ARMILLARY
PRIVATE CAPITAL

Return on Capital Employed

Review of 2018 Returns

June 2019

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Disclaimer

Foreword

We are delighted to present the ninth Armillary Private Capital Return on Capital Employed ('ROCE') report. This year the total number of entities in our data set of NZX, NZAX, USX, and selected Crown entities is 144. We have also included a sample of 259 private companies, although we have not identified those entities individually.

The ROCE methodology we use in this report was developed by Du Pont Corporation and is therefore 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 turnover, provides an indication of balance-sheet efficiency. Combined the two ratios give overall ROCE. A full explanation is provided in Appendix 2.

Again, this year's report includes an overview of the major sectors in the economy to demonstrate the effect that differences in business models have on profitability, activity and overall ROCE performance.

Following the release of Armillary's Circular Economy thought piece in September 2018, we have investigated the correlation between Return on Capital Employed (ROCE) and ESG scores provided by Harbour Asset Management (Harbour). Harbour is a thought leader on ESG performance in New Zealand and we thank them for their support in creating our Spotlight Feature this year.

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.

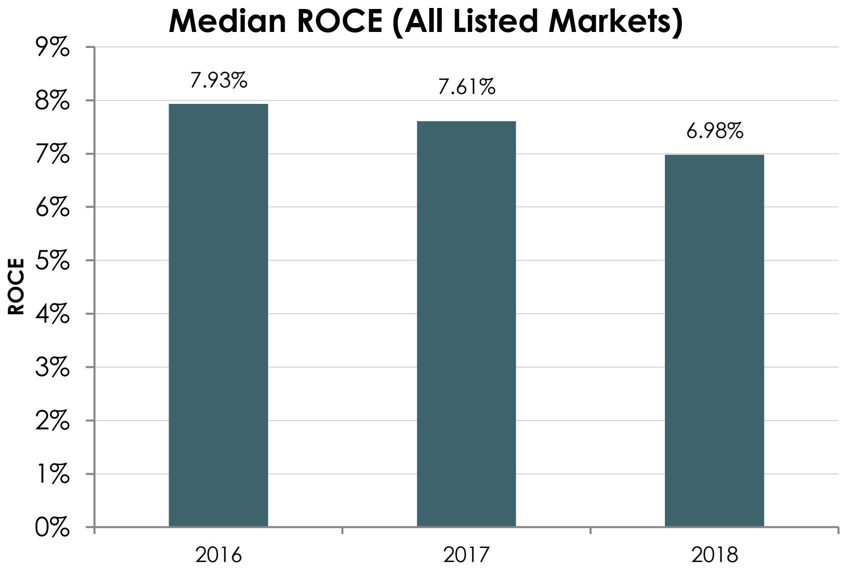
Armillary Private Capital

Executive Summary

This year's ROCE review of the 2018 financial results included 110 companies with primary listings on the NZX, 6 NZAX listed companies, 14 companies from USX, and 14 Crown Entities. This has resulted in a total sample size of 144 Crown and Listed ("NZX, NZAX/NXT, and USX") firms which is 12 less than last years' report.

In addition to our sample of Listed and Crown entities, we have included a sample of 259 private companies. These have been reviewed separately and compared to the main sample.

The median 2018 ROCE performance across all Listed and Crown entities has dropped to 6.98% from 7.61% in 2017. This result remains shy of common estimates for the market average weighted cost of capital (WACC) of around 8%.



- The a2 Milk Company, listed on the NZX, was the top performer with a ROCE of 166.8%. This result was due to an improvement in profit margins while still maintaining high activity. Of all Listed firms analysed, a2 Milk strikes the best combination of high activity and high margins and is thus once again the top performer in our Listed sample.

- Seven of the top 10 performers in 2018 were from the Consumer Staples, Information Technology and Consumer Discretionary sectors. These sectors also dominated the top 10 last year. Consumer Discretionary was the best performing sector (median ROCE of 14.4%) whilst the Materials and Healthcare sectors had the worst median ROCE in 2018 (1.42% and 1.34% respectively).

- The median ROCE of NZX50 constituent companies was 7.9%, well behind the median for companies in the ASX200 (12.5%), the EUROSTOXX350 index (11.9%), and the S&P500 (15.4%).

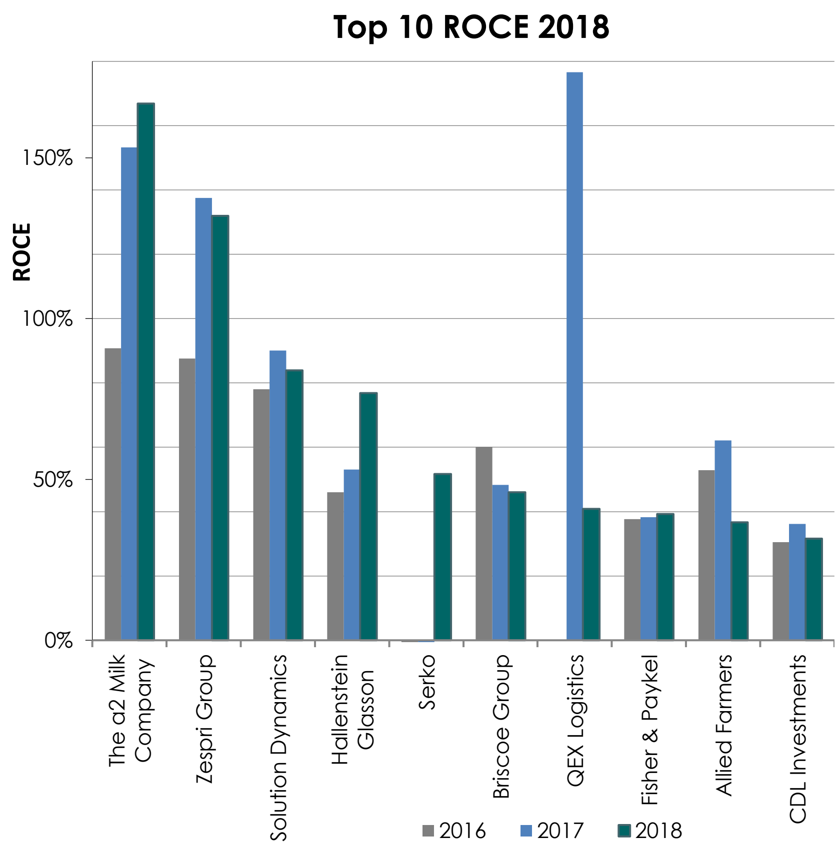
- For the Crown Entities the 2018 median ROCE was 9.6% (down from 10.9% in 2017), with Airways Corporation again recording the best performance in that group with a ROCE of 18.5%.

Top Performers

The top 10 entities by 2018 ROCE performance are dominated by businesses that optimise high levels of activity (Revenue/ Total net Operating Assets) and high profitability (EBIT/Revenue).

The top performer in 2018, The a2 Milk Company, had a 30.5% profitability ratio (up from 25.7% in 2017 and 15.0% in 2016) and a 5.48x activity ratio in 2018 (down from 5.97x in 2017). Zespri Group and Solution Dynamics both posted solid ROCE results in 2018 with 132.0% for Zespri Group and 84.0% for Solution Dynamics - albeit that both of these were below respective 2017 ROCE results.

Zespri Group, the second highest performer at 132.0%, has the highest activity ratios recorded in our listed sample of 24.3x. Both Hallenstein Glasson Holdings and Briscoe Group feature again in the top ten with ROCE of 76.8% and 46.1% respectively although care needs to be taken given their high reliance on operating leases which last year's Spotlight Feature highlighted can impact on ROCE returns. Serko and QEX Logistics are the two newcomers to the top 10 ROCE performers with Serko improving performance from negative ROCE in 2017 to a positive 51.7% in 2018.

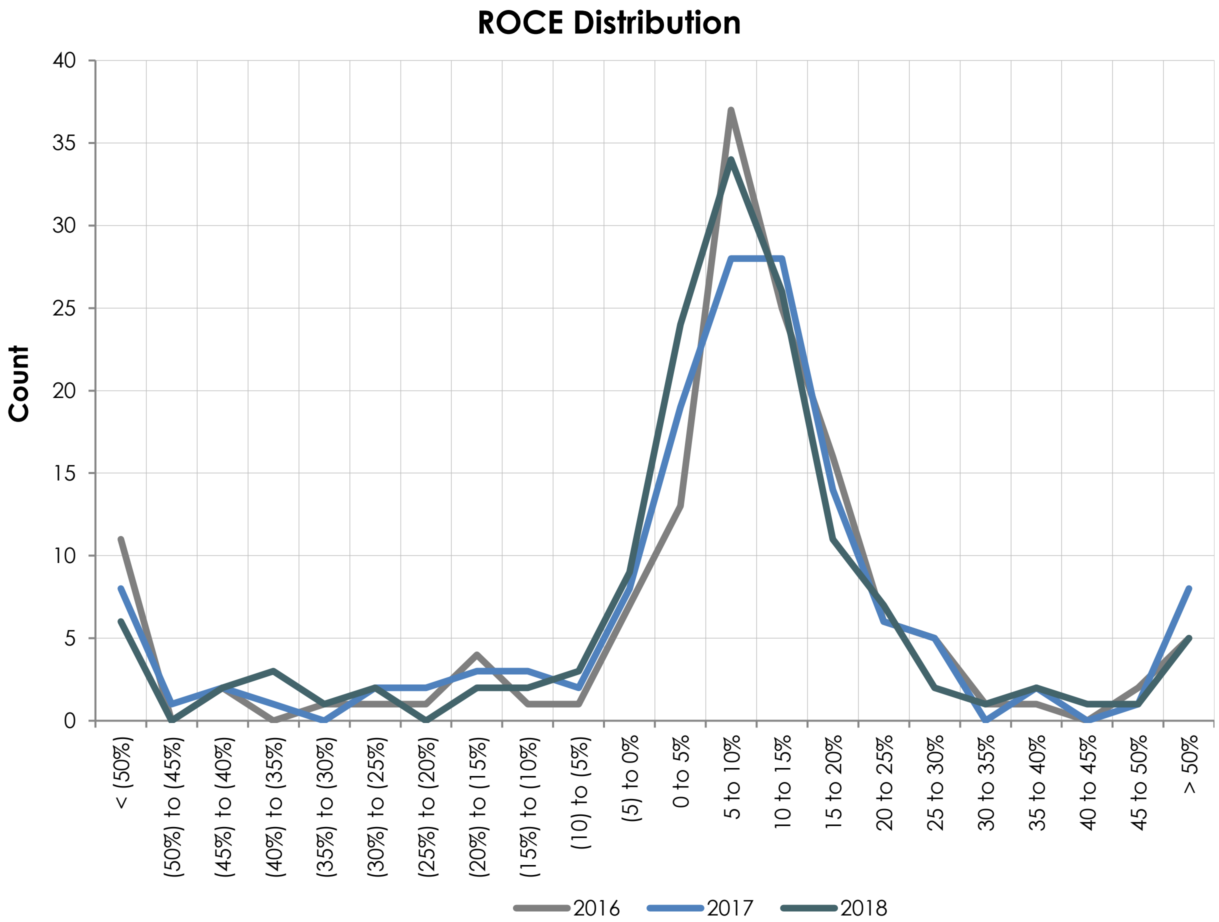


QEX wasn't in our sample last year as it wasn't listed but interestingly their 2017 results would've been the top performer had they been listed. A 5% drop in Profitability associated with NZX listing fees coupled with lower Activity levels has seen ROCE results fall from 176.6% in 2017 to 40.89% in 2018.

The top three ROCE performers in 2018 for each of the three markets analysed were as follows:

- NZX market: The a2 Milk Company (166.8%), Hallenstein Glasson (76.8%) and Serko (51.7%).
- NZAX markets: Solution Dynamics (83.9%), Enprise Group (14.2%) and Livestock Improvement Corporation (10.1%).
- USX market: Zespri Group (132.0%), Skyline Enterprises (15.8%) and Syft Technologies (13.0%).
- Crown Entities: Airways Corporation (18.5%), AssureQuality (16.7%) and The Institute of Environmental Science and Research (16.0%).

Distribution of Results



The ROCE returns for the last three years follow a normal distribution, with outliers at either side of a bell-shaped curve. A notable change in the 2018 distribution compared to 2017 is the increase in the number of firms posting ROCE in the 0-10% range with an decrease in the number of firms posting values in the 50% and above level.

47% of listed & Crown entities in New Zealand achieved a ROCE greater than 8% (being a common estimate of the market WACC, just below the previous years' result of 48%.

31 companies had a ROCE less than zero in 2018. A negative ROCE implies negative profitability, or a net operating loss. Just under 5% of the sample (7 firms) had a ROCE of less than negative 50%. Again, 3 of these 7 were in the technology sector where, more often than not, these companies are focused on growth at the expense of short-term profitability.

11% of private companies sampled reported a negative ROCE which is about half the 21% of the listed & crown entity sample reporting a negative ROCE in 2018.

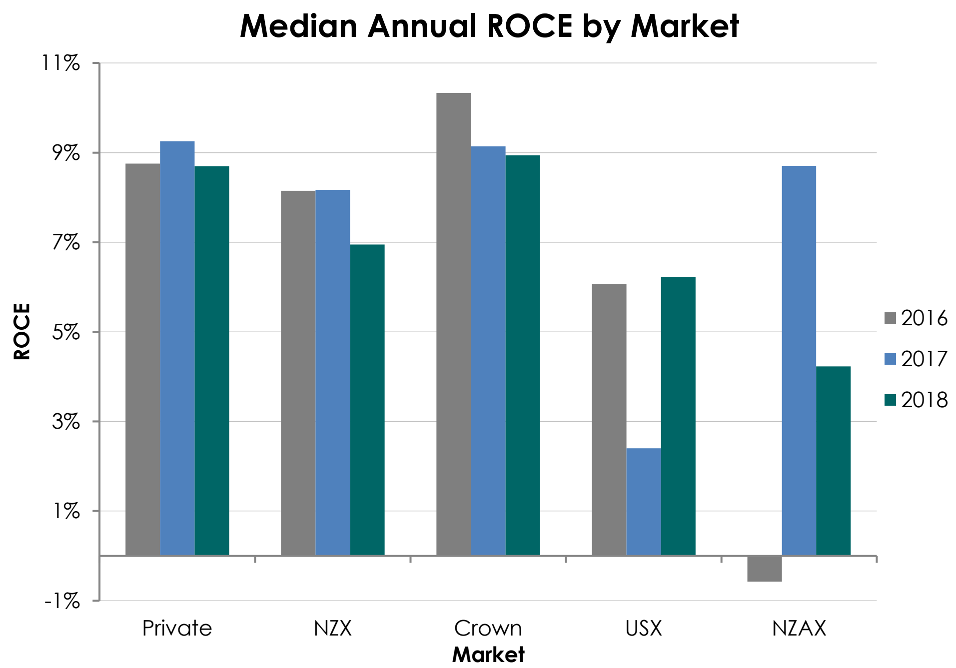
Market

The performance by market for the last three years shows:

The NZX Main Board companies posted a 1.2% decline on 2017 with a median ROCE of just under 7.0%. Despite this drop, the share market has continued to perform well as lower interest have reduced investors' required returns.

The NZAX fell sharply from an 8.7% median ROCE in 2017 to 4.2% in 2018, however, this market has undergone fundamental change over the past year with many issuers migrating to the NZX Main Board.

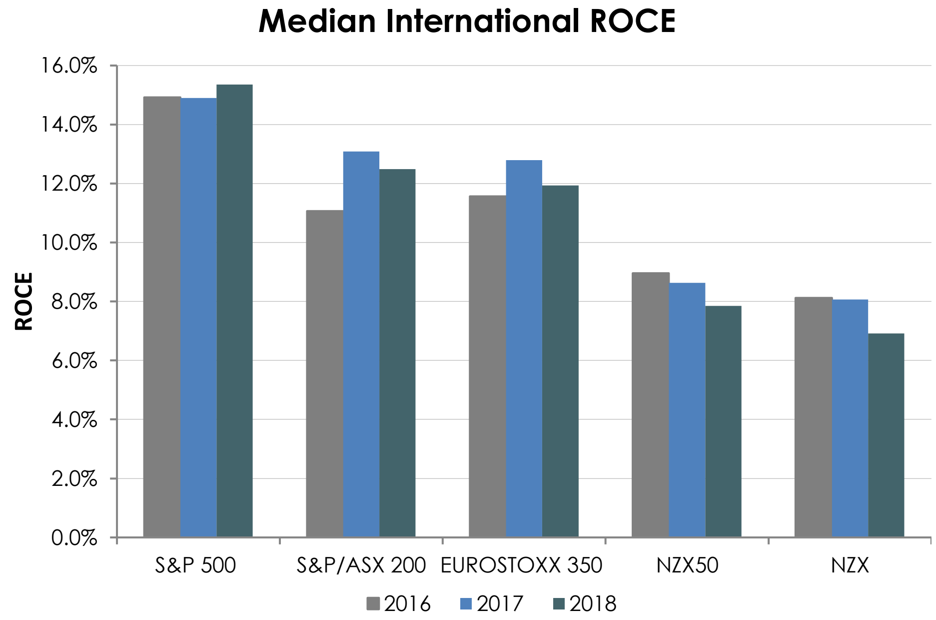
The Crown entities fell from a 9.1% ROCE in 2017 to 8.9% in 2018. Despite this decline, the median ROCE for Crown entities is the highest of all New Zealand cohorts.



The median USX result for companies improved markedly compared to the previous year with a 6.2% median ROCE for 2018 up from 2.4% in 2017 although, due to the small sample size of 14, even medians of this segment are prone to be skewed by outliers.

Our sample of private companies posted a small decline in median ROCE of 8.7%, down from 9.3% in 2017. It should be noted that the WACC for private companies will be higher than the Listed and Crown entities, therefore they require a higher ROCE compared to their Listed counterparts to exceed WACC and generate economic value.

International Comparisons



To benchmark New Zealand's performance, we have also reviewed the performance of companies in the European, Australian and US markets, as represented by the EUROSTOXX 350, S&P/ASX 200 and USA S&P500 indices respectively. For comparability, we have isolated the performance of the NZX50 index constituents from that of the entire group of NZX main board listed entities. Note that the average cost of capital in the comparison markets will vary from that of New Zealand. There are a number of factors as to why this would be the case, for example, sector composition (less exposure to regulated utilities in overseas markets compared to New Zealand), market risk premium is currently higher in Australia than in New Zealand but lower in the other markets analysed, and government bond rates varying from negative in Europe to higher than in New Zealand for the US market.

The **NZX50** index group of companies once again had a higher median performance than the overall NZX main board in 2018. The NZX50 companies represent more than 90% of the NZ listed equity market capitalisation. The NZX50 saw a reduction of 0.7% on 2017 to finish the year with an 7.9% median ROCE (8.6% in 2017), whilst a 1.2% decrease on 2017 results for the main board saw median ROCE finish up at 6.9% (8.1% in 2017).

The **EUROSTOXX 350** index covers 350 blue-chip stocks from 16 developed European countries. This index outperformed both the NZX and NZX50 in 2018 with a median ROCE of 11.9% (12.8% in 2017).

The **ASX S&P200** 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 declined in 2018 from 13.1% to 12.5%. Nevertheless, this is still noticably higher than that of NZX companies and marginally higher than returns in Europe.

The **USA S&P500** 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. In line with previous years the S&P500 returned a median ROCE of 15.4% in 2018 (14.9% in 2017). This is the only market from our sample that showed improved ROCE in 2018 compared to 2017 results.

Crown Entities

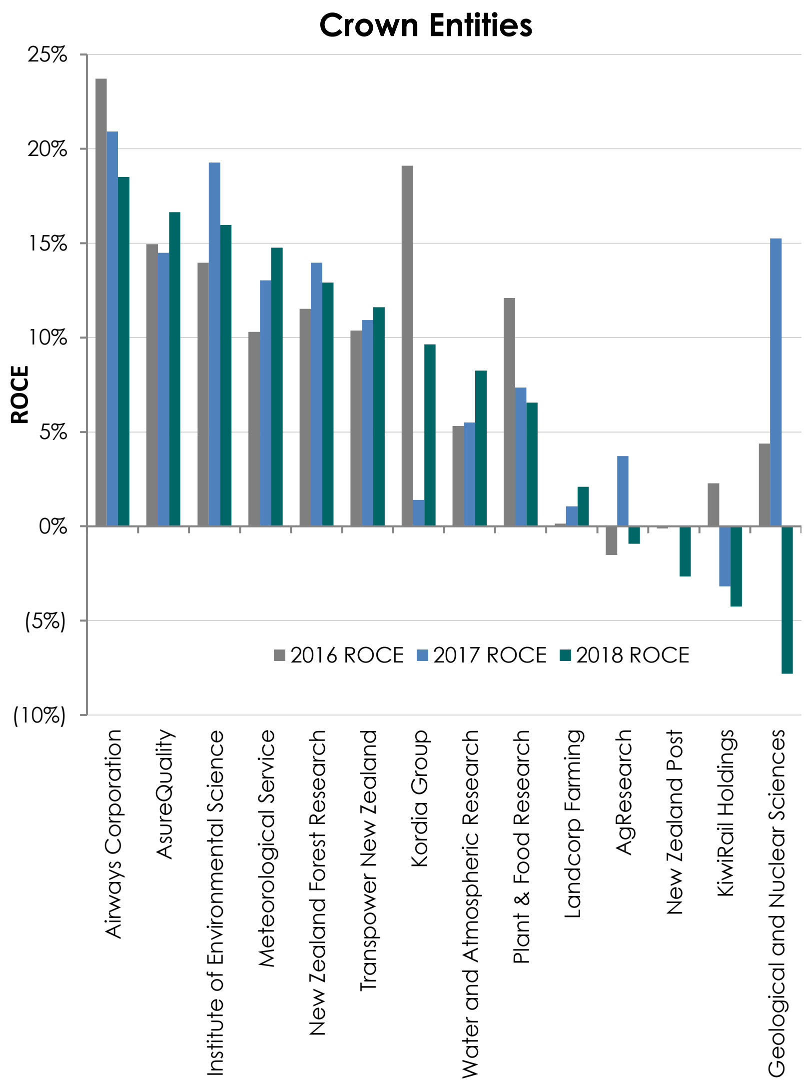
The fourteen Crown Entities in our analysis have been selected as they are generally considered the more commercially run entities in the Crown's portfolio.

The overall performance of the Crown Entities declined in 2018 with the median ROCE down 0.2% to finish at 8.9%, albeit still the highest of all NZ market segments analysed. Compared to the listed companies, the notable feature of the Crown Entities is a tighter range of returns with the highest at just over 18%. Despite this positive result, four of the fourteen firms analysed reported a negative ROCE compared to only one in 2017.

The Research Institutes (GNS, Environmental Science, Forest Research, Plant & Food, Water and Atmospheric Research, and AgResearch) struggled in 2018 with five of the six underperforming their 2017 results.

GNS recorded a substantial ROCE decline in 2018 following a notable gain in 2017. Despite revenues growing by $1.8 million (2% increase), EBIT fell by $6.4 million (135% decrease), resulting in a 7.4% drop in its Profitability Margin. Combined with a higher Activity Ratio (4.12x vs. 2.79x) this resulted in a 23% decline in ROCE (-7.8% in 2018 compared to 15.3% in 2017). Typically, a higher Activity Ratio would be a positive result, however we see here that the higher Activity Ratio coupled with negative Profitability Ratio amplifies the negative ROCE.

Kordia Group showed the greatest improvement of all Crown entities analysed with ROCE increasing from 1.4% in 2017 to 9.6%. A $7.9m improvement at the EBIT line saw the Profitability Ratio increase from 0.7% in 2017 to 4.3%. The improved Profitability Ratio combined with a slightly higher Activity Ratio of 2.25x lead to the improved ROCE performance.



Private Companies

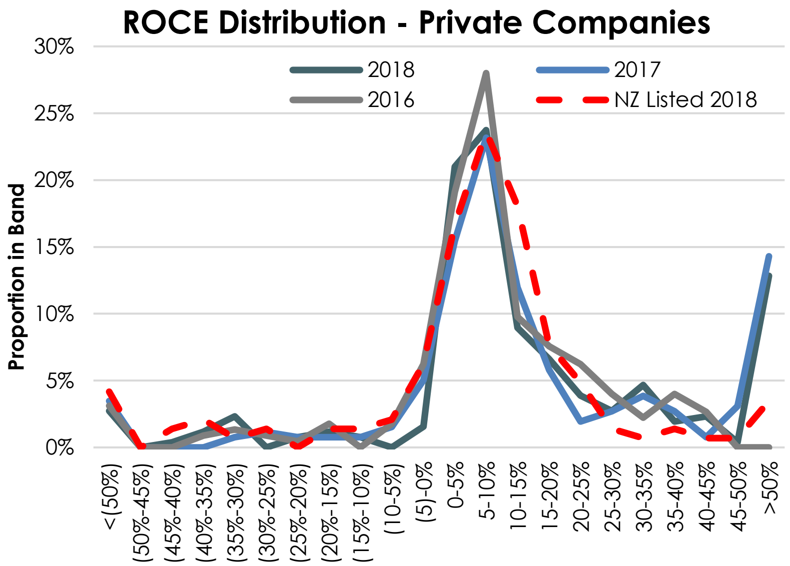
The private company database increased from 245 companies in 2017 to 259 companies in 2018. These 259 companies are reviewed to see how they compare with their listed peers with the larger sample size improving the statistical power of our analysis.

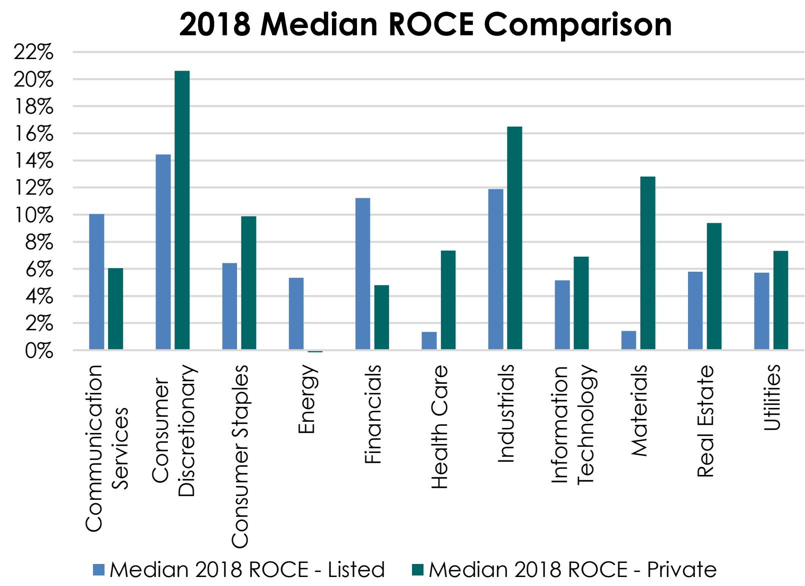
Of the sample of private companies, 58 are in the Industrials sector, 33 in Consumer Discretionary, 33 in Consumer Staples, 25 in Information Technology, 14 in Utilities, 5 in Real Estate, 10 in Health Care, 54 in Financials, 9 in Communication Services and 20 in the Materials sector. The distribution of ROCE for the private companies is bi-modal with the majority of companies falling in the 5-10% ROCE bracket with the right side of the distribution skewed by a number of relative outliers with very high ROCE. These firms make up the second peak of the bi-modal distribution which we see is much higher for private firms when compared to their Listed counterparts.

All private companies in the top quartile achieved a ROCE of greater than 25.7%, while those in the lowest quartile were all lower than 3.8%. This compares to an upper and lower quartile cut-off of 14.2% and 1.4% respectively for NZ Listed firms.

Private companies outperformed Listed firms in 8 of the 11 sectors analysed. The Energy sector showed the biggest variance with a negative 31.2% ROCE for private companies in 2018 compared to 5.3% for listed firms.

ROCE needs to be judged against the WACC of the entity. In the case of private companies, the capital weighting will typically be biased towards equity rather than debt. In addition to equity being more expensive than debt, the cost of equity for private companies is higher than that of listed companies due to investors requiring a premium for the higher levels of risk. Therefore the 2018 median ROCE of 8.7% would suggest that many of the private companies reviewed are underperforming their WACC, which for public companies is around 8% and for private companies would be in the double digits.





Listed Companies - Performance by Sector

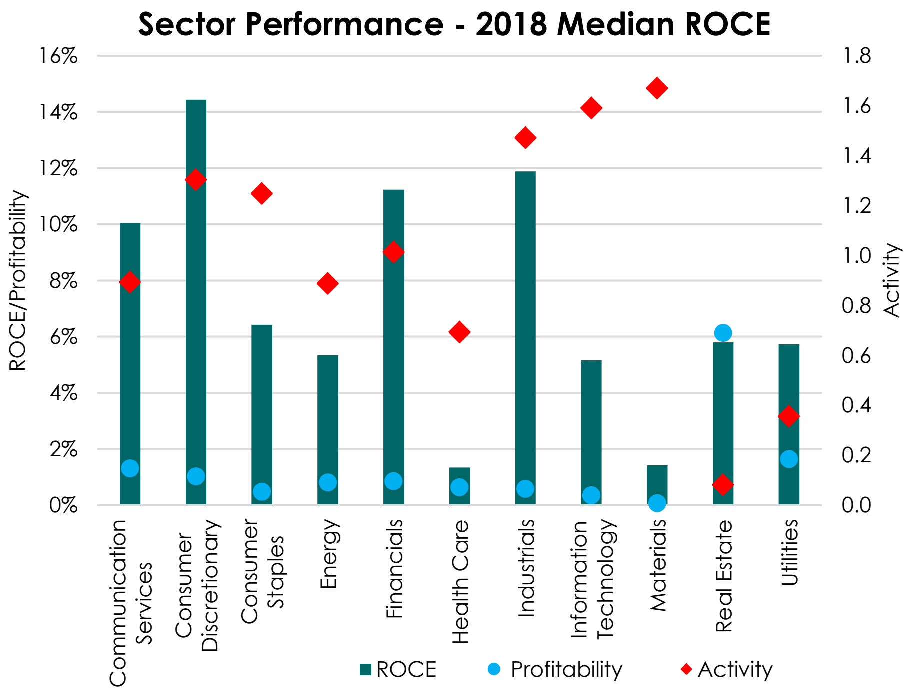
The outcome of different business models and market conditions can be examined by comparing the median performance of companies in different sectors. For this analysis, we have used the 2018 median Profitability, Activity and ROCE performance of each sector for all Listed and Crown companies.

The top three performing sectors based on 2018 ROCE are Consumer Discretionary, Industrials and Communication Services (14.4%, 11.7% and 10.0% respectively).

The Real Estate and Utilities sectors both exhibit high Profitability Ratios (69.0% and 18.5% respectively) but are dragged down by low levels of Activity due to the capital-intensive nature of the sectors (around 0.1x for Real Estate and 0.3x for Utilities).

Conversely, the Materials and I.T. sectors show high levels of Activity (1.67x and 1.59x respectively) yet have relatively low median ROCEs as a result of lower median Profitability Ratios (0.9% and 4.0% respectively). Companies in the Materials sector include forestry, steel and construction material suppliers which overall have high sales volumes but lower profit margins while, as already noted, I.T. companies will often have a focus on growth at the expense of short term profitability.

The worst performing sector was the Health Care sector at ROCE of 1.3%. This sector has median profitability of 7.2% and a median activity ratio of 0.69x.



	Profitability	Activity	ROCE
Communication Services	14.8%	0.89 x	10.0%
Consumer Discretionary	11.6%	1.30 x	14.4%
Consumer Staples	5.4%	1.25 x	6.4%
Energy	9.2%	0.89 x	5.3%
Financials	9.7%	1.01 x	11.2%
Health Care	7.2%	0.69 x	1.3%
Industrials	6.6%	1.47 x	11.9%
Information Technology	4.0%	1.59 x	5.2%
Materials	0.9%	1.67 x	1.4%
Real Estate	69.0%	0.08 x	5.8%
Utilities	18.5%	0.36 x	5.7%

Spotlight: Environmental, Social and Governance (ESG)

The following has been provided by Harbour Asset Management

ESG investing has seen substantial growth in recent years both globally and domestically. Globally, there are now over US$30.7 trillion in assets managed under responsible investing strategies, a rise of 34% from 2016 to 2018.[1] Responsible Investment is becoming embedded in investment practice in New Zealand and over 2017 alone, responsible investment assets under management rose 40% to approximately NZ$183 billion[2]. There is an increasingly greater understanding that investment performance is related to ESG factors.

Harbour takes an active approach to incorporating ESG considerations into our investment process through multiple elements: Harbour's ESG score, corporate engagement and proxy voting. As a responsible corporate citizen, with a fiduciary duty to our clients, and as a signatory to the Principles of Responsible Investing (PRI), Harbour has an obligation to consider all types of non-financial risk, and we believe our ESG integration strategy strengthens our investment decisions.

Companies are assessed by Harbour analysts on their competence in identifying and mitigating ESG risks and opportunities. Each company in our investment universe is allocated a Harbour ESG score based on their ESG competency. ESG scores are generated via one of two processes:

1. For New Zealand companies, Harbour's analyst for the company in question completes our proprietary Corporate Behaviour Survey (CBS). This score is cross-referenced against an external ESG research provider's ESG recommendation if available, and a final score is produced.

2. For Australian companies, an external ESG research provider's recommendation is translated into an ESG score.

Harbour's survey currently consists of 81 questions which covers a wide spectrum of areas relating to governance, environment and social aspects. Examples are governance lapses, environmental mismanagement or poor labour relations. Harbour seeks to constructively engage with companies to encourage ongoing improvement in corporate behaviour. The CBS is used as a tool to initiate conversations with management and the board on corporate behaviour standards.

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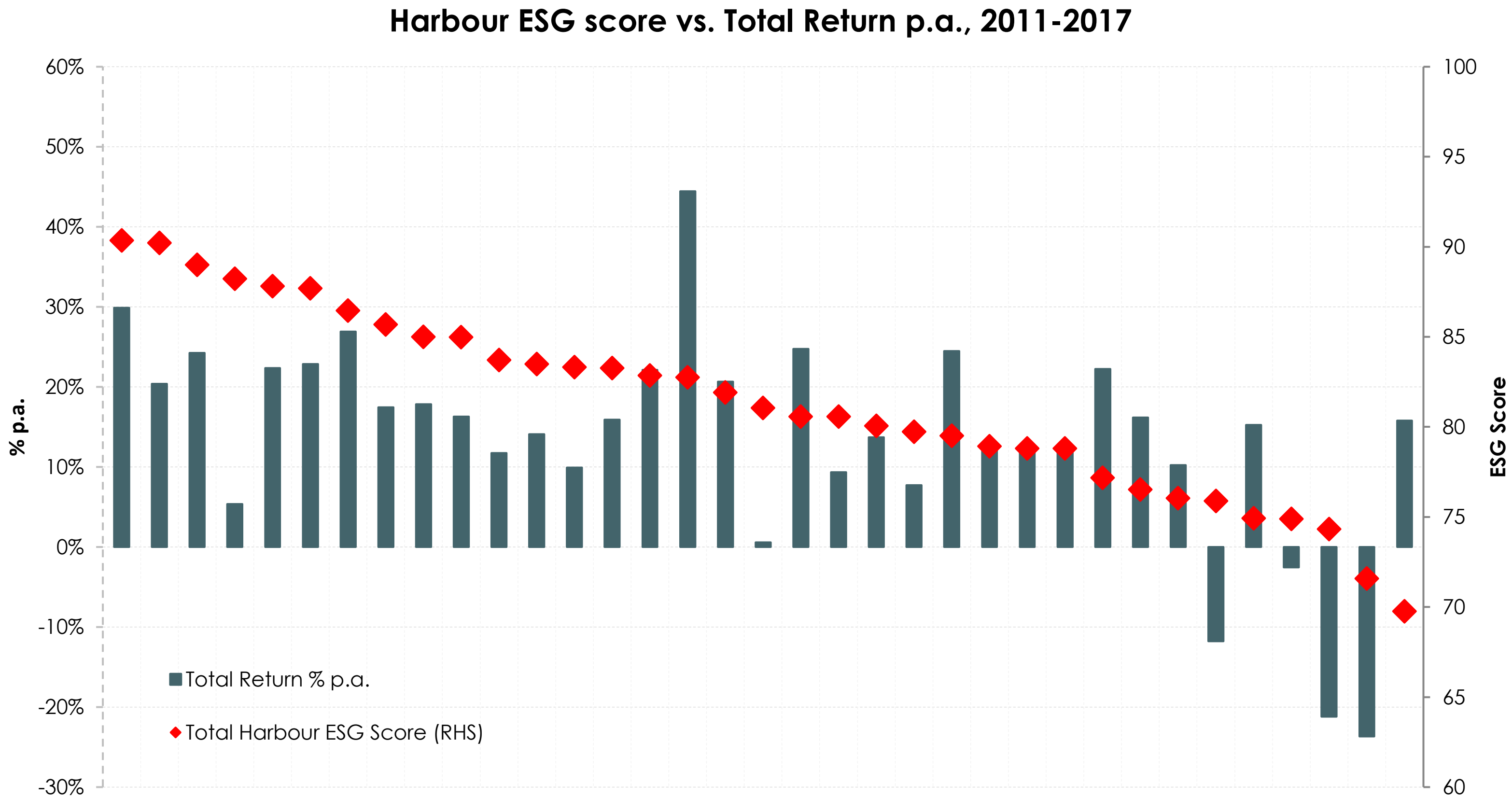
[1] Global Sustainable Investment Review 2018
[2] RIAA Benchmark Report 2018

Harbour uses a quantitative framework in our investment process to rank opportunities in our universe according to quantitative and qualitative factors that we believe provides a signal for adding value to shareholder returns. ESG is one of these factors as well as Return on Equity (ROE) and growth in Return on Equity. Historically stocks exhibiting sustainably high and/or increasing ROE have been ascribed higher valuation multiples by the market as they are seen as being defendable franchises in weak economic environments and growing franchises in strengthening economic environments.

Return on Capital Employed breaks down the performance of a company by its profitability and activity which are represented by financial metrics. Conversely, ESG factors are traditionally considered as non-financial metrics of a company that may represent underlying risk or opportunities that materialise in company performance over the long term. They include measures such as carbon footprint, human capital management and board composition which can be subjective and difficult to quantify. Approaches to implementing ESG in the investing process can vary significantly with screening, integration and thematic approaches being applied by practitioners. Irrespective of approach, investors who are incorporating ESG into their process are realising that it does not have to come at a detriment to financial return and is often beneficial according to empirical evidence.[3]

We have conducted our own analysis comparing ROCE with our company ESG scores from the NZX50 over the past few years which has shown a moderate, positive relationship between a high ROCE and a high ranking ESG score. This relationship is consistent with similar analysis we have conducted when looking at stock price returns with our ESG scores although not every year showed statistical significance. However, the relationship did hold true when aggregating the results over the total number of years we have run the survey as displayed on the following chart. This reinforces the potential for a company's share price out-performance relative to the market to be influenced by factors such as a high ROCE and high ESG score over the long term.

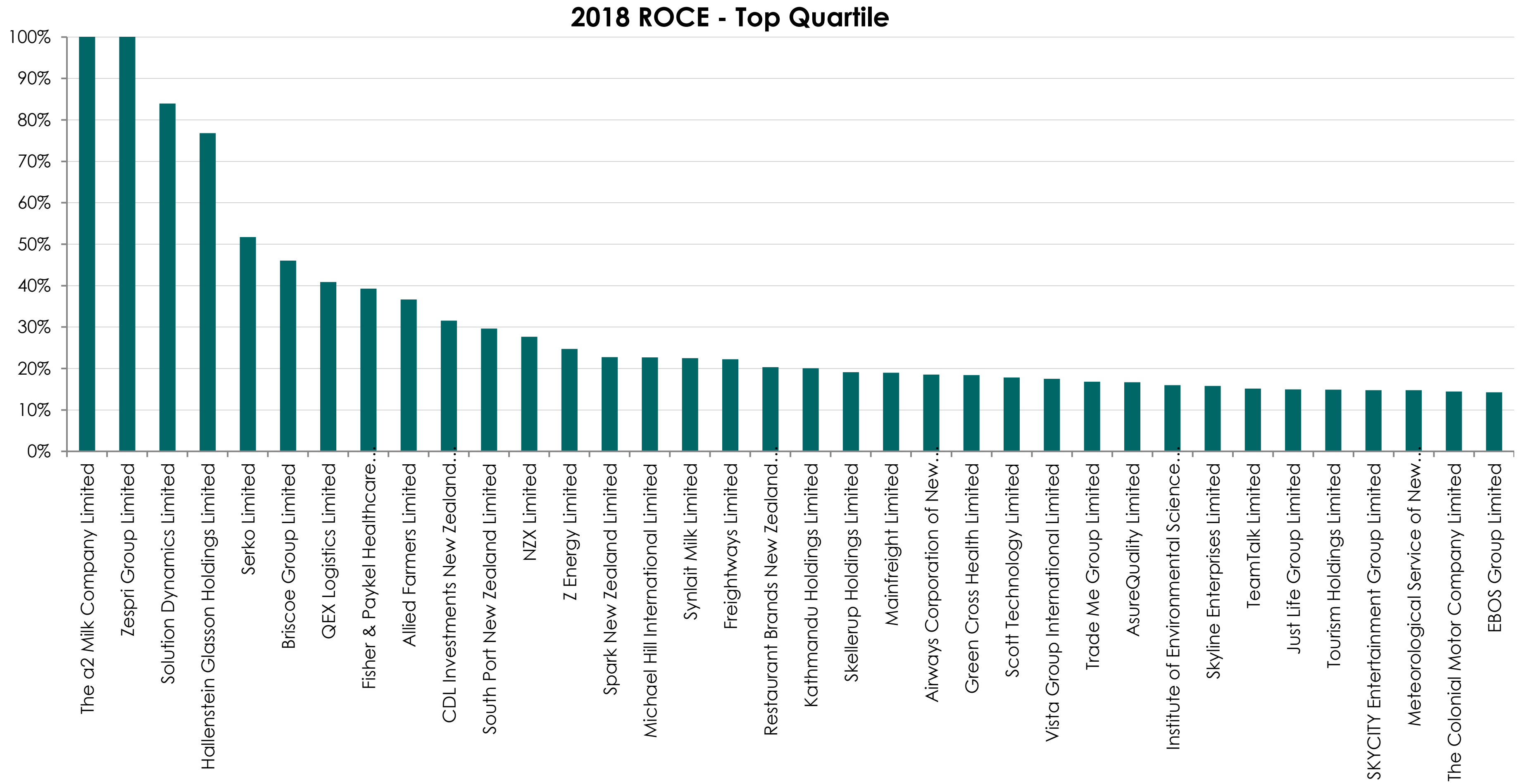
[3] Australian Centre for Financial Studies (ACFS), Monash Business School, independent report for National Australia Bank (NAB) to review socially responsible investing in Australia, 2017



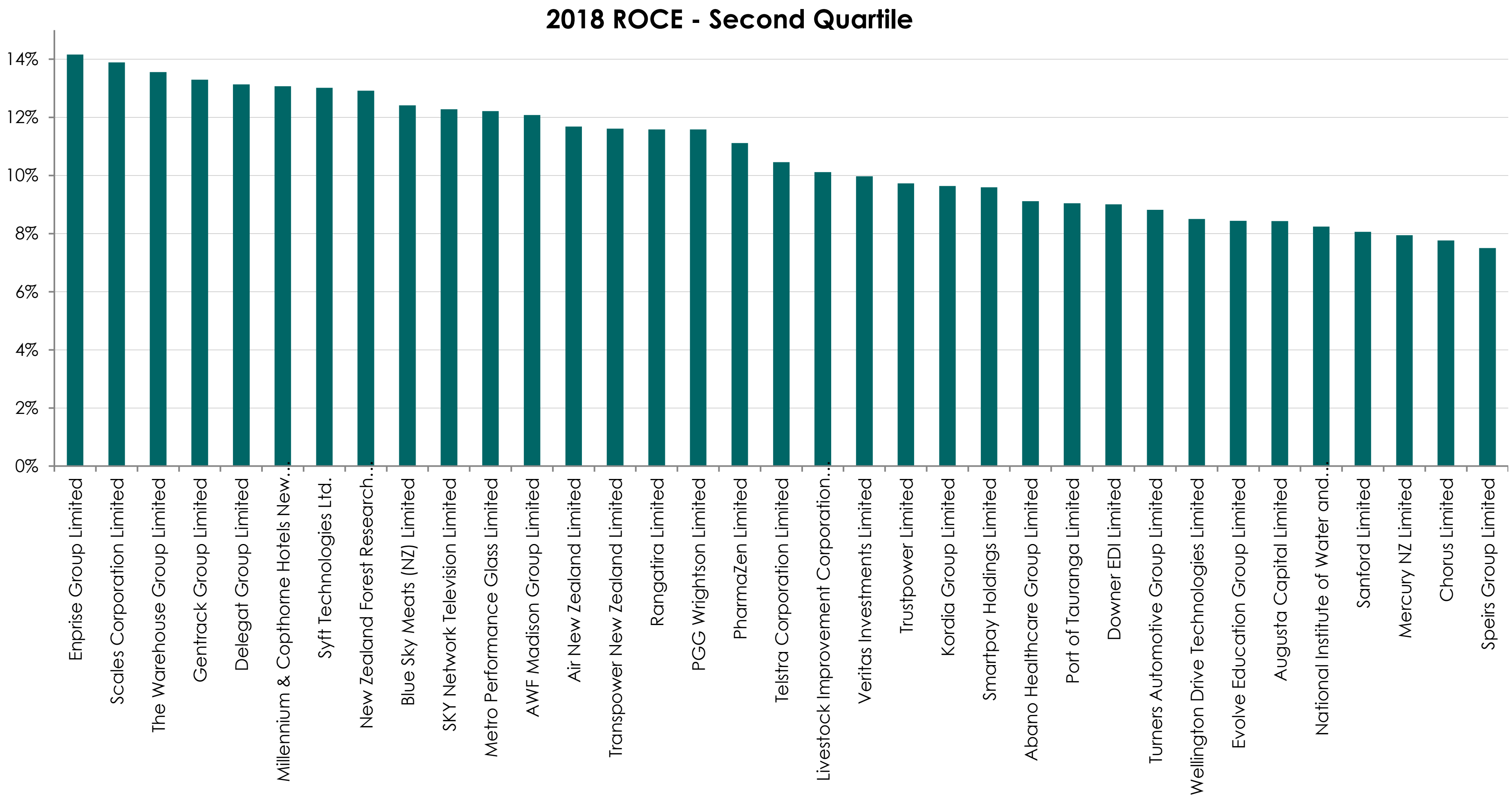
Source: Harbour. Company names have been hidden for confidentiality reasons.

Individual Entities

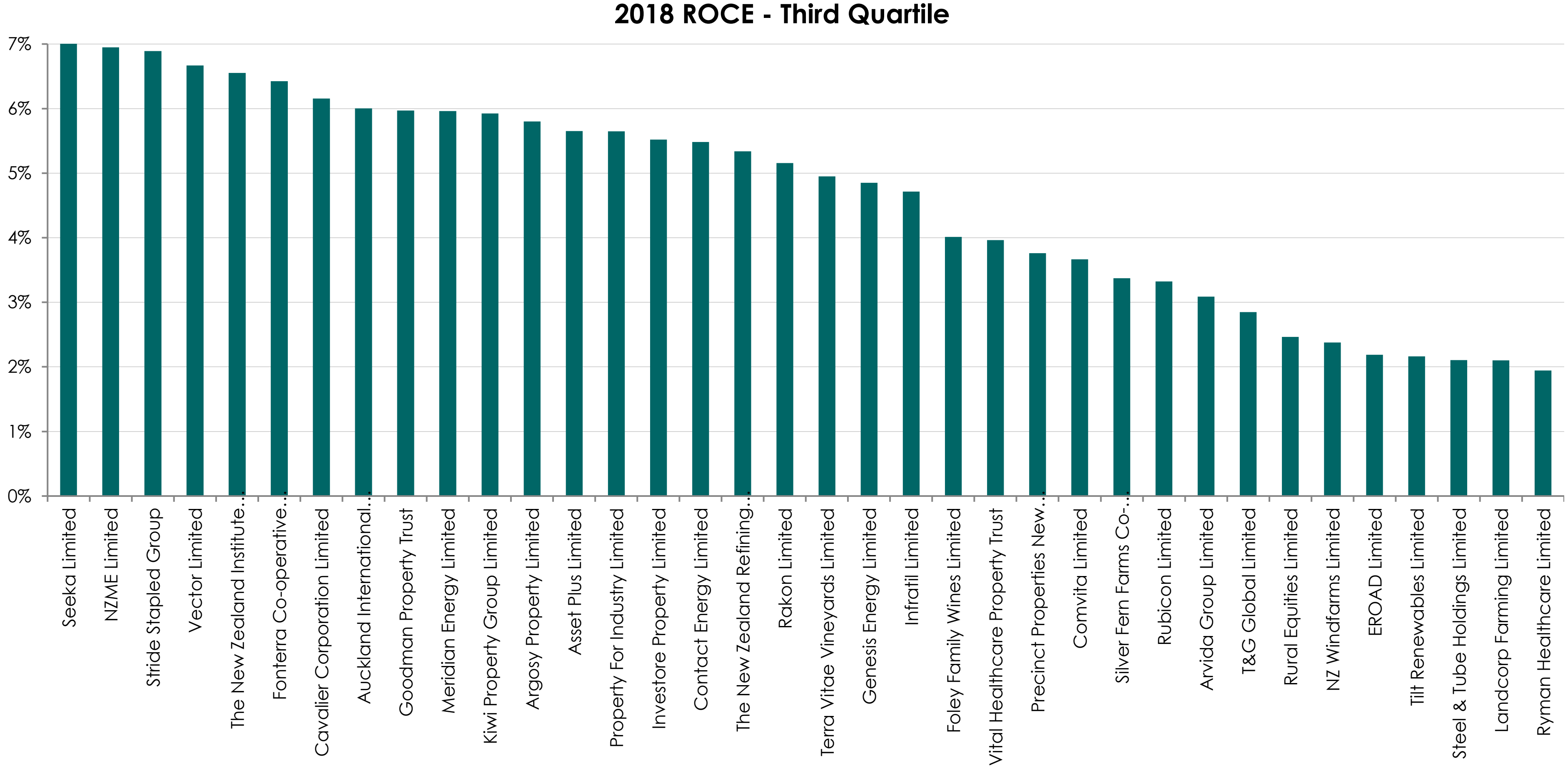
The following four charts show the individual ROCE performance for each of the 144 listed and Crown Entities reviewed in 2018. Note that for the purposes of presenting this chart, entities with ROCE greater than 100% have been capped at that level. The 36 entities in the top quartile are dominated by the Industrials, Consumer Discretionary and Consumer Staples sectors, which combined make up 72% of this top quartile. Top quartile ROCE performance ranges from 166.8% to 14.2%.



The 36 entities in the second quartile had 2018 ROCE ranging between 14.2% and 7.5%. At these levels we estimate that most are trading at or above their individual WACC.

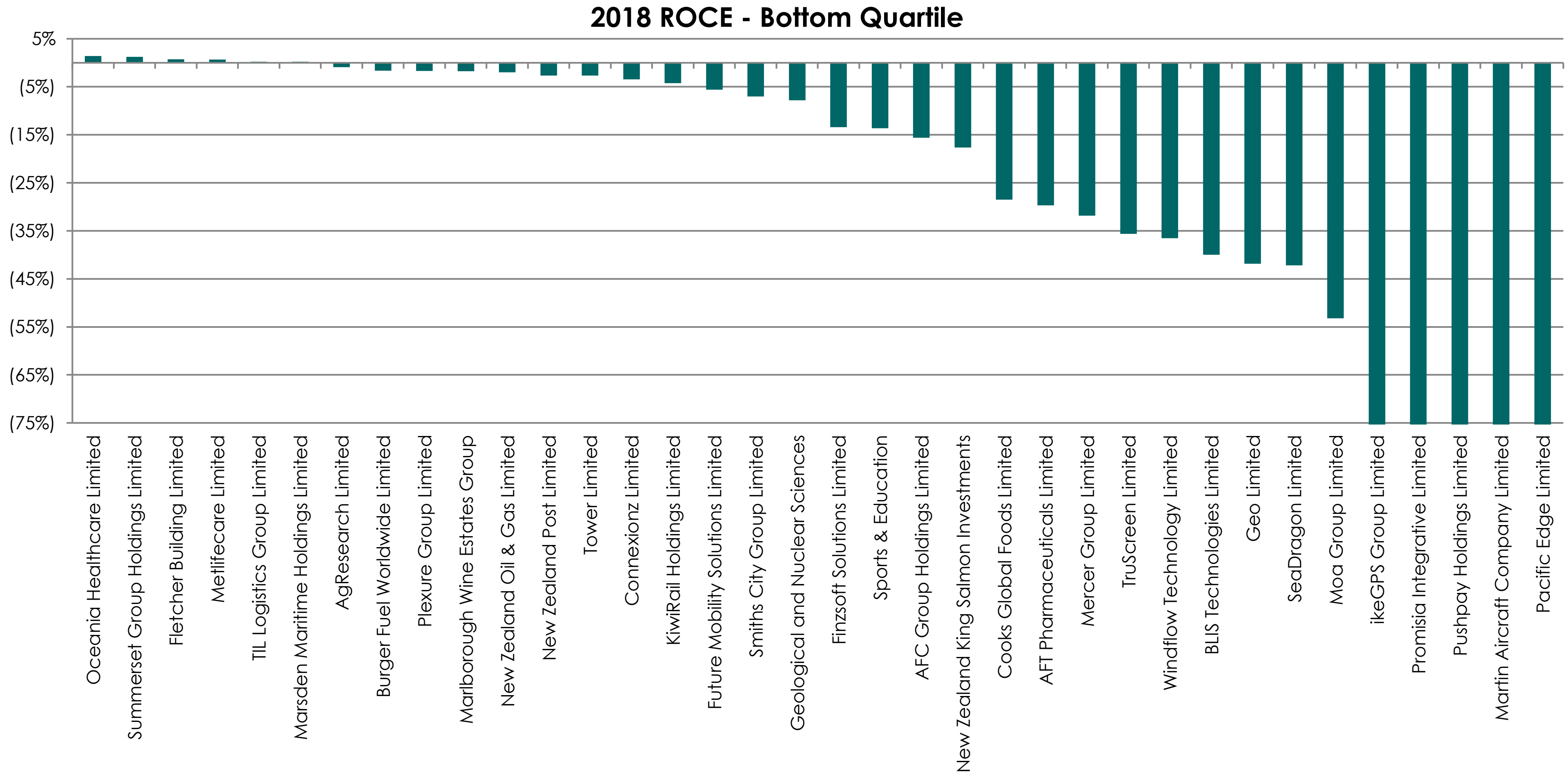


The third quartile ranges from 7.0 to 1.9%. At face value this level of returns would suggest that the companies are earning below their individual WACC. However, low risk Utility companies make up the largest portion of this quartile (19% of these companies are Utilities and fully 70% of all the Utility companies in the entire data set fall in this quartile) so their lower reported returns could still be matching, or exceeding, their individual WACC.



The bottom quartile mostly consists of entities with a negative ROCE, ranging from 1.4% to negative 1738.7%. Note that for the purposes of this chart, those entities with a ROCE of less than negative 150% have been constrained at that level.

26% of firms in the Consumer Staples sector fall into this quartile. While Consumer Staples is typically seen as a profitable industry, and for many companies it is, the ones in this quartile tend to be small and/or focused on more volatile agricultural/horticultural based earnings. Others within this bottom quartile are focused on a significant growth strategy at the expense of short-term profitability. In contrast, those mature businesses with negative ROCE may need to reconsider the viability of their business models if their negative results are a recurring theme.



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 stages 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 clients' needs and find the right solution(s).

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 Securities Exchange (USX).

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 may 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

Appendix 1 contains a table of individual entity results of 2017 and 2018 Profitability and Activity Ratios along with ROCE for the last three years.

	Market	2017 EBIT Margin	2018 EBIT Margin	2017 Activity Ratio	2018 Activity Ratio	ROCE 2016	ROCE 2017	ROCE 2018	3 Year Average ROCE
Abano Healthcare Group Limited	NZX	9.43%	9.48%	0.91 x	0.96 x	8.2%	8.6%	9.1%	8.6%
AFC Group Holdings Limited	NZX	(5.51%)	(9.91%)	3.98 x	1.58 x	(57.01%)	(21.92%)	(15.62%)	(31.52%)
AFT Pharmaceuticals Limited	NZX	(21.58%)	(10.80%)	2.75 x	2.75 x	(41.82%)	(59.35%)	(29.70%)	(43.62%)
AgResearch Limited	Crown	4.54%	(1.26%)	0.82 x	0.74 x	(1.51%)	3.73%	(0.93%)	0.43%
Air New Zealand Limited	NZX	11.53%	10.25%	1.13 x	1.14 x	16.94%	13.03%	11.68%	13.88%
Airways Corporation	Crown	15.59%	14.84%	1.34 x	1.25 x	23.73%	20.91%	18.51%	21.05%
Allied Farmers Limited	NZX	16.86%	14.51%	3.69 x	2.53 x	52.87%	62.11%	36.66%	50.55%
Argosy Property Limited	NZX	73.18%	71.32%	0.09 x	0.08 x	6.74%	6.55%	5.80%	6.36%
Arvida Group Limited	NZX	16.86%	14.51%	0.25 x	0.21 x	5.62%	4.20%	3.09%	4.31%
Asset Plus Limited	NZX	54.09%	56.76%	0.10 x	0.10 x	5.64%	5.37%	5.65%	5.55%
AsureQuality Limited	Crown	6.12%	6.37%	2.37 x	2.61 x	14.94%	14.49%	16.65%	15.36%
Auckland International Airport	NZX	63.23%	61.88%	0.10 x	0.10 x	6.71%	6.56%	6.00%	6.42%
Augusta Capital Limited	NZX	57.27%	53.05%	0.16 x	0.16 x	8.15%	8.99%	8.43%	8.52%
AWF Madison Group Limited	NZX	4.08%	2.94%	4.02 x	4.11 x	15.86%	16.40%	12.07%	14.78%
BLIS Technologies Limited	NZX	(0.43%)	(19.62%)	2.25 x	2.04 x	(16.04%)	(0.96%)	(39.96%)	(18.99%)
Blue Sky Meats (NZ) Limited	USX	(2.17%)	4.20%	2.58 x	2.96 x	(4.62%)	(5.61%)	12.41%	0.73%
Briscoe Group Limited	NZX	12.55%	12.87%	3.85 x	3.58 x	60.10%	48.33%	46.06%	51.49%
Burger Fuel Worldwide Limited	NZAX	4.48%	(0.47%)	3.20 x	3.50 x	(19.37%)	14.34%	(1.66%)	(2.23%)
Cavalier Corporation Limited	NZX	(0.45%)	4.36%	1.46 x	1.41 x	7.92%	(0.65%)	6.15%	4.48%
CDL Investments New Zealand	NZX	54.08%	53.05%	0.67 x	0.60 x	30.54%	36.17%	31.57%	32.76%
Chorus Limited	NZX	30.10%	27.37%	0.33 x	0.28 x	9.07%	10.02%	7.76%	8.95%
Comvita Limited	NZX	0.64%	5.21%	0.71 x	0.70 x	12.32%	0.45%	3.66%	5.48%
Connexionz Limited	USX	(12.59%)	(1.40%)	1.92 x	2.48 x	6.04%	(24.18%)	(3.48%)	(7.20%)
Contact Energy Limited	NZX	13.37%	10.83%	0.44 x	0.51 x	6.83%	5.93%	5.48%	6.08%
Cooks Global Foods Limited	NZAX	(43.46%)	(22.85%)	0.60 x	1.25 x	(29.49%)	(26.25%)	(28.51%)	(28.08%)
Delegat Group Limited	NZX	27.80%	29.41%	0.43 x	0.45 x	14.61%	12.08%	13.13%	13.27%
Downer EDI Limited	NZX	3.45%	3.22%	2.25 x	2.79 x	13.02%	7.77%	9.00%	9.93%

	Market	2017 EBIT Margin	2018 EBIT Margin	2017 Activity Ratio	2018 Activity Ratio	ROCE 2016	ROCE 2017	ROCE 2018	3 Year Average ROCE
EBOS Group Limited	NZX	2.77%	3.07%	5.20 x	4.64 x	14.57%	14.44%	14.24%	14.41%
Enprise Group Limited	NZAX	10.08%	8.75%	2.37 x	1.62 x	16.62%	23.87%	14.16%	18.22%
EROAD Limited	NZX	(15.33%)	2.66%	0.66 x	0.82 x	(4.80%)	(10.16%)	2.19%	(4.26%)
Evolve Education Group Limited	NZX	16.36%	11.57%	0.73 x	0.73 x	12.24%	11.92%	8.43%	10.86%
Finzsoft Solutions Limited	NZX	20.54%	(6.33%)	2.76 x	2.11 x	8.11%	56.64%	(13.37%)	17.12%
Fisher & Paykel Healthcare	NZX	26.84%	27.51%	1.43 x	1.43 x	37.67%	38.29%	39.29%	38.42%
Fletcher Building Limited	NZX	5.29%	0.42%	1.77 x	1.73 x	12.67%	9.34%	0.73%	7.58%
Foley Family Wines Limited	NZX	21.52%	11.71%	0.33 x	0.34 x	7.81%	7.03%	4.01%	6.28%
Fonterra Co-operative Group	NZX	5.60%	4.08%	1.48 x	1.58 x	9.87%	8.26%	6.42%	8.18%
Freightways Limited	NZX	16.08%	15.80%	1.39 x	1.41 x	22.57%	22.30%	22.24%	22.37%
Future Mobility Solutions Limited	NZX	4.27%	(2.07%)	2.78 x	2.72 x	7.13%	11.87%	(5.62%)	4.46%
Genesis Energy Limited	NZX	8.09%	6.72%	0.64 x	0.72 x	7.38%	5.19%	4.85%	5.81%
Gentrack Group Limited	NZX	26.49%	22.94%	0.71 x	0.58 x	25.11%	18.73%	13.30%	19.04%
Geo Limited	NZX	(107.50%)	(75.37%)	0.40 x	0.56 x	(66.3%)	(43.28%)	(41.87%)	(50.49%)
Geological and Nuclear Sciences	Crown	5.47%	(1.90%)	2.79 x	4.12 x	4.39%	15.26%	(7.82%)	3.94%
Goodman Property Trust	NZX	75.67%	78.83%	0.07 x	0.08 x	5.72%	5.46%	5.97%	5.72%
Green Cross Health Limited	NZX	7.02%	5.85%	3.18 x	3.15 x	21.99%	22.34%	18.43%	20.92%
Hallenstein Glasson Holdings	NZX	9.90%	13.61%	5.36 x	5.65 x	46.06%	53.08%	76.84%	58.66%
ikeGPS Group Limited	NZX	(188.36%)	(84.20%)	0.71 x	1.17 x	(148.0%)	(134.3%)	(98.10%)	(126.8%)
Infratil Limited	NZX	13.79%	14.84%	0.34 x	0.32 x	5.16%	4.72%	4.71%	4.86%
Institute of Environmental Science	Crown	9.07%	7.22%	2.12 x	2.21 x	13.97%	19.27%	15.97%	16.40%
Investore Property Limited	NZX	83.56%	81.93%	0.08 x	0.07 x	10.15%	6.57%	5.52%	7.41%
Just Life Group Limited	NZX	17.78%	17.46%	1.13 x	0.86 x	19.29%	20.00%	14.98%	18.09%
Kathmandu Holdings Limited	NZX	12.80%	15.40%	1.30 x	1.30 x	13.90%	16.68%	20.05%	16.88%
Kiwi Property Group Limited	NZX	69.29%	69.03%	0.09 x	0.09 x	5.89%	6.07%	5.93%	5.96%
KiwiRail Holdings Limited	Crown	(4.00%)	(5.96%)	0.80 x	0.71 x	2.29%	(3.19%)	(4.25%)	(1.72%)
Kordia Group Limited	Crown	0.68%	4.29%	2.06 x	2.25 x	19.10%	1.40%	9.64%	10.04%
Landcorp Farming Limited	Crown	8.10%	15.30%	0.13 x	0.14 x	0.14%	1.06%	2.10%	1.10%
Livestock Improvement Corp.	NZAX	4.05%	11.41%	0.76 x	0.89 x	0.85%	3.07%	10.11%	4.68%
Mainfreight Limited	NZX	6.60%	6.40%	2.74 x	2.96 x	16.90%	18.07%	18.96%	17.98%

	Market	2017 EBIT Margin	2018 EBIT Margin	2017 Activity Ratio	2018 Activity Ratio	ROCE 2016	ROCE 2017	ROCE 2018	3 Year Average ROCE
Marlborough Wine Estates Group	NZAX	(51.42%)	(9.15%)	0.17 x	0.19 x	(2.00%)	(8.51%)	(1.77%)	(4.09%)
Marsden Maritime Holdings Limited	NZX	12.66%	6.77%	0.03 x	0.04 x	0.06%	0.40%	0.24%	0.23%
Martin Aircraft Company Limited	USX	(81866%)	(89628%)	0.00 x	0.01 x	(141.9%	(157.0%)	(984.9%)	(427.9%)
Mercer Group Limited	NZX	(9.05%)	(15.96%)	1.48 x	1.99 x	(21.15%)	(13.39%)	(31.81%)	(22.12%)
Mercury NZ Limited	NZX	20.91%	20.19%	0.35 x	0.39 x	6.71%	7.31%	7.94%	7.32%
Meridian Energy Limited	NZX	13.66%	13.58%	0.37 x	0.44 x	6.64%	5.07%	5.96%	5.89%
Meteorological Service	Crown	7.96%	8.14%	1.64 x	1.81 x	10.30%	13.04%	14.76%	12.70%
Metlifecare Limited	NZX	13.52%	10.28%	0.07 x	0.07 x	1.15%	1.00%	0.70%	0.95%
Metro Performance Glass Limited	NZX	13.87%	11.53%	1.10 x	1.06 x	15.68%	15.21%	12.21%	14.37%
Michael Hill International Limited	NZX	11.25%	9.05%	2.39 x	2.51 x	21.48%	26.87%	22.70%	23.68%
Millennium & Copthorne Hotels	NZX	38.86%	37.96%	0.33 x	0.34 x	13.01%	12.88%	13.07%	12.99%
Moa Group Limited	NZX	(22.62%)	(24.21%)	2.18 x	2.20 x	(60.31%)	(49.27%)	(53.19%)	(54.26%)
Water and Atmospheric Research	Crown	3.50%	5.37%	1.57 x	1.53 x	5.31%	5.51%	8.24%	6.35%
New Zealand Forest Research	Crown	7.27%	6.81%	1.92 x	1.90 x	11.52%	13.97%	12.91%	12.80%
New Zealand King Salmon	NZX	(17.05%)	(17.80%)	0.94 x	0.99 x	(17.34%)	(16.11%)	(17.67%)	(17.04%)
New Zealand Oil & Gas Limited	NZX	(77.68%)	(2.20%)	0.49 x	0.89 x	(30.10%)	(38.04%)	(1.95%)	(23.36%)
New Zealand Post Limited	Crown	0.22%	(4.10%)	0.11 x	0.65 x	(0.12%)	0.02%	(2.66%)	(0.92%)
NZ Windfarms Limited	NZX	(32.97%)	20.09%	0.09 x	0.12 x	(0.45%)	(3.13%)	2.38%	(0.40%)
NZME Limited	NZX	10.52%	7.16%	0.97 x	0.97 x	7.44%	10.17%	6.95%	8.19%
NZX Limited	NZX	30.85%	30.90%	0.88 x	0.90 x	24.29%	27.13%	27.67%	26.36%
Oceania Healthcare Limited	NZX	9.00%	4.97%	0.33 x	0.29 x	4.14%	2.95%	1.43%	2.84%
Pacific Edge Limited	NZX	(464.39%)	(430.93%)	1.27 x	4.03 x	(386.6%)	(588.0%)	(1738.7%)	(904.4%)
PaySauce Limited	NZX	(461.57%)	(208.42%)	0.85 x	2.29 x	(578.8%)	(391.3%)	(478.10%)	(482.7%)
PGG Wrightson Limited	NZX	4.72%	4.23%	2.80 x	2.74 x	15.69%	13.24%	11.59%	13.50%
PharmaZen Limited	USX	(1.30%)	17.15%	0.45 x	0.65 x	7.05%	(0.59%)	11.11%	5.86%
Plexure Group Limited	NZX	(91.03%)	(0.76%)	1.31 x	2.24 x	(161.0%)	(119.7%)	(1.71%)	(94.11%)
Port of Tauranga Limited	NZX	44.52%	45.41%	0.20 x	0.20 x	8.85%	9.01%	9.04%	8.97%
Precinct Properties New Zealand	NZX	63.87%	65.11%	0.07 x	0.06 x	5.56%	4.30%	3.76%	4.54%
Promisia Integrative Limited	NZX	(35.03%)	(311.69%)	1.86 x	0.54 x	(55.08%)	(65.07%)	(168.85%)	(96.33%)
Property for Industry Limited	NZX	79.67%	80.86%	0.07 x	0.07 x	5.79%	5.60%	5.65%	5.68%

	Market	2017 EBIT Margin	2018 EBIT Margin	2017 Activity Ratio	2018 Activity Ratio	ROCE 2016	ROCE 2017	ROCE 2018	3 Year Average ROCE
Pushpay Holdings Limited	NZX	(72.79%)	(32.30%)	3.97 x	7.42 x	(203.2%)	(289.0%)	(239.7%)	(244.0%)
QEX Logistics Limited	NZX	11.24%	6.23%	15.72 x	6.56 x	NA	176.60%	40.89%	108.75%
Rakon Limited	NZX	(4.06%)	4.05%	1.08 x	1.27 x	0.31%	(4.39%)	5.16%	0.36%
Rangatira Limited	USX	11.74%	9.73%	1.06 x	1.19 x	29.35%	12.47%	11.59%	17.80%
Restaurant Brands New Zealand	NZX	8.59%	8.25%	3.09 x	2.46 x	28.53%	26.56%	20.32%	25.14%
Rubicon Limited	NZX	(50.00%)	8.57%	0.02 x	0.39 x	1.51%	(1.10%)	3.32%	1.25%
Rural Equities Limited	USX	42.91%	41.05%	0.06 x	0.06 x	1.64%	2.40%	2.46%	2.17%
Ryman Healthcare Limited	NZX	16.70%	15.63%	0.13 x	0.12 x	2.47%	2.16%	1.94%	2.19%
Sanford Limited	NZX	12.40%	11.67%	0.64 x	0.69 x	8.69%	7.96%	8.06%	8.24%
Scales Corporation Limited	NZX	10.72%	10.07%	1.30 x	1.38 x	25.65%	13.99%	13.89%	17.84%
Scott Technology Limited	NZX	9.87%	8.29%	2.03 x	2.15 x	17.24%	19.98%	17.85%	18.36%
SeaDragon Limited	NZX	(143.99%)	(179.13%)	0.30 x	0.24 x	(41.96%)	(43.67%)	(42.17%)	(42.60%)
Seeka Limited	NZX	7.44%	7.13%	1.10 x	0.98 x	8.86%	8.17%	7.01%	8.01%
Serko Limited	NZX	(23.77%)	8.69%	5.25 x	5.95 x	(188.6%)	(124.9%)	51.72%	(87.23%)
Silver Fern Farms Co-operative	USX	9.76%	31.04%	0.27 x	0.11 x	NA	2.64%	3.37%	3.00%
Skellerup Holdings Limited	NZX	14.00%	15.84%	1.11 x	1.21 x	17.41%	15.57%	19.12%	17.37%
SKY Network Television Limited	NZX	20.95%	21.84%	0.52 x	0.56 x	13.95%	10.98%	12.28%	12.40%
SKYCITY Entertainment Group	NZX	22.78%	24.54%	0.59 x	0.60 x	15.38%	13.53%	14.77%	14.56%
Skyline Enterprises Limited	USX	28.67%	28.27%	0.53 x	0.56 x	15.38%	15.32%	15.82%	15.50%
Smartpay Holdings Limited	NZX	13.56%	18.01%	0.56 x	0.53 x	6.54%	7.61%	9.60%	7.91%
Smith's City Group Limited	NZX	2.46%	(3.15%)	2.34 x	2.23 x	5.64%	5.77%	(7.03%)	1.46%
Solution Dynamics Limited	NZAX	9.27%	9.15%	9.72 x	9.18 x	78.07%	90.11%	83.95%	84.04%
South Port New Zealand Limited	NZX	33.25%	33.90%	0.79 x	0.87 x	29.08%	26.36%	29.61%	28.35%
Spark New Zealand Limited	NZX	16.38%	16.80%	1.38 x	1.35 x	21.85%	22.63%	22.72%	22.40%
Speirs Group Limited	USX	(3.60%)	3.08%	2.90 x	2.43 x	2.76%	(10.45%)	7.50%	(0.06%)
Sports & Education	USX	NA	(64.60%)	NA	0.21 x	NA	NA	(13.60%)	(13.60%)
Steel & Tube Holdings Limited	NZX	6.18%	1.31%	1.66 x	1.61 x	11.96%	10.29%	2.10%	8.12%
Stride Stapled Group	NZX	76.25%	75.56%	0.07 x	0.09 x	5.25%	5.39%	6.89%	5.85%
Summerset Group Holdings Limited	NZX	15.50%	12.91%	0.10 x	0.10 x	1.36%	1.61%	1.25%	1.40%

	Market	2017 EBIT Margin	2018 EBIT Margin	2017 Activity Ratio	2018 Activity Ratio	ROCE 2016	ROCE 2017	ROCE 2018	3 Year Average ROCE
Syft Technologies Ltd.	USX	8.67%	8.18%	2.06 x	1.59 x	47.15%	17.86%	13.01%	26.01%
Synlait Milk Limited	NZX	8.89%	12.77%	1.63 x	1.76 x	13.64%	14.52%	22.49%	16.88%
T&G Global Limited	NZX	2.40%	1.34%	2.00 x	2.13 x	5.03%	4.80%	2.85%	4.23%
TeamTalk Limited	NZX	21.61%	22.77%	0.62 x	0.67 x	11.18%	13.29%	15.15%	13.21%
Telstra Corporation Limited	NZX	17.63%	12.86%	0.83 x	0.81 x	18.89%	14.68%	10.46%	14.68%
Terra Vitae Vineyards Limited	USX	25.57%	31.91%	0.14 x	0.16 x	6.10%	3.60%	4.95%	4.88%
The a2 Milk Company Limited	NZX	25.68%	30.45%	5.97 x	5.48 x	90.76%	153.26%	166.84%	136.95%
The Colonial Motor Company	NZX	4.18%	4.67%	3.39 x	3.09 x	13.03%	14.19%	14.43%	13.88%
Plant & Food Research	Crown	4.84%	4.72%	1.52 x	1.39 x	12.10%	7.34%	6.55%	8.67%
New Zealand Refining Company	NZX	29.38%	14.98%	0.42 x	0.36 x	7.94%	12.20%	5.34%	8.49%
The Warehouse Group Limited	NZX	3.65%	3.06%	3.91 x	4.42 x	13.51%	14.26%	13.55%	13.77%
TIL Logistics Group Limited	NZX	3.44%	0.08%	4.71 x	3.30 x	NA	16.20%	0.25%	8.23%
Tilt Renewables Limited	NZX	28.69%	14.93%	0.17 x	0.14 x	10.97%	4.77%	2.16%	5.96%
Tourism Holdings Limited	NZX	14.13%	14.82%	1.04 x	1.01 x	14.47%	14.76%	14.92%	14.72%
Tower Limited	NZX	(1.93%)	(2.64%)	0.96 x	1.01 x	(2.21%)	(1.86%)	(2.68%)	(2.25%)
Trade Me Group Limited	NZX	56.83%	55.45%	0.29 x	0.30 x	15.01%	16.23%	16.82%	16.02%
Transpower New Zealand Limited	Crown	48.36%	49.70%	0.23 x	0.23 x	10.36%	10.93%	11.61%	10.97%
TruScreen Limited	NZX	(243.85%)	(173.82%)	0.12 x	0.20 x	(12.78%)	(29.88%)	(35.63%)	(26.10%)
Trustpower Limited	NZX	17.47%	20.61%	0.42 x	0.47 x	6.34%	7.39%	9.72%	7.82%
Turners Automotive Group Limited	NZX	12.68%	10.79%	0.80 x	0.82 x	10.96%	10.17%	8.81%	9.98%
Vector Limited	NZX	27.48%	23.77%	0.27 x	0.28 x	6.98%	7.53%	6.67%	7.06%
Veritas Investments Limited	NZX	16.66%	14.48%	0.64 x	0.69 x	14.26%	10.58%	9.97%	11.60%
Vista Group International Limited	NZX	19.31%	18.44%	0.82 x	0.95 x	17.59%	15.82%	17.50%	16.97%
Vital Healthcare Property Trust	NZX	67.95%	57.11%	0.09 x	0.07 x	6.65%	6.17%	3.97%	5.60%
Wellington Drive Technologies	NZX	(2.85%)	1.39%	5.30 x	6.10 x	(18.77%)	(15.10%)	8.50%	(8.46%)
Windflow Technology Limited	USX	(266.13%)	(168.95%)	0.06 x	0.22 x	(9.48%)	(15.79%)	(36.55%)	(20.61%)
Z Energy Limited	NZX	10.23%	9.23%	2.91 x	2.68 x	16.01%	29.76%	24.71%	23.49%
Zespri Group Limited	USX	5.50%	5.43%	30.84 x	24.29 x	87.63%	137.50%	131.99%	119.04%

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 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 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 assess 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 – Non-current non-interest-bearing Liabilities

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 – Non-current non-interest-bearing Liabilities

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

The movement in TNA reflects operating changes made to the employment of scarce resources, whilst Net Debt (i.e. 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: $\dfrac{\text{Revenue}}{\text{Capital Employed}}$

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

By way of example, an Activity Ratio of 2.50x means that for every $1.00 invested in Capital Employed the business produces $2.50 in sales. It answers the question of whether the net operating assets are being utilised efficiently in the production of income.

The activity drivers are:

- Raw Materials, Work in Progress, and Finished Goods: the value of raw materials, work in progress and finished goods the business holds;
- Trade Debtors: how much the business has tied up in receivables;
- 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. Non-current non-interest-bearing Liabilities, while typically a relatively small number, are also levers that management can use to influence the Activity Ratio.

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:

$$\frac{\text{EBIT}}{\text{CE}}$$

OR

Profitability Ratio x Activity Ratio

The interactive nature of this ratio is seen in the alternative formula as the product of the Profitability and Activity ratios. 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 which of its components contribute to both the strengths and weaknesses of the operational 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%
Capital Employed	50,000
Activity Ratio	2x
ROCE	10% x 2 = 20%

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

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

(v) Interfacing Profit and Loss 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 completely 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.

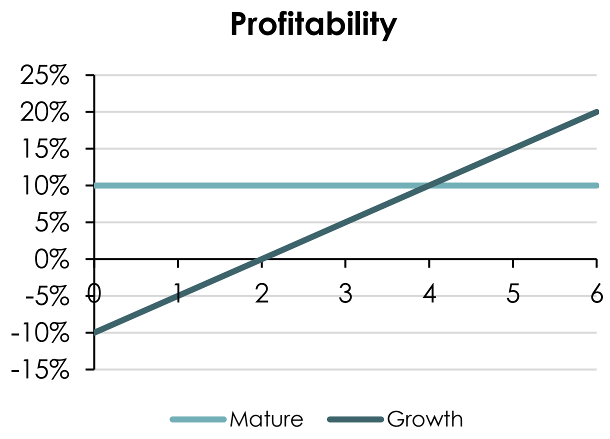
Budgeting and Valuation

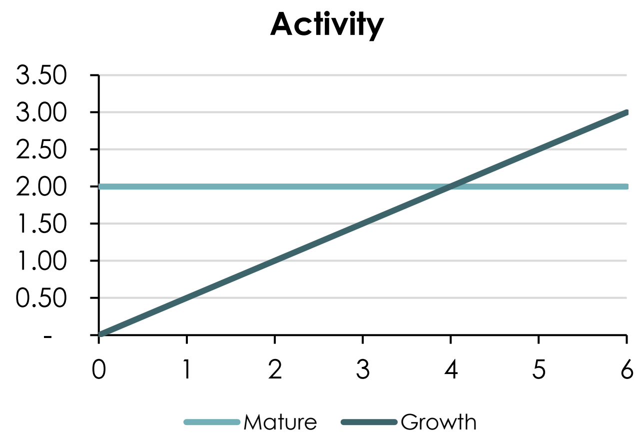
Businesses and analysts can often make an underlying error in budgeting or forecasting business performance that impacts a business valuation. When undertaking a valuation, the biggest error usually arises from utilising overly optimistic forecasts. Discount rates are generally less susceptible to such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

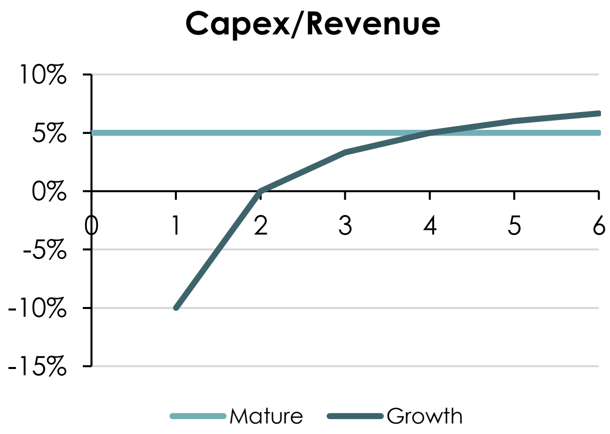
Consider the following four charts that simplistically compare Profitability, Activity, Capex to Revenue and ROCE ratios for a mature business and a growth business. The underlying issue is that budgets for mature businesses more than often assume expanding profitability, increasing activity, reducing 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.

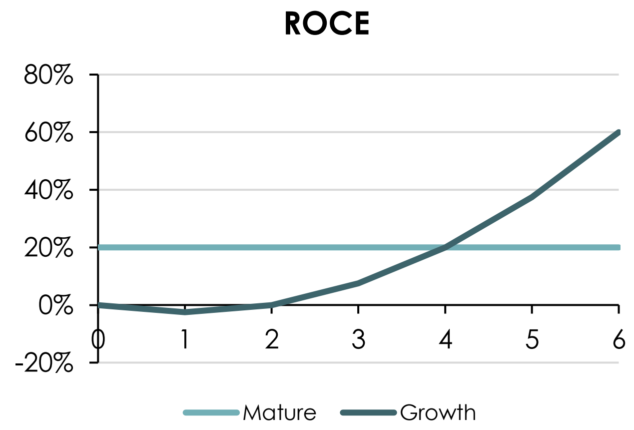
Forecasts for growth businesses often have the opposite issues. Businesses often struggle to achieve EBIT margins in excess of 20% on an ongoing basis. At those levels competitors are likely to enter a market and customers generally start looking elsewhere or in-housing the supply. Revenue growth will 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 relaxes controls around 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 WACC for the business. Where this is the case the business will be creating value for its shareholders.