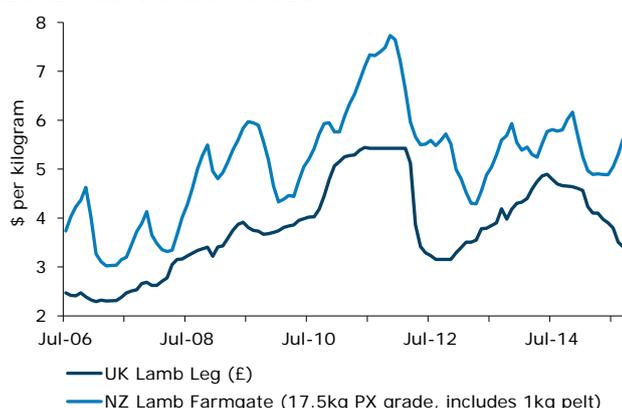
Source: ANZ, Agrifax

### LAMB PRICE INDICATORS

\$ per kg	Current Month	3 Mth Trend	Last Year	Chg. M/3M	Chg. Y/Y
NZ Lamb <sup>1</sup> (NZD)	5.62	5.08	5.80	↑	↓
UK Lamb Leg (£)	3.41	3.74	4.66	↓	↓
Rack US (USD)	15.1	15.2	16.8	↓	↓
Flaps (USD)	4.24	4.21	5.67	↑	↓
Skins <sup>2</sup>	2.56	2.88	4.89	↓	↓

<sup>1</sup> 17.5kg PX grade, including 1kg pelt <sup>2</sup> USD per skin

### LAMB INDICATOR PRICES



Source: ANZ, Agrifax

### US beef prices have fallen substantially in recent weeks.

The dynamics driving the fall are likely to weigh on schedule prices into at least the start of the summer period. **The focal point has been weaker foodservice demand in the US, high inventory levels and increased feedlot supplies.** US inventory levels have been tracking 10-15% above the five-year average and well above last year. A near doubling of imports (compared with 5-year average) from the majority of importers has increased supplies. Australia has been the main contributor given its size, but hit its quota trigger level (85% full) in August implying more limited supply through till the end of year. The other supply dynamic has been an increase in market-ready prime cattle in the US affecting the price of other beef cuts. This has lowered round and chuck cut prices impacting on US lean grinding beef. Foodservice demand has been softer too during the summer period, meaning buyers have decided to take a wait and see approach with adequate inventory levels. Customer foot traffic for US restaurants has been softer recently and cheaper alternatives in the form of pork and chicken are reportedly weighing on beef demand.

**With the US market looking softer, more beef is being diverted into Asia.** China continues to take increasing volumes and South Korea has picked up lately too. Australian production continues to fall and exports over the next season are expected to be back 9%. These dynamics should be price supportive, but will crucially depend on how the US gets past its current digestion issues.

**Lamb prices are expected to be more positive this season largely due to a substantial tightening in tradable supply and lower NZD.** Lamb exports from New Zealand and Australia are expected to be down 6% y/y over the course of 2015/16. Combined with the lower breeding ewe turn-off, total exportable sheepmeat production is expected to decline 8%. This should be price supportive for all markets outside the UK, where higher domestic supplies (+5% YTD) are continuing to pressure prices.

**In the near-term there will be the normal seasonal uptick in schedule prices** for Christmas sales in the UK and Europe. This could last longer than normal with the Chinese New Year being in early February, a potentially slow start to the processing year due to seasonal conditions and lower lamb numbers (farmers choosing to add more weight). Anecdotally, Chinese enquiry has recently picked up despite it being the seasonal lull for meat consumption. Demand for the New Year period and the liquidation of mutton stocks are seeing buyers re-emerge. **The UK market remains the greatest concern, with prices yet to stabilise.** UK domestic production is expected to remain 5.0-7.5% (0.9m head) up on year ago levels till Q1 2016. Anecdotally, negotiations for the chilled Christmas trade have been as strong as last year, which combined with a lower NZD should be price supportive. However, outside the speciality occasion windows high UK production is expected to provide plenty of competition.

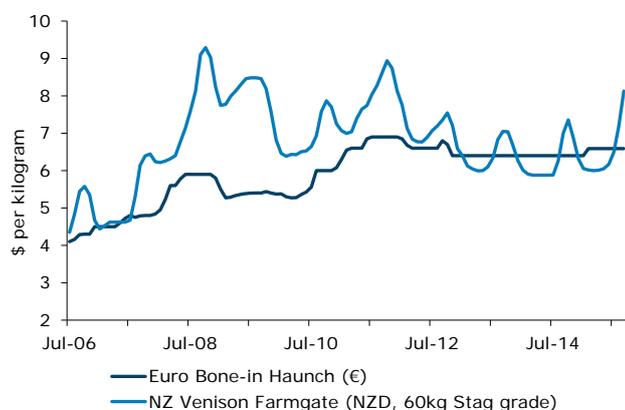
## KEY COMMODITIES: VENISON AND WOOL

### VENISON PRICE INDICATORS

\$ per kg	Current Month	3 Mth Trend	Last Year	Chg. M/3M	Chg. Y/Y
NZ Stag <sup>1</sup>	8.13	6.61	7.00	↑	↑
NZ Hind <sup>1</sup>	8.03	6.51	6.90	↑	↑
Euro Bone-in Haunch (€)	6.59	6.59	6.40	↔	↑
Boneless Shoulder (€)	4.94	4.90	4.69	↑	↑
Loin (€)	16.2	16.0	14.5	↑	↑

<sup>1</sup> (60kg Stag AP grade), (50kg Hind AP grade)

### VENISON INDICATOR PRICES

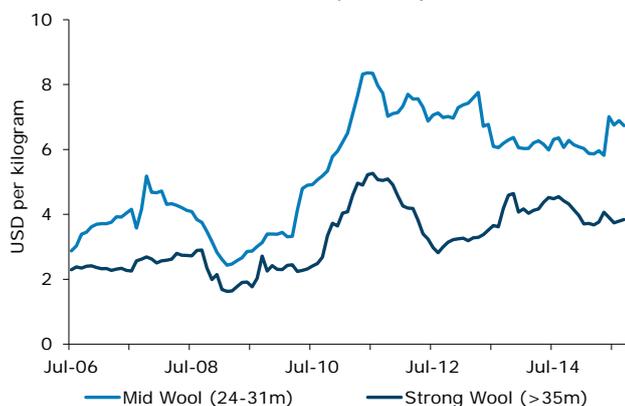


Source: ANZ, Agrifax

### CLEAN WOOL INDICATOR PRICES

\$ per kg	Current Month	3 Mth Trend	Last Year	Chg. M/3M	Chg. Y/Y
NZ Mid Wool (24-31m)	10.56	10.22	7.42	↑	↑
NZ Strong Wool (>32m)	6.02	5.66	5.41	↑	↑
USD Mid Wool (24-31m)	6.74	6.88	6.06	↓	↑
USD Strong Wool (>32m)	3.84	3.81	4.42	↑	↓

### WOOL INDICATOR PRICES (CLEAN)



Source: ANZ, Beef + Lamb NZ, Wool Services International

**Venison prices have hit the \$8/kg plus mark for the first time in four years.** Better in-market prices for the European game season, combined with a lower NZD/EUR providing a substantial lift on the low-\$7/kg schedules seen over the last three years.

**New Zealand venison production in 2014/15 looks like it will finish 8% behind last year.**

**This has reduced frozen inventory levels as the season has progressed.** Chilled prices have been supported with better demand for quality game meats in Europe and expanding alter markets (i.e. North America and China). Some European buyers who had supported alter sources of lower quality and priced game meat in recent years have returned (for quality and consistency reasons) this season improving demand. When combined with lower stocks of loins, this has improved pricing. Frozen leg and shoulder prices have been slower to improve, but the lift in chilled pricing this game season and lower inventory levels appears to have been the catalyst for a recent shift higher. This should be price supportive for schedule prices once the seasonal peak for chilled product into Europe closes. This is usually around early November.

**The other dynamic, which will be supportive in 2015/16 is industry forecasts for another 6% decline in New Zealand production.** This would take production back toward 360,000 head, which would be the lowest level of production since 1997/98.

**It's been a quiet period with the seasonal lull for auction volumes of coarse wool. Some smaller parcels of finer micron wool have traded at solid prices though. Uncertainty over the Chinese economy remains and this could spill over into demand for wool** as seasonal auction volumes of coarse micron wool once again increases. China continues to dominate accounting for 57% of New Zealand's total wool exports in 2014/15. Exports have held up so far in 2015/16 despite recent concerns about the extent of the downturn in the Chinese economy and other woollen substitutes facing price pressure. Indeed the likes of cotton prices have continued to face downward pressure hitting fresh multi-year lows recently despite a large downgrade in US cotton production. **The other area of uncertainty remains Europe**, with exports continuing to track behind the year for the three biggest markets of Germany, UK and Italy.

**The support factors for farm-gate auction prices are likely to be a lower NZD and constrained volumes.** Anecdotally inventory levels are reportedly low, more wool is being sold via other channels on fixed contracts, and the drop in sheep numbers in 2014/15 is expected to see wool production decline by 2% in 2015/16. This follows a 9% reduction in supply over the last two years.

## KEY COMMODITIES: GRAINS

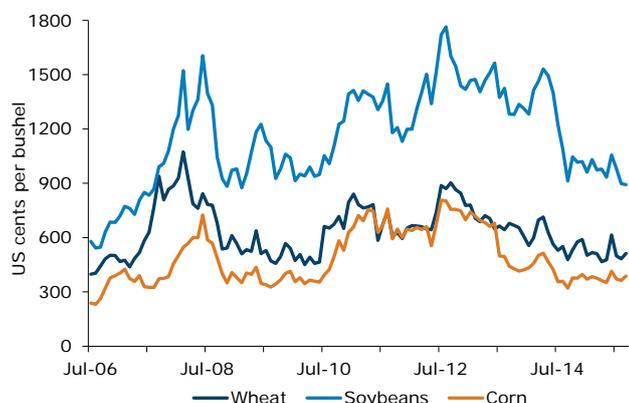
### GRAIN & OILSEED PRICE INDICATORS

	Current Month	3 Mth Trend	Last Year	Chg. M/3M	Chg. Y/Y
NZ Milling Wheat <sup>1</sup>	376	389	443	↓	↓
NZ Feed Wheat <sup>1</sup>	332	345	432	↓	↓
NZ Feed Barley <sup>1</sup>	315	329	428	↓	↓
Palm Kernel Expeller <sup>1</sup>	212	227	260	↓	↓
US Wheat <sup>2</sup>	5.1	5.3	4.8	↓	↑
US Soybeans <sup>2</sup>	8.9	9.8	9.1	↓	↓
US Corn <sup>2</sup>	3.9	3.8	3.2	↑	↑
Australian Hard Wheat <sup>1</sup>	374	411	383	↓	↓

<sup>1</sup> NZD per tonne

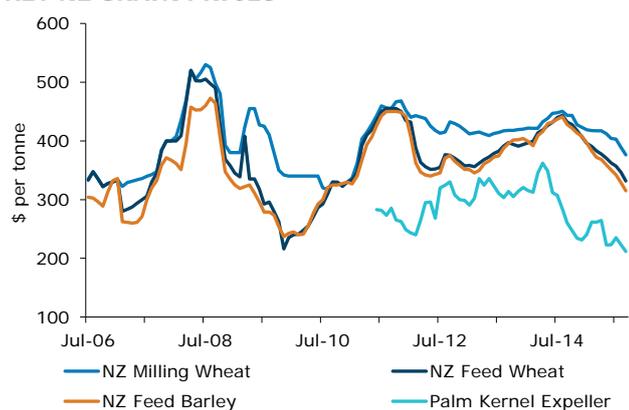
<sup>2</sup> USD per bushel

### CBOT FUTURE GRAIN & OILSEED INDICATOR PRICES



Source: ANZ, Bloomberg

### KEY NZ GRAIN PRICES



Source: ANZ, Agrifax

The lows in domestic grain prices have been seen, but a large improvement is not expected yet. An improvement in the milk price outlook as we head into a predicted El Nino summer is expected to increase buyer activity providing price support. A base has also formed in global grain prices, although some downside risk remains into the end of year.

PKE prices have already begun to react to the improved milk price outlook and are moving back toward \$220-230/t. In-market prices have also increased with demand from other international buyers emerging. An increase in PKE prices will help to stabilise domestic wheat, maize and barley prices.

Feed wheat and barley prices have hit five-year lows recently. Market activity has been subdued with dairy farmers preferring PKE and feed mills using cheaper imports. September saw contract prices being negotiation for next season's feed wheat and barley. However, even at the lower prices being offered minimal buyer interest has reportedly been expressed. **The lack of interest in contracts is expect to see a reduction in the planted area this season as growers opt for more flexibility** by planting a bigger area of alternatives, such as brassicas. A smaller planted area should be price-supportive in 2016 depending on how seasonal conditions evolve. A stronger near-term improvement isn't expected with carryover stocks from 2014/15 still needing to be digested and PKE being preferred. **Growers will be interested to see if dairy farmers follow Fonterra's new guideline of a 3kg daily limit per cow for PKE.** If it were to be made a condition of supply this would be a positive for domestic feed sources, especially during periods of seasonal stress for pasture growth.

Higher imports of cheap international maize, combined with a large 2015 crop and subdued dairy demand has seen substantial downward pressure on maize grain and silage prices. Contract prices for this year's maize grain look to be \$30-\$40/t below 2014/15 contracts. The lower prices will see a smaller area planted. Most planting has occurred in the upper North Island, but the lower half is only getting underway.

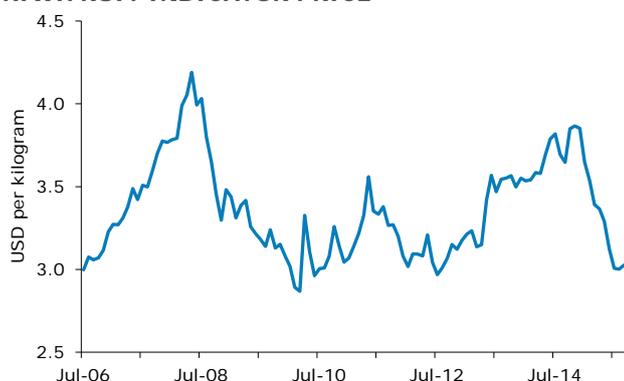
Global grain prices are languishing around five year lows too. A base seems to be forming despite the International Grain Council forecasts of global stocks hitting almost 30-year highs. Wheat prices have fallen to the lowest level in 12 months in Australia. Prices have been hit by weaker global prices and rainfall in Australia, increasing the size of the wheat crop to 24.5mt, up 1.5mt y/y.

## KEY COMMODITIES: HORTICULTURE

HORTICULTURE PRICE INDICATORS					
	Current Month	3 Mth Trend	Last Year	Chg. M/3M	Chg. Y/Y
Kiwifruit (USD per kg)	3.0	3.0	3.6	↔	↓
Apples (Weighted Index)	240	243	203	↓	↑
Average Wine Price <sup>1</sup>	4.72	5.34	5.40	↓	↓
Packaged White Wine <sup>1</sup>	5.53	5.73	6.15	↓	↓
Packaged Red Wine <sup>1</sup>	7.96	9.12	9.52	↓	↓
Bulk wine <sup>1</sup>	2.93	3.00	3.01	↓	↓

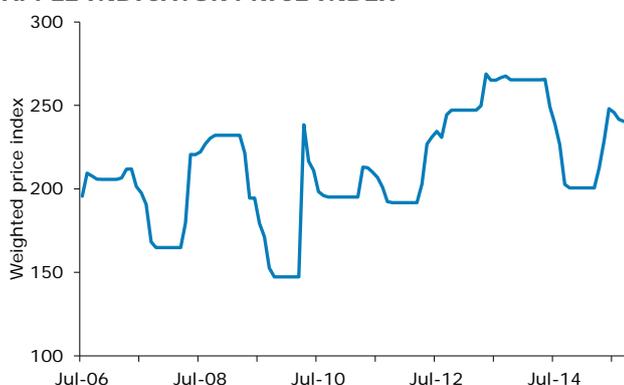
<sup>1</sup> USD per litre

## KIWIFRUIT INDICATOR PRICE



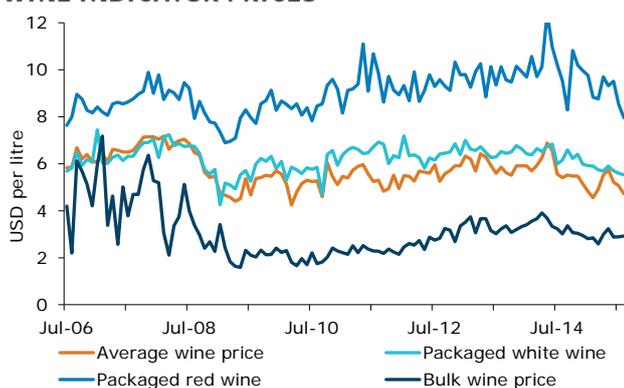
Source: ANZ, Zentrale Markt- und Preisberichtsstelle

## APPLE INDICATOR PRICE INDEX



Source: ANZ, Zentrale Markt- und Preisberichtsstelle

## WINE INDICATOR PRICES



Source: ANZ, NZ Winegrowers

**Kiwifruit and pipfruit returns look like they will end up being very solid for the 2015 crop.**

**Zespri's latest forecast for Green returns is \$4.87/tray.** This sits at the lower end of an earlier forecast range of \$4.8-\$5.2/tray. There have ended up being significantly higher Green volumes than earlier signalled, impacting on the market mix and increasing fruit loss due to an extended selling season. **Indeed, Zespri are now forecasting sales of 81.2 million trays, or a 17% increase on last year.** The other factor has been increased Chilean volumes back to 85% of the level produced before the extreme frost damage in 2014. While current guidance on per tray returns is well back on last season's record (\$6.02/tray), higher yields provide an offset for total orchard-gate revenue.

**Gold volumes were also slightly higher than earlier anticipated, reaching 32.6 million trays.** This has impacted on the marketing mix and attracted higher promotion costs to establish SunGold's position in existing and new markets. This was always expected, but overall it seems the market has managed to absorb increased volumes at better than earlier expected price points. With SunGold sales finishing strongly in Europe it is expected final orchard-gate returns shouldn't be too far away from current guidance of \$7.76/tray.

**For medium-term kiwifruit returns, improved market access to both Japan (TPP) and Korea (FTA) is a positive.** Current tariff costs for the two markets are \$37 million. Not all this will find its way back to grower's pockets, but if it did it would add \$0.33/tray across the 2015 crop.

**In-market packaged wine prices have been softer lately, but the fall in the NZD has offset this.** Year-to-date NZD prices are up 15%, with Australia and the US leading the way. Bulk wine prices are back slightly, but are making up a smaller proportion of supply at 25% with the significantly smaller 2015 vintage. **Exports to the US continue to surge, and year-to-date it is the largest export destination, just piping the UK.** The average price being achieved in the US is the highest of the big three at \$7.29/litre. This is only slightly higher than Australia, but 10% more than the UK. But while Australian prices are holding up, volumes are well back indicating a drop in end demand. Other growth markets are Canada, Japan, Singapore, Finland and Norway. Sweden, Hong Kong, Denmark and Germany have had tougher starts to the new selling season.

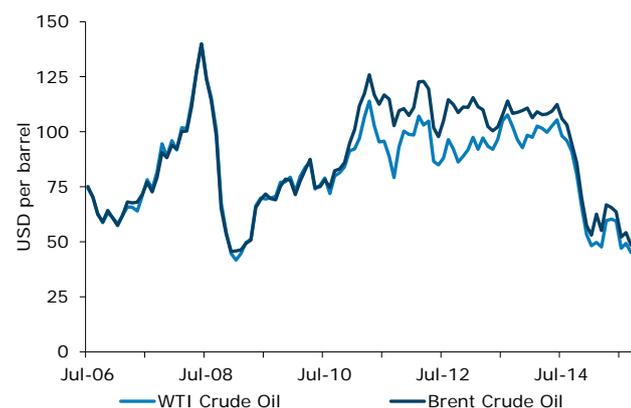
## KEY COMMODITIES: OIL, FREIGHT AND FERTILISER

OTHER COST INDICATORS					
	Current Month	3 Mth Trend	Last Year	Chg. M/3M	Chg. Y/Y
WTI Oil <sup>1</sup>	45	52	91	↓	↓
Brent Oil <sup>1</sup>	48	57	95	↓	↓
Ocean Freight <sup>2</sup>	900	945	1,063	↓	↓

<sup>1</sup> USD per barrel, grade WTI

<sup>2</sup> Baltic Dry Index

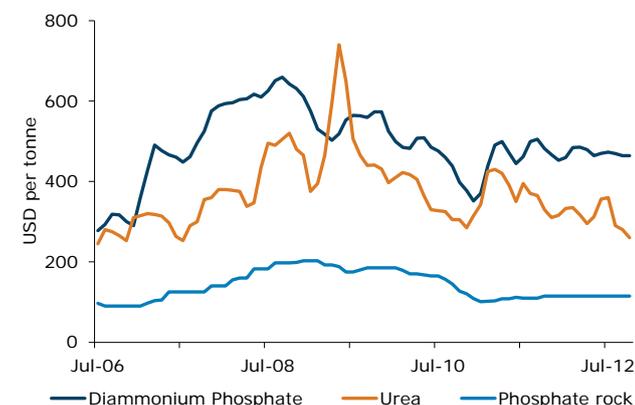
### CRUDE OIL INDICATOR PRICES



Source: ANZ, Bloomberg

FERTILISER PRICE INDICATORS					
USD per tonne	Current Month	3 Mth Trend	Last Year	Chg. M/3M	Chg. Y/Y
DAP (USD)	464	469	482	↓	↓
Urea (USD)	260	310	330	↓	↓
Phosphate Rock (USD)	115	115	115	↔	↔
Farm-gate DAP (NZD)	875	868	835	↑	↑
Farm-gate Urea (NZD)	575	575	614	↔	↓
Farm-gate Super phosphate (NZD)	324	321	316	↑	↑

### INDICATIVE INTERNATIONAL FERTILISER PRICES



Source: ANZ, Bloomberg

We have made some significant reductions in our forecasts for crude oil prices (both WTI and Brent) for the next several years. Globally, the supply/demand balance should remain in a surplus position for at least the next 18 months, albeit with the severity of oversupply expected to gradually decline. **This will likely keep the upside to prices capped below USD60/bbl.** Over the next six months WTI is likely to trade down to USD40/bbl, before supply-side constraints start to be felt.

**Crucial to the outlook is how producers respond to lower prices.** On this front, neither OPEC nor the US are showing signs of blinking first. We expect this tussle to continue over at least the next six months before production starts to be significantly curbed.

**We do not expect major changes in OPEC's strategy in maintaining production around 30mbpd.** Venezuela has been particularly vocal due to the impact low oil prices are having on its export earnings and government finances, but we think that an "about-face" on this issue now would be unpalatable for the core producers. It is likely they will maintain their strategy of trying to force the US to bear the brunt of the supply cutbacks. Indeed, despite big improvements over the last 12 months operating costs across the US shale oil/gas industry are typically higher than OPEC's. This will set the scene for an interesting six months between these two supply forces.

**Iranian sanctions remain in focus, with the country aiming to lift exports by one million barrels per day in 2016.** But opposition to the nuclear deal is strong within the US, which may see any eventual sanction relief delayed.

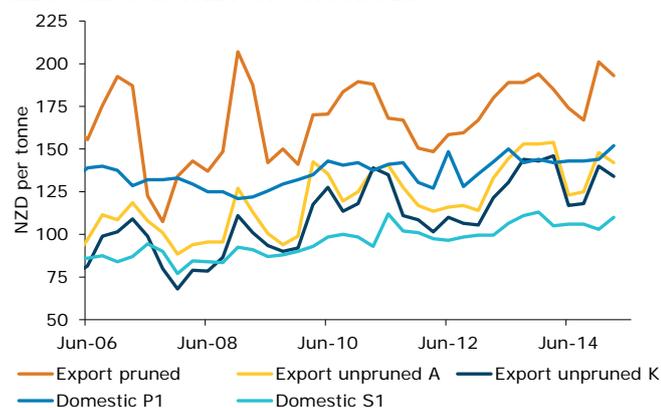
**There has been a bit of upward pressure on farm-gate fertiliser prices recently from a lower NZD.** Both DAP and Superphosphate have increased slightly. Urea prices have been more stable with in-market prices continuing to fall.

Global urea markets have remained subdued and there are reports of high inventories weighing on prices. Generally global fertiliser demand has been fairly sluggish given a softer commodity price backdrop for most major crops.

## KEY COMMODITIES: FORESTRY

FORESTRY PRICE INDICATORS					
	Current Quarter	3 Period Trend	Last Year	Chg. P/3P	Chg. Y/Y
<b>Export: (NZD per JAS m<sup>3</sup> f.o.b.)</b>					
Pruned	193	181	185	↑	↑
Unpruned A Grade	142	132	154	↑	↓
Unpruned K Grade	134	125	146	↑	↓
Pulp	119	113	133	↑	↓
<b>Domestic: (NZD per tonne delivered at mill)</b>					
P1	152	143	142	↑	↑
P2	126	126	126	↔	↔
S1	110	105	105	↑	↑
S2	103	106	105	↓	↓
Pulp	53	51	50	↑	↑

NZ FORESTRY INDICATOR PRICES



Source: ANZ, MPI

**In-market prices for unpruned export logs have been under pressure recently, but a lower NZD/USD and lower shipping rates continue to provide somewhat of an offset for wharf-gate returns. Pruned export and domestic logs prices have held up well and there are expectations the current higher prices will persist.** The Ministry of Primary Industries is reviewing its forestry price series data, so unfortunately the data in the table to the left is out of date.

**The situation in China hasn't changed too much, and most expect it will remain soft for at least the next 12 to 18 months.** Inventory levels have dropped to 3.2-3.5 million m<sup>3</sup>, which is a decent reduction from the peak of 4.0 million m<sup>3</sup> a few months ago. The reduction is due to less supply, rather than better demand. **All the major importers have reduced supply**, but North American exports have been hit particularly hard with year-to-date volumes down 50%. Better domestic demand, higher USD and intense competition from New Zealand and Russian supply seems to have taken its toll. Demand remains sluggish for this time of year in part due to the relocation of processing mills with China, but also soft construction activity from excessive housing stock in lower tier cities. That said a modest improvement in inventory levels and pickup in tier one housing activity could lead to a modest uplift from current lows.

**The falling NZD is adding extra demand to the buoyant pruned log market.** The lower NZD is improving returns for finished products, thus adding more appeal to pruned logs. The price of pruned logs is currently sitting at \$164/t, its highest level since March 2003.

**Structural logs have held steady at \$105/t. Demand remains strong for structural logs and this is expected to continue with residential consent issuance trending up, led by Auckland.** On a three month basis the floor area issuance is up 8.5%, which should add to demand into the start of next year. On a trend basis, Statistics NZ estimate that issuance in Auckland is at its highest since November 2004. This strength is clearly the response that policy makers are attempting to generate.

# BORROWING STRATEGY

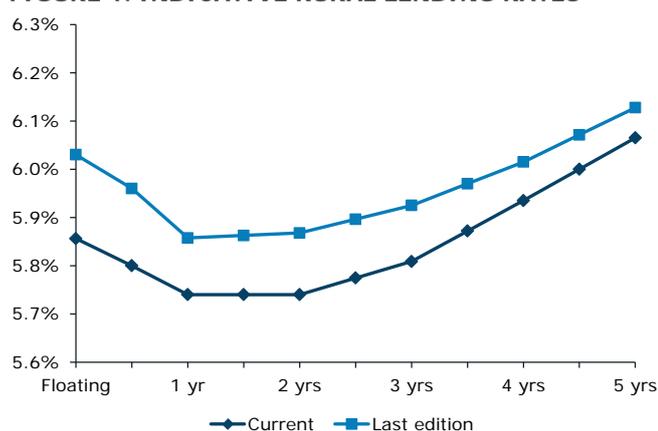
## SUMMARY

Indicative rural lending rates have continued to fall, matching falls in wholesale interest rates to near all-time lows. RBNZ OCR cuts have been an influential driver, as has the global environment, with inflation failing to fire and central banks generally sounding a cautious tone. The RBNZ has already cut the OCR three times this year, but has signalled the potential for at least one more cut. Rebounding dairy prices make that a less likely scenario, but a wobbly global scene still means there is a reasonable chance the OCR moves down again. Long-end rates tend to follow global moves, and although the US Federal Reserve (the "Fed") is gearing up to tighten later this year, we expect the rise in long-term bond yields to be gradual, and local interest rates to compress against US rates, keeping local rates fairly stable.

## OUR VIEW

**Indicative rural rates continue to fall. Lending rates are down across the board** since the last edition of the *Agri Focus*, matching falls in wholesale swap rates. Generally speaking, wholesale interest rates are back within touching distance of all-time lows. The fall in lending rates has been fairly uniform, with all rates down by between 6 and 17 basis points. Short-end rates fell slightly further, but it is the shape of the curve, rather than the change in interest rates, that stands out the most, with the 1-2 year part of the curve marking the low point. This reflects the market's expectation that the OCR has further to fall in the near term. Once the last OCR cut is delivered, we would expect the yield curve to adopt its familiar upward-sloping profile.

FIGURE 1. INDICATIVE RURAL LENDING RATES



Source: ANZ, Bloomberg

As we have written about in past editions, **the short end tends to follow the OCR and the long end tends to follow global interest rates**. Accordingly, we need to keep a close eye on both dynamics.

**At the short end, expectations are that we might get one more cut from the RBNZ.** That's in line

with our view, though technically we have the RBNZ in "pause and reflect" mode for the time being before moving again in 2016. The market is more attuned to something more immediate. We view rebounding dairy prices as challenging that; low dairy prices were a huge reason behind the RBNZ cutting rates in June, July and September, so rebounds should encourage a period of reflection. Irrespective of the timing of another cut, two points remain relevant. Firstly, we see rates remaining low for an extended period. Second, the risk profile for the OCR is skewed beyond simply one cut. That reflects the global scene.

**The long end will follow global interest rates, necessitating an eye on US developments.** We expect the Fed to start lifting its policy interest rate later this year as it embarks on what it calls the "normalisation" of policy. Nonetheless, with inflation nowhere to be seen, we expect hikes to be gradual, **and US bond yields to move up at a glacial pace.** With the RBNZ in easing mode and the Fed in tightening mode, there is significant scope for NZ/US spreads to narrow, absorbing the rise in US interest rates and leaving long-term rates here fairly steady. As long-end rates hold steady and the short end moves lower, we expect the curve to steepen.

Although we see limited upside for global rates, with term rates at historic lows and our breakeven analysis showing that interest rates don't need to move much in order for fixing to be worthwhile, **at face value, it does make sense to add some additional cover here.** That's certainly the feeling one might glean from taking an "a bird in the hand is worth two in the bush" perspective. **However, there is a caveat.**

Rural Lending Rates (incl. typical margin)		Breakeven rates			
Term	Current	in 6mths	in 1yr	in 2 yrs	in 3 yrs
Floating	5.86%				
6 months	5.80%	5.68%	5.74%	5.91%	6.25%
1 year	5.74%	5.71%	5.74%	5.95%	6.31%
2 years	5.74%	5.77%	5.84%	6.13%	6.45%
3 years	5.81%	5.88%	6.00%	6.28%	
4 years	5.94%	6.03%	6.15%		
5 years	6.07%				

As we warned in our last edition, fixing now **will prevent borrowers from taking advantage of further falls in interest rates, should that occur.** As noted, we expect long-term rates to hold fairly steady and for short-end rates to fall. Accordingly, while fixing has not been cheaper for a long time, doing so now is likely to entail slightly higher cost if you share our view of rates being biased lower or holding steady. Accordingly, we favour keeping hedging to a minimum for now, and instead take a "wait and see" approach.

## ECONOMIC BACKDROP

### SUMMARY

Momentum across the economy has slowed over the year, and we expect modest growth over the coming 12 months. The nucleus resides in lower terms of trade (export prices), flattening Christchurch activity, and capacity bottlenecks in some sectors. It's a deceleration, not a full-blown downturn, but this critically assumes the offshore scene stabilises; our eyes are on China. The economy nonetheless has a reasonable backbone. Pockets of strength exist and financial conditions are supportive; the lower OCR is boosting housing outside of Auckland and the NZD is lifting export prospects. Construction sector activity is still rising. All will help underpin a recovery in late 2016.

### GIVING BACK

**The economy is sluggish, but is still recording positive growth.** Confidence is soft, and firms' own activity expectations are sub-trend. There are still bright spots and indicators have stabilised of late but the economic pulse overall has a softer beat. Annualised growth is tracking just under 2 percent. That's reasonable but not stellar.

**Challenges come from four broad areas.**

- **Low dairy prices.** They have started to recover but levels remain below the marginal cost of production globally and an abundance of global supply remains. We continue to pencil in a likely 15% peak-to-trough fall in the goods terms of trade. All else being equal, that's enough to knock 2-2.5 percentage points off GDP growth over the subsequent two years. Cashflow is still constrained for dairy farmers meaning the chequebook is shut. It's being felt most strongly in the dairy-aligned regions, but does have national consequences too.
- **The Christchurch city rebuild has peaked and from a technical perspective it will now start to detract from growth, despite being ongoing in terms of work itself.** This removes impetus to growth and will create issues in Christchurch; residential and commercial rents are already falling. We are more neutral on the economy-wide impact. Construction sector activity across the country has yet to peak; Auckland still has a profound shortage of houses. Several major Auckland projects are yet to kick off. Christchurch resources will be reallocated to other regions.
- **Structural metrics are deteriorating, though they are not as bad as was seen prior to previous corrections.** The household debt to income ratio is rising, the current account deficit is deteriorating, household saving is receding and Auckland house prices have surged (though anecdotally flattening of late); that's a potent

mix and signals borrow-and-spend style growth – and accordingly a higher than normal degree of vulnerability.

- **Risk is being re-priced as the Fed moves closer to lifting the fed funds rate.** While rates are expected to move up in a very gradual fashion, there are a number of key issues. Asia has leveraged heavily, including in USD; weaker EM Asia currencies and a stronger USD in combination with higher interest rates is a potentially potent mix. Equity volatility has picked up as growth concerns start to dominate cheap money. New Zealand's fortunes are closely tied to the international scene.

**Numerous positives remain across the economy, however.**

- **The tenor of economic data is far from one-way traffic.** Migration inflows are at annual record highs. Large export earners outside of dairying, particularly tourism, are performing well. Construction sector activity has yet to peak relative to GDP despite the Christchurch city rebuild topping out.
- **Skill shortages continue to feature as a restraining influence on businesses' ability to expand, according to our small business microscope.** That's a supply-side challenge, not a demand-side one.
- **Inflation is low and the RBNZ has lowered the OCR.** We expect a further 25 basis points of easing, though not immediately.
- **The NZD has fallen, although it has stabilised of late. Exporters are benefiting.**
- **Lower interest rates and NZD have delivered a material easing in financial conditions.** Trends in our Financial Conditions Index bode well for an eventual uplift and recovery in momentum.
- **The economy has better microeconomic foundations.** These are the collection of little things that add up and can help insulate the economy against challenges.

**We expect around 2% real GDP growth over the coming year;** somewhat of a soft landing across the economy. The risk profile is down but mitigated by the potential for the OCR to move lower and the NZD too.

**We are not buying into the speculation of a pending recession.** Such talk is wide of the mark. Such a scenario requires a material external catalyst. The greatest candidate is China, but would likely be countered quickly by even deeper cuts in the OCR and the NZD moving to USD0.55. Fiscal policy has ample scope to support the economy in 2016 too.

# EDUCATION CORNER: NEW ZEALAND CRAFT BEER INDUSTRY

## SUMMARY

Export markets are opening up for New Zealand craft beer, complementing a domestic market with a thirst for big-flavour beer. Beer exports to Asia have doubled over the past two years and brewers tell us exports are just getting started. Given the fine product brewers are creating and Asia's potential market being 750 times the size of New Zealand, they have reason to be optimistic.

Craft beer is New Zealand's fastest-growing category of beer. Our research suggests off-premise retail sales are up 42% in the last 12 months, now accounting for 13% of total beer sales.

Passion appears the number one reason brewers are in business, and collaboration among brewers is much higher than in other industries. Investors are now starting to pile in behind brewers and the industry, funding New Zealand craft brewers at rates significantly higher than overseas breweries and other industries – reflecting exceptional growth potential.

The craft beer industry is poised for an exciting future, but growth and new export markets bring challenges. Brand positioning, in-market brewing, international distribution agreements, value chain communication to meet demand, and alcohol regulation are just a few of many challenges. The industry needs buy-in from all parties, from the Government to the value chain and broader community, as it has a significant investment opportunity.

## NEW ZEALAND BEER MARKET OVERVIEW

This paper takes a look at the emergence of the New Zealand craft beer industry and some of the key drivers – beyond the euphoria many kiwis take from making their own brew.

*“New Zealand has an incredibly proud tradition and talent for beer brewing. It's been a favourite pastime for many Kiwis and it turns out others think we're pretty darned good at it.”*  
 Bob King, Brewers Guild Chairman

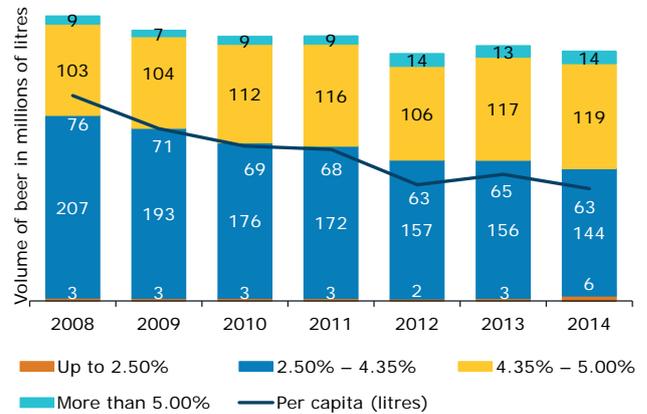
**While beer consumption overall is decreasing, the craft beer segment continues to grow.**

### Domestic beer consumption

The volume of beer consumed in New Zealand has fallen 12% since 2008, yet off-premise craft beer sales have increased 42% in the past 12 months, reflecting an increasing preference for big-flavour beer over quantity.

*“Even in my footy club it's changing – it's about quality over quantity.”*  
 Josh Scott, Founder of Moa Brewing Company

FIGURE 1: BEER CONSUMED IN NZ, BY ALCOHOL %

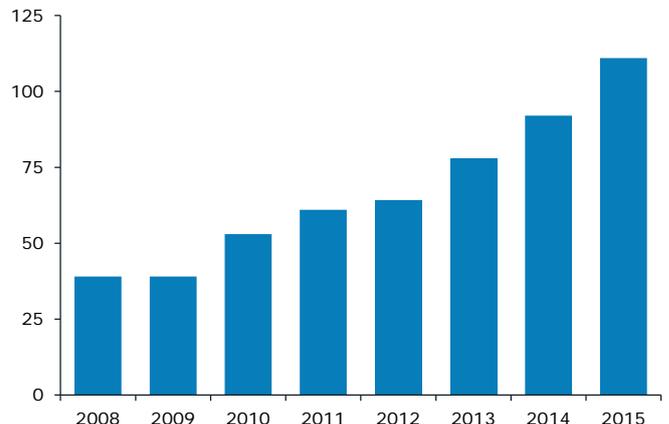


Source: ANZ, Statistics NZ

Historically the New Zealand beer industry has been dominated by large offshore-owned breweries: Lion Breweries, DB Breweries and more recently, Independent Liquor.

However, the number of brewing companies has close to tripled since 2008 with the establishment of many small operations.

FIGURE 2: NUMBER OF BREWING COMPANIES



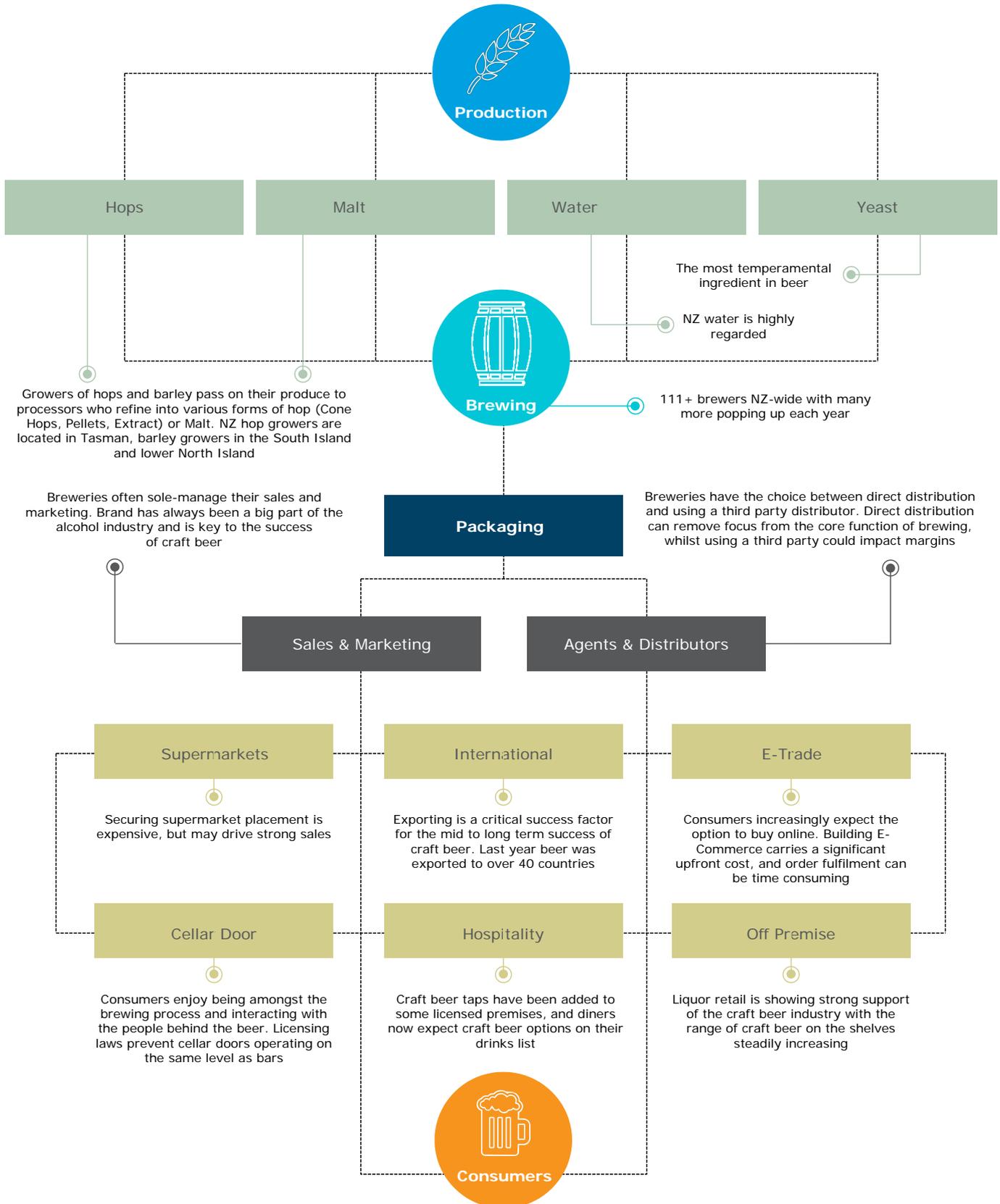
Source: ANZ, Brews Guild, Beer Cellar, Beer Tourist

This trend has not been seen only in New Zealand: the number of brewers in the US has surged in recent years and is now at its highest level since the Civil War<sup>1</sup>.

<sup>1</sup> www.brewerassociation.org/statistics/number-of-breweries

# EDUCATION CORNER: NEW ZEALAND CRAFT BEER INDUSTRY

## NZ BEER VALUE CHAIN



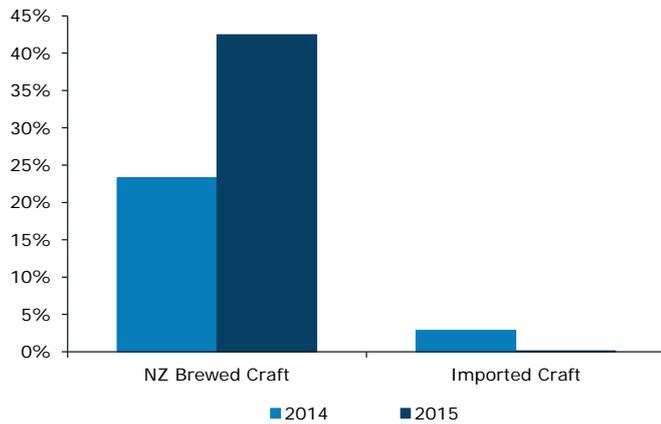
Source: ANZ

# EDUCATION CORNER: NEW ZEALAND CRAFT BEER INDUSTRY

## Off-premise sales trends

A sample of off-premise sales shows the industry is in a high-growth phase, with New Zealand Brewed Craft growing at 42% over the last 12 months<sup>2</sup>.

FIGURE 3: ANNUAL GROWTH OF CRAFT SALES



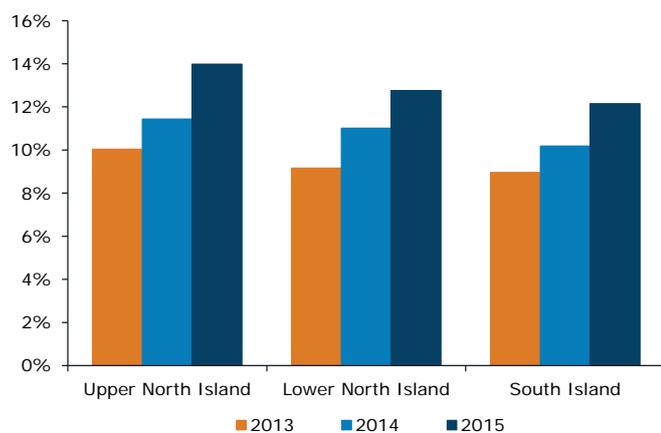
Source: ANZ, sample of 15% of off premise liquor sales

*"We have invested heavily in the last 12 months in tanks, a canning line and a soon-to-arrive bottling line that can bottle 7000 330ml bottles per hour."*

*Carl Harrington, Harrington's Breweries*

The craft segment over the last two years has grown from 9% of total beer sales to 13%. The sales split is relatively consistent across the major regions in New Zealand, with the Upper North Island marginally leading the way with craft beer representing 14% of total beer sales.

FIGURE 4: CRAFT'S SHARE OF TOTAL BEER SALES



Source: ANZ, sample of 15% of off premise liquor sales

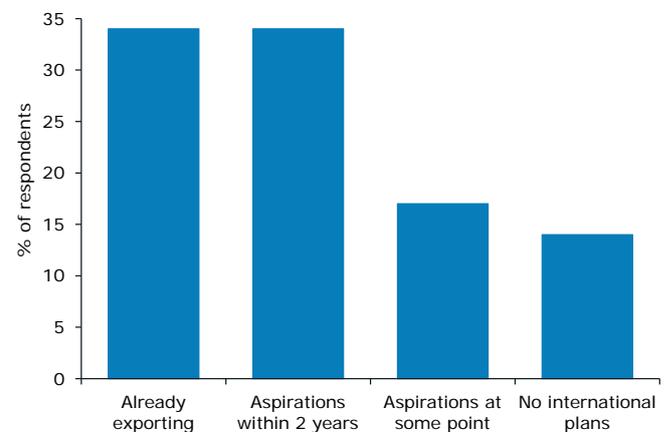
## New Zealand beer exports

*"Once again New Zealand has a great product in Craft Beer and that's a very good start. Developing and capturing the export value from it over the medium to long term is where we traditionally struggle."*

*Dave Pearce, Strategic Director, Renaissance Brewing*

A third of craft brewers surveyed by ANZ are already exporting; another third have aspirations to export within two years.

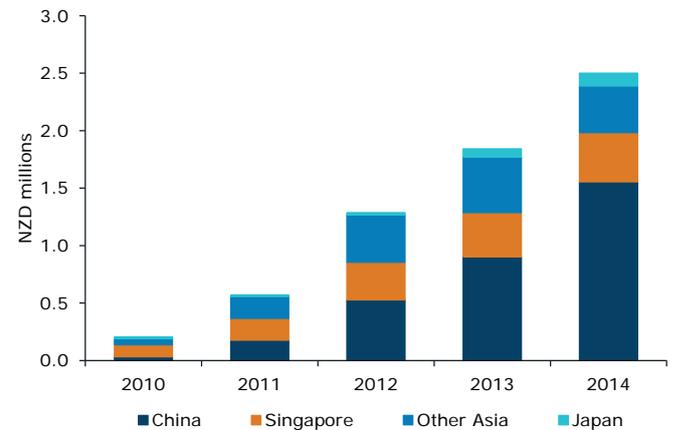
FIGURE 5: BREWERS EXPORT ASPIRATIONS



Source: ANZ survey of 35 Brewers

Asia is a key region craft beer brewers are targeting. Exports to Asia have more than doubled in the past two years. China represented over half of all beer exports to Asia in 2014. Although the numbers are still small, growth is beginning to build.

FIGURE 6: NEW ZEALAND BEER EXPORTS TO ASIA



Source: ANZ, Statistics NZ

<sup>2</sup> Sample represents approximately 15% of New Zealand's off premise liquor sales Sources: Statistics NZ, new reports, ANZ analysis of company financials.

## EDUCATION CORNER: NEW ZEALAND CRAFT BEER INDUSTRY

### So what is happening offshore?

The highest consumption of beer per capita is in the Czech Republic. However, given local beer production and a low price point it is not high on the export radar. China consumes just over half as much as New Zealand on a per capita basis. However, it is the biggest market, consuming almost twice as much beer as the US.

### US craft market summary

**The craft beer market in the US is the most developed** and is showing no signs of slowing down, with industry growth of 18% in each of the last two years.

In 2014 US craft beer:

- produced 22.2m barrels
- opened 615 breweries
- represented 11% of total beer volume, compared to 8% in 2013
- Increased exports by 36%
- Increased price by 3%

The “hottest” style of craft beer is IPA: sales grew by 47% in 2014 and now represent 23% of all US craft.

BEER CONSUMPTION BY COUNTRY			
Rank	Country	Litres per capita	Total consumption (million litres)
1	Czech Republic	147.1	1,909
2	Namibia	108.6	250
3	Austria	105.9	898
4	Germany	101.7	8,410
13	United States	76.2	24,082
15	Australia	74.7	1,743
26	United Kingdom	67.4	4,242
28	New Zealand	64.1	289
52	Japan	43.1	5,489
?	China	34.1	46,313

TOP CRAFT BEER STYLES IN THE US			
Rank	Beer Style	Dollar Share	Volume Growth
1	IPA	23%	47%
2	Seasonal	17%	10%
3	Pale Ale	11%	10%
4	Variety	8%	20%
5	Amber Ale	6%	12%
6	Amber Lager	5%	2%
7	Bock	4%	5%

Source: ANZ

### Summary

*“Successfully exporting one’s brand and products from New Zealand is a challenge worth accepting and requires dedication and vision to best deliver the finest of what our nation has to offer.”*

*Chris Mills, Kereru Brewing Company*

**While New Zealand beer consumption overall is decreasing, the craft beer segment continues to grow.** Off-premise New Zealand brewed craft beer sales increased 42% over the last 12 months<sup>3</sup>.

Over the past two years off-premise craft beer sales increased from 9% to 13% of total beer sales (by value).

**Beer exports to Asia have doubled over the past two years and brewers tell us this is just beginning.** The US craft market continues its momentum, growing 18% in 2014 – New Zealand brewers will face some competition in its quest to grow exports.

<sup>3</sup> Sample represents approximately 15% of New Zealand’s off-premise liquor sales. Sources: Statistics NZ, news reports, ANZ analysis of company financials.

# EDUCATION CORNER: NEW ZEALAND CRAFT BEER INDUSTRY

## NEW ZEALAND CRAFT BREWERIES

### AUCKLAND AND NORTHLAND

- > 8 Wired Brewing
- > Bach Brewing
- > Behemoth Brewing
- > Ben Middlemiss Brewing Co.
- > Boundary Road\*
- > Brothers Beer
- > Dedwood Brewing Co.
- > Deep Creek Brewing Co.
- > Epic Brewing Company
- > Forbidden Brewing Co.
- > Galbraith's Brewing Co. Ltd
- > Governor Brewery
- > Hallertau Brewery
- > Hancock & Co.
- > Isthmus Brewing Company
- > Laughing Bones Brewing Co.
- > Leigh Sawmill Brewing Company
- > Liberty Brewing
- > Rocky Knob Brewing Company
- > Schippers Bitter
- > Sparks Brewing
- > Standing Spoon Brewery
- > Steam Brewing
- > Waiheke Brewery
- > Weezellog Brewing
- > Zeffler Brewing Company
- > Zeppelin Brewing

### WAIKATO

- > 666 Brewing Co. Ltd
- > Biggles Brewery Ltd
- > Boilerhouse Brewery Ltd
- > Brewaucracy
- > Coromandel Brewing Company
- > Crafty Trout Brewing Co.
- > Good George Brewing
- > Hot Water Brewing
- > Lakeman Brewing

### BAY OF PLENTY

- > Aotearoa Brewery
- > Croucher Brewing Company
- > Fitzpatrick's Brewing Co. Ltd
- > Kaimai Brewing
- > Mount Brewing
- > Two Fingers Beers

### TARANAKI

- > Brew Mountain
- > Mike's Organic Brewing

### NELSON AND MARLBOROUGH

- > Bays Brewery
- > Dale's Brewing Co
- > Founders Brewery\*
- > Golden Bear Brewing Company
- > Hop Federation Brewery
- > Lighthouse Brewery
- > McCashins Brewery (Stoke)
- > Moa Brewing Company
- > Mussel Inn
- > Pink Elephant
- > Renaissance Brewing
- > Sprig & Fern
- > Townshend Brewery

### GISBORNE AND HAWKE'S BAY

- > Brave Brewing
- > Fat Monk Brewery Co.
- > Giant Brewing Company
- > Hawkes Bay Independent Brewery
- > Sunshine Brewery
- > Zeelandt Brewing Co.

### WEST COAST

- > Monteith's Brewing Company\*
- > West Coast Brewery

### WELLINGTON AND WAIRARAPA

- > Baylands Brewery
- > Black Dog Brew Co.\*
- > Fork & Brewer
- > Funk Estate
- > Garage Project
- > Geek
- > Kereru Brewing
- > Martinborough Brewery
- > North End Brewery
- > Panhead
- > ParrotDog
- > Peak Brewery
- > Regent 58 Brewery
- > Tiamana Brewery
- > Tuatara Brewery
- > Wild & Woolly Brewing
- > Yeastie Boys

### SOUTHLAND

- > Dr. Hops
- > Golden Ticket Brewing
- > Invercargill Brewery

### OTAGO

- > Craftwork Brewery
- > Emerson's Brewery\*
- > Green Man Brewery
- > Jabberwocky Brewery
- > Queenstown Brewers
- > Scotts Brewing Co.
- > Wanaka Beerworks

### CANTERBURY

- > Brew Moon Brewing Company
- > Cassels & Sons Brewery
- > The Dux Brewing Co.
- > Eagle Brewing
- > Eruption Brewing
- > Fiasco
- > Four Avenues Brewing
- > Harrington's Brewery
- > Hop Baron
- > Kaiapoi Brewery
- > Kaiser Beer
- > KJD Brewing Company
- > Raindogs
- > Three Boys Brewery
- > Twisted Hop
- > Two Thumb Brewing
- > Valkyrie Brewing Co.
- > Valley Brewing Company
- > Wigram Brewing Company

\* Boundary Road and Founders Brewery are owned by Independent Liquor; Emerson's is owned by Lion; Monteith's Brewing Company and Black Dog Brew Co. is owned by DB Breweries

Source: Brewer's Guild of New Zealand, The Beer Cellar, Beer NZ, news reports, ANZ analysis

## EDUCATION CORNER: NEW ZEALAND CRAFT BEER INDUSTRY

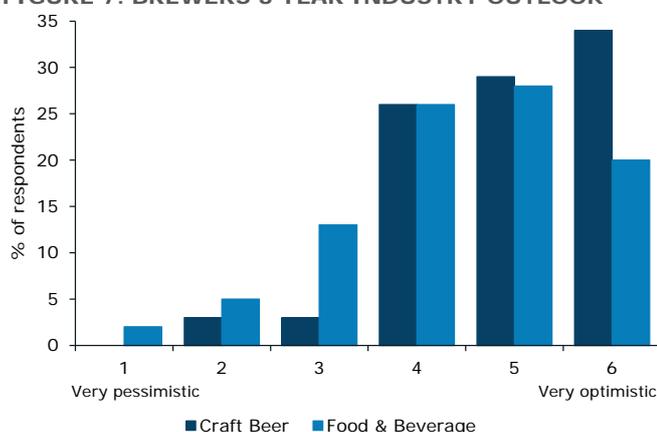
### THE CHANGING FACE OF NEW ZEALAND CRAFT BEER: A BREWERS' PERSPECTIVE

#### A passionate brew

Craft brewers surveyed by ANZ<sup>4</sup> had a **common driver for making beer – “passion”**. Around **80% of craft brewers said that they were in business to follow their passion, compared to a quarter of those in other industries**. But brewers also see the potential for growth in the sector and over half said one of their motivations was to make money.

It appears that many brewers are well poised to do just that, with growth expectations significantly higher than those in other industries.

FIGURE 7. BREWERS 3 YEAR INDUSTRY OUTLOOK



Source: ANZ survey of 35 brewers

#### The challenges of exporting

**Taking New Zealand craft beer to large offshore markets is not without its challenges.**

For those brewing in New Zealand and exporting there are notable freight costs relative to the value of the beer. If the beer is going to Asia or beyond, then there are high air temperatures that the beer will be exposed to, there is the time it spends in transit, and the many other costs such as tax and distributor margins. These challenges collectively chew into margin and potentially impact product quality.

#### Local market as an export foundation

Strong growth in the local market continues to drive demand for local producers, who have increased in numbers by close to 20% in the last year. Local market growth includes on/off premise, and a growing “cellar door” opportunity with potential regional tourism spinoffs.

**This local market strength is providing the platform for brewers to build volume and profitably position them to embark on exporting.** A third of local craft breweries are already expanding into offshore markets.

*“For 24 years Harrington’s Breweries have been producing a range of quality craft beers, distributing throughout the country. We are now talking with an Australian distributor.”*  
*Carl Harrington, Harrington’s Breweries*

#### Brand positioning for export

**Some brewers are taking the plunge and brewing offshore, addressing many of the challenges of export.**

*“Good beer, in good condition sells itself. The NZ Inc brand offers some degree of value, but exceptional beer can be made anywhere in the world.”*  
*Luke Nicholas, Owner Brewer, Epic Brewing Company*

Yeastie Boys, Panhead, ParrotDog, and Tuatara are all embarking on such strategies. **With lower costs and quicker distribution to market, the strategy has potential.** It has certainly been used to good effect by offshore brands in New Zealand. **Some brewers say offshore brewing may have an impact on product marketability given it loses the “brewed in New Zealand” badge**, which most brewers agree confers some value to their product overseas. However, brands brewed offshore may still be able to capture some of this value with a link to New Zealand through people or ingredients.

#### Collaboration for success

**There is a high level of collaboration right across the industry**, with one example being the “New Zealand Craft Beer Collective” formed earlier this year.

Modelled on the successful “Family of Twelve” wine export collaboration, the New Zealand Craft Beer Collective brings together five similar-minded breweries to take on the UK market and forge a category.

The collective includes Yeastie Boys, Tuatara Breweries, Renaissance Brewing, 8 Wired Brewing Co and Three Boys Brewery.

An opportunity exists for similar collaboration domestically to consolidate distribution to market. Discussions with retailers found that simpler ordering processes, particularly for large retailers, will result in more shelf space, which ultimately results in more sales.

<sup>4</sup> ANZ Privately-Owned Business Barometer Survey 2015

## EDUCATION CORNER: NEW ZEALAND CRAFT BEER INDUSTRY

**There is also collaboration among brewers in the brewing process.** Some brewers contract brew for other brands who do not own breweries. This benefits the brewery owner by providing an additional source of income to improve returns on their investment in the brewery. It also benefits the other brand by not having to invest significant capital into a brewery that is not needed from a total industry perspective.

It is likely we will see the emergence of tailored independent contract brewing facilities to cater to the growth demands of the industry.

Another great example of industry collaboration is O-I Glass, in conjunction with Auckland's Unitec Institute of Technology, which has developed a bottle designed specifically to assist the craft beer industry to target Asia, a market 750 times the size of New Zealand.

O-I's bottle, "The Provider", offers a 888ml and 258ml bottle. These numbers are thought to be lucky in Asia.

### From cottage to corporate

**As the craft beer sector transforms from cottage industry to corporate, passion must be matched with business skills.**

Capacity constraints, securing shelf space, and a steady supply of raw materials are all cited by craft brewers as key challenges. Secondary challenges around maintaining quality standards and attracting skilled staff also have the potential to influence growth.

One way to mitigate some of these challenges is accurate forecasting. This planning would not only help brewers to better prepare their businesses for the future, but also to manage the expectations of suppliers.

Also, better understanding of regulations could help brewers to navigate increasingly strict licensing requirements, or save the unnecessary time and expense occurred when exported product gets held up at borders.

Where these skill gaps are evident, industry stakeholders such as professional services, industry bodies and government agencies can have a big influence by offering their expertise in specialised areas.

### Summary

Brewers most commonly cite "Following my passion" as the number one reason they are in business. There is a high level of collaboration in the New Zealand craft beer industry.

**An opportunity exists for domestic distribution collaboration.** Discussions with retailers found that simpler ordering processes, particularly for large retailers, will result in more shelf space, which ultimately results in more sales.

**New Zealand has a great product in craft beer; the challenge now is to realise its value through export markets.**

# EDUCATION CORNER: NEW ZEALAND CRAFT BEER INDUSTRY

## WHAT ARE BREWERIES WORTH? NEW ZEALAND MARKET MULTIPLES

*"There is no shortage of capital."  
Jason Crowe, Business Manager, Garage Project*

**New Zealand Breweries are attracting investment at more than twice their revenue, as investors anticipate exceptional growth to come.**

### So what do the numbers mean?

For market transactions that have taken place in New Zealand such as Renaissance and Yeastie Boys', the price (as measured by multiples on current performance) has been high relative to offshore breweries and particularly high relative to other industries.

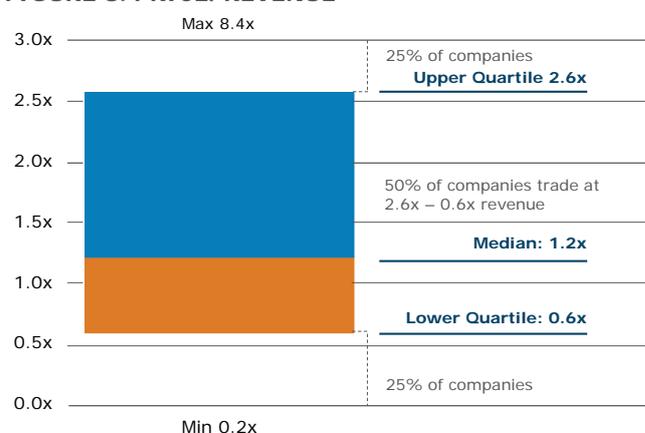
Other than a high growth outlook for craft, what else might be driving these high valuations? Crowdfunding allows small investments, so investors may be less focused on price. However, it does not offer an obvious exit path, which hinders valuation. Another consideration is people are investing in what they drink and something they can share with their mates.

*"You can take these businesses offshore and keep the beer 'craft'. There is nothing stopping you from being 50 times your size and still producing the exact same product."  
Jason Crowe, Business Manager, Garage Project*

### Offshore micro breweries' market multiples

To gauge offshore market value of micro breweries in larger markets, the trading multiples of all 26 publicly listed breweries with turnover under NZD 100m have been analysed.

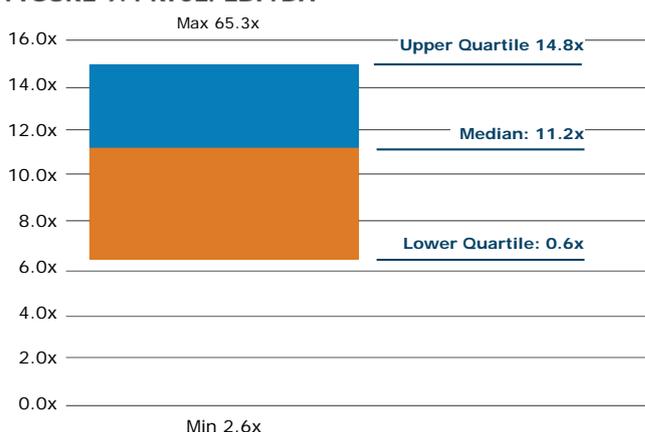
**FIGURE 8. PRICE/REVENUE**



Source: ANZ, S&P Capital IQ

Of these offshore micro breweries, 50% trade within a 6.3x – 14.8x EBITDA multiple and 50% trade within a revenue multiple of 0.6x – 2.6x.

**FIGURE 9. PRICE/EBITDA**



Source: ANZ, S&P Capital IQ

*"As craft beer continues to grow in market share the large multinational brewing companies will look at acquisition rather than investing in developing their own craft brands from the ground up."  
Luke Nicholas, Owner Brewer, Epic Brewing Company*

## NEW ZEALAND MARKET MULTIPLES

Company Name	Market	Year	Market Value (NZDm)	Revenue (NZDm)	EBITDA (NZDm)	Price to Revenue	Price to EBITDA
Renaissance (Craft Beer)	Crowdfunding	2014	5.0	1.5	0.2	3.3x	29.2x
Yeastie Boys (Craft Beer)	Crowdfunding	2015	3.5	0.7	-	5.2x	N/A
Moa (Craft Beer)	Listed	2015	13.1	6.1	-5.2	2.1x	N/A
42 Below (Spirits)	Acquisition	2006	136.0	17.0	-4.0	8.0x	N/A
Invivo (Wine)	Crowdfunding	2015	10.0	5.1	0.4	2.0x	26.0x
Foley Family Wines	Listed	2015	70.5	29.7	7.8	2.4x	9.0x

Source: Standard & Poor's Capital IQ, news reports, crowdfunding investment offer documents from Yeastie Boys, Renaissance and Invivo, Moa Annual Report, ANZ analysis

## EDUCATION CORNER: NEW ZEALAND CRAFT BEER INDUSTRY

### THE KEY INGREDIENTS: THE BIG FOUR – HOPS, MALT, YEAST AND WATER

#### Hops

**Craft beer is all about hops, using several times the quantity compared to mainstream beer.**

Cultivation continues to trend towards designated aroma/flavour varieties in which New Zealand has an international advantage due to an absence of hop disease. Popular aromatic varieties include Riwaka and Wakatu.

Hops grown in New Zealand are supplied to New Zealand Hops Limited ("NZ Hops"), a co-op owned by 17 member/growers. NZ Hops processes, markets and sells the hops. Hops are a very location-sensitive crop due to their specific climate requirements, but the top of the South Island suits hops well.

The 2015 season was – for the most part – ideal, but the aftermath of cyclone Pam did have an impact, with the harvest down 3% on 2014 to 739,620kgs.

The 2015 season was 95% sold prior to harvest, with the full harvest expected to again be pre-sold in 2016. New Zealand Hops' ambition is to increase production by around 30% to 900-1,000 metric tonnes by 2020, 85% of which is destined for export.

Currently growers are focused on switching out varieties to meet market preferences, but as varieties are balanced the volume will increase with an enlarged acreage.

There is strong demand globally for hops at the moment, and particularly New Zealand-grown hops. ANZ internal analysis suggests there are strong comparative returns growing hops in the Tasman region relative to other land uses such as grapes, kiwifruit and pip fruit.

The Riwaka based Plant & Food Research team, headed up by Ron Beatson, continues to work in partnership with New Zealand Hops to research and develop new cultivars with the "wow factor".

#### Malt

Malt has the greatest effect on a beer's colour and is a more forgiving ingredient on taste, which allows significant scope to experiment without easily spoiling a brew.

The malt industry is also experiencing heightened demand with the emergence of the craft beer market both in New Zealand and overseas. Varieties are now vast including Brown Malt, Chocolate Malt, Manuka Smoked Malt, Toffee Malt, Red Back Malt, Biscuit Malt and Roasted Malts the list goes on.

The growth is a good thing, as it is for the brewers, but it needs to be well managed and comes with some challenges.

*"Increase in popularity of craft brewing increases difficulty for key ingredient suppliers as brewers demand specific products for creation. Suppliers are required to adapt."*

*David Cryer, Owner, Cryer Malt*

#### Water

The presence of minerals and bacteria in water impact a brew's characteristics. Good-quality water is a necessity for brewing as the presence of bacteria can spoil the brew.

New Zealand water is highly regarded for brewing. Water differences are thought to be a primary reason why a beer contract brewed in different locations may not taste the same.

For an efficient brewery, one litre of beer will require the use of around 5 litres of water; however, smaller breweries may use significantly more.

#### Yeast

Yeast enables fermentation, which provides alcohol content, carbonation, flavour and aroma. Yeast is the most temperamental ingredient in beer. There is a wide variety of brewing yeasts, and knowledge of their effect on the brew is a key component of a craft brewer's intellectual property.

## KEY TABLES AND FORECASTS

FX RATES	ACTUAL			FORECAST (END MONTH)						
	Aug-15	Sep-15	12-Oct	Dec-15	Mar-16	Jun-16	Sep-16	Dec-16	Mar-17	Jun-17
NZD/USD	0.641	0.638	0.668	0.61	0.59	0.59	0.59	0.59	0.59	0.59
NZD/AUD	0.899	0.908	0.912	0.91	0.91	0.92	0.92	0.92	0.92	0.92
NZD/EUR	0.572	0.569	0.588	0.58	0.56	0.55	0.53	0.51	0.51	0.51
NZD/JPY	77.76	76.76	80.25	73.2	69.0	67.9	67.9	67.9	66.1	64.9
NZD/GBP	0.416	0.420	0.436	0.39	0.37	0.37	0.37	0.36	0.36	0.36
NZ TWI	68.7	68.5	71.5	67.3	65.0	64.8	64.0	63.3	63.1	62.9

INTEREST RATES	ACTUAL			FORECAST (END MONTH)						
	Aug-15	Sep-15	12-Oct	Dec-15	Mar-16	Jun-16	Sep-16	Dec-16	Mar-17	Jun-17
NZ OCR	3.00	2.75	2.75	2.75	2.50	2.50	2.50	2.50	2.75	3.25
NZ 90 day bill	2.92	2.84	2.83	2.90	2.60	2.60	2.70	2.70	3.10	3.40
NZ 10-yr bond	3.22	3.28	3.44	3.20	3.00	3.00	3.00	3.00	3.10	3.10
US Fed Funds	0.25	0.25	0.25	0.50	0.75	1.00	1.25	1.25	1.25	1.25
US 3-mth	0.33	0.33	0.32	0.66	0.91	1.16	1.33	1.33	1.33	1.33
AU Cash Rate	2.00	2.00	2.00	2.00	1.75	1.50	1.50	1.50	1.50	1.50
AU 3-mth	2.15	2.18	2.18	2.20	2.20	2.20	2.20	2.20	2.30	2.30

ECONOMIC INDICATORS	Jun-15	Sep-15	Dec-15	Mar-16	Jun-16	Sep-16	Dec-16	Mar-17	Jun-17	Sep-17
GDP (% q/q)	0.4	<b>0.5</b>	<b>0.5</b>	<b>0.5</b>	<b>0.6</b>	<b>0.7</b>	<b>0.7</b>	<b>0.7</b>	<b>0.7</b>	<b>0.6</b>
GDP (% y/y)	2.4	<b>1.9</b>	<b>1.7</b>	<b>1.9</b>	<b>2.1</b>	<b>2.3</b>	<b>2.5</b>	<b>2.7</b>	<b>2.8</b>	<b>2.7</b>
CPI (% q/q)	0.4	<b>0.3</b>	<b>0.2</b>	<b>0.7</b>	<b>0.5</b>	<b>0.6</b>	<b>0.2</b>	<b>0.7</b>	<b>0.5</b>	<b>0.7</b>
CPI (% y/y)	0.4	<b>0.3</b>	<b>0.7</b>	<b>1.5</b>	<b>1.6</b>	<b>1.9</b>	<b>2.0</b>	<b>2.0</b>	<b>2.0</b>	<b>2.1</b>
Employment (% q/q)	0.3	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.3</b>	<b>0.3</b>	<b>0.3</b>	<b>0.4</b>	<b>0.4</b>	<b>0.4</b>
Employment (% y/y)	3.0	<b>2.3</b>	<b>1.3</b>	<b>0.8</b>	<b>0.9</b>	<b>1.0</b>	<b>1.1</b>	<b>1.3</b>	<b>1.4</b>	<b>1.5</b>
Unemployment Rate (% sa)	5.9	<b>6.0</b>	<b>6.2</b>	<b>6.3</b>	<b>6.2</b>	<b>6.2</b>	<b>6.1</b>	<b>5.9</b>	<b>5.8</b>	<b>5.6</b>
Current Account (% GDP)	-3.5	<b>-3.8</b>	<b>-4.4</b>	<b>-5.3</b>	<b>-6.0</b>	<b>-6.2</b>	<b>-6.0</b>	<b>-5.8</b>	<b>-5.6</b>	<b>-5.5</b>
Terms of Trade (% q/q)	1.3	<b>-7.8</b>	<b>-5.2</b>	<b>0.2</b>	<b>3.6</b>	<b>1.6</b>	<b>0.1</b>	<b>0.1</b>	<b>0.2</b>	<b>0.0</b>
Terms of Trade (% y/y)	-4.4	<b>-7.7</b>	<b>-10.4</b>	<b>-11.3</b>	<b>-9.3</b>	<b>0.0</b>	<b>5.6</b>	<b>5.5</b>	<b>2.0</b>	<b>0.3</b>

Figures in bold are forecasts. q/q: Quarter-on-Quarter, y/y: Year-on-Year

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