



Prepared for:

Viterra Operations Pty Limited

Supplement to CRA Report on the Benefits of Code Exemption for Viterra Grain Export Terminals

Public version

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Date: January 9, 2020

This submission provides analysis to supplement Charles Rivers Associates' ("CRA") *Report on the Benefits of Code Exemption for Viterra Grain Export Terminals* ("CRA Report"), prepared for Viterra Operations Pty Limited ("Viterra"), dated 7 November 2019.

EXECUTIVE SUMMARY

Section 3 of the CRA Report summarizes our analysis of the incentives for Viterra to deny access to its port terminals for wheat exporters that compete with Glencore Agriculture. We showed that:

- competing wheat export terminals that are already in operation in South Australia or that are planned to commence operations in early 2020 have capacity to export sufficient wheat volumes to ensure that Viterra will not have an incentive to deny access to its port terminals for competing exporters to benefit Glencore Agriculture, both in terms of total capacity and peak capacity;
- based on the low construction costs of new port terminals in Australia, the threat of entry or actual entry would add further discipline to any attempt by Viterra to deny access to its port terminals for competing exporters to benefit Glencore Agriculture; and
- the profit that would be lost by Viterra if it denied access for competing exporters to its port terminals would exceed any gain in profit that Glencore Agriculture might achieve through lower prices paid to producers.¹ This analysis was based on assumptions about:
 - The reduced prices that Glencore Agriculture might attempt to pay to grain producers if Viterra was to deny access for competing exports to its port terminals. For the purposes of the analysis in the CRA Report, we used an extreme example which would involve Glencore Agriculture achieving a hypothesized increase in trading margins of 333 percent; and
 - The volume of grain that would switch from Viterra terminals to competing terminals in South Australia if Viterra was to deny access for competing exporters to its port terminals. Again, for the purposes of the analysis, we used conservative or "low case" assumptions about the volume of grain that would in all likelihood switch away from Viterra's port terminals).

Under these assumptions – which we described as "conservative" in the sense that they are likely to be more unfavorable to Viterra's case for exemption than the situation that is likely to apply in reality – any denial of access would result in a **reduction** in the combined profits of Viterra and Glencore Agriculture. Therefore, Viterra does not have any incentive to deny access.

To assist the ACCC, this submission provides further clarity about some of the assumptions used in our foreclosure incentive model (i.e., the "vertical arithmetic" in the CRA Report). In particular, this submission provides additional information relating to our assumptions about the available capacity of competing export terminals in South Australia.

We have also updated our foreclosure incentive model with additional information about the port terminal margin that Viterra would lose if it denied access to its port terminals for competing exporters.

[C-i-C]

¹ As in the CRA Report, we use the word "producer" interchangeably with "grower".

In this supplementary submission [C-i-C]. We also utilize both the assumption of a 333 percent increase in trading margins and an even more extreme case that assumes a 500 percent increase in trading margins. Furthermore, for some of the analyses we present, we assume even more conservative assumptions about the volumes of grain that would switch away from Viterra terminals. These alternative analyses demonstrate that, submission [C-i-C] denial of access by Viterra would be unprofitable even if we utilize other assumptions that are even more favorable to Viterra and Glencore Agriculture than the assumptions utilized in the CRA Report.

This submission also addresses the issue of whether competing terminals may have limited “maximum capacity” such that Viterra may have an incentive to deny access for competing exporters during peak periods for exports (i.e. because producers would have more limited alternatives to Viterra terminals during certain periods). We find that there is sufficient maximum capacity at competitor port terminals to export sufficient volumes to make any attempt by Viterra to deny access to competitive traders unprofitable for the combined Viterra/Glencore operations.

CAPACITY AT COMPETING PORT TERMINALS IN SOUTH AUSTRALIA

In the CRA Report, we identified three competing bulk wheat export port terminals in South Australia: LINX and Semaphore in Port Adelaide, both of which are already operating; and T-Ports at Lucky Bay on the Eyre Peninsula, which has been completed and is expected to begin operations shortly.²

In our report, based on the capacity information available for those three competing ports, we presented calculations that showed these competing ports had sufficient capacity to handle the tonnage they already loaded in 2017/2018 plus 60 percent of total competing wheat exports shipped through Viterra’s terminals during that season (i.e., volumes exported by traders that compete with Glencore Agriculture). Specifically, LINX and Semaphore loaded 510,000 tonnes in 2017/2018. Competing traders shipped another 3.3 million tonnes through Viterra’s port terminals during the 2017/2018 growing season (see Table 1 below). Sixty percent of this 3.3 million tonnes is 1.98 million tonnes.³

Consequently, the three competing ports would need a total of 2.49 million tonnes of capacity to satisfy the requirements of our foreclosure incentive model, as presented in the CRA Report (i.e., the 0.51 million tonnes that was shipped through LINX and Semaphore in 2017/2018 plus the 1.98 million tonnes that the foreclosure incentive model assumes would have to be diverted to competing ports).

According to capacity information available at the time the CRA Report was written, LINX had a capacity of between 1 and 1.5 million tonnes (depending on the information and assumptions about loading rates), Semaphore had a capacity of up to 0.82 million tonnes and T-Ports had a capacity of up to 3.6 million tonnes. While the combined capacity of these three ports, as reported in the CRA Report far exceeded the capacity needed to satisfy the requirements of our foreclosure incentive model, in some cases the capacities we reported were theoretical capacities. One of the objectives of this Supplemental Report is

² Note that, in the following analysis, we have excluded consideration of a competing port terminal that is already in operation at Port Pirie. Including the capacity for this terminal would add even more competing port terminal capacity that is available for competing exporters. We understand that ADM has built a bunker site at Port Pirie and received grain for the 2019/2020 harvest and has loaded 2 grain vessels between 14 November and 1 December 2019, totaling approximately 40,000 tonnes. Loading occurs with a mobile ship loader (the same set up as with Semaphore at Port Adelaide).

³ The foreclosure incentive model demonstrates that, in order to render a denial of port access by Viterra unprofitable, only a subset of competing trader port shipments need to be diverted to competing ports (see the CRA Report and calculations presented below in this Supplemental Report).

to refine our estimates of competitor port terminal capacity in order to demonstrate that the conclusions of our foreclosure incentive model are sound and robust.

Table 1 below summarizes competing exporter volumes through South Australian export terminals in the bumper harvest season 2016/2017, as well as in the 2017/2018 season.

**Table 1:
Summary of Competitor Exports from South Australia Port Terminals**

Area	Competitor Exports through All Terminals (mmt)	
	2016/2017	2017/2018
Port Adelaide	1.92	1.83
Eyre Peninsula	1.8	1.2
All South Australia	4.6	3.8

Sources: Volumes are calculated or estimated based on tonnes exported and market shares from the ACCC's Bulk Grain Monitoring Report 2017-2018.

As long as competing port terminals have the capacity to ship sufficient volumes of grain so that exporters that compete with Glencore Agriculture have sufficient alternatives to render any denial of access by Viterra unprofitable, Viterra does not have the ability to prevent those exporters from competing to purchase grain from producers in South Australia (as they would readily be able to export enough wheat through competing port terminals). Accordingly, any attempt by Viterra to deny access to its port terminals would not provide Glencore Agriculture with any ability to reduce the prices that it pays to producers in South Australia.

The CRA Report provided information about capacity at competing terminals, as summarized in Table 2 below. In addition to the three competing port terminals identified in the CRA Report, Table 2 provides information about Cargill's new terminal at Berth 20 Port Adelaide, a port facility that was not included in the CRA Report. Cargill's November 2019 Exemption Application provides the following information about this new terminal:

Cargill has acquired a mobile shiploader and is proposing to develop and commence port terminal services at Berth 20 in Port Adelaide. Cargill anticipates that its operations will be capable of facilitating bulk grain exports from around March 2020. The estimated nominal capacity of Cargill's proposed facility is 300,000 tonnes per annum.⁴

To aid understanding of maximum capacity, it is noted that the highest practical capacity that the proposed facility could possibly reach is 60,000 tonnes a month over a period of 9 months in a year, being 540,000 tonnes annually. This is due to the practical limitations on the amount of capacity that may be provided through the proposed shiploader. At the time of this application, Cargill does not have any storage facilities at Port Adelaide. The current absence of port storage and the consequent need for grain to be trucked in i.e. in accordance with a just-in-time process, does not enable Cargill to increase capacity of the facility beyond the indications made here.⁵

⁴ Cargill Australia Limited, "Application for Exemption under the Port Terminal Access (Bulk Wheat) Code of Conduct, 30 October 2019, p. 3.

⁵ Cargill Australia Limited, "Application for Exemption under the Port Terminal Access (Bulk Wheat) Code of Conduct, 30 October 2019, pp. 3-4.

**Table 2:
Summary of Competitor Terminal Capacity Estimates from CRA Report⁶**

Competitor Terminal	Annual Capacity Estimate (mmt)	Comment
LINX – Port Adelaide	1	Based on 12x maximum monthly throughput (83,248 tonnes June 2018)
	1.5	Potential capacity per AEGIC
Semaphore – Port Adelaide	0.820	Based on 12x maximum monthly throughput (68,336 tonnes April 2017)
Cargill Berth 20	0.300	Nominal capacity
	0.540	Highest practical capacity (based on 60,000 tonnes/month for 9 months)
Total Port Adelaide	2.12 – 2.86	
T-Ports – Lucky Bay	0.60	Capacity “based on securing up to 600,000 mt per annum”. (T-Ports’ 2014 exemption application)
	3.6	Extrapolating from a mean operational loading rate of 10,800 tonnes per day, across seven days a week for a full year, the terminal has a maximum loading capacity of 3.6 million tonnes per year. (T-Ports’ 2014 exemption application)
Total South Australia	5.72 – 6.46⁷	

A comparison of Tables 1 and 2⁸ shows that, based on published and/or extrapolated capacity figures, competing port terminals have more than enough maximum capacity to handle the historical volumes of competing exporters, both regionally (Port Adelaide region and the Eyre Peninsula) and for South Australia as a whole. However, in order to be more conservative, the analysis in this Supplemental Report is based on lower estimates of competitor port capacity, in part utilizing information from the Cargill Berth 20 Exemption Application that maximum practical capacity is based on nine months of operation at maximum achieved and/or maximum projected capacity.⁹ Applying this information to the other three competing port terminals:

⁶ The CRA Report did not include information for Cargill Berth 20.

⁷ The total utilizes the extrapolated capacity for T-Ports—Lucky Bay of 3.6 million tonnes. We also use lower capacity estimates for the purposes of our foreclosure incentive model analyses (see below). We do not use the figure of 0.60 million tonnes as the annual capacity for this port, as that figure represents a projected commercial case, not the port’s capacity.

⁸ Note that Table 2 does not include any consideration of the proposed Cape Hardy port on the Eyre Peninsula. This proposed port recently received a Federal Government commitment of more than \$25 million for road upgrades. See <https://minister.infrastructure.gov.au/mccormack/media-release/25-million-support-cape-hardy-port-precinct>.

⁹ Using this “nine month rule” does not necessarily mean that the port operates for nine months, but allows for both downtime and for maintenance periods at the ports.

- Implied practical capacity for LINX—Port Adelaide is estimated to be 0.75-1.5 million tonnes (the former figure based on nine times maximum achieved monthly throughput,¹⁰ the latter based on AEGIC information);
- Implied practical capacity for Semaphore—Port Adelaide is estimated to be 0.615 million tonnes (nine times maximum achieved monthly throughput);
- Implied capacity for Cargill Berth 20 is 0.54 million tonnes (based on the Exemption Application information); and
- Implied capacity for T-Ports—Lucky Bay is 1.93-2.7 million tonnes (based on “mean operational” daily loading rates of 10,800 tonnes per day, multiplied by 9 months, for 5 or 7 day loading per week). Note that the “commercial estimates” of 0.6 million tonnes for this port are based on a business case that is not intended to designate maximum or maximum practical capacity.

These more conservative estimates imply that annual competing port capacity at Port Adelaide is between 1.905 and 2.655 million tonnes (approximately equal to or greater than 2017/2018 total exports by competing exporters from Port Adelaide). Total competing port capacity is 3.835 to 5.355 million tonnes (i.e., including T-Ports capacity), the lower figure slightly higher than the total competitor exporter export shipments during the 2017/2018 growing season and much more than the 1.83-2.49 million tonnes required to satisfy the requirements set forth in the foreclosure incentive analysis that is presented below.

We also understand that the ACCC has questioned whether the T-Ports terminal at Lucky Bay is likely to have higher fees compared to Viterra port terminals because of what the ACCC termed ‘double handling’. However, we note that, according to T-Ports “(w)e require a fraction of the capital expenditure to build shallow-water ports compared to a deep-water facility and operating expenses are highly competitive in comparison.”¹¹ Accordingly, the expectation is that T-Ports’ fees will not be materially higher than fees at Viterra port terminals. This terminal now has grower receival storage and Viterra estimates that it has received approximately 100,000 tonnes for the year to date. Based on public statements, we expect that the terminal will begin full operations around March or April 2020.

The Lucky Bay terminal will also provide a competitive alternative to Viterra’s upcountry sites, through a combination of storage at the terminal and producer investment in on-farm storage:

One of the major longer-term changes anticipated is that some farmers will move to on-farm storage for the efficiencies it will generate for their businesses. This would generate supply chain cost savings by being able to deliver directly to port.

This will occur through avoiding the up-country storage charges and using farmer-owned truck assets. This will take costs out of their businesses, making them more competitive against the ‘real’ competition – other grain exporting nations.¹²

The T-Ports Exemption Application explains further:

¹⁰ Achieved monthly maximum throughput is likely a conservative measure of maximum monthly capacity. A comparison of the AEGIC information with maximum monthly throughput for LINX—Port Adelaide tends to confirm that monthly maximum achieved throughput is a conservative measure of capacity.

¹¹ T-Ports website at <https://tports.com/about/>.

¹² T-Ports website at <https://tports.com/about/>.

T-Ports has developed an innovative business model that gives equity in the business to growers. 120 Growers in the catchment area have signed expressions of interest, through which they receive \$3 in shares for every tonne of grain delivered in the first 7 years of operations. They have signed up for 377,000 tonnes per annum, or a total of approximately 15% of total Equity.¹³

The facility offers significant domestic road freight advantages for much of the eastern Eyre Peninsula grain growers by bringing port services 175km closer to growers.¹⁴

The development of an alternative supply chain from farm gate to ship loading provides competition in the upstream market. Growers will now have the choice between two bulk storage providers and two export ship loading providers. In addition to storage facilities at Lock and Lucky Bay, T-Ports will also offer an off-farm accumulation service, direct to ship loading service, supporting the development of effective on-farm storage options.¹⁵

T-Ports operations will be supported by the development and operation of grain receipt and storage facilities at Lock (132km from Lucky Bay) and bunker facilities at Lucky Bay (2km from berth). Lock facilities include sampling, weighbridge and 150,000mt of bunker storage. Lucky Bay facilities include sampling, weighbridges and 360,000mt of bunker storage.¹⁶

As such, it is anticipated that a mean operational rate of 10,800 tonnes per day, equating to 5.1 days loading time, is achievable. Extrapolating this across 7 day operations for a full year equates to a loading capacity of 3.6Mill tonnes, however T-Ports commercial estimates are based on securing up to 600,000mt per annum.¹⁷

Ports in Victoria

As part of the background analysis conducted in conjunction with the CRA Report, we determined that exporting through terminals in Victoria, specifically terminals in Melbourne, Portland and Geelong, may be commercially viable alternatives for at least some grain produced in South Australia. Particularly for grain produced in eastern South Australia near Port Adelaide and to the south and east, the distance to terminals in Victoria is shorter, and, as a result, the freight cost advantage of terminals in South Australia is lower.

Any attempt to reduce prices to producers near Port Adelaide would likely cause significant substitution of volume towards ports in Victoria, which would further reduce the incentive for Viterra to deny access to exporters that compete with Glencore Agriculture at its Port Adelaide terminals. However, the revised foreclosure incentive model analyses we present below do not include any consideration of potential export shipments for South Australian wheat through ports in Victoria. This is another conservative assumption.¹⁸ The option of delivering wheat to domestic users and containerized export terminals provides an additional constraint on Viterra pricing.

13 T-Ports Application for Exemption at p. 4.

14 *Ibid.* at p. 4

15 *Ibid.* at p. 6

16 *Ibid.* at p. 3

17 *Ibid.* at p. 2

18 See Appendix A for a brief summary of our analysis of the feasibility for some South Australian producers to export through ports in Victoria.

Viterra Terminal Share of South Australia Production is Declining

Viterra estimates that, between the 2008/2009 and 2017/2018 seasons, on average between 75 percent and 82 percent of South Australian grain production was exported through Viterra port terminals, with most of the remainder of production being sold into domestic users, although in 2016/2017 and 2017/2018 approximately 7 percent of South Australia production was exported through competing terminals in South Australia (LINX and Semaphore). However, there was a substantial increase in shipments to domestic users in 2018/2019, which is expected to continue in 2019/2020, such that the share of South Australian grain production that is exported through Viterra terminals was (and/or is anticipated to be) approximately 50 percent in these years.

This recent shift towards shipments to domestic users indicates that producers in South Australia have a range of options in addition exporting grain (either through Viterra's export terminals or competing export terminals).

[C-i-C]

REVISED VERTICAL ARITHMETIC

We have updated the expected effects of denial of access on the combined profits of Viterra and Glencore Agriculture, assuming that Viterra's terminal margin is [C-i-C].

The CRA Report showed that if Viterra's terminal margin is assumed to be \$10/tonne, 60 percent of Viterra volume switches to competing terminals, and Glencore Agriculture's exporting margin increases by \$5/tonne (a 333 percent increase in trading margin), then the combined Viterra/Glencore Agriculture profit falls by \$720,000 annually, or 1.3 percent.

Each of these assumptions is very conservative for the reasons set out below:

- Any terminal margin is likely to be significantly higher than \$10/tonne, particularly once one accounts for margins associated with other, related port services. As discussed above, a higher port terminal margin implies a higher loss to Viterra if it was to deny access for competing exporters to its port terminals, all other things being equal;
- Given the availability of capacity at competing export terminals, it is likely that more than 60 percent of Viterra's volume of export shipments by competitive exporters would switch to competitor terminals (and in the long run would incentivize competitor port terminals to increase capacity further); and
- It is unlikely that Glencore Agriculture's trading margin would increase by 333 to 500 percent assumed for the purpose of calculating profit impact in our foreclosure incentive model (particularly as competing exporters would continue to compete for the purchase of grain from South Australian growers and export from competing terminals). If Glencore Agriculture were to decrease the prices it offers to growers by this magnitude, it is likely that growers would simply supply grain to other exporters, traders, brokers or to domestic users or for containerized export.

The calculations present in the CRA Report are repeated in the third column (labeled "CRA Report") in Table 4.

Columns 4 through 7 in the table report our calculations [C-i-C] with different assumptions about the volume that switches to alternative ports and the margin increase that can be sustained by Glencore Agriculture.

[C-i-C]

These calculations strengthen our initial finding that Viterra will have no economic/financial incentive to deny access to its terminals for competing exporters.

[C-i-C]

ADEQUACY OF COMPETITOR PORT MAXIMUM CAPACITY

We understand that the ACCC has questioned whether the CRA Report may overstate the ability of competing port terminals to handle the volumes of grain that our model assumes would be diverted to them by competing exporters, particularly during peak exporting periods.

This question appears to arise from one or both of the following presumptions:

- Wheat must be exported shortly after harvest since it can be stored for only a limited period of time, and, since harvesting is concentrated in certain times of the year, substantial export terminal capacity is required during these periods; and/or
- Exporters seek to take advantage of periods of higher pricing in export markets and demand for export capacity is high during these periods.

The ACCC has questioned whether either or both of these factors would lead to limited capacity at competitor terminals during peak exporting periods and would therefore improve Viterra's incentive to deny access to competing exporters, at least during these peak exporting periods.

Wheat can be stored for a lengthy period without quality deterioration if stored in proper conditions. For example, Viterra generally carries about 10 percent to 15 percent of grain from one harvest into the next season.

Appendix B contains charts showing, for each of the six Viterra export terminals in South Australia, Viterra grain exports for each month of the year averaged over 2013/2014 to 2017/2018. These charts show that Viterra grain exports are not concentrated in only one or two months, but rather that significant export volumes are loaded throughout the year.

Based on information provided on actual achieved maximum monthly loading or projected monthly loadings as per Exemption Applications, the three competing Port Adelaide ports would have a maximum monthly capacity of as follows:

- LINX—Port Adelaide has a maximum monthly capacity of 83,248 tonnes, as per its maximum recorded monthly loading (see Table 2 above);
- Semaphore – Port Adelaide has a maximum monthly capacity of 68,336 tonnes, as per its maximum recorded monthly loading (see Table 2 above); and
- Cargill Berth 20 at Port Adelaide has a maximum monthly capacity of 60,000 tonnes, as per its maximum projected monthly loading (see Table 2 above).

Since these figures are based on maximum recorded loadings in two of the three cases, not maximum achievable capacity, this is a conservative assumption.¹⁹ The total maximum monthly capacity for competing ports at Port Adelaide is therefore more than 211,000 tonnes (i.e., the sum of the three maximum capacities noted immediately above). Consistent with our assumption that maximum annual capacity is nine times maximum monthly capacity, these figures imply annual capacity for the three Port Adelaide competitor ports of about 1.9 million tonnes (i.e., nine times maximum monthly capacity). As per the analysis we present above, the T-Ports Eyre Peninsula port would have a maximum monthly capacity of at least about 214,000 tonnes (based on 5 day per week operation and the maximum daily loading rate noted in Table 2 above) or 300,000 tonnes (assuming seven day per week operation) and an annual capacity of about 1.93 to 2.7 million tonnes (again based on nine times maximum monthly loading rates).²⁰

The combined annual capacity of these four competing ports of about 3.8 to 4.6 million tonnes is far in excess of the 1.83 to 2.49 million tonnes²¹ required to satisfy the assumptions used in the foreclosure incentive model calculations. Moreover, the maximum monthly capacity of these competitor ports is 0.426 to 0.512 million tonnes (i.e., the sum of the maximum monthly capacity for T-Ports and the three competitor Port Adelaide ports). This allows for at least 17 to 21 percent of annual required diversions²² to be exported in any one month.²³

Given the information on average monthly exports from Viterra's ports over the past several years (see Appendix B), it is apparent that sufficient capacity is available at these competing ports to handle peak month requirements associated with the assumed diversions.

Further confirmation of the adequacy of maximum month capacity at competitor ports (i.e., in addition to the information presented in Appendix B) is provided by the pattern of outturns at Viterra's up-country

¹⁹ For example, using the assumption from the Cargill Berth 20 Exemption Application, that annual capacity is equivalent to nine times maximum monthly capacity (which allows for downtimes and maintenance at the facility), implies a maximum annual capacity for LINX at Port Adelaide of about 750,000 tonnes. This figure is only half of the maximum annual capacity for this port according to the figure cited by AEGIC. This is another conservative assumption.

²⁰ See Section above "Capacity at Competing Port Terminals in South Australia" for the derivation of these figures on maximum daily loading rates, maximum monthly capacity and annual capacity.

²¹ This is the 0.51 million tonnes loaded by LINX and Semaphore in 2017/2018 plus the assumed 1.32 to 1.98 million tonnes that the foreclosure incentive model assumes is the maximum required volume to be diverted to competitive ports in order for a Viterra foreclosure strategy to be unprofitable.

²² These percentages were derived as follows. The minimum percentage (17 percent) assumes maximum monthly capacity of 0.426 million tonnes (including assuming five day per week operation at T-Ports) and maximum required annual diversion to competitor ports of 2.49 million tonnes per annum. The maximum percentage (28 percent) assumes maximum monthly capacity of 0.512 million tonnes (including assuming seven day per operation at T-Ports) and maximum required annual diversion of 2.49 million tonnes.

²³ These calculations are based on an annual need for export of 2.49 million tonnes from competing ports and do not take into account the additional capacity available at Port Pirie, nor do they take into account any other competitive port capacity additions (including other proposed competitive ports), nor do they take into account any additional volumes that could be exported through ports in Victoria, nor do they take into account the potential to divert additional volumes to domestic or container sales. The percentages would be greater if 1.83 million tonnes were used as the annual loading requirement for competing ports (see Table 4 above).

storage sites. Table 5 presents this information in percentage terms for each month from 2014/15 to 2018/19. While out-turns are higher on average during the December to July period, out-turns are significant in every month and the average percentage is well within the 17-21 (or greater)²⁴ percent maximum monthly loading capacity we calculate for competitor ports.

[C-i-C]

²⁴ Again, these percentages are based on an annual need for 2.49 million tonnes exported from competing ports. The percentages would be higher if the annual requirement were just 1.83 million tonnes.

Appendix A: Alternative Port Terminals in Victoria

In this Appendix we show that some producers in South Australia, and in particular in the area to the east of Port Adelaide, can economically transport wheat to bulk export terminals in Victoria should Glencore Agriculture attempt to reduce producer prices and deny access to Viterra terminals for competing exporters. Freight cost to ports in Victoria is higher for producers in South Australia, but higher prices in Victoria make up the difference for some producers such that transporting to grain to Victoria can be economical, at least in some circumstances.

Estimated Freight Costs

We constructed a linear regression model using Viterra's Export Select freight rates²⁵ and road distances²⁶ to estimate the cost of freight between an up-country storage location and an export terminal. The equation is a linear relationship between freight cost and distance, and the model provides an estimate of the fixed cost of freight and the freight cost per kilometre. Figure A1 is a scatter plot of Export Select freight costs and distances between Viterra storage facility and port.²⁷ The estimated intercept term is 8.1351, which is interpreted to mean that the fixed cost of freight (e.g. loading and other handling costs, which are incurred irrespective of the distance shipped) is \$8.14 per tonne. The estimated slope term is 0.0792, which is interpreted to mean that the incremental freight cost for every additional kilometre shipped after is \$0.079/tonne.

For reference, the distance from Keith (a Viterra up-country receival site) to Port Adelaide is about 240 kilometres, while the distance from Keith to Portland, Victoria, is about 320 kilometres. Assuming our \$0.079/tonne.km freight cost, the incremental cost of freight to Portland from Keith (not including the fixed cost component, which must be incurred wherever the product is transported) is about \$6.30/tonne. This is similar to the hypothetical reduction in price to producers we have assumed for our foreclosures incentives model and demonstrates that some producers (and the exporters that purchase grain from them) in certain parts of South Australia, in addition to having the option of exporting through a competitive port at Port Adelaide, would also have the option of exporting through Victoria.²⁸ Our foreclosure incentive model does not take into account this additional option, in keeping with our objective of utilizing conservative assumptions.

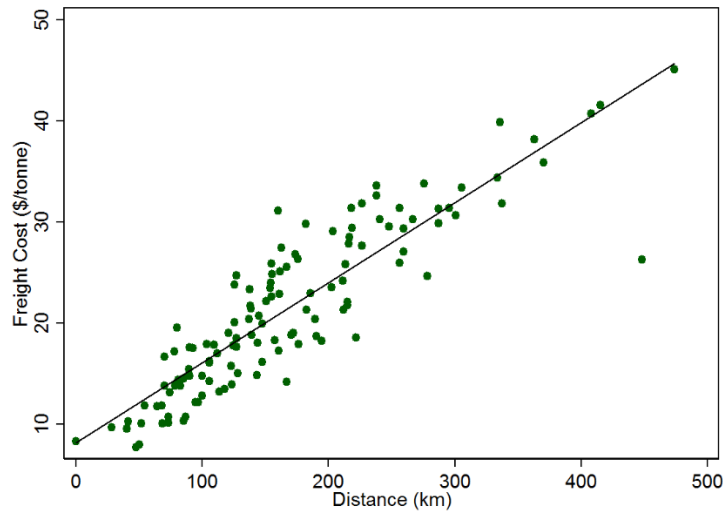
²⁵ We use Viterra's Export Select rates for the 2018/2019 season. Available at: <http://viterra.com.au/index.php/export-select-freight-rates/>

²⁶ Distances from storage locations to terminals were obtained using Google Maps.

²⁷ We removed four storage location/terminal pairs that have disproportionately low freight costs for the distance between locations. These pairs are as follows: Redhill/Wallaroo, Gladstone/Wallaroo, Redhill/Outer Harbor, and Gladstone/Outer Harbor.

²⁸ The distance to Geelong or Melbourne is significantly further than to Portland for South Australian producers, but, in some circumstances, price differentials between South Australia and those Victoria ports may be sufficient to make shipment profitable (see below).

**Figure A1:
Scatter Plot of Freight Rates and Distances Shipped**



Sources: Google Maps distance calculations;
<http://viterra.com.au/index.php/export-select-freight-rates/>

[C-i-C]

Profitability of Delivering to Victoria

A producer at a given location (or an exporter purchasing from the producer at a given location) will deliver its grain to sites in Victoria rather than Viterra if the net return for shipments to Victoria—which is the delivered price in Victoria less freight to Victoria from the producer location—exceeds the net return to Port Adelaide.²⁹ Some producers in South Australia may receive a higher return from selling in Victoria. Again, this factor has not been taken into account in our foreclosure incentive model because we have tried to be very conservative in our analysis.

²⁹ This is an approximation as the actual net return is based on freight on delivery to storage, if applicable, then freight from storage to the terminal. For the purposes of our model, we assume producers are located at the storage location so freight is directly from storage.

[C-i-C]