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Study of financial returns benchmarks

Inquiry into the South Australian bulk grain export supply chain costs

Essential Services Commission of South Australia
26 April 2018

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26 April 2018

Mr Mike Philipson
Principal Adviser
Essential Services Commission of South Australia
GPO Box 2605
ADELAIDE SA 5001

Dear Mr Philipson

Re: Grains Inquiry

Thank you for providing the opportunity to contribute to the Commission's inquiry into the South Australian bulk grain export supply chain costs.

Attached is our final report on the financial returns that might be considered reasonable for a business with similar characteristics to Viterra.

Please contact me at any time on 0418 967 377 if you would like to discuss any aspects of this report and our underlying analysis.

Yours sincerely

Phil Bayley
Director

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1. Scope and objective

The Essential Services Commission of South Australia ["ESCOSA"] is conducting an Inquiry into the South Australian bulk grain supply chain costs, which was initiated by the then Treasurer in March 2017.[1]

The purpose of the Inquiry is to determine the reasonableness of the costs underpinning the South Australian bulk grain supply chain in achieving the State's key objectives for the sector. The Inquiry is being delivered in two parts:

- analysis of the South Australian bulk grain export supply chain costs over the past 10 years;
- investigating cost efficiency within the supply chain and providing options to address any inefficiencies that are identified.

An important aspect of the Inquiry is considering whether Viterra — as the predominant service provider of bulk grain supply chain services, particularly handling and storage — is earning financial returns that are reasonable given the characteristics of its business and associated inter-year volatility.

Value Adviser Associates Pty Ltd ["VAA"] was engaged by ESCOSA to provide advice on the appropriate rates of return that a hypothetical investor would seek to invest in a business in a similar market and with similar characteristics to that of Viterra.

VAA has been not asked to analyse the performance of Viterra's South Australian business ["Viterra SA"].

The grain storage and handling network was established as South Australian Co-operative Bulk Handling ["SACBH"] in 1955. In 2000, SACBH was demutualised to form two companies, both of which merged with ABB Grain Ltd in 2004. In 2008, the export wheat market was deregulated. Viterra acquired ABB Grain in 2009, enhancing access to global grains markets. Glencore acquired Viterra in 2012, and the agricultural products business was sold into a joint venture known as Glencore Agriculture in 2016.

ESCOSA is seeking advice on the returns an investor would likely require to invest in a business with similar characteristics to that of Viterra:

- Viterra's business in South Australia is restricted to grain handling and storage (including the operation of bulk loading facilities at port), and is not involved in grain marketing;
- on behalf of clients, Viterra can offer full supply chain services from farm gate to ship loading, including arranging the transport from upcountry storage to port;
- revenues vary according to seasonal variations;
- bulk storage and handling businesses are characterised by substantial and bespoke capital asset requirements, most of which have little or no alternative uses; and
- assets are sized to cater for bumper crop years with the corollary that they are underutilised during light years.

Direct comparisons with other businesses are difficult, as:

- there are no ASX-listed companies that have substantial financial and capital market information available and would be directly comparable to Viterra's business, particularly given the regional and seasonal dimensions of its activities;
- financial details are only publicly available for two other Australian bulk handling companies — Co-operative Bulk Handling ["CBH"], a Western Australian farmer-owned

[1] There was a change in government in South Australia following the State election on 17 March 2018.

co-operative and registered charity, and Graincorp, a listed entity with global operations in storage and handling, trading and marketing, malts and grain oils; and

- other grain businesses, such as Emerald Grain and Bunge which are involved in marketing or other downstream activities that provide opportunities to add value and diversify revenue.

2. Approach

The study presents three measures of financial returns:

- Return on Invested Capital ["ROIC"] — a measure of the nominal post-tax earnings that a company derives from the debt and equity capital employed in its business;
- Return on Equity ["ROE"] — a measure of the return to shareholders after debt funding costs and taxes are paid; and
- Return on Assets ["ROA"] — a measure of the pre-tax nominal earnings that are derived from a company's assets.

These measures are defined in Appendix A.

Decisions on a company's capital structure (ie the mix of debt and equity that it utilises to manage its activities and grow the business) do not affect the total amount of capital employed by a business, and therefore do not affect ROIC.

ROA incorporates the value of assets, rather than the capital used to fund the business. Accordingly, it is also not affected by the capital structure.

In contrast, ROE is affected by the capital structure. For example, a higher debt level tends to increase observed ROE, while simultaneously increasing the level of financial risk.

In this study, the impact of differing capital structures is removed by standardising the capital structure at two different debt to capital ratios — 30 per cent and 50 per cent — and adjusting for the impact on interest payments and taxes prior to calculating ROEs.[2]

VAA's approach to this study is based on two discrete approaches to determining a range of financial returns:

- identifying companies that could be considered to be broadly comparable, in that they exhibit some similar characteristics to Viterra, and deriving the financial returns measures from publicly-available information (section 5); and
- a reasonableness test that applies the principles of the Capital Asset Pricing Model (section 6).

ROIC and ROE have strong foundations in corporate finance principles, whereas ROA is an accounting-based measure and suffers from the limitations of the accounting measurement model. Accordingly, ROA is not considered in the set of measures presented in section 6.

The comparable company analysis reflects historical performance of the selected companies, whereas the reasonableness is essentially a top-down approach that largely reflects current market conditions. While macroeconomic conditions have been broadly stable over recent years, these two approaches will inevitably result in different outcomes that ESCOSA should take into account in the Inquiry.

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[2] Some of the comparable companies would not be able to sustain these gearing levels as their operating cash flows would be insufficient to comfortably meet the interest and debt amortisation burden. Nevertheless, the ROE measures have been calculated for the comparable companies on a consistent basis and therefore can be used by ESCOSA to analyse Viterra financial performance.

3. Qualifications and limitations

VAA has been engaged to undertake this study based on publicly available information, and no confidential information has been provided or accessed.

This report presents financial information that is, by its nature, subject to interpretation. Accordingly, the study reflects VAA's best judgement and market insight, and the knowledge, expertise and experience of the individual consultants involved.

It is not intended that the VAA's assessment of reasonable returns for a business with similar characteristics to Viterra should be considered to be a recommendation for regulatory intervention. Similarly, it does not necessarily represent the findings that would be reached if a regulatory weighted average cost of capital study was undertaken, as different methodologies would be applied along with access to more detailed and confidential information.

This report has been prepared for ESCOSA on the understanding that it would be released publicly as part of its review into the bulk grains export supply chain. However, in no event shall Value Adviser Associates assume any responsibility to any third party that accesses the report or any other information that is contained in this report, whether or not consent has been provided.

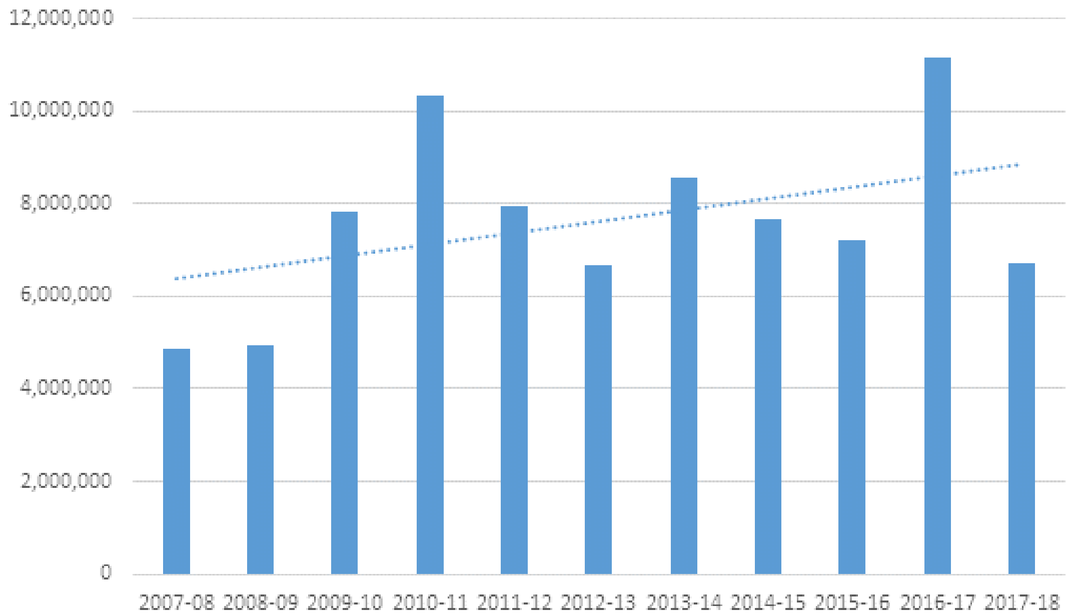
VAA has acted independently in preparing this report. VAA is being remunerated on the basis of time spent and no part of the fee is contingent upon the contents, the conclusions reached or the future use of this report. Value Adviser Associates has no conflict of interest in relation to the work undertaken.

4. Background

4.1 Grains industry and supply chain

Over the past decade, the South Australian grain industry has produced between 5 million and 11 million tonnes of grain annually, with wheat comprising the majority of grains produced. Harvest volumes are variable, affected by seasonal conditions and marginal decisions made by farmers regarding crop selection and livestock grazing on traditionally mixed farmland.

FIGURE 1 SOUTH AUSTRALIAN HARVEST TRENDS (TONNES)



Source: ESCOSA, summarised from Primary Industries and Regions SA (PIRSA)Crop and Pasture Reports[3]

VAA is not aware of any material risk to ongoing grain production in South Australia. The alternative use of the land currently under wheat and other grains is limited and/or lower value due to soil quality, hydrology, feed availability and other factors. Accordingly, the key factors that drive inter-year production are likely to continue.

Typically, the South Australian grain supply chain operates in the following manner:

- growers deliver grains to upcountry storage facilities that are mostly owned and operated by Viterra;
- around 90 per cent of grain is warehoused, where growers retain ownership until they sell to traders (or commit it against existing contracts);
- there are approximately 13 trading operators from Adelaide. Viterra delivered grain to 11 exporters that shipped grain in the 2017 season. Glencore Agriculture holds a 30 per cent market share;
- growers can manage their own logistics from upcountry storage to port, or use the Export Select service offered by Viterra;
- Export Select chooses the most efficient logistics route considering road or rail and destination port; and
- growers receive the free-on-board ["FOB"] price, which is firm at time of sale and net of logistics and other supply chain costs.

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[3] http://pir.sa.gov.au/primary_industry/crops_and_pastures/crop_and_pasture_reports

TABLE 1 MAIN SOUTH AUSTRALIAN CROPS — HIGH AND LOW (DROUGHT) PRODUCTION YEARS (TONNES)

	2006-07 Production (Low Year)[2]					2016-17 Production (High Year - State record)[3]				
DISTRICT	Wheat[1]	Barley	Canola	Lentils	All Crops[4]	Wheat[1]	Barley	Canola	Lentils	All Crops[4]
Western Eyre Peninsula	262,650	77,490	1,782	100	354,785	955,000	138,000	12,000	3,000	1,153,080
Lower Eyre Peninsula	204,468	107,714	23,918	540	375,077	553,000	233,000	150,000	7,200	1,031,500
Eastern Eyre Peninsula	215,543	74,200	1,000	0	300,140	1,019,000	195,000	19,000	6,000	1,274,690
Total Eyre Peninsula	682,660	259,404	26,700	640	1,030,002	2,527,000	566,000	181,000	16,200	3,459,270
Yorke Peninsula	151,823	268,621	5,800	16,800	487,596	826,000	695,000	25,000	360,000	2,004,900
Upper North	124,165	94,444	3,600	400	242,183	743,000	286,000	29,000	10,800	1,167,100
Mid North	226,212	155,839	19,789	3,818	461,007	1,018,000	390,000	47,500	26,000	1,614,400
Lower North	57,300	59,429	3,211	1,584	140,113	273,500	122,000	6,700	16,500	465,800
Total Northern Districts and Yorke Peninsula	559,499	578,333	32,400	22,602	1,330,899	2,860,500	1,493,000	108,200	413,300	5,252,200
Kangaroo Island	7,243	2,067	6,125	0	19,857	12,500	4,300	3,300	0	36,200
Central Hills & Fleurieu	6,420	9,500	1,200	0	23,977	14,900	37,500	8,500	420	76,520
Total Central	13,663	11,567	7,325	0	43,834	27,400	41,800	11,800	420	112,720
Lower Murray	34,968	42,694	1,192	0	94,797	165,300	174,000	5,400	2,200	383,500
Northern Murray Mallee	134,184	28,600	300	0	179,484	442,500	122,000	12,000	800	602,900
Southern Murray Mallee	31,500	34,971	770	0	78,533	341,000	253,000	7,500	8,000	678,000
Total Mallee	200,652	106,266	2,262	0	352,815	948,800	549,000	24,900	11,000	1,664,400
Upper South East	36,800	54,001	2,630	164	106,175	236,500	105,000	30,000	6,500	496,650
Lower South East	14,400	19,458	1,622	50	53,323	70,000	20,000	17,000	260	159,460
Total South East	51,200	73,459	4,252	214	159,499	306,500	125,000	47,000	6,760	656,110
STATE TOTAL	**1,507,674**	**1,029,030**	**72,938**	**23,456**	**2,917,049**	**6,670,200**	**2,774,800**	**372,900**	**447,680**	**11,144,700**

Source: PIRSA, *South Australian Grain Industry Overview — Submission to ESCOSA Grains Inquiry*, May 2017.
https://www.escosa.sa.gov.au/ArticleDocuments/1073/20170522-I-SABulkGrainSupplyChainCostsTORSubmission-PIRSA.pdf.aspx?Embed=Y

Table 1 provides details on grain production by district and crop, including the variability in harvests between a low yield year (2006-07) and the record high yield year (2016-17).

The grain traders generally use bulk commodity ships, which are loaded from port terminal facilities that are largely owned by Viterra SA.

Semaphore Container Services Pty Ltd, based at Outer Harbour, is moving into containerised grain operations. While containerised grain exports are growing interstate, it is yet to emerge as a strong competitor in SA as the services appear to lack the economies of scale and efficient management of empty export containers is a key issue yet to be addressed.[4]

Cargill Australia Ltd, a grain handler and trader, and a subsidiary of multinational agribusiness Cargill Inc., also operates facilities at Port Adelaide, providing further niche competition to Viterra.

Further, a proposed new port on the Eyre Peninsula could also compete for some grain export handling, bypassing Viterra's port assets.

There are few bottlenecks in the SA export grain supply chain. Indeed, Viterra has previously been responsive to market conditions; it rapidly built new portside capacity to accommodate the record 2016-17 harvest and exceeded the notional capacity of existing port infrastructure.

4.2 Viterra's South Australian business

Viterra SA is exposed to the fluctuations in the grain harvest, which are the primary source of variability in its revenue.

Key points of Viterra's integration in South Australia's grain supply chain that have been identified in discussions with ESCOSA include:

- while farmers have flexibility in crop selection (or whether to graze livestock) they are still largely reliant on Viterra's upcountry storage services and other aspects of its supply chain services;
- farmers on mixed cropping and grazing land make crop selections well in advance in response to forecast global prices and climactic conditions, and there is no evidence of active switching between crops in response to supply chain costs or management; and
- there are few opportunities for growers to sell into the domestic market — which would bypass some of Viterra's services or assets — as 85 per cent of SA grain production is exported.

Viterra SA's assets are focused on grain storage, including upcountry storages, and port facilities such as elevators, loaders and delivery belts. It also has containerised export operations, with facilities in SA, NSW and Victoria.

Trucking and rail rolling stock are not owned but are secured under long-term contracts.

Viterra SA operates six port terminals — Port of Adelaide's Inner and Outer Harbour, Port Giles, Wallaroo, Port Lincoln and Thevenard — that are all covered by the Port Terminal (Bulk Wheat) Code of Conduct, which is an open access regime.

[4] An insufficient supply of 20-foot containers into SA has been identified as an issue recommended for Ministerial investigation. Refer *From the Paddock to the Plate — A Fair Return for Producers*, Economic and Finance Committee, November 2017, p.138 http://bccm.coop/wp/wp-content/uploads/2017/12/Final-Report-Primary-Producers-Inquiry-2017-11-28-1.pdf

Viterra's direct clients are the grain traders, who pass the supply chain costs onto the growers. The growers receive a FOB price. While this structure may dilute the growers' bargaining power, VAA understands that the growers are highly engaged in supply chain management.

Viterra's submission to the Inquiry highlights its focus on efficiency and cost management, with direct feedback from growers used to set investment priorities.[5]

VAA also notes that there are incentives for Viterra to deliver timely services, and efficient costs and pricing. These incentives include:

- the risk of a competitor building alternative supply chains. In particular, a recent Credit Suisse report highlights the negative impact that on-farm storage and containerised exports is having on Graincorp's storage and logistics business[6]; and
- its indirect exposure to global markets, as traders can purchase from alternative markets if Viterra fails to deliver the contracted volumes to meet shipping schedules. This would undercut Viterra's revenue and South Australian growers' access to the global grains market.

4.3 Characteristics of a business similar to Viterra

The following discussion outlines VAA's understanding of relevant characteristics — including strategic risk and financial profile —that are relevant when considering the returns that would be appropriate for a hypothetical business similar to Viterra.

For the purposes of the study, ESCOSA advised VAA to assume that this hypothetical business has:

- major assets that are ageing and have few alternative uses, are largely depreciated and do not require material replacement expenditures;
- forecast and actual capital expenditure are consistently low relative to the replacement value of the assets; and
- capital expenditure is comfortably funded from operating free cash flows.

Common to commodity transport and logistics service operations, economies of scale are important to efficiently manage grain supply chain infrastructure.

However, significant barriers to entry exist where these economies of scale — and economies of scope through related services, particularly transport logistics management — and high market share are evident.

These financial and strategic factors are key value drivers for the hypothetical business. Others include:

- high levels of free cash generation;
- efficient operation and long-term management experience; and
- competition that is limited to niche operators.

A general observation of monopolists in unregulated markets is that market power and/or supply chain bottlenecks often result in inefficient cost structures, which are passed onto customers through higher prices. However, in this study, VAA has assumed that an incentive to operate efficiently and a lack of supply chain bottlenecks partly mitigate these potential effects for the hypothetical business being considered.

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[5] Viterra, *Submission to the Essential Services Commission of South Australia's Inquiry into the South Australian bulk grains export supply chain costs*, May 2017 http://www.escosa.sa.gov.au/ArticleDocuments/1073/20170519-I-SABulkGrainSupplyChainCostsTORSubmission-Viterra.pdf.aspx?Embed=Y

[6] Saligari, Grant & Diamond, Annabelle, Credit Suisse Equity Research, *Graincorp*, 18 February 2018

Also, when sales volumes are variable, pricing behaviour can be an important indicator of the extent to which a company can utilise its market power to stabilise earnings. However, VAA has not received any information on Viterra's pricing in the export supply chain and has not considered this as an issue in assessing its risk profile, nor the characteristics that can be applied to a similar hypothetical business.

VAA concludes that the hypothetical business faces a material but longer-term risk of assets being stranded, which would result in reduced asset utilisation regardless of the age and accumulated depreciation of the affected assets. Notwithstanding revenue variability, this business would be relatively low risk in the foreseeable future with low capital expenditure requirements and high levels of free cash generation.

Together, these characteristics, and VAA's experience in analysing capital market conditions and asset valuations, suggest that lower returns commensurate with many infrastructure-based businesses are considered to be reasonable.

5. Comparable companies

5.1 Selection methodology

As noted earlier, there are no companies that can be directly compared to Viterra's business given its unique characteristics. Accordingly, VAA has constructed a set of comparable companies that have a range of similar characteristics, including:

- grains industry exposure, particularly storage and handling, or infrastructure-based businesses;
- significant earnings variability (year to year changes of more than 5 per cent and less than -5 per cent in any year); and
- the strategic risk profile outlined in section 4.3.

A number of filtering criteria (using Bloomberg financial and capital market data service) were applied to listed companies, which led to the following groups being used as the comparable companies in this study:

- businesses that were identified with operations and assets in grains storage and handling and demonstrated revenue variability (six companies); and
- landlord ports and port service providers (15 companies).

Three unlisted companies that focused on bulk grains storage and handling were also selected, comprising CBH, the Albany Port Authority (Western Australia) and the Thunder Bay Port Authority (Canada).

Albany Port Authority was merged with ports of Bunbury and Esperance to form the Southern Ports Authority on 1 October 2014. As grain exports contribute a smaller share of the combined revenues of the new business, the Southern Ports Authority has not been used as an unlisted comparator.

This process resulted in a total of 24 companies being used as comparators, as shown in Appendix B.

Financial results were identified for the past five years. Subject to data availability, VAA's analysis is summarised in the body of this report and more detailed results are presented in Appendix C.

Some companies that are involved in the bulk grains sector were excluded from the comparator set as their business profile did not exhibit sufficient commonalities with Viterra, particularly traders such as Sumitomo (owner of Emerald Grain) and Bunge that also have significant downstream value-adding activities. [7]

5.2 Comparable companies analysis

The comparable companies displayed a wide variation in financial returns.

Returns for the listed port companies were generally similar to the listed grains storage and handling businesses — which is consistent with capital market and investors' perceptions that these groups of businesses have similar business risks, as indicated by data on their observable asset beta[8].

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[7] Glencore Agriculture was not considered as it would be inappropriate for a company's parent to be included in a set of comparable companies, and in any case, its global trading and value-added operations make it unsuitable.

[8] The equity beta reflects the non-diversifiable (or systematic) risk of a business. For listed companies, the equity beta is observable as the relative volatility of a company's share price against the broader market. The asset beta is an ungeared measure, which can be derived by removing the impact of a company's capital structure, or financial risk,

However, having six comparable companies as the subset of listed grains storage and handling companies is a small sample for this study. To overcome this, all of the listed and unlisted grains storage and handling businesses are grouped together.

Including the unlisted grains handling and storage businesses has the effect of expanding the range of returns, as these three business have a wide range of results and variability in returns. For instance, the Albany Port Authority had a ROIC of 10 per cent or higher in the three years that have been analysed for this study, whereas the returns of the Thunder Bay Port Authority were very low.

This effect is ameliorated when all of the comparable companies are treated as a single group, which is an appropriate approach as they have been selected for their broad similarities to Viterra's South Australian business. VAA has also found that the observable asset betas for the listed companies in the sample are broadly similar, which also supports this approach.

A summary of the returns achieved by the comparable companies is shown in Table 2, and detailed charts are shown in Appendix C.[9]

TABLE 2 SUMMARY OF COMPARABLE COMPANY RETURNS

	ROIC	Standardised ROE 30% debt/capital	Standardised ROE 50% debt/capital	ROA
Grains storage & handling				
Median	4.8%	5.2%	7.2%	5.6%
75th percentile(a)	10.1%	13.3%	18.2%	9.9%
Listed ports				
Median	6.3%	8.3%	11.7%	7.1%
75th percentile	7.3%	9.6%	13.4%	8.5%
All comps				
Median	6.2%	7.9%	11.1%	6.7%
75th percentile	8.3%	10.6%	14.7%	9.1%

(a) Small sample sizes result in wide divergence between median and 75th percentile
Source: VAA analysis

In principle, a business should be targeting median returns against a group of competitors or peers with similar characteristics, although a well-performing business should achieve returns in the third quartile — i.e. returns should be between the median and 75th percentile — over the medium term.

Any deviations outside the 75th percentile should be rare, and in principle, should also be offset by returns well below the median in poor years.

If a company achieves returns that are consistently in the top quartile, it would generally be considered as outperforming its peers, which could reflect superior management, market power or a combination of these factors.

from the equity beta. For unlisted companies, the asset beta is unobservable, and is therefore referenced against comparable companies and judgement must be applied by experienced analysts.

[9] In this study, the median refers to the mid-point of comparable companies' annual returns when they are ranked, and the third quartile is bounded by the median and the 75th percentile, which means that only the top quarter of single-year returns are excluded.

6. Reasonableness test

The reasonableness test is based on applying the principles of the Capital Asset Pricing Model.

In general, it would be expected that investors would assess a company's performance by analysing its Return on Invested Capital ["ROIC"] and its Return on Equity ["ROE"].

The mix of debt and equity on a company's balance sheet is a board decision and typically reflects trade-offs between the lower cost of debt finance and the risk of meeting debt repayments.

To assess whether a business is enhancing value for its shareholders, the ROIC would be compared against the expected (i.e. forward-looking) Weighted Average Cost of Capital ["WACC"]. An excess ROIC over WACC indicates that the company is creating shareholder value (by 'beating' its cost of debt and equity capital).

The WACC consists of three distinct components: cost of equity ["Ke"], cost of debt and capital structure (or debt/capital ratio), with the latter used to weight the respective source of funds. Each of these three components are separately and independently estimated to the extent possible, although they share some common parameters.

For both ROIC and ROE, returns that exceed the appropriate benchmark (WACC and ROE respectively) would be considered to be adding shareholder value. Accordingly, the WACC and Ke for a hypothetical business exhibiting similar characteristics to Viterra SA establish a target range for reasonable returns on invested capital and equity respectively.

As Return on Assets relies on the accounting measurement model rather than a capital markets-focussed measure, it is not considered in this section.

6.1 Key parameters

Consistent with the principles of CAPM, key parameters in selecting the WACC and Ke are the level of gearing in the business and the asset beta.

Section 4 highlights the following points — particularly the strategic positioning and financial profile for a similar, hypothetical business — that are relevant to selecting these parameters:

- similarities to an infrastructure-based business, such as ports, albeit with greater variability in its earnings arising from harvest volumes that are outside its control;
- while growers can substitute between grains, substitutability between grains and other agricultural commodities is relatively low;
- high levels of free cash flow, after essential stay-in-business capital expenditure, provide a strong capability to service debt and accordingly a reasonably high level of debt commensurate with many infrastructure-based businesses; and
- the risk of assets being stranded is material but longer-term.

Based on this profile, and the broader information presented in section 4, VAA considers (based on its experience in analysing capital market conditions and asset valuations) that a business with these characteristics would:

- have a financial structure consistent with a BBB/Baa credit rating, with a debt to total capital ratio between 30 per cent and 50 per cent; and
- would have an asset beta between 0.45 and 0.55, which results in an equity beta between 0.64 and 1.1 at these gearing levels.

It is important to note that these parameters have been selected based on VAA's extensive experience in asset valuations and cost of capital assignments. To ensure that the measures of appropriate returns under the reasonableness test and comparable companies are determined independently, the analysis of comparable companies in section 5 has not been applied in selecting the parameters in this section.

6.2 Cost of Capital

Based on the key parameters for gearing and asset beta, and other market data, Table 3 shows the derived Ke and WACC.

TABLE 3 COST OF CAPITAL

Parameter assumptions				
Debt/total capital ratio	50%	50%	30%	30%
Asset beta	0.45	0.55	0.45	0.55
Cost of capital				
Risk-free rate - AU	2.4%	2.4%	2.4%	2.4%
Equity beta(a)	0.90	1.10	0.64	0.79
Market risk premium - AU market	6.5%	6.5%	6.5%	6.5%
Cost of equity	**8.3%**	**9.6%**	**6.6%**	**7.5%**
Risk-free rate - AU	2.4%	2.4%	2.4%	2.4%
Debt risk premium - Corporate BBB 10-year bond spread	1.5%	1.5%	1.5%	1.5%
Pre-tax cost of debt	3.9%	3.9%	3.9%	3.9%
Corporate tax rate	30.0%	30.0%	30.0%	30.0%
Post-tax cost of debt	**2.7%**	**2.7%**	**2.7%**	**2.7%**
Weighted average cost of capital	**5.5%**	**6.1%**	**5.4%**	**6.1%**

(a) The process used by VAA to derive the asset beta and re-geared equity beta does not adjust for tax, nor associated parameters such as dividend imputation and dividend payout ratios. These factors, as well as a methodology that combines the comparable company and top-down approaches, would all be taken into account in a regulatory context, rather than a higher-level benchmarking study of this nature.

Source: Bloomberg, and VAA analysis based on Bloomberg information

Notes: Market information is updated as at 28 Feb 2018

6.3 Conclusion

Based on this analysis, VAA considers that a business with similar characteristics to Viterra SA, based on this top down approach, should achieve the returns shown in Table 4.

TABLE 4 RANGE OF REASONABLE RETURNS

	Low	High
Return on Invested Capital		
50% debt	5.5%	6.1%
30% debt	5.4%	6.1%
Return on equity		
50% debt	8.3%	9.6%
30% debt	6.6%	7.5%

7. Conclusion

This study presents two different approaches (the comparable companies and reasonableness test) to identify a range of financial returns that could be considered reasonable for an investor in a hypothetical business with similar characteristics to Viterra SA. These approaches and the results are presented in sections 5 and 6 respectively.

Table 5 summarises the results of the two approaches presented in this report.

As the two approaches have been analysed independently, and have different time horizons, it is inevitable that they reach different conclusions. For instance, the median returns for the comparable companies are marginally higher than the high end of the target returns presented in the reasonableness test.

Without analysing Viterra's returns, which is outside the scope of this study, it is not appropriate for VAA to infer a direct relationship between its returns and the level of the grains harvest, nor to assess its performance against the range of potential outcomes.

Nevertheless, VAA would expect that Viterra SA's financial performance would vary in line with the inter-year harvest volumes, and therefore its financial performance (and the associated benchmarks) must be analysed over the medium term.

TABLE 5 SUMMARY OF RESULTS

	ROIC	Standardised ROE 30% debt/capital	Standardised ROE 50% debt/capital	ROA
Comparable companies				
Median	6.2%	7.9%	11.1%	6.7%
75th percentile	8.3%	10.6%	14.7%	9.1%
Reasonableness test				
Low	5.4%	6.6%	8.3%	n/a
High	6.1%	7.5%	9.6%	n/a

If Viterra SA's returns are consistently exceeding these benchmarks, then its consistently high returns may reflect its market power, superior management and/or other strategic factors discussed in this study.[10]

On the other hand, if Viterra SA does not consistently exceed these cost of capital benchmarks over a number of years, it is reasonable to conclude it is a moderately well-performing business that is rarely able to recover its cost of capital. This would likely reflect the sunk investment in capacity that is underutilised in most years when harvest levels are below the inter-year peaks.

10 VAA has not had access to detailed or confidential information for this study, and has not consulted with stakeholders other than ESCOSA. Accordingly, VAA is not suggesting that Viterra's financial returns, if they exceed these benchmarks, in any way reflect the misuse of its market power.

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Appendix A: Definition of financial returns measures

$$ROIC = \frac{Earnings\ before\ interest,\ \ tax\ \&\ abnormal\ items\ x\ (1 - t)}{Average\ total\ capital}$$

$$ROE = \frac{Net\ profit\ after\ tax}{Average\ equity}$$

$$ROA = \frac{Earnings\ before\ interest\ \&\ tax}{Average\ total\ assets}$$

Appendix B: Comparable companies

Company	Bloomberg Ticker	Country	Description
Listed grains storage			
GrainCorp	GNC AU Equity	Australia	GrainCorp Limited provides grain industry related services in Australia. The Group provides grain and bulk commodities handling and storage for growers, end users and marketing organizations. The Group also operates grain pools, provides transportation services for bulk commodities along with farming products and flour milling and mixing services.
Malteries Franco Belges	MALT FP Equity	France	Malteries Franco Belges operates flour mills and grain storage facilities. The Company oversees the entire malting process from the selection of seed to the delivery of malt to breweries. MFB operates malt houses in Champagne, Lorraine, Beauce-Gatinais, and Bourgogne, and also provides seed to local farmers.
Green Plains	GPRE US Equity	United States	Green Plains Inc. owns and operates ethanol plants located in the Midwest U.S. The Company also markets and distributes fuel grade ethanol, livestock feed, and industrial grade corn oil. Green Plains provides grain handling, storage, and complementary agronomy services to local grain producers through grain elevators located in Iowa, Missouri, Nebraska, and Tennessee.
Hamburger Hafen und Logistik	HHFA GR Equity	Germany	Hamburger Hafen und Logistik AG (HHLA) provides services to the port in the European North Range. The Company's container terminals, transport systems, and logistic services provide a network between overseas port and European hinterland.
Chalmers	CHR AU Equity	Australia	Chalmers Limited provides various bulk transportation and storage services in Australia and New Zealand. The Company operates storage facilities, drop deck equipment to move equipment and bottom dumpers to carry bulk malt and grain. Chalmers also provides private companies and government agencies with the maintenance and servicing of storage facilities.
Ag Growth International	AFN CN Equity	Canada	AG Growth International, Inc., manufactures portable and stationary grain handling, storage and conditioning equipment. The Company's products include augers, belt conveyors, grain storage bins, grain handling accessories, and grain aeration equipment.
Listed ports			
China Merchants Port Holdings	144 HK Equity	Hong Kong	China Merchants Port Holdings Company Limited, through its subsidiaries and associated companies, operates ports, airports, and other container and cargo terminals around the world. The Company also manages toll roads, properties, and other assets.
Qinhuangdao Port Co Ltd	3369 HK Equity	Hong Kong	Qinhuangdao Port Company Limited loads, stores, transports port cargo. The Company's main products include liquid chemicals, iron ore and coal, oil and other cargo, containers and other products.
Rizhao Port Co Ltd	600017 CH Equity	China	Rizhao Port Co.,Ltd. conducts port management and operation businesses. The company provides cargo warehousing, handling, transportation, and transit services. Rizhao Port provides port services for coal, cements, steel materials, minerals, and wood products.
COSCO SHIPPING Ports Ltd	1199 HK Equity	Hong Kong	COSCO SHIPPING Ports Limited, through its subsidiaries, provides ports services worldwide. The Company operates container terminals, and provides container handling, storage, transportation, management, and stevedoring services.

Company	Bloomberg Ticker	Country	Description
Wilson Sons Ltd	WSON33 BZ Equity	Bermuda	Wilson Sons Ltd., through subsidiaries, is a provider of integrated port and maritime solutions. The Company provides a set of services to participants in domestic, international trade and oil and gas industry, and has its principal operations divided into: Container Terminals, Oil & Gas Terminals, Towage, Offshore Vessels, Shipyards, Logistics, and Shipping Agency.
Global Ports Investments PLC	GLPR LI Equity	Cyprus	Global Ports Investments PLC provides terminal operator services. The Company offers import and export logistics operations including oil products, container and other cargo operations. Global Ports operates ports and terminals in Finland, Estonia and Russia.
Santos Brasil Participacoes SA	STBP3 BZ Equity	Brazil	Santos Brasil Participacoes S.A., through its subsidiaries, operates and manages container terminals in ports of Brazil. The Company provides logistics, transportation and distribution services integrated to port terminals.
Port of Tauranga Ltd	POT NZ Equity	New Zealand	Port of Tauranga Limited activities include the provision of wharf facilities, back up land for the storage and transit of import and export cargo, berthage, cranes, tug and pilotage services for exporters, importers and shipping companies and the leasing of land and buildings. The Group also operates a container terminal and has bulk cargo marshalling operations.
Salalah Port Services Co SAOG	SPSI OM Equity	Oman	Salalah Port Services Co SAOG developed a shipping port at Raysut, which serves the largest container vessels and includes dry-dock facilities and a Royal Navy terminal.
Summit Alliance Port Ltd	SAPORTL BD Equity	Bangladesh	Summit Alliance Port Ltd. provide both ICD (Inland Container Depot) and CFS (Container Freight Station) services.
Marsden Maritime Holdings Ltd	MMH NZ Equity	New Zealand	Marsden Maritime Holdings Limited operates a marina port in New Zealand where the Company provides cargo handling, marine salvage, storage and port operation services. The Company owns a fleet of tug vessels for the provision of towage and handling charter services.
Tianjin Port Co Ltd	600717 CH Equity	China	Tianjin Port Co., Ltd. operates the Tianjin Port and provides related services including loading and unloading, storage, and transportation services. The Company also acts as a freight transportation agency.
Tianjin Port Development Holdings	3382 HK Equity	Hong Kong	Tianjin Port Development Holdings Limited operates container terminals in China. The company provides container handling operations, stacking and warehousing services and non-containerized cargo services.
Bintulu Port Holdings Bhd	BPH MK Equity	Malaysia	Bintulu Port Holdings Berhad is an investment holding company. The Company, through its subsidiaries, provides port services at Bintulu Port, Sarawak.
MMC Corp Bhd	MMC MK equity	Malaysia	MMC Corporation Berhad is an investment holding company. The Company, through its subsidiaries and associated company, operates a container port, provides power generation, distributes natural gas, and provides engineering and construction services.

Unlisted			
Co-operative Bulk Handling	N/a	Australia	CBH operations include grain storage, handling, transport, marketing and processing. It is owned and controlled by Western Australian grain growers. Its storage and handling system receives and exports around 90 per cent of the Western Australian grain harvest; it owns its own dedicated rail fleet and four port terminals; and it markets and trades grains in WA and eastern Australia. CBH also owns 50% of international businesses Interflour and Intermalt.
Port of Albany	N/a	Australia	Albany is a bulk products port, with the main trades being grain and woodchip exports. Other smaller trades are the export of silica sand and the import of fertiliser and fuel. Albany Port Authority was a standalone Western Australian Government Business, until it was merged with other regional ports to form the Southern Ports Authority in 2014.
Port of Thunder Bay	N/a	Canada	The Port of Thunder Bay is the westernmost port in the Great Lakes system. Grains are its primary commodity. Thunder Bay Port Authority is one of 19 publicly-owned Canada Port Authorities, which operate commercially as landlord ports, at arm's length from the federal government.

Appendix C: Comparable companies' financial returns

Return on invested capital

FIGURE 2 A: LISTED AND UNLISTED GRAINS STORAGE & HANDLING BUSINESSES

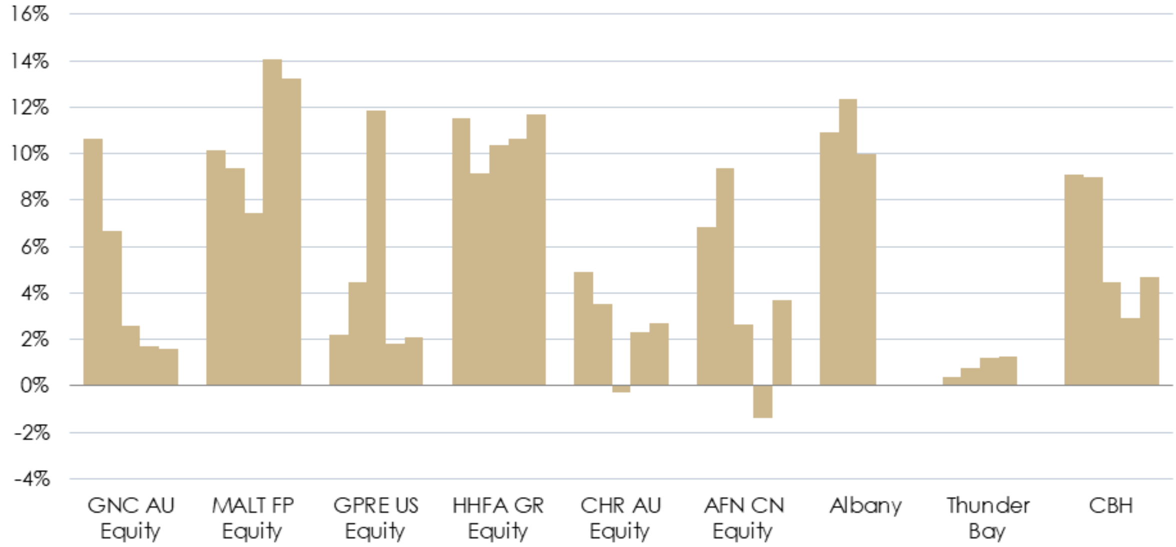
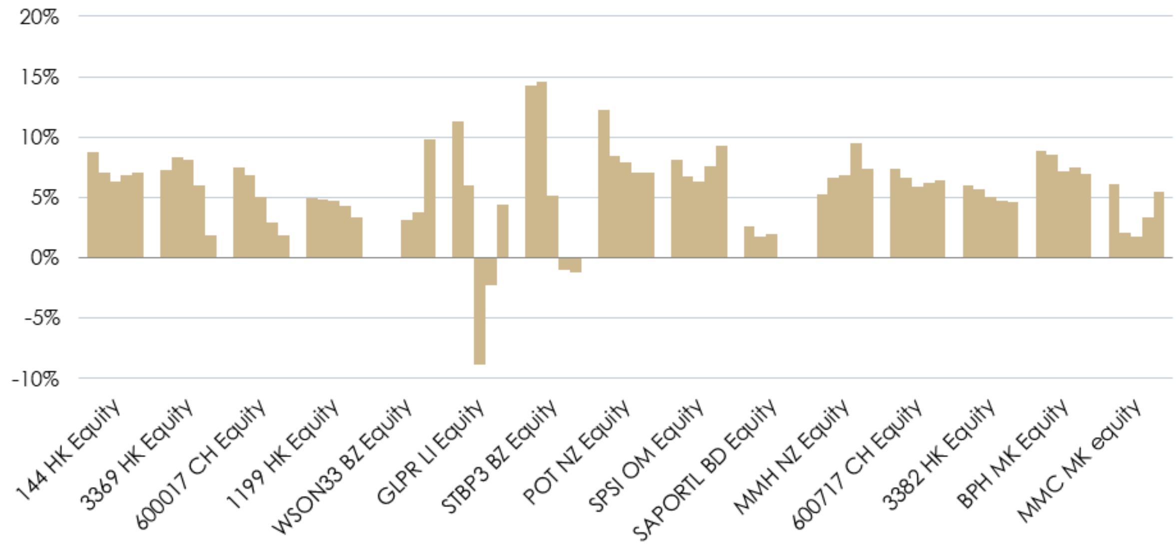


FIGURE 2 B: LISTED PORTS



Source: Bloomberg, VAA analysis on Bloomberg and public information
Albany Port Authority was merged with other regional ports to form the Southern Ports Authority on 1 October 2014, and excluded from the dataset from that point.
Year refers to financial information as at 28 Feb

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Standardised return on equity (30% debt to capital)

FIGURE 3 A: LISTED AND UNLISTED GRAINS STORAGE & HANDLING BUSINESSES

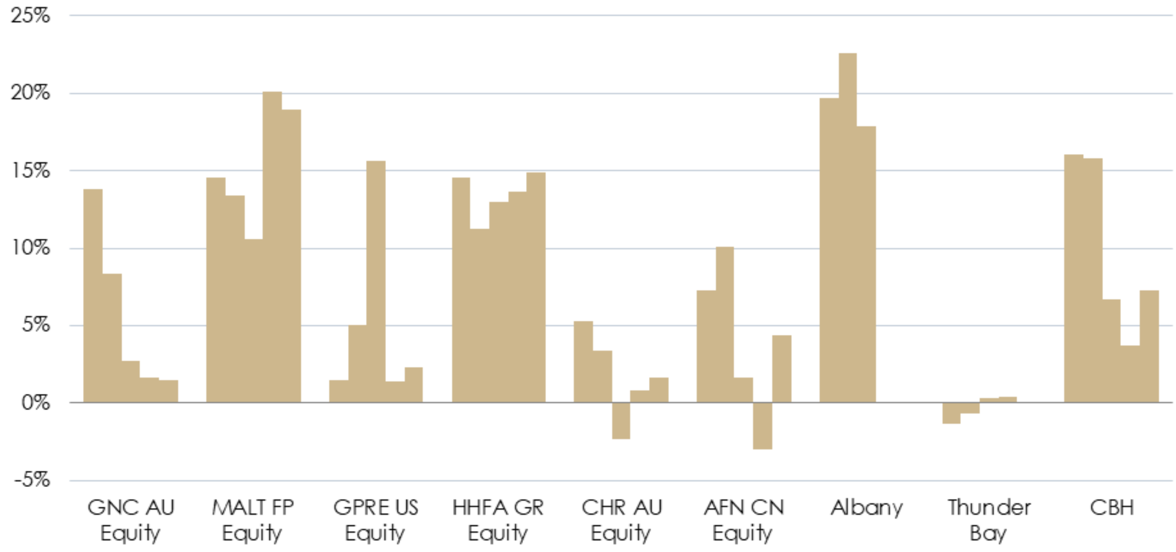
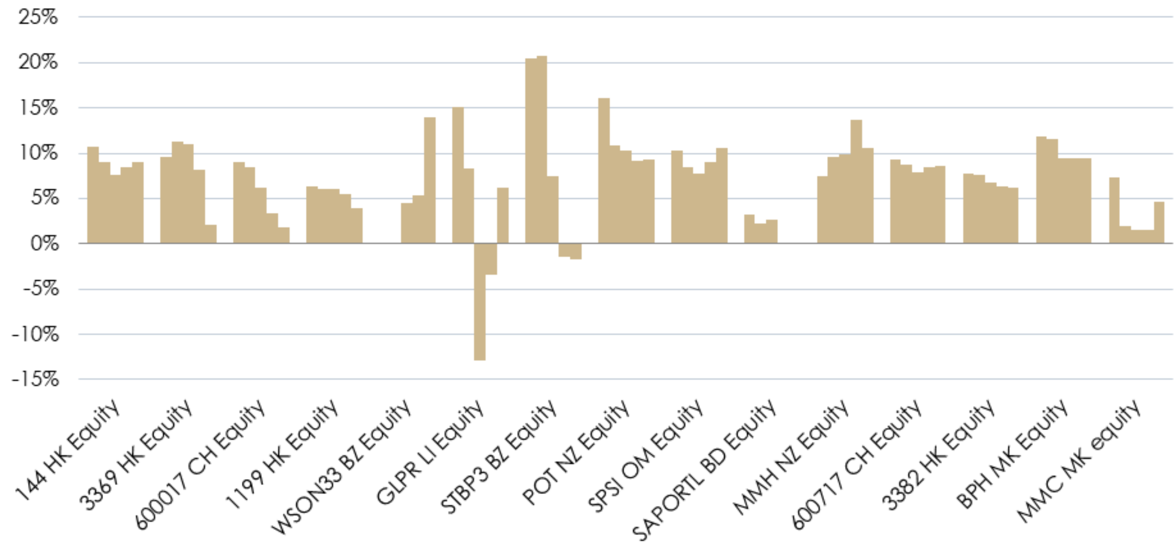


FIGURE 3 B: LISTED PORTS



Source: Bloomberg and VAA analysis on Bloomberg information
Albany Port Authority was merged with other regional ports to form the Southern Ports Authority on 1 October 2014, and excluded from the dataset from that point.
Year refers to financial information as at 28 Feb

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Standardised return on equity (50% debt to capital)

FIGURE 4 A: LISTED AND UNLISTED GRAINS STORAGE & HANDLING BUSINESSES

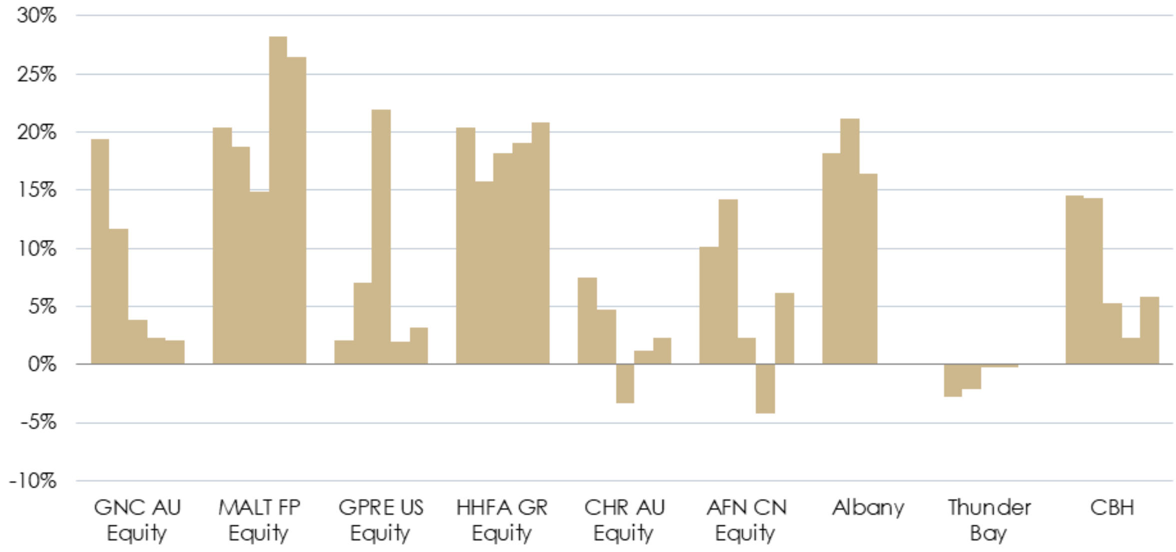
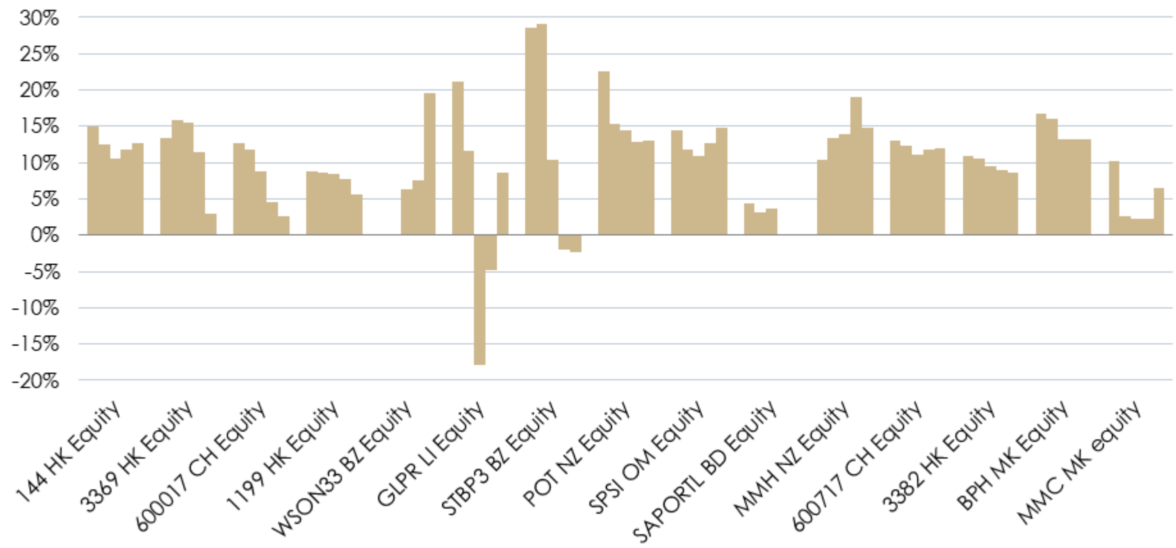


FIGURE 4 B: LISTED PORTS



Source: Bloomberg and VAA analysis on Bloomberg information
Albany Port Authority was merged with other regional ports to form the Southern Ports Authority on 1 October 2014, and excluded from the dataset from that point.
Year refers to financial information as at 28 Feb

Return on assets

FIGURE 5 A: LISTED AND UNLISTED GRAINS STORAGE & HANDLING BUSINESSES

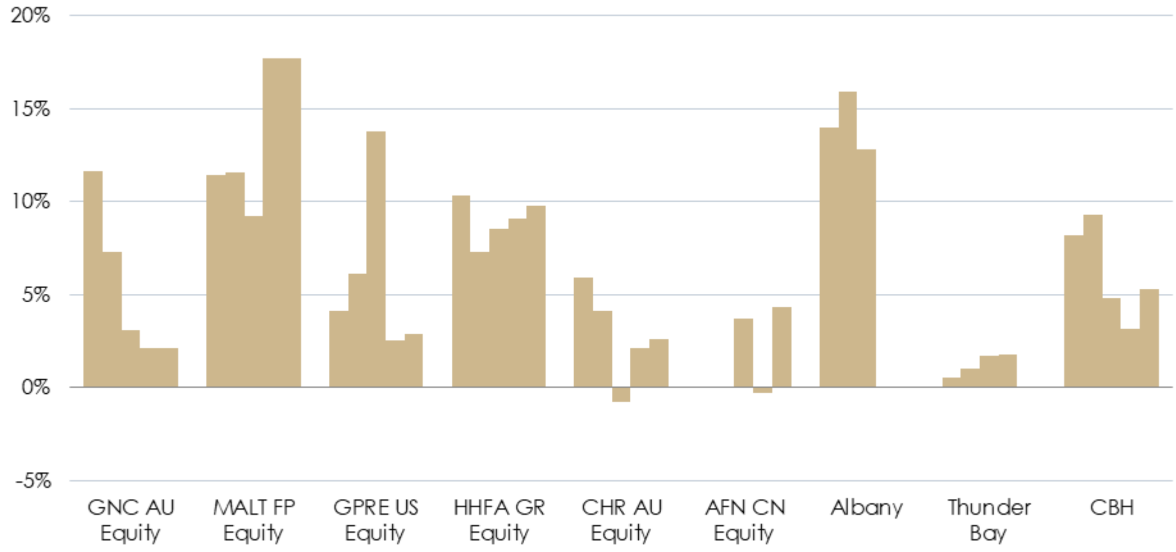
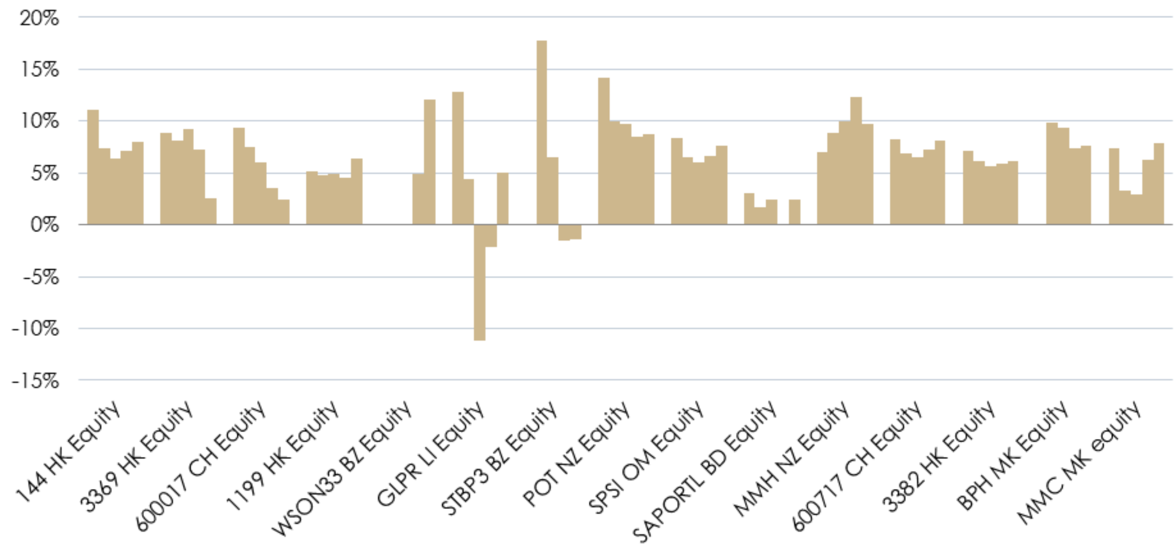


FIGURE 5 B: LISTED PORTS



Source: Bloomberg and VAA analysis on Bloomberg information
Albany Port Authority was merged with other regional ports to form the Southern Ports Authority on 1 October 2014, and excluded from the dataset from that point.
Year refers to financial information as at 28 Feb

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