

Grower Returns and Single Desk Selling of Australian Wheat

by

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1. Introduction

One of the major on-going policy debates in Australia has been whether single desk selling powers should remain for the export of Australian wheat. It has been over a decade since that debate was resolved in favour of deregulation on the domestic-side but in 2004 the Federal government held a review of single desk management following on from its important 2000 National Competition Policy (NCP) review of the *Wheat Marketing Act 1989* (WMA). This Act establishes the regulatory framework for the wheat industry and also specifies operating conditions and rights for the AWB Limited; the privatised entity of the original statutory authority, the Australian Wheat Board. The review recommended the retention of single desk powers.

The WMA contains several sections that impose restrictions on the degree of competition in various areas of the Australian wheat industry. The most important of these are:

- *Export Controls*: There are several ways in which the WMA places restrictions on the free export of wheat from Australia. First, the export of the wheat from Australia requires the consent of the Wheat Export Authority (WEA). The WEA is a statutory authority that oversees the operation of the WMA. AWB

* Financial assistance from AWBI is gratefully acknowledged although none of the views expressed here should be read as those of AWB or AWBI. The latest version of this paper is available at www.mbs.edu/jgans.

International Limited or AWBI (a subsidiary of AWB Ltd) has a general exemption from requiring the consent of the WEA in order to export wheat. Second, AWBI has a veto over any consent that might be given to a person or firm that may wish to export wheat in ‘bulk’ quantities.

- *Receival Standards*: the WMA gives AWB Ltd the right to establish standards for wheat it receives.

The first set of provisions effectively imposes single desk selling of Australian wheat overseas through AWBI. Note that this does not restrict trade in the domestic market nor does it apply to non-bulk trade through bags or by container. Nonetheless, these provisions give AWBI power to exclude others from exporting Australian wheat; potentially in direct competition with it. The second set of provisions may give AWB the ability to restrict competition by raising receival standards ‘too high.’ In each case, the potential exclusionary nature of the provisions does not, in of itself, give the AWB an *incentive* to exercise its rights in all circumstances.

It should also be noted that the WMA contains some pro-competitive elements. The most significant of these are:

- *AWB Purchase Obligation*: Under s84 of the WMA, AWB International is obligated to purchase all wheat offered to it that meet its receival standards and to operate a pooling arrangement for the calculating the price of that wheat. This purchase obligation would not remain in force if AWB International lost its exemption from applying for a license to export.
- *WEA Regulatory Powers*: AWB’s performance is subject to regulatory review by the WEA.

As will be discussed later in the paper, the AWB’s purchase obligation is pro-competitive because it prevents AWB from exercising monopsony power when purchasing from Australian growers. The regulatory oversight is also pro-competitive for, to the extent that it is effective, it will improve AWB’s performance and raise the productive efficiency of the Australian wheat industry.

Also of relevance for the economic analysis is the corporate structure of AWB. First, the AWB is effectively a *growers’ cooperative*. All operating growers in Australia are entitled to A-class shares that enable them to elect the majority of directors to the Board of AWB Limited. Growers were assigned B-class shares on the basis of their

equity in the Wheat Industry Fund (WIF).¹ Holders of B-class shares can receive dividend payments from AWB. These shares are tradable and ASX-listed. Essentially, this means AWB is predominantly owned and controlled by growers.²

Second, and related to the first, is that the corporate objectives of the AWB are tied to the interests of growers, rather than the pure maximisation of shareholder value that arises for firms that are not cooperatives. In particular, the AWB operates to maximise the net returns to growers selling pool return wheat to the company and to provide services with a view to realising that objective.³ Finally, AWBI holds the single desk and this operates separately from the other functions of AWB.⁴ Its performance in raising grower returns is overseen by the WEA.

A final important feature of AWB for the purpose of economic analysis is its use of *pools* for determining disbursements to growers. In the absence of pools, growers would receive a price that reflected the *particular* price paid for their grain by final consumers. A pool means that growers receive a price that reflects the *average* price paid by final consumers for grain. The pool, therefore, provides an insurance mechanism for growers against short-term price fluctuations and also against heterogeneity among consumers of grain in terms of the value they place on that grain and the competitive options open to them. The AWB operates pools in an overlapping manner with different pools opening and closing at different times of the year. Therefore, due to harvest cycles there is a regional element to pooling. Moreover, AWB distinguishes between different qualities of grain supplied to the pool; so that growers are rewarded for grain quality. Essentially, by selling grain to a pool, the grower is buying shares in a fund the return of which is the overall revenue generated by all of the wheat in that pool less common costs. In this respect, marketing costs are shared among growers.

¹ A levy on grower farm gate production over a 9-year period enabled B-class shareholders to convert their WIF units to shares on a one for one basis. The net asset backing of the WIF units at the time of conversion was \$2.51.

² A-class shares are also related to production levels but the incremental power as a function of quantity produced diminishes quickly.

³ Constitution of AWB Limited, Article 2.

⁴ In what follows, for convenience, I will use AWB and AWB International interchangeably unless, of course, the distinction is critical for a particular issue.

The policy debate surrounding the single desk centres on the trade-off between potential higher returns arising from AWBI's virtual monopoly status as an exporter of Australian wheat and its monopsony status as a purchaser of wheat for export. Some commentators argue that as Australian wheat comprises about 16% of global wheat trade, AWBI's monopoly power is overstated. Others are concerned that, as a monopsonist, it may not act efficiently in reducing the distribution and marketing costs associated with wheat export.⁵ However, in reality, viewing AWBI as acting in a textbook monopsonistic manner is not appropriate as its various functions are regulated. The purchase obligation of the WMA prevents AWBI from restricting purchases and lowering the price paid to growers. The WEA's oversight is intended to ensure that AWBI acts efficiently.

In this light, an assessment of what might occur if single desk powers were to be removed is more complex. Specifically, if more bulk wheat export marketers were permitted, it would likely no longer be feasible to impose on each a purchase obligation. As such, one must ask whether a regulated monopsony is preferable to an unregulated oligopsony.

The purpose of this paper is to explore the potential benefits and costs of removing the single desk powers of AWBI. The objective of the WMA is to "maximise the net returns to Australian wheat growers" who are providing wheat for export. An NCP review asks whether such legislative objectives can be achieved without any specified restrictions on competition that might exist in the legislation. It is with this in mind that this economic analysis takes place.

Nonetheless, it is worth emphasising that broader issues of economic welfare and efficiency can also be of relevance. In particular, restrictions on competition, while of benefit to a particular group (e.g., Australian wheat growers), may not be in the interests of all people and businesses, in both Australia and internationally. Hence, it will also be of relevance, throughout this paper, to identify those persons that might potentially be harmed by the competitive restrictions in the WMA. However, throughout this paper, I will frame the analysis in terms of how a particular legislative provision impacts upon the returns to Australian wheat growers.

⁵ See L. Gropp, T. Hallam and V. Manion, "Single Desk Marketing: Assessing the Economic Arguments," *Staff Research Paper*, Productivity Commission, 2000, for a summary of these views.

The key question for analysis, therefore, is: *if other traders were permitted to export bulk Australian wheat, what would happen to the net returns Australian wheat growers received?* This is a complex question because of the potentially large number of alternative scenarios that might evolve. The contribution of this paper is to answer this by considering alternative scenarios relative to AWBI's current regulated status. For example, the removal of a single desk could lead to a large number of export traders selling Australian wheat overseas or, alternatively, the removal of the provisions may have a limited effect on the AWBI's current role as it has intrinsic advantages in marketing Australian wheat that cannot easily be replicated by others. In this case, however, the removal of regulations may pose a greater issue for growers.

The paper proceeds as follows. Section 2 considers the options available to AWBI as a single desk seller given the regulations that exist. It formulates a theoretical model of current market outcomes and compares this to a drastic alternative whereby export marketing became perfectly contestable. Section 3 then considers more realistic scenarios that may arise if single desk powers were removed; demonstrating that the price of Australian wheat could rise but the returns to growers may at the same time fall as they are no longer protected by regulation. Section 4 then calibrates the model to get an indication of the magnitudes of likely effects while Section 5 considers issues that will make export marketing more or less contestable following any deregulation. A final section concludes.

2. Options Available to the Single Desk

To begin, I consider what AWBI can actually do as a single desk seller of Australian wheat. In particular, as will be explained here, regulations prevent it from acting like a textbook monopolist in this regard. Nonetheless, its single desk status does potentially give it greater bargaining power in negotiations with export customers.

Put simply, AWBI is also able to negotiate a higher price if it can potentially play buyers off against one another. That is, if AWBI has more options available to it in selling wheat, it can more readily insist on a higher price in negotiations with any single buyer.

One way AWBI does this is through the use of logistics and planning. By timing sales and strategically managing the quality of Australian wheat sold over the course of a year, AWBI can ensure that it is able to flexibly make stronger marketing options available at all times. It can also ensure that the correct type of wheat is available at the port closest to a particular customer. In this way, if a buyer were to be difficult in negotiations, AWBI would face fewer costs in supplying that wheat to other buyers.

In the absence of a single desk, AWBI would likely have more difficulty in matching logistics to buyer negotiations. Instead, it would not be as sure where a particular grower would be selling wheat and, indeed, whether it would trade through AWBI at all. Thus, its flexibility would be undermined and this would diminish AWBI's negotiating position with buyers. Moreover, these logistical advantages would potentially be lost to all traders (except maybe for multi-national corporations) to the long-term detriment of Australian growers.

Another way AWBI could reap benefits from buyer competition would be to limit the supply of Australian wheat. This is the textbook way a monopolist exercises its market power; restricting supply in order to create shortages and increase price.

However, there is a complication to this textbook case of cartel use of market power for the case of AWBI. The *statutory obligation on AWBI to purchase all wheat (of acceptable quality) limits its ability to exercise any market power* it might have. To see this, consider how a firm may exercise any market power it possessed. That firm would wish to restrict output in order to push up prices and maximise the total profits earned. However, for AWBI, the extent to which it can limit output is restricted by the behaviour of growers. Suppose that in one particular year, wheat prices were to rise to monopoly levels. This would induce some growers to expand their harvest and maybe other farms to plant wheat.⁶ AWBI could not continue to maintain the output levels that led to high prices. Instead, it would have to market any wheat produced in that year and if necessary accept a lower price in order to sell its stocks.⁷⁻⁸

⁶ As those growers are relatively small (compared with the volume of Australian wheat), they ignore the effects their expansion of output has on the prices earned by themselves and by other growers.

⁷ It could conceivably only release a limited quantity onto world markets but this could not be done indefinitely as its stockpiles would rise.

The end result is that while AWBI may have market power, its ability to exercise it by restricting output is limited by its statutory obligation to accept all wheat delivered. The amount of wheat produced is a decision of individual growers and not AWBI. This effect makes it unlikely, as a matter of economics, that AWBI will be able to extract maximal price premiums in its current form.⁹ Only by being able to control the output of all Australian wheat, could AWBI fully exercise market power. However, in order to do this it would have to ensure that individual growers did not exceed specified quotas or restrain total production by limiting grower access to export markets.¹⁰⁻¹¹

In summary, while market power is often extolled as a benefit of exclusive marketing arrangements, the particular institutional structure of AWBI makes it difficult for such market power to be exercised. This is because the output decisions continue to reside with growers who can respond to supra-competitive price premiums by increasing output.¹² In order for AWBI to be able to exercise market power, it would have to be able to impose production maxima (quotas) on growers or to restrict access to AWBI services. This, however, would have the potential implications of either placing disproportionate

⁸ Mueller argued that the inability of cooperatives to control supply makes the customary index of market power, a seller's share of the market, virtually meaningless when applied to agricultural cooperatives. Mueller points directly at the lack of control over production as a severe limitation on the ability to enhance prices (W.F. Mueller, *The National Antitrust Commission: Implications of Cooperatives*. In *Economics Issues*. Department of Agricultural Economics, University of Wisconsin – Madison, 1979).

⁹ AWBI's ability to price discriminate is not necessarily a function of its market power. Many firms in competitive markets practice price discrimination. For example, cinemas offer discounts for screenings on certain days, or to particular classes of customers (e.g. pensioners). The ability to price discriminate is more an indicator of good performance in negotiations than the exercise of market power *per se*.

¹⁰ Setting production quotas is a common practice of cartels seeking to raise world prices (e.g., OPEC).

¹¹ Cotterill notes that closed membership arrangements produce different results. "... farmer members of the closed membership cooperative capture.. a higher price for their farm product" (R. Cotterill, "The performance of agricultural marketing cooperatives in differentiated production product market". *Strategy and policy in the Food System: Emerging Issues, Proceedings of NE-165 Conference* June 20-21, 1996, Wash DC.

¹² Perhaps this explains why it has been difficult to establish the existence of persistent price premiums earned by single desks around the world. The difficulties of evaluating single desk selling is outlined by R.R. Piggott, "Some old truths revisited" *Australian Journal of Agricultural Economics* 36, 1992, pp.117-40. Piggott argues the problem lies in establishing the correct counterfactual. However, to this I would add that the supply response of growers erodes whatever premia are available.

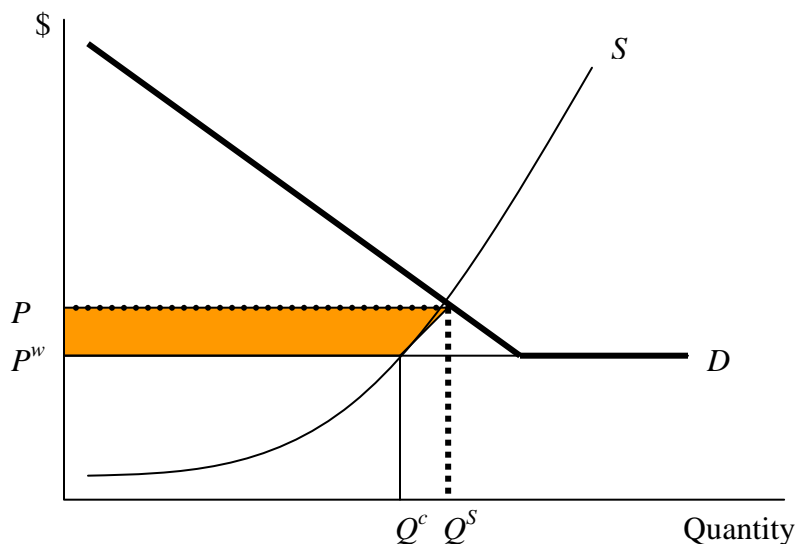
harm on small growers who may be unable to produce enough to be viable or, alternatively, may be denied access to export markets entirely.¹³

Theoretical foundation

What does this mean from a theoretical perspective? Under its purchase obligation, AWBI must sell all wheat offered for sale by Australian wheat growers. In addition, under pooling arrangements, Australian growers are paid on the basis of average price. Given this, the overall level of wheat offered for sale will be at the average price where the overseas demand for Australian wheat (based on marginal price), D , equals the supply of wheat for export from Australia, S . S is determined by, among other things, the domestic demand for wheat in Australia.

This outcome is depicted in Figure 1 with any overall volume for export of Q^s . Notice that the demand curve has a 'kink' in it. This kink comes because at some benchmark world price, P^w , it is assumed that Australian growers can sell as much as they want without impacting on that price.

Figure 1: Outcomes under Single Desk and Contestable Selling



¹³ Cotterill *ibid.* cites the case of Welch's-National Grape and Ocean Spray system wherein farms that have marketing rights through the cooperative are much more valuable than those that do not. The closed cooperative price premium is capitalised into the value of the farm.

A perfectly contestable benchmark

One unrealistic outcome from the removal of single desk powers would be that export marketing would become contestable: many traders competing to sell Australian wheat overseas. What is important to note is that the supply and demand conditions for export of Australian wheat do not change if we moved from single desk to perfectly contestable selling. Under perfectly contestable selling, so long as it is possible for a particular grade of wheat to be sold at a unit price of P^w , Australian growers will offer volumes of wheat for which their marginal cost is below P^w . However, this contestable price will be lower than the average price received by Australian growers under single desk selling. Thus, under perfect contestability, the demand curve for Australian wheat changes and is now a perfectly elastic straight line at P^w . What this means is that under perfect contestability, the total volume of wheat exported from Australia will actually fall.

The most important difference between single desk and contestable selling is in the prices it is able to achieve for wheat put forward for export. In a contestable market, given the relatively small size of growers, all wheat of a particular grade will sell for the same price: regardless of the customer or destination. In contrast, in principle, a single desk seller is able to use strategic withdrawal, price discrimination and other market tactics possible with market power to achieve higher prices. Some customers may pay higher prices than others depending upon the volume of their needs and their preference for a particular grade. Ultimately, the shaded area in Figure 1 is the additional revenues achieved by a single desk seller in comparison with a contestable wheat export market.

In reality, however, the structure of export marketing that may emerge following any removal of single desk powers is unlikely to be a contestable outcome. For that reason, I next analyse various alternative scenarios regarding post-regulation market structure.

3. Structure of Export Marketing

Gans and Hirschberg¹⁴ demonstrated that Australian wheat is differentiated from wheat elsewhere and appears to have an intrinsic value. For this reason, those advantages may be exploited by large export marketers of Australian wheat; especially those with systems and the reputation to command quality premia on world markets. It also means that even if that sector were to become oligopolistically competitive, some price premia may still likely arise.

However, the removal of single desk powers will also likely change the structure of export marketing. This will have profound and important effects on grower returns. I explain this in this section; demonstrating the crucial role of pooling and purchase obligations on the level and distribution of grower returns. In the absence of these practices, the returns to growers will be driven by the level of entry barriers in to export marketing (perhaps caused by vertical integration). These lead to more oligopolistic market structures that can exploit market power by restricting the supply of Australian wheat on international markets.

The Role of Regulation

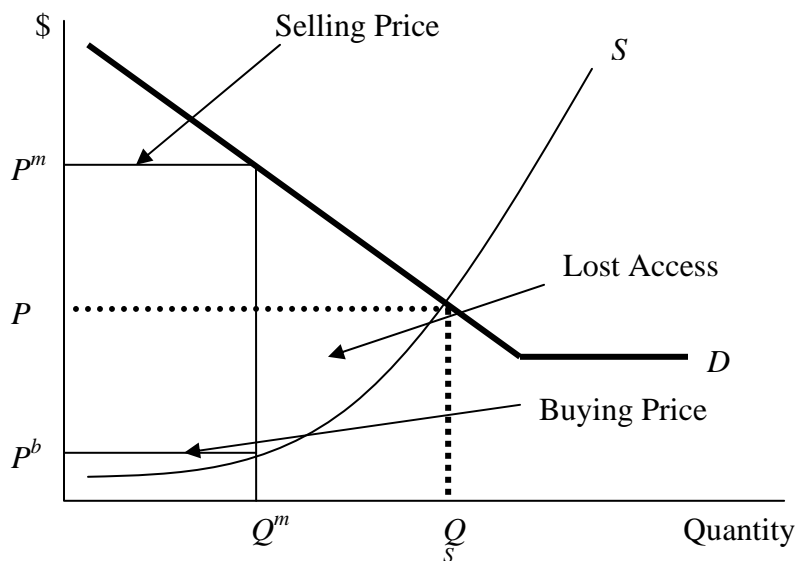
As noted earlier, it is important to recognise that AWBI *is not simply a statutory monopoly but a regulated monopsony*. While AWBI can market wheat for export in whatever manner it sees fit, it is constrained as to how it deals with growers. These regulations are a highly effective means of preventing it from exercising any monopsony (or single buying) power that it might otherwise have because of its single desk selling powers.

To see this, consider what would happen if AWBI could indeed act as a unregulated monopsonist. Figure 2 depicts the difference between regulated single desk selling and this outcome. The price AWBI currently achieves is represented by P . But for a small, regulated margin, this is also the buying price AWBI pays through pooling

¹⁴ J.S. Gans and J. Hirschberg, "A Hedonic Price Analysis of Price Premiums for Australian Wheat Exports," *mimeo.*, Melbourne, 2004.

arrangements to all growers exporting wheat. In this situation, the total volume of wheat offered for export is represented by Q^S .

Figure 2: The Effect of Regulation



If the purchase obligation were removed from AWBI, it would be able to restrict the volume of wheat it purchased for export. Figure 2 represents a situation where there are no other options for export for Australian growers (perhaps caused by high entry barriers into export marketing). In this situation, the selling price of Australian wheat is likely to rise as Australian wheat holds an intrinsic value on world markets. The new selling price is presented by P^m .

Note that a higher selling price is achieved by a reduction in volumes exported. In general, a high selling price will require a large reduction in volume. However, this, in turn, will be related to the elasticity of demand for Australian wheat. Critically, the reduction in volumes translates into lost export opportunities for a, perhaps sizeable, group of growers. Those growers will be left to the domestic market; so instead of earning P , they will earn a return dictated by the supply curve S .

For the growers who offer wheat for export, however, the picture is not substantially better. The exporter's monopoly position gives it monopsony power in purchasing wheat for export. Without an obligation to purchase and pooling

arrangements, the restriction in export supply (giving a restriction in purchases) pushes down the buying price. So those growers exporting wheat receive P^b rather than P .¹⁵

This demonstrates the role of the purchase obligation, pool arrangements and other regulations. In the absence of these, a monopoly export marketer will be able to achieve a higher selling price on international markets. However, this is done at the expense of (1) lower volumes on those markets, reducing international trade in wheat; (2) reduced access of growers to international markets; and (3) a lower return to growers involved in the export of Australian wheat.

Moreover, it is worth emphasising that these outcomes will occur under any scenario where export marketers have some buying power over Australian growers. For this reason, we describe the effect and determinants of competition in export marketing next.

Competition in Export Marketing

In Section 2, I examined the extreme case whereby export marketing became perfectly contestable as single desk powers were removed. The situation in Figure 1 shows that the export price of Australian wheat would fall to its world reference benchmark; although if Australian wheat has some intrinsic value it may fall less than this amount.

More critically, however, the volume of wheat exported would fall. The reason for this is that in the absence of pooling and purchase obligations, wheat offered for export will be driven by marginal rather than average factors. Thus, no exporter will trade wheat that must be purchased above what it can receive for such wheat. This means that no wheat for which growers can achieve more than P^w will be offered for sale.

Nonetheless, despite the loss in access for some growers, a perfectly contestable situation does eliminate any wedge between buying and selling prices of wheat for

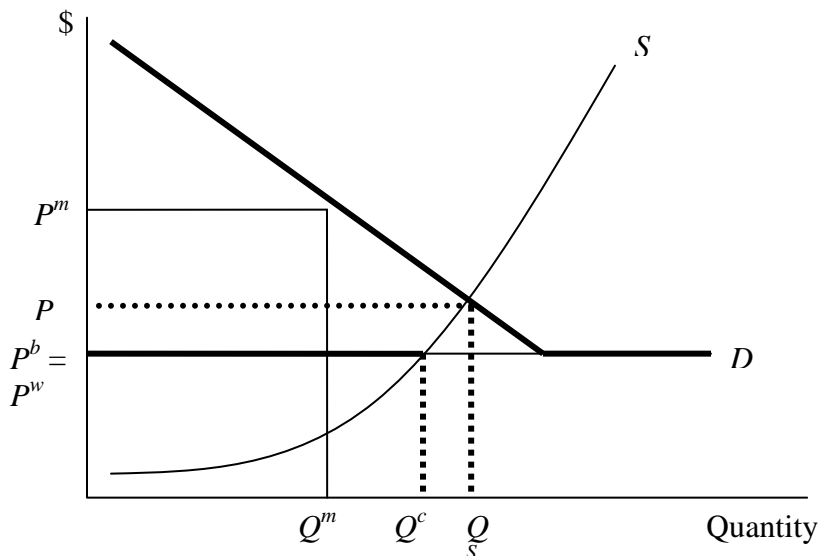
¹⁵ This model and the calibration that follows is stylised in an important respect: it presumes no internal costs of getting wheat to market. Thus, here P^b presumes that growers pay those costs and their receival price consequently builds in those costs. In actuality, so long as internal freight, storage and handling costs are unchanged following the removal of single desk powers, this model reflects the impact on grower returns. Of course, competition in the vertical chain may alter those costs; something we return to discuss below.

export. However, it does so at the cost of any real premium for Australian wheat. For this reason, the average return to growers will fall.

What happens, however, if there are some export traders that can use the advantages of scale, reputation and other factors AWBI now enjoys to earn a market premium on Australian wheat? We noted above that in the extreme where only ‘premium’ exporters can operate on international markets and where there was only one of these, the reduction in returns to growers is likely to be substantial; even if the selling price of Australian wheat rises.

Two forces might mitigate this reduction in returns (although for each there is a reduction in export premia). First, there may exist more than one premium seller. Those sellers will compete with one another on international markets but also compete for Australian wheat for export. This will lower P^m but raise P^b . Second, there may exist alternative, substantial non-premium exporters as well as one or more premium exporters. If that non-premium (or what we term ‘contestable’) exporter has the capacity to sell most Australian wheat on world markets (i.e., is not simply a niche marketer) but must otherwise take the world price of wheat (P^w) as given, we will have an outcome as in Figure 3.

Figure 3: Outcomes under Premium and Non-Premium Competition



The effect of having a contestable, non-premium exporter is to change the supply curve from the perspective of premium exporters. Rather than the supply alternative being to sell domestically, growers can also sell at the competitive world price. Therefore, in order to trade through premium exporters they need to be compensated at least for this competitive price. This leads to higher prices but also greater volume traded.

Figure 3 depicts the changed outcome. Now the premium exporter's reference costs come from a supply curve that is flat initially and rises as the returns to selling domestically exceed P^w .

In that situation, the total volume of wheat offered for export would fall to the same as the perfectly contestable case (i.e., Q^c). Moreover, the buying price by all exporters would be at its perfectly contestable level, P^w , as it represents the outside option for those dealing with premium exporters. However, some premium exporters will be able to generate market premia on world markets. The extent on that premium will be driven by competition between them.

Thus, even if there are premium exporters, it is likely that the returns to Australian growers will, on average, be no higher than the perfectly contestable outcome. There might be some differences if some growers produce particularly high quality wheat and themselves have some market power. However, it is unlikely that such differences in returns to growers will be substantial. Indeed, if there is more than one premium exporter, it is not certain that each could maintain the same reference quality through blending and other arrangements; reducing opportunities for those growers with higher quality wheat product.

In summary, from the perspective of economic theory, the prospect of high returns to growers following the removal of regulations on the single desk, come from the existence of 'contestable' exporters who have the capability to offer large quantities of Australian wheat for exporter at the world reference price. While premium exporters may be able to appropriate more of the intrinsic value of Australian wheat on world markets, in the absence of contestable exporters, those returns will be unlikely to flow to the majority of growers. Thus, absent considerable change in productive efficiency, moving from the regulated monopsony of single desk selling is unlikely to offer higher returns to growers.

4. Calibrated Model

As a potentially useful exercise, to understand the potential magnitude of any reduction in grower returns following the removal of the single desk, this section attempts to calibrate the outcomes analysed in Section 3. In so doing, I rely on results from Gans and Hirschberg.¹⁶ While a simplistic exercise, it can give a feel to the magnitudes involved under various scenarios.

It should be recognised, however, that while these calculations are based on an empirical estimation of some key parameters they are still subject to error inherent in a lack of perfect observability of those parameters. Nonetheless, they are useful in both identifying and quantifying some potential effects that might flow from deregulation.

Model Specification and Calibration

I assume a simple linear specification to understand post-single desk outcomes. Suppose that the less elastic portion of the demand for Australian wheat takes the form, $P = a - bQ$; where a and b are intercept and slope coefficients respectively. We assume that the supply curve for Australian wheat for export is given by $P = cQ$.

The point at which demand equals supply is given by:

$$Q^s = \frac{a}{b+c} \text{ and } P^s = \frac{ac}{b+c}$$

Notice also that the price elasticity of demand:

$$\mathcal{E} = \frac{\partial Q}{\partial P} \frac{P}{Q} = -\frac{1}{b} \frac{P}{Q}$$

This gives us three equations with three unknowns at a given (P, Q) consistent with single desk selling.

To calibrate the model, I rely on the following data:

- $P^s = \text{US\$}142$ per tonne
- $Q^s = 15,000,000$ tonnes
- $\mathcal{E} = -1.2$

The price is based on the average per tonne price for Australian wheat between 2000 and 2003. The quantity is based on what appears to be the average non-drought volume of

¹⁶ *Op.cit.*

wheat exported. The elasticity measure is a reasonable and conservative figure arising from an econometric analysis of AWBI's contract data.¹⁷

Given these, I am able to calculate the parameters as:

- $a = 260$
- $b = 7.89 \times 10^{-6}$
- $c = 9.467 \times 10^{-6}$

It is instructive to use these calibrated parameters to calculate what this model predicts would be the perfectly contestable volume of wheat exported. Based on the average P^w for AWBI contracts between 2000 and 2003, $P^w = \text{US\$}133$.¹⁸ At this price, $Q^c = 14\text{m}$ tonnes (approx). Based on this the upper bound value of the single desk is $(\$142 \times 15\text{m})/2 + (\$133 \times 14\text{m})/2 = \text{US\$}134\text{m}$.

I now turn to present several counterfactual outcomes using the model calibration above. In so doing, I distinguish between the cases where there are no contestable exporters and those exporters are available to growers. The reason for this distinction is that this is the key market condition that will dictate the returns to growers in any post-single desk environment. Put simply, in the absence of contestable exporters, most growers will not have access to international markets at anything near the world benchmark price; in effect, growers will compete amongst each other for access to the benefit of premium exporters and others with market power along the value chain in the wheat export industry.

No Contestable Exporters

We begin with the case where there are no contestable exporters. As will be seen this situation results in the worst options for grower returns.

In contrast to the current regulated monopoly, a possible outcome is a single premium exporter without any purchase obligation or pooling. In this case, the price and quantity outcomes are found by solving:

$$\max_Q (a - bQ)Q - \frac{1}{2}cQ^2$$

¹⁷ *Op.cit.*

¹⁸ *Op.cit.*

This yields:

$$Q^m = \frac{a}{2b+c} = 10.3\text{m}, P^m = \frac{a(b+c)}{2b+c} = \$179 \text{ and } P^b = \frac{ca}{2b+c} = \$97.5$$

Notice that the considerable rise in price comes at the expense of a significant drop in export quantity.

In terms of the reduction in overall grower returns, these price changes yield an expected loss of US\$563m per annum (or over half of existing grower returns under our model's assumptions).

This reduction is not as strong if there are more premium exports of Australian wheat. To illustrate, we suppose that there are two of these and they are of equal size and efficiency. In this situation, the average price of Australian wheat will fall and quantity traded will be higher than the single premium seller case.

To see this, we assume that export marketers operate as a Cournot (quantity setting) oligopoly. This fits a situation where they procure wheat from Australian growers prior to signing export contracts. In this setting, an individual exporter chooses its quantity, q , to solve:

$$\max_q (a - bQ)q - \frac{1}{2}cQ^2.$$

This yields:

$$Q^d = \frac{2a}{3b+2c} = 12.2\text{m}, P^c = \frac{a(b+2c)}{3b+2c} = \$164 \text{ and } P^b = \frac{2ac}{3b+2c} = \$115.5$$

This involves a loss in grower returns of approximately US\$360 per annum.¹⁹

These examples reinforce the notion that the critical feature in understanding grower returns post-deregulation would be their received price rather than the price achieved by exporters of Australian wheat.

Contestable Exporters

We now suppose there exists sufficient numbers of contestable exporters so that any volume of wheat can be exported at the world reference price of P^w .

¹⁹ Suppose that there were many premium export traders. If there are more than 13 traders, then prices are unambiguously lower than their single desk levels. Whereas in the above market structures, some growers may benefit from a removal of single desk powers, as the number of traders increases, this lowers the average return of all growers.

In this case, when there is a single premium exporter, the price and quantity outcomes are found by solving:

$$\max_Q (a - bQ - P^w)Q$$

This yields:

$$Q^m = \frac{a - P^w}{2b} = 8.05\text{m}, P^m = \frac{a + P^w}{2} = \$196 \text{ and } P^b = P^w = \$133.$$

The existence of contestable exporters means that overall quantity and price are higher than where there are only premium sellers. Indeed, overall quantity is the same as the perfectly contestable case.

This means that total volume and the price received by growers will be exactly the same as the perfectly contestable case. None of the benefits of premium exporting flow to growers. This means that grower returns will be reduced by approximately US\$134m per year (or about 12 percent over current levels).

When there are contestable exporters, having more premium exporters does not improve the situation for growers. Overall exports and the price they receive are the same as the perfectly contestable case.

Nonetheless, in this situation, an individual premium exporter chooses its quantity, q , to solve:

$$\max_q (a - bQ - P^w)q.$$

This yields:

$$Q^d = \frac{a - P^w}{3b} = 10.7\text{m}, P^c = \frac{a + 2P^w}{3} = \$175 \text{ and } P^b = P^w = \$133$$

Thus, while grower returns are the same as the single premium case, total volume sold by premium exporters rises and the price they receive falls.

Summary

Here I have explored alternative market structures in export marketing and what they imply for the overall returns to the Australian wheat industry. The following table summarises these outcomes.

Market Outcomes (all \$ are USD)

Market Structure	Average Export Price	Annual Export Quantity	Price Received by Growers	Reduction in Grower Returns
Single Desk	\$142	15m	\$142	-
Only Premium Exporters	\$179 (Monopoly) to \$164 (Duopoly)	10.3m (Monopoly) to 12.2m (Duopoly)	\$97.5 (Monopoly) to \$115.5 (Duopoly)	\$563m (Monopoly) to \$360m (Duopoly)
Presence of Substantial Contestable Exporters	\$169 (Monopoly Premium) to \$165 (Duopoly Premium) to \$133 (No Premium Exporters)	14m	\$133	\$134m

The key calculation – the reduction in grower returns – takes the grower returns as calculated in each counterfactual exercise (based on P^b and the expected quantity) and subtracts total grower returns under the single desk (based on a price of US\$142 and a quantity of 15m tonnes). This gives a negative number in each case, reported as the reduction in grower returns under each specific post-single desk scenario.

These results give a sense of the magnitudes involved but also reinforce two clear conclusions:

- The negative impact on grower returns is most salient where there are no contestable exporters offering access to international markets for Australian growers.
- Regardless, grower returns will likely fall if the regulations controlling monopsony power on the part of exporters are removed with the single desk.

These results also highlight the importance of focusing on grower returns as opposed to the returns to the industry at a whole. There is a sense in which these conflict when single desk powers are removed. Thus, one key feature of the current system is the way it aligns the interests of growers and exporters in promoting value in the system. This would likely disappear to a large extent if the single desk system were to be dismantled.

5. Prospects for Contestable Exports

The above analysis highlights that a key determinant of the returns to growers following any removal of single desk powers will be the presence of sufficient numbers of exporters so that most growers will be able to access world markets and receive approximate world prices for wheat.

There are two challenges to the contestability of exporters – entry barriers and issues along the vertical chain. I discuss each in turn.

Export Entry Barriers

The main barriers to entry in export marketing come from economies of scale in production and logistics and similar advantages that come through marketing. Economies of scale mean that it is difficult for exporters to enter unless they do so on a large scale. Thus, when economies of scale are present, it is unlikely that contestable traders will be significant in number.

It has been argued that there exist economies of scale in wheat trading.²⁰ The ‘system’ element to wheat handling, storage, distribution and transport costs as well as the savings on the costs of transacting with many international customers all have qualities that the average cost of each falls when a greater quantity of wheat is serviced.²¹ But the economies of scale can go beyond these functions to the profitability of research and development and the dissemination of information to growers. In addition, the ability of the AWBI to offer insurance options to growers depends on the diversity and numbers of growers across Australia as well as its ability to store wheat from year to year.²² These

²⁰ For example, Cargill’s acquisition of Continental’s grain merchandising business was considered to be motivated by the desire to achieve economies of scale and scope in grain handling (M. Hayenga and R. Wisner, “Cargill’s acquisition of Continental Grain’s grain merchandising business,” *Staff Paper* 312, Department of Economics, Iowa State University, 1999).

²¹ Such pressures for consolidation are occurring throughout the agricultural industry. See, for example, Mark Drabentstott, “Consolidation in US Agriculture: The New Rural Landscape and Public Policy,” testimony to the Senate Committee on Agriculture, Nutrition and Forestry, January 1999.

²² Richard Caves found that both information and insurance were important reasons why scale economies appeared to be present in agriculture. On the information-side, economies came from information about demand (in terms of quantity, timing and quality) and the expectations of international trade flows. This information could be used to assist in coordination and other logistical activities. On the insurance side, risks in grain trading can more easily be managed through pooling arrangements. See Richard E. Caves, “Organisation,

systemic elements to wheat marketing all potentially serve to lower logistics costs for all wheat as more wheat is traded through AWBI.²³

A subtler form of scale economy surrounds the issue of ‘branding.’ As argued earlier, AWBI’s methods of assuring wheat quality and improving wheat variety have enabled it to develop a reputation for Australian wheat; thereby, improving returns per unit sold. If some Australian wheat were marketed without these quality assurances, it may lead to some deterioration in wheat quality and may harm the brand-image of Australian wheat. That is, the reputation AWBI has developed may be undermined.²⁴ It may be possible to remove the statutory protection of AWBI without erosion of its brand so long as strict controls on the alternative marketing of Australian wheat were possible. However, these very controls may be argued to be an impediment to the competition any removal of protection may be designed to achieve.

Vertical Chain

Growers who wish to export their produce will first bring it to a site where it is handled by a bulk handler. It is at this point that a farmer chooses to either sell their grain to various traders to accept AWBI’s pool price that is determined later. The traders themselves are speculating on that pool price. So, in effect, growers have a choice of financial instruments and contracts at this point.

However, at the same time, the different options have embedded potentially different payments for bulk handling. A grower electing to sell to AWBI will implicitly pay the price AWBI has negotiated with bulk handlers, freight transporters and port services. Other traders will have different implicit options. Some of these traders may themselves be bulk handlers.

Importantly, the whole industry from site to port and beyond appears to be constituted by serial monopolies. Port services are controlled by monopoly port operators

Scale and Performance of the Grain Trade” *Food Research Institute Studies*, Vol. 16 Stanford University, 1977-78; and Richard Caves, *Multinational Enterprise and Economic Analysis*, Cambridge University Press: Cambridge, 1982.

²³ The issue of economies of scale and scope raises the empirical question as to the optimal size of the AWB, and how this compares to the Australian market.

²⁴ Jean Tirole, “A Theory of Collective Reputations,” *Review of Economic Studies*, Vol. 63(1), January 1996, pp.1-22.

that have varying degrees of regulation (although AWB itself has a stake in some ports and ports partly compete with one another). Freight by rail has monopoly elements but thanks to recent access regulation has a more competitive pricing structure.

Finally, bulk handling has been subject to increasing monopolisation with virtual monopoly provision on both coasts. The main reason for this is the high costs of setting up bulk handling sites and duplicating back office structures. AWB has entered into this segment in recent years but still has only a fraction of the total number of sites.

What this means is that even if there are many exporters, access to international markets is likely to be controlled by market power at other steps of the vertical chain. Thus, the wedge between grower receival prices and export prices will be driven by margins in these segments rather than at the export end. From the perspective of economics, however, the impact on growers is the same. Market power at segments between them and the international market will reduce their prospects for high returns in any post-single desk environment.

Summary

Contestable exporters are an important means by which the decline in grower returns could be arrested in any post-single desk environment. However, the prospects for such contestability are slim. Many export functions become only efficient if economies of scale can be realised; providing an important entry barrier. Moreover, the existence of bottleneck suppliers along the value chain themselves creates a barrier to access to international markets – even if contestable exporters were present in large numbers. For this reason, it appears that following deregulation, the reduction in grower returns may be significant with any benefits to the removal of AWBI's single desk status and accompanying regulations flowing to others in the Australian and International wheat market.

6. Conclusion

Analysing the desirability of single desk selling of Australian wheat is a difficult task. In particular, it involves establishing what the likely outcomes would be if single

desk restrictions were removed and other traders were able to sell Australian wheat. But how to predict that counterfactual is not simple; a dilemma noted by others:

The impact of an STE (State Trading Enterprise) operating in the international market can be determined by answering the following question: What is the outcome (e.g., in terms of prices, output, exports, imports, economic surplus) if an STE is assumed to operate in the international market, and what is the effect on this outcome if the STE is removed and replaced by privately-owned traders?

The assumptions used in answering this question are very important. Previous models of STE typically assume that STE removal will result in the formation of a competitive trading sector in that country or for that commodity. This assumption is simplistic and can have important consequences for the results of analyses that employ it. In reality, although the removal of an STE could potentially result in a competitive trading sector, in many industries the more likely impact of STE removal is the replacement of one oligopolistic structure with another. This is particularly likely for many export STE. ... the replacements to an export STE are often likely to be multinational enterprises (MNE); these MNE are large, may be vertically integrated, and often are privately owned firms that provide very little public information.²⁵

In the Australian context, the analysis is complicated further because the domestic market is unregulated and because AWBI has conditions that require it to purchase all wheat put forward by growers for export, subject to minimal quality standards. This means that AWBI can potentially derive bargaining power but not market power in world markets.

On a theoretical level, this paper has shown that the impact of removal of single desk selling may have an adverse impact on growers as a whole and also a distributional impact that may affect some growers more than others. In particular, it is likely that AWBI can command price premia that would be eroded in the absence of its exclusive trading rights. Moreover, by examining actual pricing data, it was found that this data was consistent with this theoretical hypothesis. Even entry of additional trader could erode price premia significantly.

Similar losses could also arise when considering AWBI's logistic function. In particular, the critical issue is whether new traders would erode economies of scale and thereby increase average exporting costs across the Australian industry. Moreover, it is important to consider whether those traders would place sufficient competitive pressure on AWBI's costs to outweigh any losses in economies of scale; specifically, competitive pressure that could not be achieved by appropriate regulation by the Wheat Export

²⁵ Veeman et.al., *op.cit.*, p.33.

Authority. This is a key issue that needs to be judged in any review of AWBI's exclusive export rights.

In terms of the potential gains to agents other than growers, we were unable to predict definitively the impact on the domestic trading market although we could conclude that international purchasers and other traders would potentially benefit from the removal of single desk selling of Australian wheat. Nonetheless, any gains here seemed to be distributional rather than welfare enhancing. This was a similar conclusion to other studies:

We believe that concerns over export STE are probably exaggerated. The evidence available indicates that most export STE receive little assistance from their government. The most effective way of ensuring that SET do not subsidise exports is to ensure that these are self-financing institutions that are insulated from government. However, the most effective means of ensuring that export subsidies do not distort world markets for agricultural products would be the complete prohibition of all agricultural export subsidies.²⁶

From this perspective, this paper has argued that the negative impact of single desk selling on international trade is overstated and is in all likelihood non-existent given the statutory purchase obligations of AWBI.

In the end, it appears most likely that the impact of the removal of single desk selling would be distributional. That is, some growers may benefit while others might be disadvantaged. Such distributional concerns have been common throughout the history of the Australian wheat industry.

The standard work on the AWB (Whitwell and Sydenham, 1991) is entitled *A Shared Harvest*, a title reflecting the essence of the pooling principle that price risks and marketing costs are shared among producers. The way farmers manage production, marketing and financial risks is at the core of their individual business strategies and competition for resources amongst farmers. Pooling is designed to reduce this competition. Whatever the economic effects of pooling and statutory marketing, grower equality was paramount for its supporters. Their other concern was the behaviour of middlemen. Whitwell and Sydenham (*ibid.*, p.286) described growers' ambitions for wheat marketing as involving 'three main principles, namely that the pool be compulsory, that the marketing organisation be granted monopoly powers and that it be grower-dominated.'²⁷

²⁶ Veeman et.al., *op.cit.*, p.32.

²⁷ A.S. Watson, "Grain Marketing and National Competition Policy: Reform or Reaction?" *Australian Journal of Agricultural and Resource Economics*, 43 (4), 1999, p.436.

Pooling is an example of practice that protects some growers. It means that grower returns are average across wheat grade and other factors. In practice, this means that there are potential opportunities for some growers to receive greater returns from dealing with customers who have high demand for certain grades of wheat. However, to allow this would be to reduce the returns for growers unable to sell wheat to those customers. The erosion in bargaining power and the loss of economies of scale that might arise from the removal of AWBI's exclusive right – as well as pressure to remove its statutory purchase obligation – could well result in some growers being no longer able to access international markets. It is in this light that the single desk policy needs to be evaluated. That is, *is the principle of equalising access to international customers worth sacrificing efficiency losses (if any) that result from single desk selling?*