

The Cost of Australia's Bulk Grain Export Supply Chains

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Key messages

- Supply chain costs are roughly equivalent to 30% of a grain producer's cost of production. Using the example of wheat, travelling 200 km from farm to port, supply chain costs start at A\$60–75/t. As such, supply chain costs are generally the single largest cost item for a grain producer.
- Within grain supply chains there is limited disclosure of costs and profit margins, although indications are that profit margins differ along the supply chain.
- There is a wide range in the efficiency of receival and storage sites across Australia.
- Port fees have risen at a faster rate than storage and freight fees.
- Australia has an internationally competitive shipping advantage into south-east Asia.
- There is limited transparency in shrink and dust deductions. Within grain supply chains there is variation in deductions for shrink and dust between regions and crop species. The technical and financial basis for the variation in these deductions is not well documented. Some costs in the supply chain, such as research and development (R&D) levies, or end point royalties (EPR) attract far more scrutiny and media attention than dust and shrinkage.

Introduction

The term export grain supply chain describes the system that collates grain from farms and then distributes it to overseas end users. There are a set of processes that make up the supply chain, including storage, handling, freight and shipping as well as ancillary services such as financing, regulation and quality testing. Each of these is critical to delivering grain to end users, but each part involves a cost. Maintaining the balance between low cost and high service is critical to the competitiveness of the industry in the global market. A low cost supply chain that does not deliver timely, high quality grain may impose unseen costs, whereas a high cost supply chain needs offsetting reductions in cost, most likely by the production sector, to maintain competitiveness in international markets.

This paper summarises a report on the costs of Australia's export grain supply chain. The full report can be found at [AEGIC's website](#).

The producer's perspective

From a grain producer's perspective, grain supply chain costs depend on several factors, but chiefly the proximity of a receival point to the point of harvest, its distance to port, the mode of grain transport and the grain handling, storage and loading charges throughout this supply chain. In general, supply chain costs in Australia for wheat, travelling 200 km from farm to port, start at A\$60–75/t. As such, supply chain costs are often the single largest cost item for a grain producer in a typical year.

Unique features of Australia's grain supply chains

A key consideration in understanding the efficiency and value of the Australian export grain supply chain is the capacity to export grain in the December to May marketing window. In this period the supply from competitors in the northern hemisphere is waning, and there are

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often premiums and opportunities available in the Asian markets. There is significant benefit to traders in shipping during this period, with benefits realised by producers through increased prices. These seasonal demands create competition for grain, rail and port services and shipping slots. Servicing these demands for throughput whilst providing for and managing multiple segregations in a full supply chain is a major challenge for bulk handlers.

Supply chains in Western Australia (WA) and South Australia (SA) are structured to deliver grain one way to port, as about 85–95% of the grain produced in these two States is exported. By contrast, about 50% of grain grown in eastern Australia is consumed locally, which results in grain travelling in various directions, utilising numerous modes of transport.

Australia's volatile grain production, due to seasonal factors, increases freight and logistics costs along the supply chain — excess capacity is required to accommodate large harvests following favourable seasons. Seasonal conditions also can affect the range and composition of grain quality, impacting on grain segregation costs. Having the capability and capacity to spatially and temporally react to a wide range of logistic requirements also creates additional costs. Volatile production also poses problems for exporters keen to affordably lock-in freight and shipping requirements in advance of harvest.

By comparison, mining companies through their infrastructure investments and control of volumes from mine sites, can better control the timing of shipments, which leads to increased efficiency and much lower freight and logistic costs. Mining port and freight costs can be as low as a quarter of the cost of grain port and logistic costs.

Three large bulk handlers are dominant players in Australia's grain supply chains — Cooperative Bulk Handling (CBH) in WA, Glencore/Viterra in SA (subsequently referred to as Viterra) and GrainCorp in eastern Australia. Each of these companies owns integrated supply chains, including storage sites, rolling stock, ports, and exporting and marketing businesses in discrete regions. CBH handles 90–95% of the grain produced in WA and Viterra handles approximately 80% of the grain produced in SA. Both companies export around 45% of the grain in their respective states. By comparison GrainCorp, which operates in an environment with more competition at port and storage, handles 75% of east coast grain and accounts for less than 30% of grain exports from that region. This is in part due to the GrainCorp domestic investment in crushing, malting and milling facilities. Other significant bulk handlers include Cargill, with grain handling capacity in NSW, Vic and SA, and Emerald with handling capacity in Vic. While the bulk handlers dominate the storage and transport of grain, 50–70% of the grain is exported by other grain marketers in any season. This reflects the intense competition in grain trading in international markets.

Grain Storage and Receival

There is sufficient grain storage capacity across most of Australia to cater for a range of seasonal outcomes. There is about 55 MMT of bulk handling storage capacity at 623 sites across Australia. Combined with an estimated 15 MMT of on-farm storage capacity, Australia has capacity to store the equivalent of two years' average grain production. As a result, grain storage fees are kept relatively low and are falling in real terms. Many sites have a throughput ratio of one or less. Despite this there is an increasing trend for on-farm storage. This is particularly prevalent in eastern Australia as producers look to sell direct to local buyers, avoiding delays and associated costs at harvest due to slow receival turnaround times, while also maximising their marketing opportunities.

There is a wide range in the efficiency of receival and storage sites across Australia. Firstly, there is a broad range in the available storage capacities of receival sites and secondly, the train loading times can differ markedly.

Viterra has introduced a tier-based pricing structure for the 2013 winter crop harvest, applying a \$0.75/t surcharge to Tier 2 (less efficient) receival sites. This may encourage producers to deliver to more efficient sites, yet possibly lead to further site rationalisation. Such rationalisation will cause remaining sites, on average, to receive higher volumes, thereby lowering per tonne fixed costs, increasing capacity turnover ratios and providing the

opportunity to increase site efficiency. However, offsetting these lower unit costs of receipt will be additional transport and road damage costs incurred by grain producers hauling their grain over longer distances. Hence, some cost shifting will accompany any consolidation of receipt sites.

Transparency in Costs and Returns?

Disclosure of profit margins along the grain supply chain is limited, however there are indications that profit margins differ along the supply chain. Bulk handlers now consolidate storage, freight and ports into one business segment for reporting purposes. As a result it is difficult to determine if pricing along the supply chain solely reflects costs. Viterra is part of the international conglomerate Glencore Xstrata and its SA bulk handling operations are not separately reported. The SA accounts are consolidated with other agricultural businesses in the group, making monitoring of the profitability of its supply chain segments difficult.

Due to the regional concentration of port ownership by grain handlers, most grain ports are subject to access agreements with required approval from the Australian Competition and Consumer Commission (ACCC). The ACCC are in the process of rewriting the port access undertakings to replace them with mandatory codes of conduct, though they are yet to be finalised (as of January 2014). Port facilities are operated under a fee-for-service arrangement to ensure the local natural monopoly position of a bulk handler does not affect the ability of other accumulators to access the port facilities. The presence of new port facility investors signals that port margins are sufficient to attract new entrants. Newcastle Agri-Terminal (NSW), Bunge in Bunbury (WA) and Heilingjiang Feng Agricultural in Albany (WA) are currently constructing port terminal facilities.

Ports and Shipping

The Kwinana and Port Kembla terminals are the fastest loading terminals in Australia with capacities of 5,000t/hr. This loading rate is impressive by international standards — by comparison Canadian ports have maximum loading capacities of 3,400t/hr. However, congestion occurs at Australian ports during what exporters term the 'marketing window' during the first few months of the year when supplies in the northern hemisphere are generally running low. This rush to gain the typically higher price means shipping slots during this period are in high demand and limited in availability. As a result, shipping slot auctions and management systems have been introduced.

Port fees have risen at a faster rate than storage and freight fees. Producers are typically quoted prices on site, or track or free-in-store (FIS) at the port, so the port charges are already deducted from the price offered by the grain marketer or buyer. As a result producers do not see the itemised port fees.

Grain deliveries are subject to shrinkage and dust deductions. These costs vary between regions and crop species and shrink can be charged to the producer twice if grain is delivered into port by a third party. The technical or financial basis for the variation in these rates appears not to be well documented. Some costs in the supply chain, such as research and development (R&D) levies, or end point royalties (EPR) attract far more scrutiny and media attention than some other costs of similar magnitude, such as dust and shrinkage.

Beyond the ports, Australia has an internationally competitive shipping advantage into south-east Asia (Indonesia, Malaysia, Thailand and Vietnam). Sea transit time to Indonesia is 6.5 days from WA and 13.5 days from NSW. This equates to 25–50% of the transit time to Indonesia from ports in the United States of America, Canada or the Ukraine. As a result, Australian bulk freight rates are a third to half those from the Americas, translating to a current bulk freight advantage of about US\$15–22/t. However, this advantage is sensitive to the magnitude of international shipping freight rates.

Australia does not have significant shipping freight distance (and therefore cost advantages) over the west coast of North America into north Asian countries, such as China, Japan and South Korea. The cost difference for bulk freight is currently only US\$1–2/t, however

Australia does have a significant freight advantage over the US Gulf and Ukraine into north Asia with sea freight distances and transit times from the US Gulf and Ukraine to north Asia double the transit time from Australia.

Regional Comparison of Supply Chain Costs

Regional differences in supply chain costs in 2013–14 are illustrated by comparing farms 200 km from port, which produce wheat sold for \$320/t FOB after three months of grain storage (see Figure 1). For this uniform case study scenario, the post-farm-gate costs per tonne of wheat were: \$58, \$69, \$73, \$70 and \$72 for WA, NSW, Qld, Vic and SA respectively. WA and SA had the lowest and highest supply chain costs respectively.

There are some sound and legitimate reasons for these cost differences. The cost structure in each jurisdiction is influenced by many factors, some unique to that region. Using these cost comparisons to make judgments about the management and operation of grain supply chains in any region is unwise. For a variety of reasons each region has unique cost structures, so great care is needed in drawing inferences from any regional comparison.

Acknowledgments

Many thanks to those in the industry who have generously contributed to this report through interviews and reviews of drafts of the report. Their time, effort and guidance has been much appreciated.

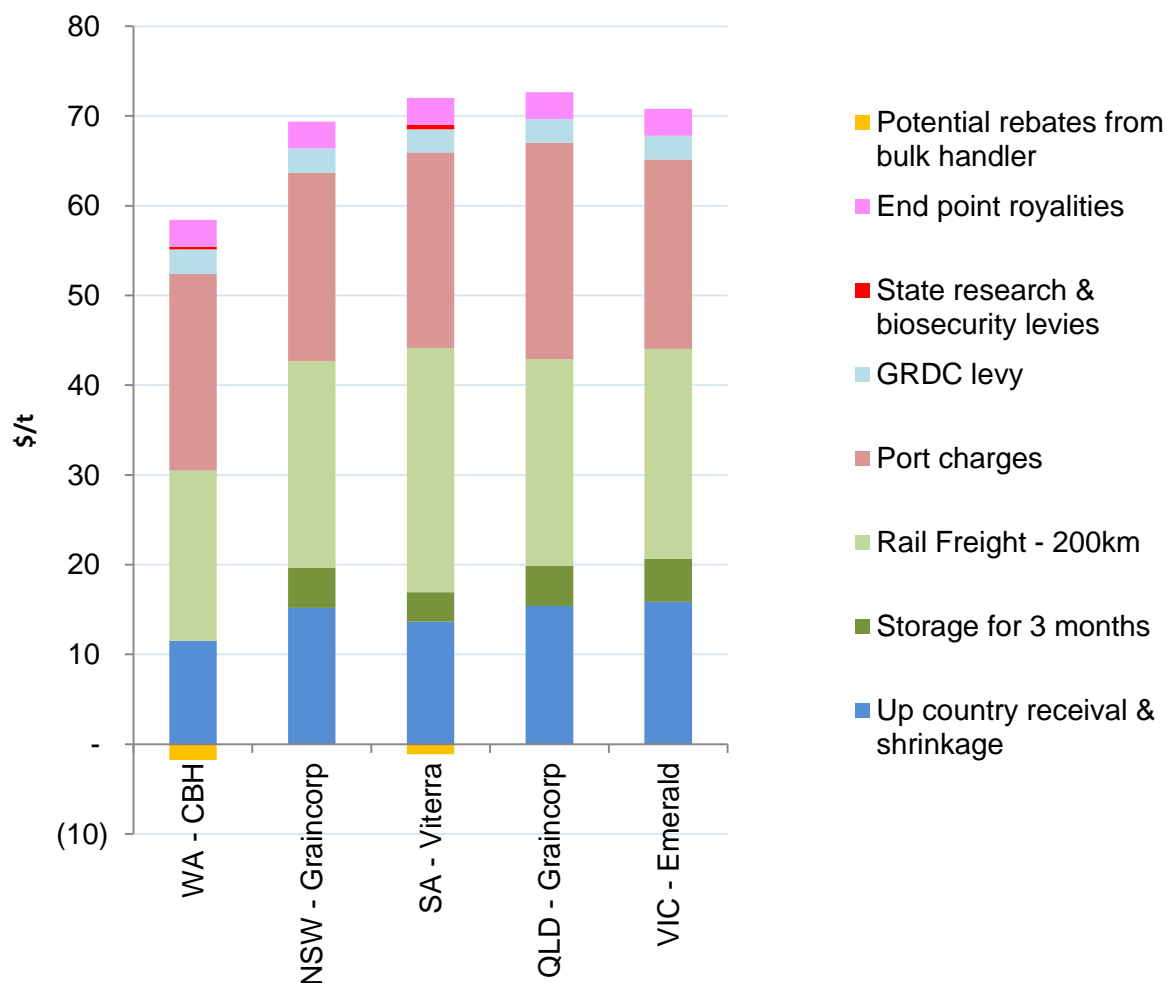


Figure 1 Composition of post-farm-gate wheat supply chain costs by State for 2013–14.