ARMILLARY
PRIVATE CAPITAL

# Return on Capital Employed

## Review of 2016 Returns of the NZ Listed Sector and NZ Crown Entities

**July 2017**

# Contents



# Disclaimer

*The information contained in this report has been prepared by Armillary Private Capital ('Armillary'). While the intention is to provide accurate information based on historical performance and market information, Armillary accepts no liability for any errors or inaccuracies in this report. The reader is advised to perform their own research to confirm the accuracy of the information contained in this report before relying on it for any investment decision making. This report has been prepared as a 'class service' as defined by the Financial Advisers Act and is general in nature.*

# Foreword

We are delighted to bring you the sixth Armillary Private Capital Return on Capital Employed (ROCE) report. This year the total number of entities in our data set of NZX, NZAX, NXT, Unlisted and selected Crown entities is 167, seven more than last year's 160 entities. We have also included a confidential sample of 130 non-listed companies to be compared to the overall dataset, although we have not identified these entities individually.

The ROCE methodology we use in this report was developed by Du Pont Corporation and therefore is not proprietary to us, although we are proponents. As it is simple to apply, anyone who understands the methodology can use it. We regularly use this methodology as a tool in our client engagements and in our financial training curriculum.

A benefit of the ROCE methodology is that the performance of an entity can be broken down into its components of profitability and activity, for deeper analysis. Profitability, as measured by EBIT margin, provides an indication of operational efficiency; activity, as measured by asset turn-over, provides an indication of balance-sheet efficiency. A full explanation of ROCE is included in Appendix 2.

This year's report includes an overview of the major sectors in the economy to demonstrate the effect that differences in business models has had in the subsequent profitability, activity and overall ROCE performance. Our sector spotlight this year is on the NZ dairy sector, which has been a sector of discussion recently due to the volatility of Farm Gate Milk Prices (FGMP), the increased emphasis on value added dairy products, and increased scrutiny on bio-security from many of New Zealand's export partners.

We continue to advocate the ROCE methodology in our work with businesses as a simple to use and easily understood tool for measuring business performance, identifying improvement strategies, creating incentive remuneration programs, and for testing budgets and forecasts, especially those applied in valuations. We also see the data and results in this report as providing useful benchmarks for business performance in the New Zealand market.

We trust that the insights contained in this report provide value to investors, business owners and managers alike.

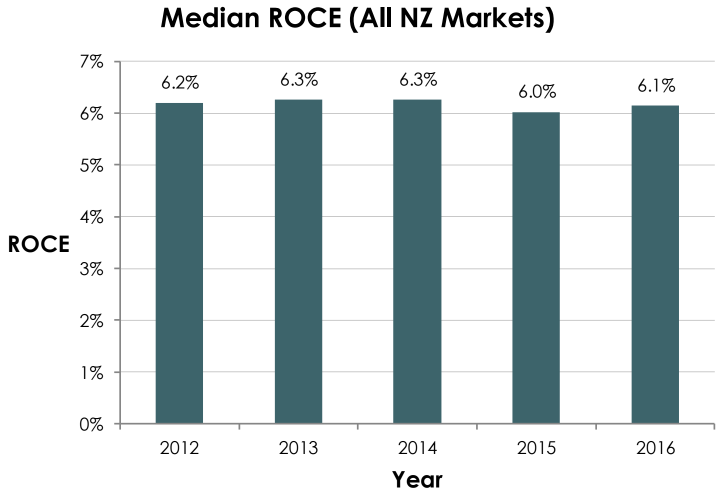
David Wallace

Joint Managing Director

# Executive Summary

This year's ROCE review of the 2016 financial results included 124 companies with primary listings on the NZX, 17 NZAX listed companies, 4 NXT listed companies, 14 companies from Unlisted, and eight Crown Entities. This has resulted in a total sample size of 167 firms for 2016, which is six more than our analysis for 2015. For this report we have grouped the NZAX and NXT companies.

In addition to our sample of listed and Crown entities, we have included a sample of 130 privately held companies. These have been reviewed separately from, and compared to the main sample.




- The median performance across all NZ Markets (including the Crown Entities) has remained flat with the 2016 median ROCE equalling the 2015 median ROCE at 6.1%. This is less than common estimates of the market weighted average cost of capital for NZX listed companies of between 8% and 9%.

- The a2 Milk Company, listed on the NZX was the top performer in 2016 with a ROCE of 89.6%. The high ROCE was largely as a result of the high activity ratio generated by the business in 2016 coinciding with a marked improvement in profitability from 2015.

- The top ten for the 2016 year consist mainly of companies from the Consumer Staples, Information Technology and Consumer Discretionary sectors, making up 8 of the top ten 2016 ROCE performances. The Industrials sector as a whole was the best performing sector whilst similar to last year the Healthcare and Information Technology sectors had the worst Median ROCE's. For the IT sector this indicates a high variability of performance within this sector.

- The median ROCE of NZX50 constituent companies was: 6.6% slightly above companies in comparable international indices in Europe (2016: 6.0%). Companies in comparable Australian and US indices (S&P ASX200 and S&P 500) significantly outperformed New Zealand in 2016, with median ROCE's of 10.8% and 12.4% respectively. This is similar to the previous year.

- For the Crown Entities, the 2016 median ROCE was 6.9% (up from 6.0% in 2015, note New Zealand Railway Corporations has fallen off in 2016), with Airways Corporations again recording the best performance from that group, achieving a ROCE of 24.9%.

## Top Performers

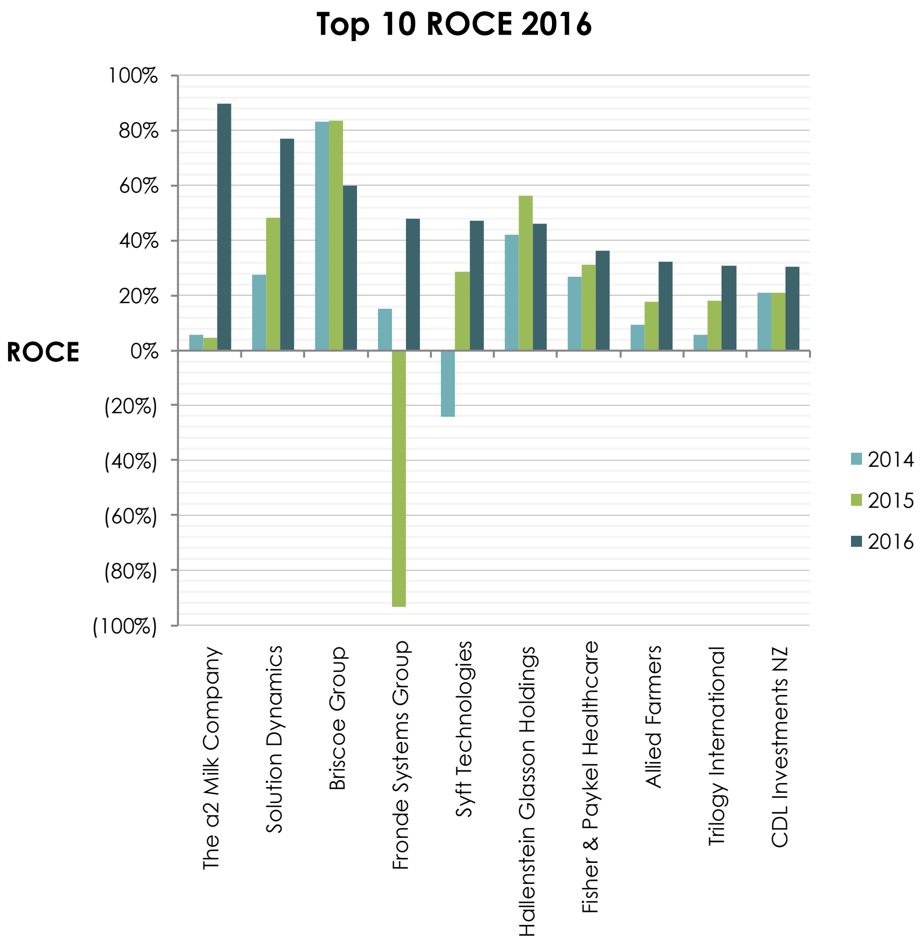
As was the case in 2015, the top 10 entities by 2016 ROCE performance are dominated by businesses that in general have high levels of activity (revenue/ total net operating assets), specifically technology and retail businesses.

The top performer in 2016, The a2 Milk Company, had a 15.0% profitability ratio (up from 1.4% in 2015) and a 6.0x Activity Ratio in 2016 (up from 3.2x in 2015). Last year's top performer, Finzsoft Solutions failed to make the top 10 this year. Its Profitability and Activity Ratios dropped to 2.5% and 2.8x respectively, down from 19.6% and 4.3x in 2015.

The second highest performer Solution Dynamics has steadily increased its ROCE over the past three years on the back of high activity ratios and improving profitability ratios. Both Briscoe Group and Hallenstein Glasson Holdings feature again in the top ten but it should be noted these companies have a large number of leases that are off-balance sheet and are thus not included in the calculation of TNA.

The top three ROCE performers achieved in 2016 for each of the three markets analysed were as follows:

- For the NZX market, The a2 Milk Company (89.6%), Briscoe Group (59.7%) and Hallenstein Holdings (46.1%).
- For the NZAX/NXT markets, Solution Dynamics (76.8%), Just Water International (18.9%) and G3 Group (11.6%).
- For the Unlisted market, Fronde (48.0%), Syft Technologies (47.1%) and Skyline Enterprises (19.3%).




- Of the Crown Entities sampled the top performers were Airways Corporation of NZ (24.9%), Meteorological Service of NZ (16.9%) and Kordia Group (16.1%).

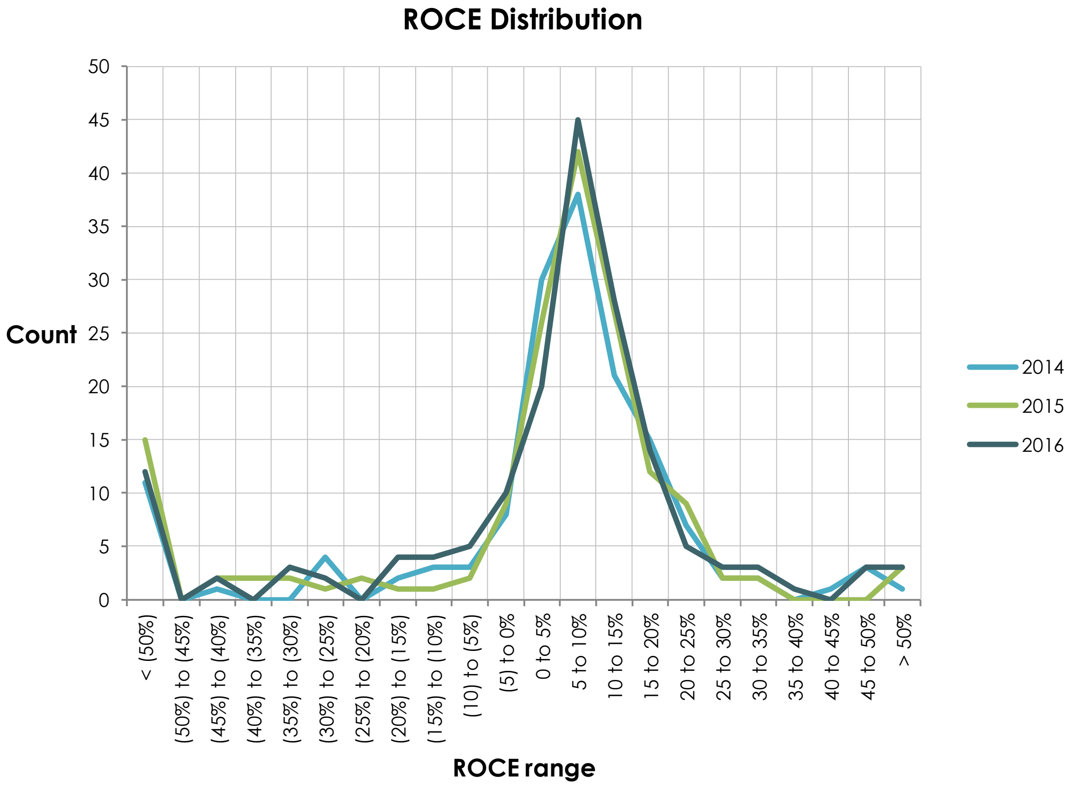
## Distribution of Results

The ROCE returns for the last three years appear to follow a relatively normal distribution, with outliers at either side of a bell shaped curve.

60 companies (36%) achieved a ROCE greater than the common estimates of the market weighted average cost of capital for NZX listed companies of between 8% and 9%, similar to previous years results of 35% in 2015 and 36% in 2014.

18 companies (11%) achieved a ROCE of greater than 20%, compared to the 18 companies in 2015. Only 3 companies reached a 2016 ROCE higher than 50% compared with 4 in 2015.

42 companies had a ROCE less than zero in 2016 (37 companies in 2015). A negative ROCE implies negative profitability, or a net operating loss. About 8% of the sample (12 firms) had a ROCE of less than negative 50%. Unsurprisingly, 5 of these 12 firms were in the technology sector. In general these entities are likely to be focused on growth at the expense of profitability.

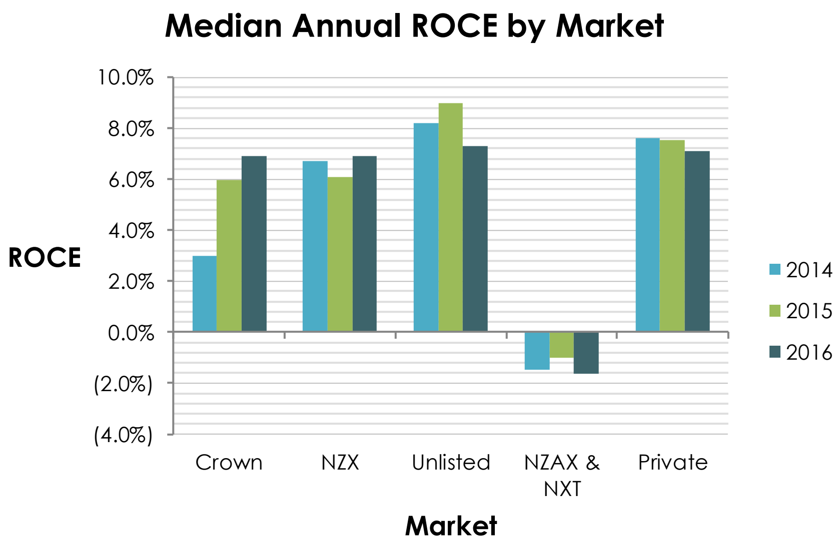


# Market

The median ROCE performance by market for the last three years shows:

- The NZX listed firms had a consistent median performance moving up to 6.9% in 2016, beating the 2014 performance of 6.7% and improving on 2015's slight dip at 6.1%. As a result of stronger Crown results in 2016, NZX listed firms have underperformed relative to all other markets, except for the NZAX and NXT.

- After a steady improvement for three straight years the median ROCE for entities listed on the NZAX and NXT markets has dipped back to pre-2014 levels this year. These firms have consistently underperformed in comparison to those on other markets. Note that of the 21 issuers reviewed from the NZAX and NXT, three had revenue lower than $1m (2015: six) and one had no revenue at all (2015: two). The negative median ROCE is representative of the mix of young loss-making companies and non-operating or pre-revenue businesses present.




- Unlisted issuers' median performance has decreased from a high of 9.0% in 2015 to 7.3% in 2016. As with 2015, the Unlisted market was the best median performer of all markets examined in 2016, including private firms. These firms are much smaller on average than their NZX-Listed counterparts, with a median market capitilisation of $65m versus $292m on the NZX.

- The Crown Entities have shown the biggest improvement over the last three years, increasing their median ROCE from just 3.0% in 2014 to 6.9% in 2016, above the NZX.

- Our sample of private, non-listed companies had a higher ROCE than most of their NZ listed counterparts with a median 2016 ROCE of 7.1%; however, their performance was comparable to the Unlisted market (median ROCE of 7.3%). It should be noted that the cost of capital for private companies and firms on the Unlisted market will be higher than the more established NZX listed and Crown entities. We would therefore expect their ROCE to be higher.

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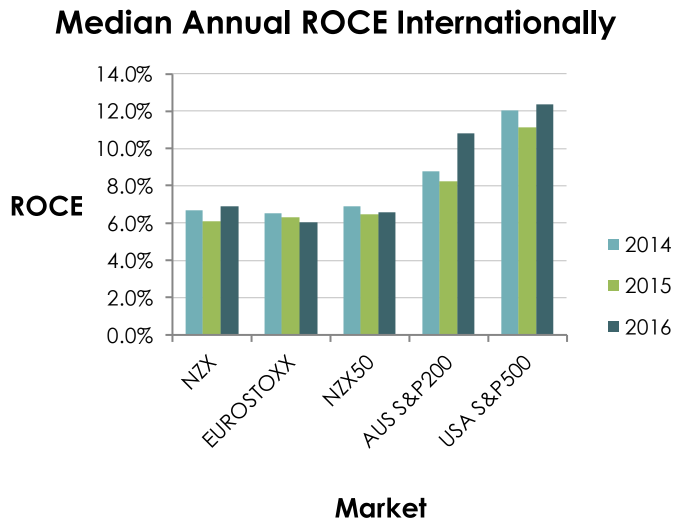
# International Comparison

In order to benchmark New Zealand's performance, we have also reviewed the performance of companies in the European, Australian and US markets, as selected by the EURO STOXX 50, S&P/ASX 200 and S&P 500 indices respectively. For comparability, we have isolated the performance of the NZX50 index constituents from that of the entire group of NZX listed entities.

- The **NZX50** index group of companies had a higher median performance than the overall NZX main board in 2014 and 2015 (0.2% and 0.4% higher respectively). However, in 2016 the median ROCE for NZX50 firms was 6.6%, which is slightly lower than that of the main board. The NZX50 companies represent more than 85% of the NZ listed equity market capitalisation.

- The **EURO STOXX 50** index covers 50 blue-chip stocks from 12 Eurozone countries. It represents more than 50% of the entire free-float market capitalisation of all Eurozone listed equities. In line with previous years this index underperformed compared to the NZX and NZX50 in 2016 (median ROCE of 6.0%).

- The **S&P/ASX 200** index is recognised as the institutional investable benchmark in Australia. The index covers approximately 80% of the equity market capitalisation in Australia. Median ROCE performance improved significantly in 2016, increasing from 8.3% to 10.8%, and was noticably higher than that of the NZX and European companies. The increase in median ROCE was largely driven by a significant performance improvement in the IT, consumer staples and consumer discretionary sectors.




- The **S&P 500** index captures approximately 80% of the total US listed equity market capitalisation. The companies in this index have consistently produced a significantly higher ROCE than the other markets examined. After a slight dip in 2015 (median ROCE of 11.1%) the S&P 500 bounced back up to 12.4% in 2016, a similar level to the 2014 result (12.1%).

- Note that the average cost of capital in the comparison markets will vary from that of New Zealand. In general, companies in the comparison indices tend to be larger and the cost of debt in each of the markets is currently lower, therefore they will have a lower cost of capital.

# Crown Entities

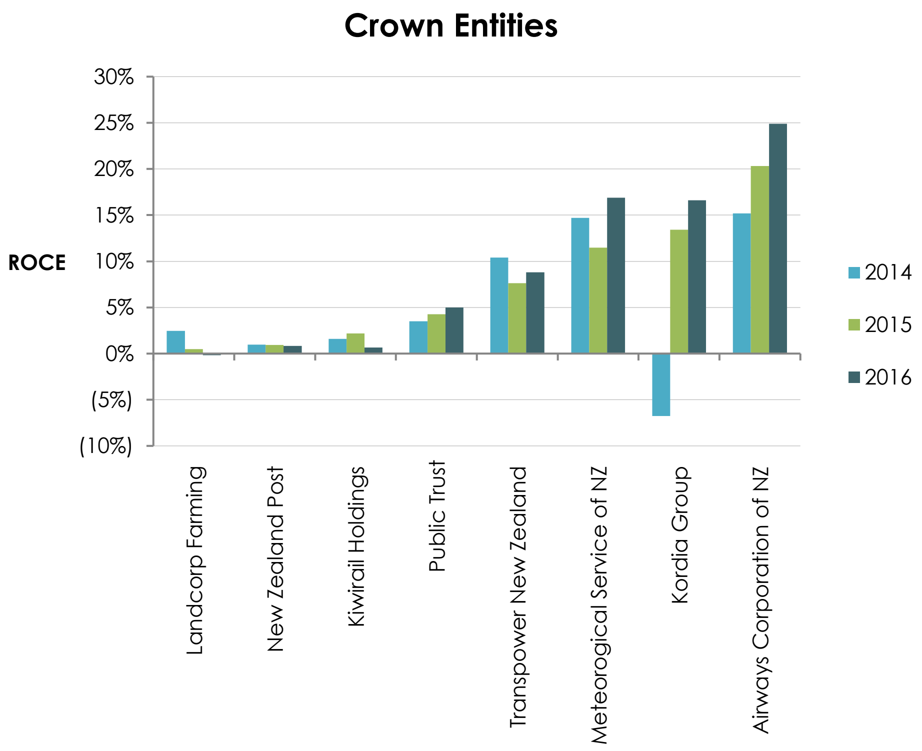
The eight Crown Entities in our analysis have been selected as they are generally considered among the most commercially run entities in the Crown's portfolio.

The overall performance of the Crown Entities improved slightly in 2016 with the median ROCE up 0.9% to 6.9%. Of these crown-owned firms, four delivered ROCE's above the median levels of publicly listed and privately held entities, while the remaining four were significantly lower.

- Five of the eight Crown Entities reported improved ROCE in 2016 compared to 2015.

- Airways Corporation recorded the best performance, improving from its 2015 ROCE of 20.3% to 24.9% in 2016. Similar to 2015 this improvement was wholly driven by an increase its profitability ratio (from 15.4% to 18.7%). In fact, the firm's activity levels only increased marginally, from 1.32 to 1.33.

- Note New Zealand Railways Corporation has been removed from the list of Crown entities covered as this is largely a holding company that is not trading and is not expected to make an operating surplus or provide dividends.



# Non-Listed Companies

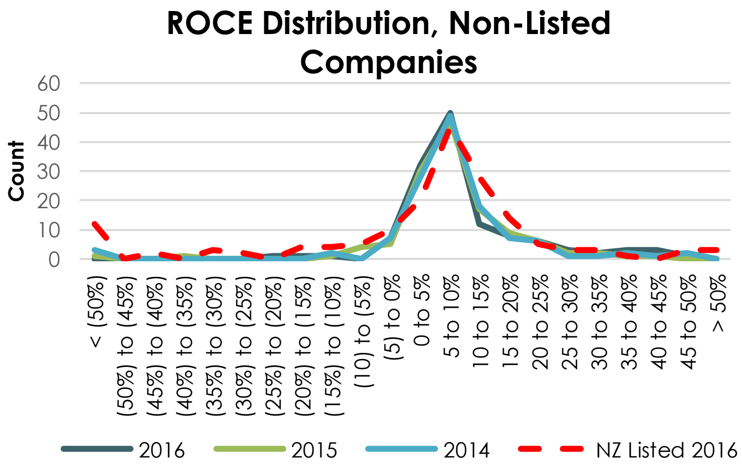
The private company database increased from 118 companies in 2015 to 130 companies in 2016. These 130 companies are reviewed to see how they compare with their listed peers. The larger sample size will improve the statistical power of our analysis. However, it should be noted that we are not making any definitive conclusions regarding the nature of private companies in New Zealand, especially at the sector level wherein the sample sizes are very small.

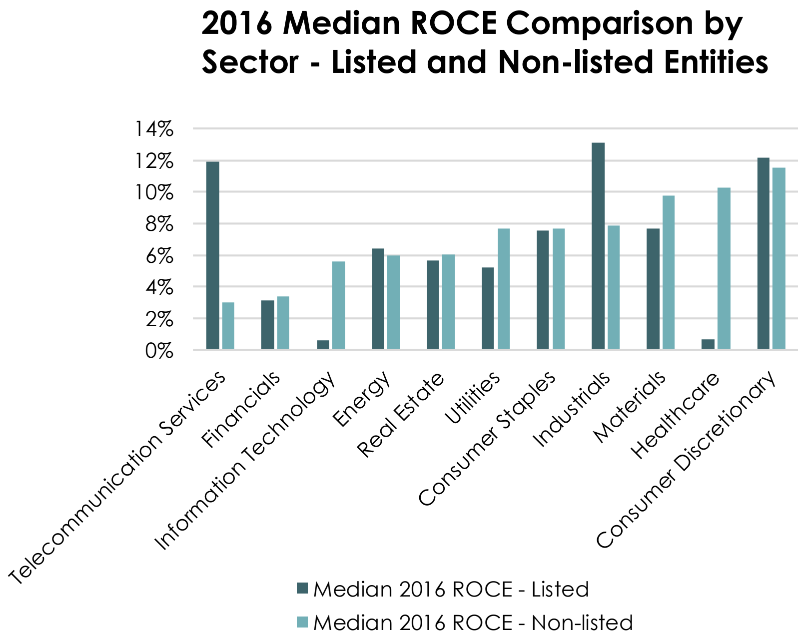
Of the sample of non-listed companies, 31 are involved in the industrials sector, 30 in financial sector, 20 in consumer staples, 14 utilities, 13 in consumer discretionary and 11 in materials. The rest are thinly spread over the other sectors.

**Analysis**

- The distribution of ROCE for the non-listed companies is similar to that of the NZ listed firms; however, the NZ listed firms present more extreme outliers (ROCEs of less than negative 50%).
- All companies in the top quartile achieved a ROCE of greater than 10.7%, while those in the lowest quartile were all lower than 3.4%. This compares to an upper and lower quartile cut-off of 13.6% and 0.0% respectively for listed NZ firms.
- Interestingly, the Healthcare sector was one of the top performing sectors from the private company database, whilst it was one of the bottom two worst performing sectors in the NZ listed database. Median 2016 ROCEs in this sector for non-listed firms was 10.2%, compared to 0.6% for NZ listed firms.

Although the median ROCE is higher than that reported for the NZ listed sector, ROCE needs to be judged against the weighted average cost of capital of the entity. In the case of these typically non-listed companies, the capital weighting will typically be biased towards equity rather than debt. In addition to equity being more expensive than debt in general, the cost of equity for private companies is significantly higher than that of listed companies due to investors requiring a premium for the higher risk. For example, higher risk relates to smaller sized, less mature firms potentially with less depth and/or quality of management, lower quality of information disclosure and lack of liquidity or marketability of the equity holding. Therefore the 2016 median ROCE of 7.1% would suggest that the majority of the private companies reviewed are not generating a return above their weighted average cost of capital, which for public companies is around 8%-9%.



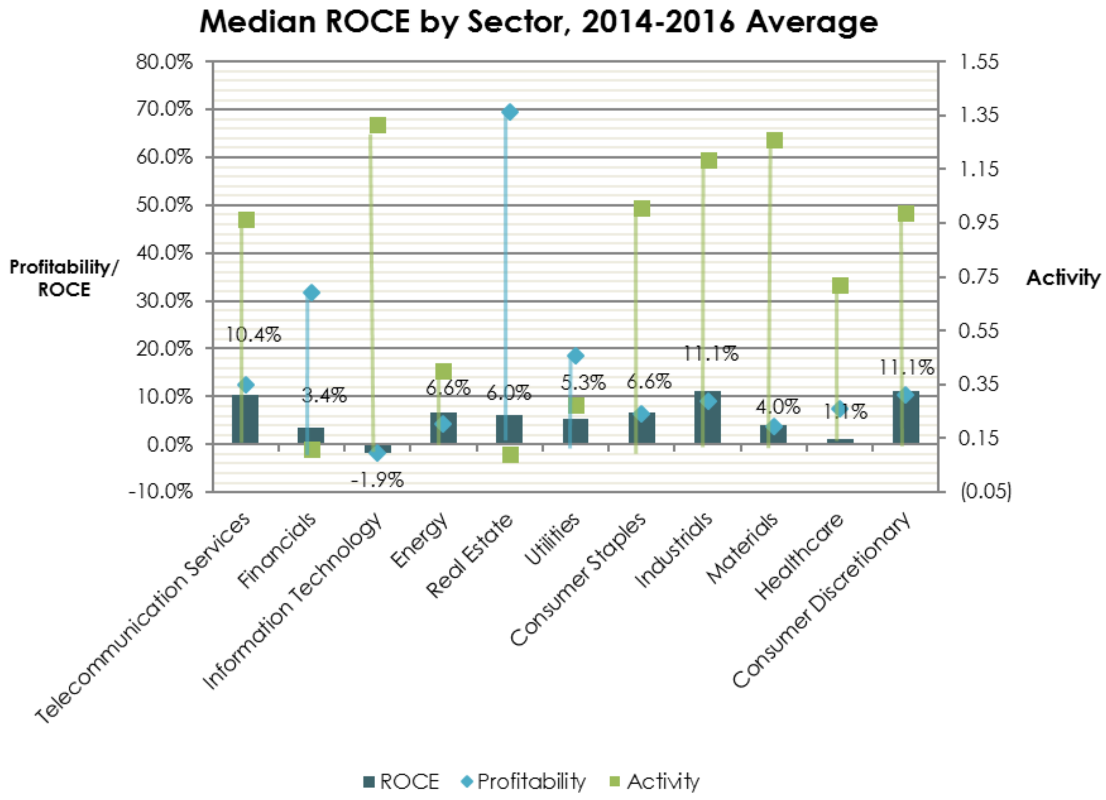
## Sector Performance

The outcome of different business models can be examined by comparing the median performance of companies in different sectors. For this analysis, we have used the median profitability, activity and ROCE performance of each sector for 2016.

The top three performing sectors based on 2014-2016 average ROCE are Consumer Discretionary, Industrials and Telecommunication Services (11.7%, 11.0% and 10.4% respectively). These three sectors display similar business models, with moderate to high activity levels and moderate profitability. The Industrials sector has a lower level of profitability, but makes up for this with a higher activity ratio.

The Real Estate and Financials sectors are dominated by property investment, banks and other financial companies. These sectors exhibit very high profitability, but are dragged down by low levels of activity due to the capital intensive nature of the sector.

Conversely, the materials sector shows very high levels of activity yet has a moderately low median ROCE, as a result of low profitability. Companies in this sector include forestry, steel and construction material suppliers. Overall, these companies have high sales volumes but low profit margins.




The IT sector had the highest level of activity but combined with low or non-existent profitability it is overall the worst performing sector in 2016. This mirrors 2015's results and it is interesting to see from Armillary's perspective the investment community's focus is starting to shift from annual recurring revenues (ARR) to time to cash positive.

## ROCE Application: New Zealand Dairy Companies

This year we have chosen to examine the performance of five NZ dairy companies: Fonterra, Synlait, Tatua, Westland Dairy and Open Country Dairy.

The dairy sector has been of interest recently in New Zealand following the decline of global dairy prices for the 2014-15 and 2015-16 seasons. The performance of the dairy sector continues to have a significant impact on the New Zealand economy. New Zealand Institute of Economic Research (NZIER) estimated that in the year to March 2016, dairy contributed $7.8 billion to New Zealand's GDP (3.5%). Of that, almost $6.0 billion was from dairy farming and $1.9 billion was from dairy processing.

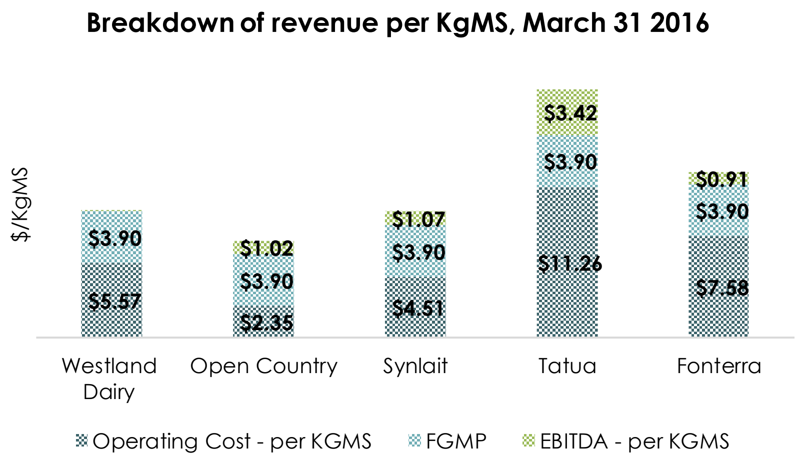
Overall, Tatua has been the best performer with a profitability ratio average of 11% over the 2011-2016 period. There has been a substantial push by processors into 'added value' products following the collapse of Global Dairy Trade prices for the 2014-15 and 2015-16 seasons. Tatua remains the industry leader in creating added value, although it is also the highest cost processor. Interestingly, Tatua has a ROCE to Farm Gate Milk Price (FGMP) correlation of (0.88), and performed poorly when the FGMP hit record highs in the 2010-11 and 2013-14 seasons. This trend can also be seen with Fonterra, Synlait and Open Country.

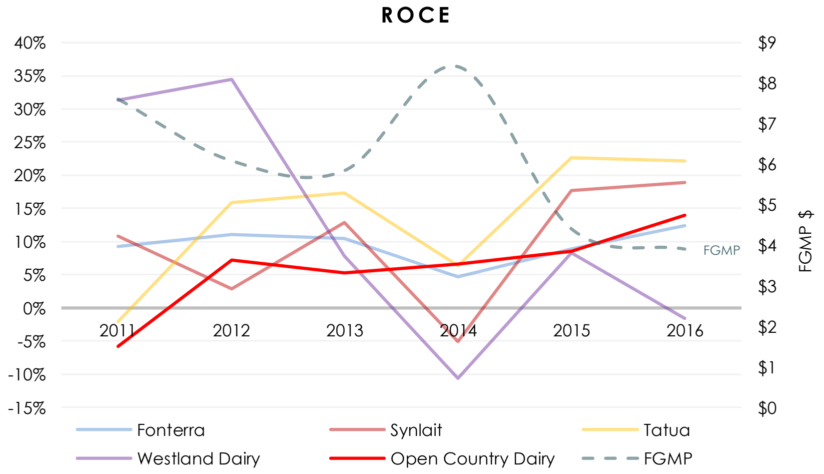
The data confirms that as the FGMP rises, refining and creating high value dairy products becomes more expensive, which erodes profit margins for dairy processors. Alternatively, low cost processors are likely to perform better on a relative basis when the FGMP is weak due to their low cost structure.

**Correlation, ROCE & Milk Price**

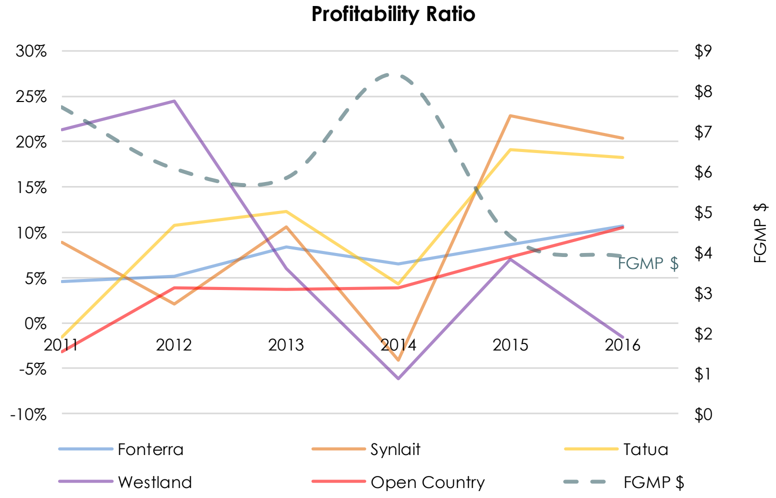
| Fonterra | Synlait | Tatua | Westland | Open Country |
|---|---|---|---|---|
| (0.73) | (0.83) | (0.88) | 0.09 | (0.67) |

| | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|
| FGMP $KgMS | $7.60 | $6.08 | $5.84 | $8.40 | $4.40 | $3.90 |

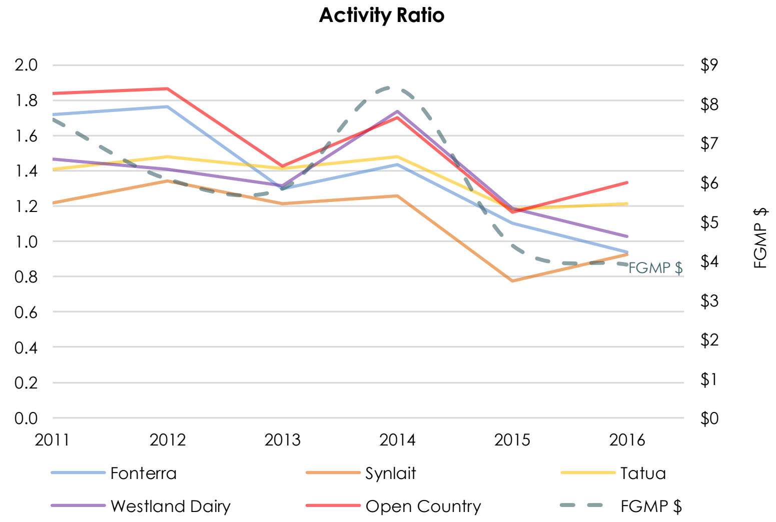


| | ROCE | | | | | | |
|---|---|---|---|---|---|---|---|
| | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | Average |
| Fonterra | 9% | 11% | 11% | 5% | 9% | 12% | 9% |
| Synlait | 11% | 3% | 13% | -5% | 18% | 19% | 10% |
| Tatua | -2% | 16% | 17% | 6% | 23% | 22% | 14% |
| Westland | 31% | 34% | 8% | -11% | 8% | -2% | 12% |
| Open Country | -6% | 7% | 5% | 7% | 8% | 14% | 6% |




Analysis of the profitability ratio illustrates that strong global milk prices squeeze profit margins, due to the higher input costs associated with the collection of milk. Westland continues to struggle following the dairy downturn, reflecting poor financial performance in recent years. Synlait and Tatua have the strongest profitability ratio, although lag behind Fonterra and Open Country on an activity ratio basis.



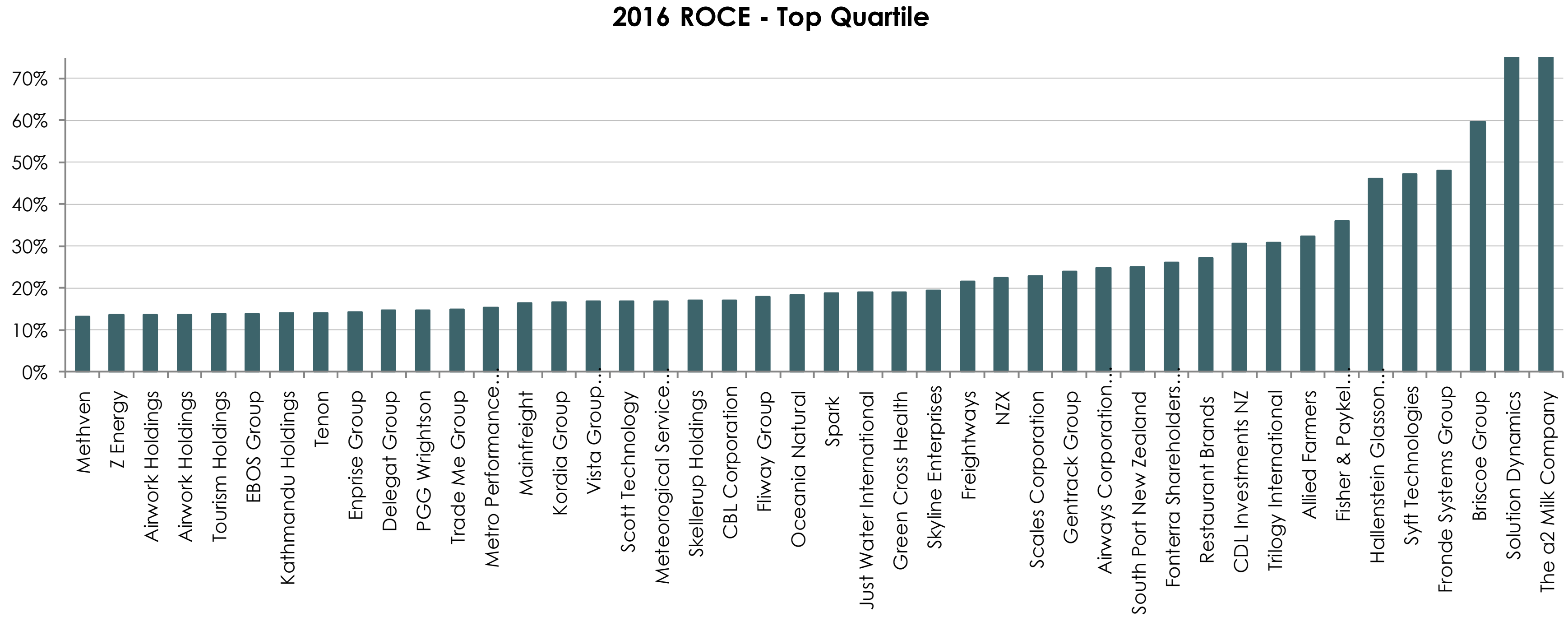

The activity ratio chart, measured against the FGMP indicates there is a relatively strong correlation between the FGMP and the activity ratio, particularly during the period 2013-2015 when the FGMP increased to $8.00 and dropped to $4.00 in the space of a year. During this period the main driver of the activity ratio was revenue with there being a high correlation between the revenue of all companies, apart from Tatua, and the FGMP.

The overall results suggest that Sylait and Tatua are more efficient at generating a return compared to their peers.

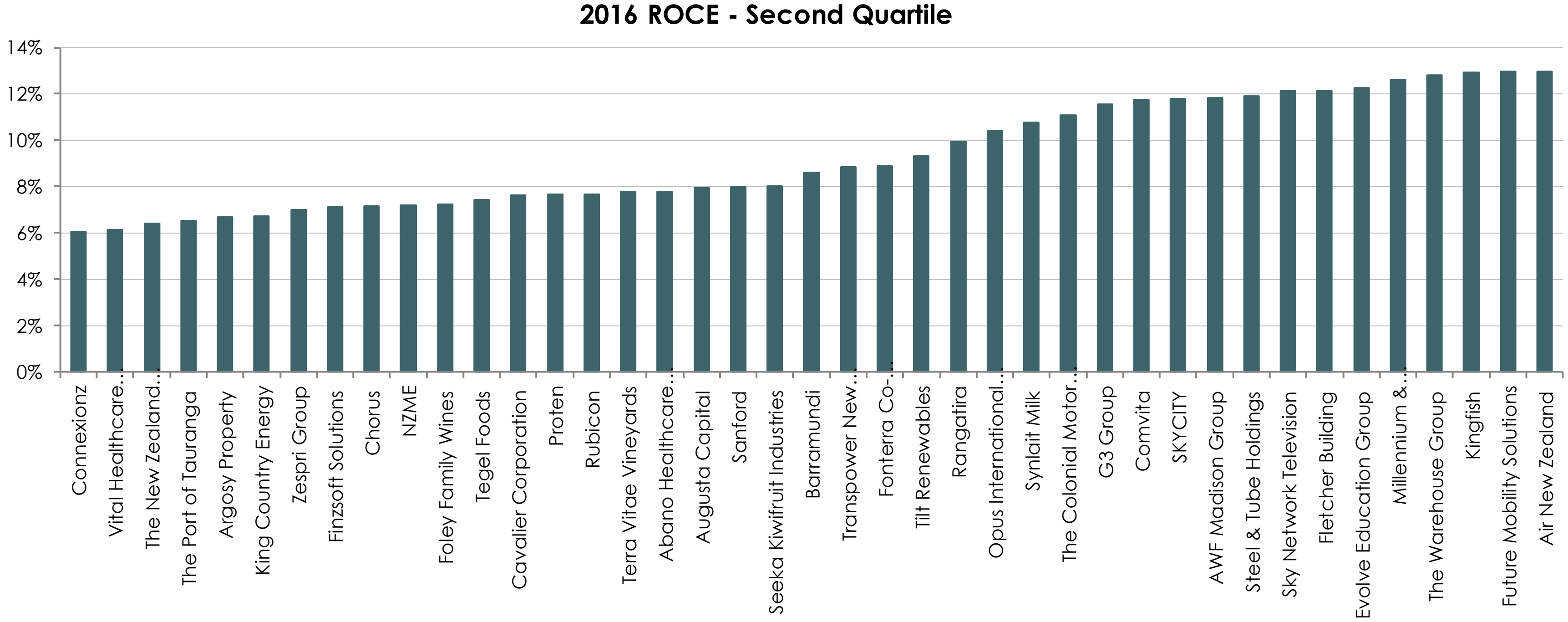
# Individual Entities

The following four charts show the individual ROCE performance for each of the 167 listed and Crown Entities reviewed in 2016. Note that for the purposes of presenting this chart, entities with ROCE greater than 75% have been capped at 75% as they are relative outliers.

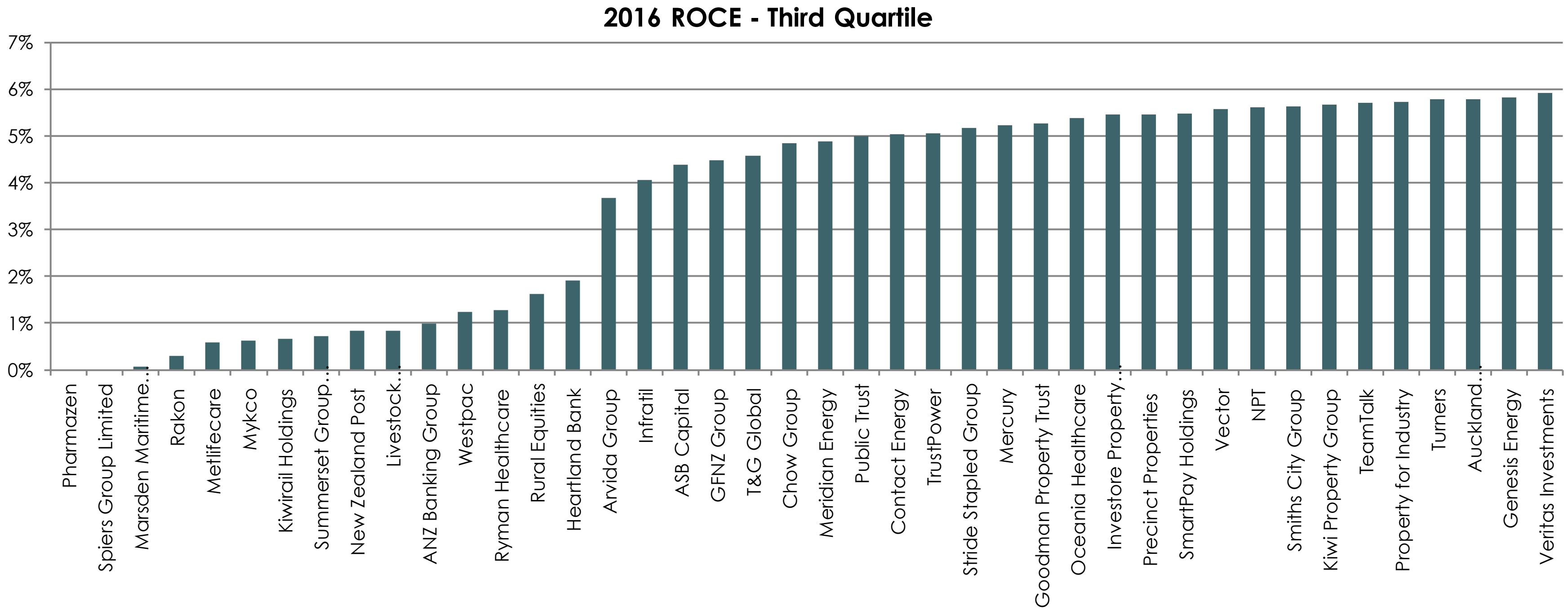
The 44 entities in the top quartile are dominated by the industrials, consumer staples and consumer discretionary sectors, which combined make up 68% of this top quartile. Top quartile ROCE performance ranges from 13.2% to 89.6%.



The 41 entities in the second quartile had 2016 ROCE's ranging between 6.0% and 13.0%. At this level, we estimate that they are trading at or above their individual weighted average cost of capital, if only marginally.

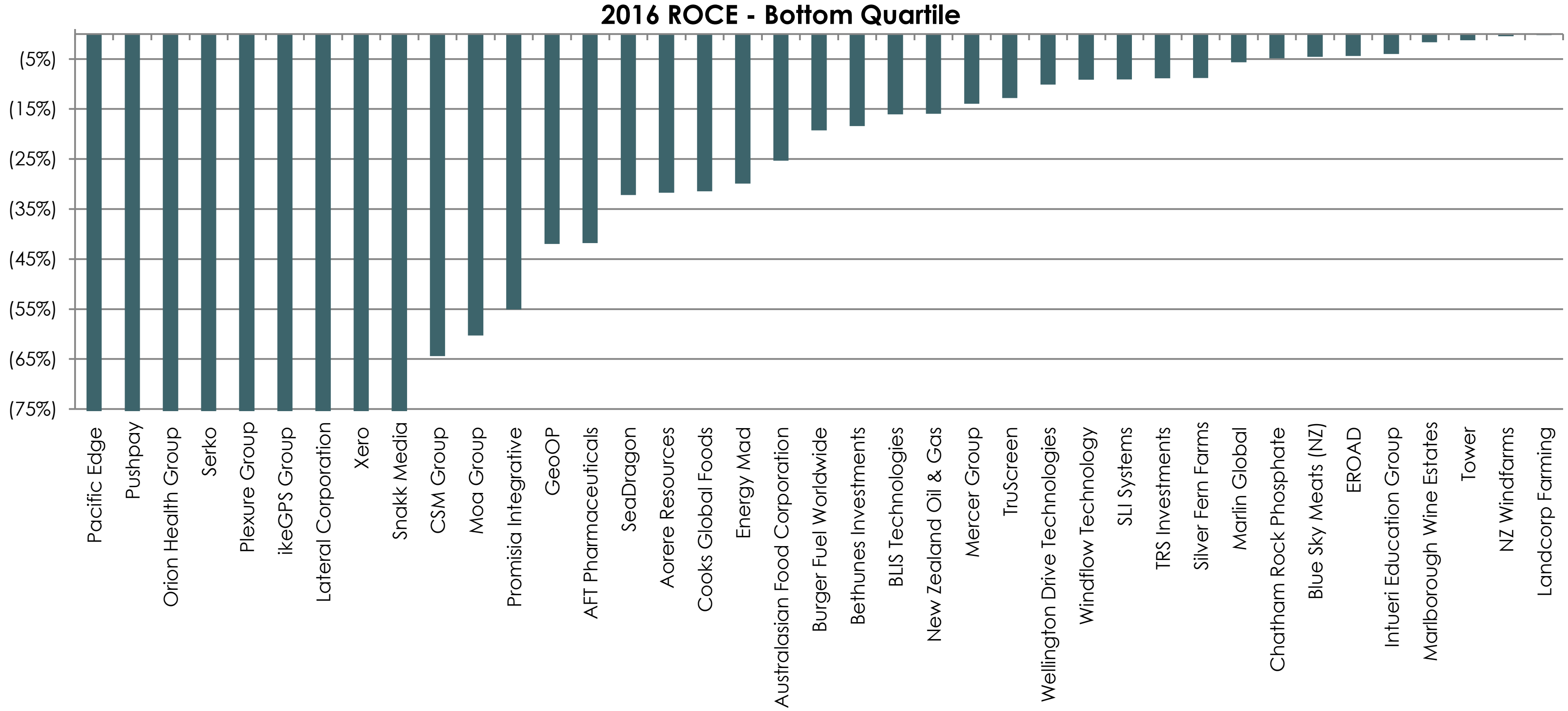


The third quartile ranges from 0.0% to 5.9%. At this level we estimate that most are trading below their individual weighted average cost of capital. Financial and Real Estate companies make up the largest portion of this quartile at 40% combined. Over 50% of the utilities companies in the sample fall in this quartile.




The fourth quartile consists of entities with a negative ROCE, ranging from negative 0.2% to negative 386.6%. Note that for the purposes of this chart those entities with a ROCE of less than negative 75% have been constrained at negative 75%. These entities with negative ROCE reported negative EBIT margins.

40% of firms in the technology sector fall into this quartile. Many of these bottom quartile firms are focused on a significant growth strategy at the expense of profitability, such as Vmob, Xero and Moa. However, those mature businesses with negative ROCE may need to reconsider the viability of their business models if their negative result is not a one-off.




Appendix 1 contains a table of individual entity results including 2015 and 2016 Profitability (EBIT margin) and Activity Ratios in addition to the 2014, 2015 and 2016 and three-year average ROCE.

# About Armillary Private Capital

Armillary Private Capital is an investment bank providing investment banking, advisory and asset management services focused on the New Zealand capital markets. Our purpose is enabling success for businesses, business owners and investors.

Our approach is based on a combination of influences grounded in our culture, methodology and experiences. We have worked with a range of New Zealand businesses through all stage of the business lifecycle from start-up to maturity. Be they private, listed or government-related, we have seen and experienced the roller-coaster rides business owners and managers endure. These experiences allow us to quickly identify your needs and find the right solution.

An important part of our approach is the use of proven financial tools and methodologies to provide a concise but comprehensive view of business performance. A key methodology that underpins our work is the DuPont method. This powerful but highly practical method of analysis allows us to develop a rapid understanding of the underlying performance of a business and to identify key business drivers. This disciplined approach helps us with quality decision making in our work.

Armillary Private Capital is the manager of Efficient Market Services Limited, operator of the Unlisted market.

# Sources of Data

The data for this analysis and report has been compiled by Armillary Private Capital from annual reports and data obtained through S&P Capital IQ. We note that we are reliant on the categorisation used by S&P Capital IQ for this analysis and such categorisation might vary from the categorisation we have applied to those companies for which we have sourced the data directly from their annual reports.

## Appendix 1 – Detailed Results

| | Market | 2015 EBIT Margin | 2016 EBIT Margin | 2015 Activity Ratio | 2016 Activity Ratio | ROCE 2014 | ROCE 2015 | ROCE 2016 | 3 Year Average ROCE |
|---|---|---|---|---|---|---|---|---|---|
| Abano Healthcare Group | NZX | 7.6% | 8.2% | 0.91 | 0.95 | 6.1% | 6.9% | 7.8% | 6.9% |
| AFT Pharmaceuticals | NZX | (10.6%) | (13.5%) | 3.41 | 3.09 | 20.9% | (36.1%) | (41.8%) | (19.0%) |
| Air New Zealand | NZX | 10.0% | 13.8% | 1.02 | 0.94 | 8.2% | 10.1% | 13.0% | 10.4% |
| Airways Corporation of NZ | Crown | 15.4% | 18.7% | 1.32 | 1.33 | 15.2% | 20.3% | 24.9% | 20.1% |
| Airwork Holdings | NZX | 16.5% | 21.5% | 0.72 | 0.63 | 8.8% | 11.8% | 13.6% | 11.4% |
| Allied Farmers | NZX | 10.3% | 13.1% | 1.73 | 2.46 | 9.4% | 17.8% | 32.3% | 19.8% |
| ANZ Banking Group | NZX | 38.4% | 32.0% | 0.03 | 0.03 | 1.5% | 1.3% | 1.0% | 1.3% |
| Aorere Resources | NZX | (32.6%) | 8480.0% | 0.13 | 0.00 | (2.7%) | (4.2%) | (31.7%) | (12.9%) |
| Argosy Property | NZX | 71.7% | 73.2% | 0.09 | 0.09 | 6.7% | 6.5% | 6.7% | 6.6% |
| Arvida Group | NZX | 19.4% | 17.6% | 0.12 | 0.21 | 50.0% | 2.2% | 3.7% | 18.6% |
| ASB Capital | NZX | 100.0% | 100.0% | 0.05 | 0.04 | 4.1% | 4.8% | 4.4% | 4.4% |
| Auckland International Airport | NZX | 62.3% | 62.8% | 0.09 | 0.09 | 6.1% | 5.7% | 5.8% | 5.9% |
| Augusta Capital | NZX | 40.2% | 45.3% | 0.14 | 0.17 | 7.0% | 5.7% | 7.9% | 6.9% |
| Australasian Food Corporation | NZAX | NA | NA | 0.00 | 0.68 | (0.8%) | (43.7%) | (25.3%) | (23.3%) |
| AWF Madison Group | NZX | 5.0% | 4.2% | 2.71 | 2.88 | 18.0% | 13.5% | 12.0% | 14.5% |
| Barramundi | NZX | 75.7% | 77.2% | 0.14 | 0.11 | (4.6%) | 10.7% | 8.6% | 4.9% |
| Bethunes Investments | NZX | NA | NA | 0.00 | 0.01 | 6.3% | (3.8%) | (18.4%) | (5.3%) |
| BLIS Technologies | NZX | (40.7%) | (7.9%) | 0.97 | 2.04 | (44.0%) | (39.7%) | (16.0%) | (33.3%) |
| Blue Sky Meats (NZ) | Unlisted | 2.1% | (1.7%) | 2.29 | 2.73 | 7.5% | 4.8% | (4.6%) | 2.6% |
| Briscoe Group | NZX | 10.2% | 11.6% | 8.18 | 5.16 | 83.0% | 83.6% | 59.7% | 75.4% |
| Burger Fuel Worldwide | NZAX | 3.0% | (6.2%) | 3.38 | 3.13 | 11.1% | 10.2% | (19.3%) | 0.7% |
| Cavalier Corporation | NZX | 1.2% | 4.7% | 1.52 | 1.62 | 5.7% | 1.9% | 7.6% | 5.1% |
| CBL Corporation | NZX | 22% | 21% | 1.22 | 0.80 | 27.7% | 30.0% | 17.1% | 23.9% |
| CDL Investments NZ | NZX | 49.0% | 49.1% | 0.43 | 0.62 | 21.0% | 21.0% | 30.5% | 24.2% |
| Chatham Rock Phosphate | NZAX | NA | NA | 0.00 | 0.00 | (1.9%) | (43.3%) | (4.9%) | (16.7%) |
| Chorus | NZX | 27.6% | 26.5% | 0.29 | 0.27 | 10.4% | 8.0% | 7.1% | 8.5% |
| Chow Group | NZAX | (547.7%) | 76.6% | 0.00 | 0.06 | NA | (1.0%) | 4.8% | 1.9% |
| Comvita | NZX | 10.0% | 11.7% | 1.11 | 1.00 | 7.5% | 11.1% | 11.7% | 10.1% |

| | Market | 2015 EBIT Margin | 2016 EBIT Margin | 2015 Activity Ratio | 2016 Activity Ratio | ROCE 2014 | ROCE 2015 | ROCE 2016 | 3 Year Average ROCE |
|---|---|---|---|---|---|---|---|---|---|
| Connexionz | Unlisted | 23.3% | 2.7% | 2.94 | 2.22 | 23.7% | 68.3% | 6.0% | 32.7% |
| Contact Energy | NZX | 13.1% | 14.9% | 0.37 | 0.34 | 6.0% | 4.9% | 5.0% | 5.3% |
| Cooks Global Foods | NZAX | (41.0%) | (54.1%) | 0.51 | 0.58 | (28.2%) | (20.8%) | (31.5%) | (26.8%) |
| CSM Group | NZAX | (883.8%) | (897.8%) | 0.09 | 0.07 | (29.1%) | (76.4%) | (64.4%) | (56.6%) |
| Delegat Group | NZX | 28.6% | 33.4% | 0.49 | 0.44 | 16.6% | 13.9% | 14.6% | 15.0% |
| EBOS Group | NZX | 2.8% | 2.8% | 4.35 | 4.99 | 10.8% | 12.2% | 13.9% | 12.3% |
| Energy Mad | NZX | (49.1%) | (9.0%) | 3.76 | 3.34 | (80.4%) | (184.6%) | (29.9%) | (98.3%) |
| Enprise Group | NZAX | 4.4% | 8.1% | 1.94 | 1.75 | (7.5%) | 8.6% | 14.2% | 5.1% |
| EROAD | NZX | 1.9% | (6.9%) | 0.58 | 0.64 | 5.3% | 1.1% | (4.4%) | 0.7% |
| Evolve Education Group | NZX | 2.8% | 16.6% | 0.45 | 0.74 | NA | 1.3% | 12.2% | 6.7% |
| Finzsoft Solutions | NZX | 19.6% | 2.5% | 4.31 | 2.80 | 20.3% | 84.4% | 7.1% | 37.3% |
| Fisher & Paykel Healthcare | NZX | 25.3% | 25.9% | 1.23 | 1.39 | 26.7% | 31.1% | 36.0% | 31.3% |
| Fletcher Building | NZX | 7.2% | 7.4% | 1.57 | 1.64 | 11.2% | 11.3% | 12.2% | 11.6% |
| Fliway Group | NZX | 4.2% | 8.3% | 1.45 | 2.15 | 10.6% | 6.1% | 17.9% | 11.6% |
| Foley Family Wines | NZAX | 11.1% | 25.0% | 0.32 | 0.29 | 5.7% | 3.6% | 7.2% | 5.5% |
| Fonterra Co-Operative Group | NZX | 4.2% | 7.7% | 1.35 | 1.16 | 3.3% | 5.6% | 8.9% | 5.9% |
| Fonterra Shareholders Fund | NZX | 100.0% | 100.0% | -0.27 | 0.26 | (13.2%) | (26.9%) | 26.0% | (4.7%) |
| Freightways | NZX | 16.9% | 17.0% | 1.23 | 1.27 | 19.0% | 20.8% | 21.6% | 20.5% |
| Fronde Systems Group | Unlisted | (5.5%) | 2.7% | 16.90 | 17.73 | 15.0% | (93.2%) | 48.0% | (10.1%) |
| Future Mobility Solutions | NZX | (9.4%) | 4.3% | 2.60 | 3.01 | (9.5%) | (24.6%) | 12.9% | (7.0%) |
| G3 Group | NXT | 8.7% | 8.0% | 1.24 | 1.45 | NA | 10.8% | 11.6% | 11.2% |
| Genesis Energy | NZX | 9.0% | 10.3% | 0.62 | 0.56 | 4.4% | 5.6% | 5.8% | 5.3% |
| Gentrack Group | NZX | 28.9% | 27.2% | 0.68 | 0.88 | 15.7% | 19.6% | 24.0% | 19.7% |
| GeoOP | NZAX | (501.7%) | (195.7%) | 0.37 | 0.21 | (210.0%) | (184.5%) | (42.0%) | (145.5%) |
| GFNZ Group | NZAX | 20.1% | 26.2% | 0.19 | 0.17 | (14.2%) | 3.8% | 4.5% | (2.0%) |
| Goodman Property Trust | NZX | 76.2% | 75.8% | 0.08 | 0.07 | 5.7% | 5.8% | 5.3% | 5.6% |
| Green Cross Health | NZX | 7.7% | 6.5% | 2.97 | 2.93 | 33.1% | 22.8% | 19.1% | 25.0% |
| Hallenstein Glasson Holdings | NZX | 10.7% | 8.4% | 5.24 | 5.49 | 41.9% | 56.1% | 46.1% | 48.0% |
| Heartland Bank | NZX | 25.1% | 28.3% | 0.08 | 0.07 | 2.0% | 1.9% | 1.9% | 2.0% |
| ikeGPS Group | NZX | (171.2%) | (110.6%) | 0.84 | 1.34 | (54.2%) | (144.6%) | (147.8%) | (115.5%) |

| | Market | 2015 EBIT Margin | 2016 EBIT Margin | 2015 Activity Ratio | 2016 Activity Ratio | ROCE 2014 | ROCE 2015 | ROCE 2016 | 3 Year Average ROCE |
|---|---|---|---|---|---|---|---|---|---|
| Infratil | NZX | 17.9% | 14.8% | 0.28 | 0.27 | 5.0% | 5.1% | 4.0% | 4.7% |
| Intueri Education Group | NZX | 12.2% | (8.5%) | 0.63 | 0.47 | 9.6% | 7.7% | (4.0%) | 4.5% |
| Investore Property Limited | NZX | NA | 94.6% | NA | 0.06 | NA | NA | 5.5% | 5.5% |
| Just Water International | NZAX | 12.5% | 14.8% | 0.98 | 1.28 | 9.5% | 12.2% | 18.9% | 13.5% |
| Kathmandu Holdings | NZX | 8.1% | 12.0% | 1.10 | 1.17 | 18.1% | 9.0% | 13.9% | 13.7% |
| King Country Energy | Unlisted | 25.9% | 21.6% | 0.20 | 0.31 | 4.5% | 5.2% | 6.7% | 5.5% |
| Kingfish | NZX | 78.5% | 82.3% | 0.10 | 0.16 | 19.0% | 7.8% | 12.9% | 13.3% |
| Kiwi Property Group | NZX | 68.2% | 67.5% | 0.09 | 0.08 | 6.0% | 6.0% | 5.7% | 5.9% |
| Kiwirail Holdings | Crown | 2.3% | 0.7% | 0.96 | 0.93 | 1.6% | 2.2% | 0.7% | 1.5% |
| Kordia Group | Crown | 6.5% | 7.6% | 2.07 | 2.19 | (6.8%) | 13.4% | 16.6% | 7.8% |
| Landcorp Farming | Crown | 3.9% | (1.5%) | 0.13 | 0.12 | 2.5% | 0.5% | (0.2%) | 0.9% |
| Lateral Corporation | NZAX | (276.4%) | (181.5%) | 0.67 | 0.62 | NA | (185.2%) | (112.5%) | (148.9%) |
| Livestock Improvement Corporation | NZAX | 8.9% | 1.3% | 0.87 | 0.66 | 10.8% | 7.8% | 0.8% | 6.5% |
| Mainfreight | NZX | 6.2% | 5.9% | 2.82 | 2.77 | 17.6% | 17.6% | 16.4% | 17.2% |
| Marlborough Wine Estates | NXT | 49.3% | (6.8%) | 0.23 | 0.24 | NA | 11.5% | (1.6%) | 4.9% |
| Marlin Global | NZX | 79.1% | 145.6% | 0.18 | -0.04 | 14.7% | 14.6% | (5.6%) | 7.9% |
| Marsden Maritime Holdings | NZX | (10.1%) | 2.2% | 0.02 | 0.03 | (0.9%) | (0.2%) | 0.1% | (0.3%) |
| Mercer Group | NZX | (3.4%) | (20.0%) | 0.95 | 0.70 | 0.1% | (3.2%) | (13.9%) | (5.7%) |
| Mercury | NZX | 18.6% | 19.9% | 0.30 | 0.26 | 6.1% | 5.5% | 5.2% | 5.6% |
| Meridian Energy | NZX | 15.7% | 16.8% | 0.32 | 0.29 | 5.0% | 5.0% | 4.9% | 5.0% |
| Meteorogical Service of NZ | Crown | 9.2% | 12.2% | 1.25 | 1.39 | 14.7% | 11.5% | 16.9% | 14.3% |
| Methven | NZX | 9.1% | 9.3% | 1.46 | 1.43 | 12.1% | 13.2% | 13.2% | 12.9% |
| Metlifecare | NZX | 14.1% | 13.1% | 0.05 | 0.04 | 0.9% | 0.7% | 0.6% | 0.7% |
| Metro Performance Glass | NZX | 14.8% | 16.0% | 0.94 | 0.96 | 12.7% | 14.0% | 15.4% | 14.0% |
| Millennium & Copthorne Hotels NZ | NZX | 29.2% | 39.3% | 0.29 | 0.32 | 4.9% | 8.5% | 12.6% | 8.7% |
| Moa Group | NZX | (89.7%) | (35.3%) | 1.23 | 1.71 | (140.4%) | (110.7%) | (60.3%) | (103.8%) |
| Mykco | NZAX | (3.5%) | 0.7% | 0.54 | 0.90 | (1.1%) | (1.9%) | 0.6% | (0.8%) |
| New Zealand King Salmon | NZX | (25%) | (19.1) | 0.50 | 0.63 | 9.6% | 0.0% | 0.0% | 3.2% |
| New Zealand Oil & Gas | NZX | (30.1%) | (36.1%) | 0.38 | 0.44 | 9.1% | (11.5%) | (15.9%) | (6.1%) |
| New Zealand Post | Crown | 9.8% | 10.3% | 0.09 | 0.08 | 1.0% | 0.9% | 0.8% | 0.9% |

| | Market | 2015 EBIT Margin | 2016 EBIT Margin | 2015 Activity Ratio | 2016 Activity Ratio | ROCE 2014 | ROCE 2015 | ROCE 2016 | 3 Year Average ROCE |
|---|---|---|---|---|---|---|---|---|---|
| NZME | NZX | 10.4% | 11.3% | 0.50 | 0.63 | 9.6% | 5.2% | 7.2% | 7.3% |
| NPT | NZX | 57.4% | 55.1% | 0.10 | 0.10 | 4.8% | 5.9% | 5.6% | 5.5% |
| NZ Windfarms | NZX | 3.9% | (3.6%) | 0.11 | 0.12 | (1.2%) | 0.4% | (0.4%) | (0.4%) |
| NZX | NZX | 28.3% | 22.7% | 1.20 | 0.99 | 47.0% | 33.9% | 22.4% | 34.5% |
| Oceania Healthcare | NZX | 10.5% | 17.6% | 0.31 | 0.31 | 0.9% | 3.2% | 5.4% | 3.2% |
| Oceania Natural | NXT | 0.7% | 7.7% | 8.12 | 2.40 | NA | 5.9% | 18.4% | 12.2% |
| Opus International Consultants | NZX | 6.4% | 3.7% | 2.68 | 2.81 | 17.2% | 17.3% | 10.4% | 15.0% |
| Orion Health Group | NZX | (32.9%) | (26.7%) | 4.16 | 8.11 | (19.1%) | (136.6%) | (216.4%) | (124.0%) |
| Pacific Edge | NZX | (396.4%) | (258.5%) | 1.59 | 1.50 | (756.0%) | (628.8%) | (386.6%) | (590.5%) |
| PGG Wrightson | NZX | 5.1% | 5.2% | 3.07 | 2.84 | 12.4% | 15.7% | 14.7% | 14.3% |
| Pharmazen | Unlisted | 14.9% | NA | 0.57 | NA | 1.7% | 8.5% | 0.0% | 3.4% |
| Plexure Group | NZX | (192.9%) | (124.7%) | 0.93 | 1.27 | (158.2%) | (179.4%) | (158.1%) | (165.2%) |
| Precinct Properties | NZX | 65.2% | 64.7% | 0.10 | 0.08 | 6.3% | 6.4% | 5.5% | 6.1% |
| Promisia Integrative | NZX | (218.6%) | (15.6%) | 0.25 | 3.54 | (27.7%) | (54.0%) | (55.1%) | (45.6%) |
| Property for Industry | NZX | 83.6% | 85.7% | 0.07 | 0.07 | 6.2% | 5.8% | 5.7% | 5.9% |
| Proten | Unlisted | 44.0% | 42.0% | 0.22 | 0.18 | 8.8% | 9.5% | 7.6% | 8.6% |
| Public Trust | Crown | 33.7% | 40.1% | 0.13 | 0.12 | 3.5% | 4.3% | 5.0% | 4.3% |
| Pushpay | NZX | (473.2%) | (196.8%) | 0.29 | 1.26 | (62.3%) | (136.9%) | (247.7%) | (149.0%) |
| Rakon | NZX | (3.2%) | 0.3% | 1.42 | 1.16 | (15.4%) | (4.5%) | 0.3% | (6.5%) |
| Rangatira | Unlisted | 35.1% | 14.9% | 0.39 | 0.67 | 32.3% | 13.5% | 9.9% | 18.6% |
| Restaurant Brands | NZX | 8.6% | 8.5% | 3.04 | 3.18 | 23.6% | 26.2% | 27.1% | 25.7% |
| Rubicon | NZX | 2.5% | 6.8% | 1.12 | 1.12 | 1.4% | 2.8% | 7.7% | 4.0% |
| Rural Equities | Unlisted | 43.5% | 36.3% | 0.05 | 0.04 | 3.1% | 2.1% | 1.6% | 2.3% |
| Ryman Healthcare | NZX | 14.7% | 16.7% | 0.08 | 0.07 | 1.6% | 1.1% | 1.2% | 1.3% |
| Sanford | NZX | 10.2% | 13.1% | 0.59 | 0.61 | 7.5% | 6.0% | 8.0% | 7.2% |
| Scales Corporation | NZX | 15.7% | 14.6% | 1.48 | 1.57 | 12.3% | 23.3% | 22.9% | 19.5% |
| Scott Technology | NZX | 10.3% | 9.8% | 1.12 | 1.71 | 8.9% | 11.5% | 16.8% | 12.4% |
| SeaDragon | NZX | (44.4%) | (97.0%) | 0.68 | 0.33 | (27.0%) | (30.1%) | (32.2%) | (29.8%) |
| Seeka Kiwifruit Industries | NZX | 5.0% | 6.5% | 1.24 | 1.24 | 5.1% | 6.2% | 8.0% | 6.4% |
| Serko | NZX | (60.8%) | (48.1%) | 1.28 | 3.68 | (12.0%) | (77.6%) | (177.2%) | (88.9%) |

| | Market | 2015 EBIT Margin | 2016 EBIT Margin | 2015 Activity Ratio | 2016 Activity Ratio | ROCE 2014 | ROCE 2015 | ROCE 2016 | 3 Year Average ROCE |
|---|---|---|---|---|---|---|---|---|---|
| Silver Fern Farms | Unlisted | 1.9% | (1.3%) | 4.28 | 6.88 | 4.7% | 8.2% | (8.8%) | 1.4% |
| Skellerup Holdings | NZX | 14.5% | 14.1% | 1.37 | 1.21 | 21.9% | 19.8% | 17.0% | 19.6% |
| Sky Network Television | NZX | 29.2% | 25.7% | 0.53 | 0.47 | 14.8% | 15.5% | 12.1% | 14.1% |
| SKYCITY | NZX | 23.9% | 24.1% | 0.48 | 0.49 | 10.2% | 11.3% | 11.8% | 11.1% |
| Skyline Enterprises | Unlisted | 35.2% | 34.6% | 0.56 | 0.56 | 17.4% | 19.6% | 19.3% | 18.8% |
| SLI Systems | NZX | (27.5%) | (0.6%) | 12.70 | 15.82 | (347.6%) | (348.6%) | (9.1%) | (235.1%) |
| SmartPay Holdings | NZX | 19.8% | 11.3% | 0.55 | 0.48 | 13.2% | 11.0% | 5.5% | 9.9% |
| Smiths City Group | NZX | 1.2% | 1.8% | 1.82 | 2.02 | 4.5% | 2.1% | 3.6% | 3.4% |
| Snakk Media | NXT | (45.5%) | (5.0%) | 19.74 | 16.92 | NA | (898.6%) | (84.5%) | (491.6%) |
| Solution Dynamics | NZAX | 6.3% | 9.0% | 7.65 | 8.58 | 27.5% | 48.4% | 76.8% | 50.9% |
| South Port New Zealand | NZX | 33.8% | 34.5% | 0.72 | 0.72 | 18.8% | 24.3% | 25.0% | 22.7% |
| Spark | NZX | 14.8% | 15.6% | 1.29 | 1.20 | 16.9% | 19.1% | 18.8% | 18.2% |
| Spiers Group Limited | Unlisted | 5.4% | 0.0% | 0.00 | 0.00 | 49.7% | 15.5% | 0.0% | 21.7% |
| Steel & Tube Holdings | NZX | 6.6% | 5.9% | 2.18 | 2.00 | 13.0% | 14.5% | 11.9% | 13.1% |
| Stride Stapled Group | NZX | 84.5% | 73.1% | 0.07 | 0.07 | 6.9% | 6.3% | 5.2% | 6.1% |
| Summerset Group Holdings | NZX | 10.5% | 12.8% | 0.06 | 0.06 | 0.7% | 0.6% | 0.7% | 0.7% |
| Syft Technologies | Unlisted | 8.7% | 21.4% | 3.28 | 2.20 | (24.1%) | 28.7% | 47.1% | 17.2% |
| Synlait Milk | NZX | 5.9% | 11.3% | 0.86 | 0.95 | 14.0% | 5.0% | 10.7% | 9.9% |
| T&G Global | NZX | 4.0% | 2.8% | 1.69 | 1.65 | 1.8% | 6.8% | 4.6% | 4.4% |
| TeamTalk | NZX | 10.6% | 6.3% | 0.57 | 0.90 | 6.7% | 6.0% | 5.7% | 6.2% |
| Tegel Foods | NZX | 8.8% | 8.4% | 1.00 | 0.89 | 4.1% | 8.7% | 7.4% | 6.8% |
| Tenon | NZX | 3.6% | 7.5% | 1.75 | 1.87 | 3.9% | 6.4% | 14.0% | 8.1% |
| Terra Vitae Vineyards | Unlisted | 40.6% | 53.3% | 0.12 | 0.15 | 5.7% | 4.9% | 7.8% | 6.1% |
| The a2 Milk Company | NZX | 1.4% | 15.0% | 3.21 | 5.99 | 5.6% | 4.4% | 89.6% | 33.2% |
| The Colonial Motor Company | NZX | 3.8% | 3.8% | 3.08 | 2.93 | 16.1% | 11.8% | 11.1% | 13.0% |
| The New Zealand Refining Company | NZX | 47.5% | 22.5% | 0.39 | 0.28 | 1.5% | 18.4% | 6.4% | 8.8% |
| The Port of Tauranga | NZX | 40.7% | 43.2% | 0.18 | 0.15 | 7.9% | 7.2% | 6.5% | 7.2% |
| The Warehouse Group | NZX | 3.3% | 3.7% | 3.41 | 3.46 | 13.5% | 11.3% | 12.8% | 12.5% |
| Tilt Renewables | NZX | NA | 38.4% | NA | 0.24 | NA | NA | 9.3% | 9.3% |
| Tourism Holdings | NZX | 13.5% | 13.9% | 0.83 | 0.99 | 7.3% | 11.3% | 13.7% | 10.8% |

| | Market | 2015 EBIT Margin | 2016 EBIT Margin | 2015 Activity Ratio | 2016 Activity Ratio | ROCE 2014 | ROCE 2015 | ROCE 2016 | 3 Year Average ROCE |
|---|---|---|---|---|---|---|---|---|---|
| Tower | NZX | (3.7%) | (1.4%) | 1.09 | 0.86 | 16.7% | (4.1%) | (1.2%) | 3.8% |
| Trade Me Group | NZX | 60.1% | 56.5% | 0.24 | 0.26 | 14.6% | 14.6% | 14.9% | 14.7% |
| Transpower New Zealand | Crown | 39.2% | 46.5% | 0.19 | 0.19 | 10.4% | 7.6% | 8.8% | 9.0% |
| Trilogy International | NZX | 12.8% | 18.7% | 1.41 | 1.65 | 5.7% | 18.1% | 30.9% | 18.2% |
| TRS Investments | NZX | (1000.0%) | (1309.8%) | 0.01 | 0.01 | (4.9%) | (5.6%) | (8.9%) | (6.5%) |
| TruScreen | NZAX | (18.9%) | (83.9%) | 0.23 | 0.15 | NA | (4.3%) | (12.8%) | (8.5%) |
| TrustPower | NZX | 23.4% | 18.3% | 0.28 | 0.28 | 6.3% | 6.5% | 5.0% | 5.9% |
| Turners | NZX | 14.0% | 13.6% | 0.33 | 0.43 | 2.8% | 4.6% | 5.8% | 4.4% |
| Vector | NZX | 27.8% | 29.1% | 0.19 | 0.19 | 6.9% | 5.2% | 5.6% | 5.9% |
| Veritas Investments | NZX | 13.8% | 6.8% | 1.47 | 0.87 | 237.7% | 20.2% | 5.9% | 87.9% |
| Vista Group International | NZX | 17.0% | 17.7% | 1.24 | 0.95 | 22.7% | 21.1% | 16.8% | 20.2% |
| Vital Healthcare Property Trust | NZX | 71.6% | 69.1% | 0.10 | 0.09 | 8.1% | 6.9% | 6.1% | 7.1% |
| Wellington Drive Technologies | NZX | (10.1%) | (4.3%) | 3.03 | 2.37 | (71.1%) | (30.8%) | (10.1%) | (37.3%) |
| Westpac | NZX | 43.4% | 38.1% | 0.03 | 0.03 | 1.5% | 1.5% | 1.2% | 1.4% |
| Windflow Technology | NZAX | (67.5%) | (213.5%) | 0.14 | 0.04 | (51.1%) | (9.1%) | (9.2%) | (23.1%) |
| Xero | NZX | (60.6%) | (43.9%) | 1.87 | 2.06 | (103.7%) | (113.5%) | (90.2%) | (102.4%) |
| Z Energy | NZX | 1.2% | 5.2% | 3.58 | 2.60 | 18.1% | 4.3% | 13.6% | 12.0% |
| Zespri Group | Unlisted | 2.5% | 0.7% | 8.45 | 10.48 | 10.7% | 21.3% | 7.0% | 13.0% |

Note: For companies with no revenue, ROCE has been directly calculated as EBIT / Average Total Net Operating Assets $_{(t\ \&\ t-1)}$.

# Appendix 2 – ROCE explained

**What is Return on Capital Employed and what does it show?**

Return on Capital Employed ("ROCE") is a measure of business effectiveness and capital efficiency. ROCE is a function of profitability, how much profit a business generates before interest on debt and tax (EBIT) and activity, how much a business has invested in operating assets to generate that level of profitability.

In the 1920's Du Pont Corporation developed what is commonly known as Du Pont accounting and ROCE as a measure of business performance to enable it to compare the performance of its many different business units. The Du Pont accounting method is a powerful and relatively simple approach to determine the impact of management decisions on financial performance. The advantage of this method is that it provides a consistent form of evaluation for a business to use when measuring performance.

At an individual business level ROCE:

- allows comparison between business units of different size over time;
- shows where to invest further and where to cut back;
- shows whether it is worth borrowing further to invest;
- shows if expectations of shareholders are being met;
- indicates the maximum sustainable growth of a business; and
- is used to track whether or not a project is performing according to plan.

ROCE can be used to test operational efficiency, balance sheet management efficiency and the adequacy of return on total capital employed to make an assessment of a business's performance.

ROCE can be used to help management improve both the profitability (EBIT) and balance sheet management. Improvements in these areas will lead to improvements in the Return on Capital Employed.

**Calculating ROCE**

It is important to note that some changes need to be made to traditional thinking to gain the benefits of this dynamic approach. To achieve this there are two concepts that need to be considered:

**Concepts**

**(i) The separation of funding from operating decisions**

Consider the traditional formula for presenting financial statements.

EQUITY = (Current Assets + Cash - Current Liabilities) + Non-current Assets - Debt

In order to calculate ROCE, all forms of funding need to be removed from the right hand side of the equation. Total net assets should exclude any external funding or debt thereby representing the true value of scarce resources employed in the business.

The financial analysis format can now be structured as follows.

DEBT - CASH + EQUITY = (Current Assets - Current Liabilities) + Non-Current Assets

TOTAL CAPITAL EMPLOYED (TCE) = TOTAL NET OPERATING ASSETS (TNA)

The movement in TNA reflects operating changes made to the employment of scarce resources, whilst Net Debt (debt – cash) and Equity reflects how these changes are funded. It should be noted that where the directors of a business elect to retain minimum levels of cash this cash should be included in TNA.

**(ii) Balance sheet efficiency – ACTIVITY RATIO.**

**Definition:** A measurement of how well the business manages its scarce resources

**Formula:** $\frac{\text{Revenue}}{\text{Total Net Assets}}$

The Activity Ratio is a measure of how many times a business turns over its TNA in a financial year.

By way of example, an Activity Ratio of 2.5 means that for every $1 invested in TNA the business produces $2.50 in sales. It answers the question of whether or not the net operating assets are being utilised efficiently in the production of income.

The activity drivers are:

– Stock, Work in Progress, Inventory: the value of raw materials, work in progress and finished goods the business holds;

– Trade Debtors: how much the business has locked up in sales revenues receivable;

– Trade Creditors: how much the business owes to its suppliers for goods and services provided; and

– Non-Current Assets: how much is invested in plant and equipment and intangible assets which are required to operate the business and produce the goods sold.

Other current assets and liabilities such as prepayments and accruals are included in trade debtors and creditors.

Adjusting one or more of the activity drivers will increase or decrease the Activity Ratio and therefore improve or worsen ROCE.

**(iii) Operational Efficiency – PROFITABILITY MARGIN.**

**Definition:** A measurement of the Return on Sales purely from an operating perspective.

**Formula:**

$$\frac{\text{Earnings before interest \& tax}}{\text{Revenue}}$$

The above formula ignores the impact of funding and concentrates on the entity's ability to produce a return from revenue.

The four key profitability drivers are:

– Price: how much a business receives for the goods it sells;

– Volume: how many goods the business sells;

– Cost of Goods Sold: how much it costs the business to produce the goods it sells; and

– Expenses: the overhead expenses of the business including depreciation.

Adjusting one or more of the profitability drivers will increase or decrease the Profitability Ratio and therefore improve or worsen ROCE.

**(iv) Return on Capital Employed – ROCE**

The link between the Balance Sheet and Profit & Loss is dynamically reflected in ROCE.

**Definition:** The percentage return yielded from the employment of scarce resources in the form of profit before interest and tax

**Formula:**

$$\frac{EBIT}{TNA}$$

OR

Profitability x Activity

The interactive nature of this ratio is seen in the alternative formula as the product of Profitability and Activity. Operational and Balance Sheet efficiency are brought to life in one single ratio. This should be the first area of review in the process of corporate performance assessment and it should be determined as to whether or not ROCE is adequate and that of its components contribute to both the strengths and weaknesses of the financial strategy.

Irrespective of the type of industry ROCE should at least be equal to or greater than the weighted average cost of capital (WACC) in order for a business to create shareholder value.

**Example ROCE calculation:**

| | |
|---|---|
| Revenue | 100,000 |
| EBIT | 10,000 |
| Profitability Ratio | 10% |
| TNA | 50,000 |
| Activity Ratio | 2x |
| ROCE | 10% x 2 = 20% |

It is worth noting that average TNA for the period over that Revenue and EBIT are derived will give a better result that just considering TNA and the end of the period being measured.

It should also be remembered that ROCE does not change when EQUITY is substituted for DEBT. This highlights the impact of a true operational performance measurement.

**(v) Interfacing Profit and Loss/(Cash) with the Balance Sheet**

The Balance Sheet is just a snapshot of the assets and liabilities of a business at a point in time. However its interaction with profit and loss, through Earnings before Interest and Tax (EBIT), provides the platform for developing a totally dynamic analytical structure.

Two businesses, producing the same sales and return on sales can be viewed from an operational point of view as being identical even if one were funded by debt and the other by equity. This is because the cost of borrowing is purely a financial issue.

**ROCE Uses**

ROCE can be used in many ways by organisations and management teams as a performance measure and as a tool when preparing budgets and valuations.

One of these ways is that the management team may set ROCE goals for either the entire organisation or its sub-units and decision making in respect of investing in new projects to ensure that the business is performing at a level that is greater than WACC.

ROCE is also able to be used to set up a performance remuneration plan for management and employees. As it is simple to calculate, ROCE provides a transparent model for such programs.

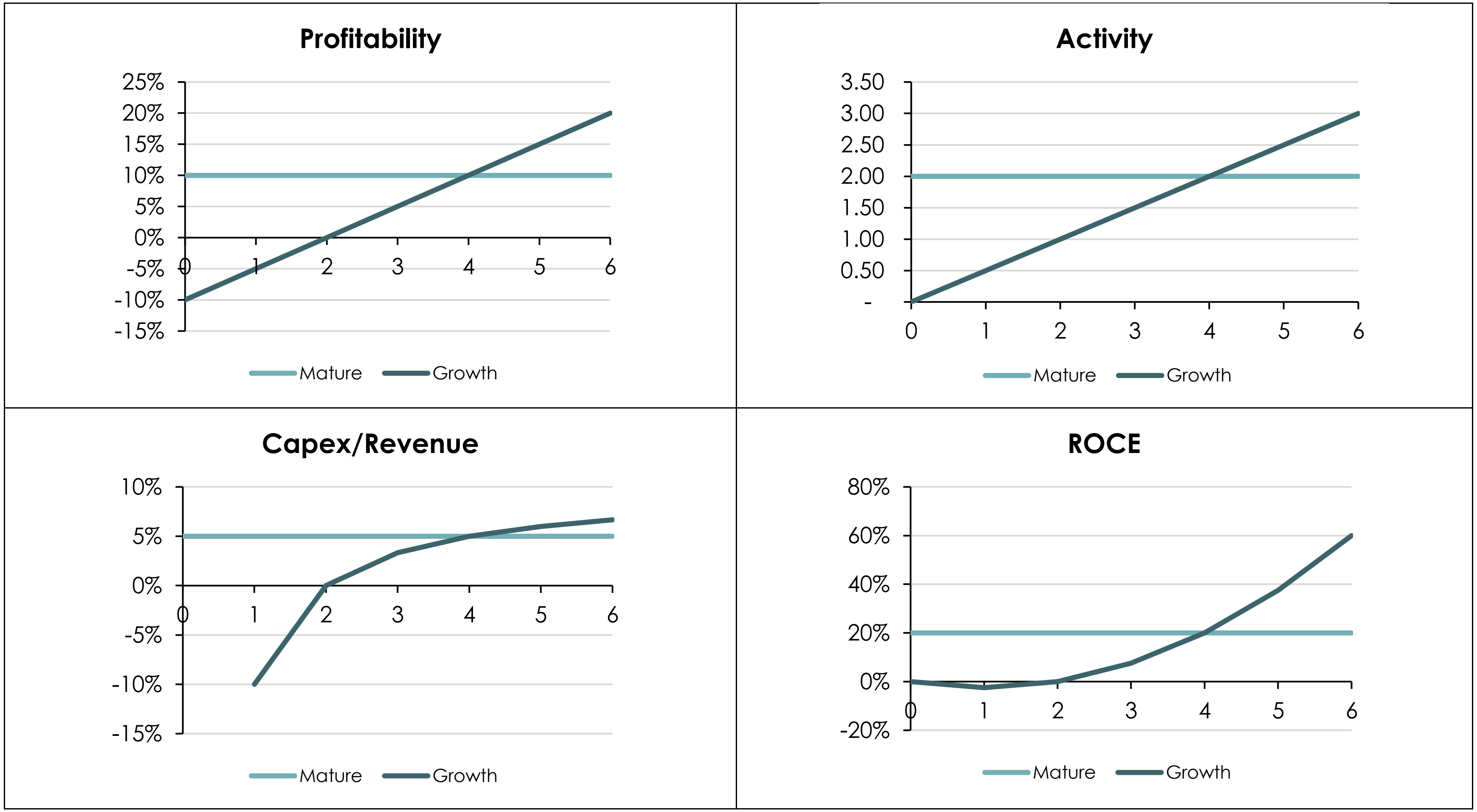
**Budgeting and Valuation**

Businesses and analysts can often make an underlying error in budgeting or forecasting business performance that impacts a business valuation. When undertaking a valuation the biggest error usually arises from utilising overly optimistic forecasts. Discount rates are generally less susceptible to such errors.

Consider the following 4 charts that simplistically compare Profitability, Activity, Capex to Revenue and ROCE ratios for a mature business and a growth business. The underlying issue is that most budgets for mature businesses more than often assume expanding profitability, increasing activity, reducing levels of capital expenditure for every dollar of sales and therefore increasing ROCE. More often than not a mature business is unlikely to see these improvements on an ongoing basis. While some improvement is always possible continuous expansion is unlikely to be experienced on an ongoing basis and the art of getting the forecasts correct is in challenging such ongoing expansion assumptions.

Forecasts for growth businesses often have the opposite issues. It is rare to find a business in NZ that can achieve EBIT margins in excess of 20% on an ongoing basis. At those levels competitors are likely to enter a market and customers generally start looking elsewhere or in-housing the supply. Revenue growth will also demand additional lock up in working capital and additional fixed assets to support the growth. Therefore to create robust forecasts for a growth business at some juncture these charts are likely to level out and this levelling is usually earlier than anticipated generally because the business becomes loose with expenditure.

Taking into account the ratios in the chart helps to reduce the risk of making a budget or forecast error and therefore improves the quality of the budget or forecast and by extension the quality of any valuation based off the same.




**What is a "Good" ROCE**

ROCE is a measure of a company's profitability and its activity. Quite simply, a good ROCE is a level that exceeds the weighted average cost of capital for the business. Where this is the case the business will be creating value for its shareholders.