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The Evolution of Grain Trading Organizations in Australia: Applying the Cooperative Life Cycle

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The Issue

Cook's (1995) life cycle theory of cooperatives predicts a rise and fall of cooperatives over time. He argues that cooperatives arise as a response, by producers or consumers, to some form of inefficiency in a market structure, for example an oligopoly. In such a market, the cooperative can thrive by replacing the ineffective firms until other firms or institutions or technology come along and deliver even better service. When this happens, the cooperative's ownership and control features may hamper its ability to grow and compete. According to Cook, the cooperative will eventually need to change in order to accommodate investors, or it will be forced to exit the market. This article considers the case of Australia's grain market within Cook's framework to see if it has behaved as predicted and where it is heading in terms of responding to the needs of the agents in the market chain.

In the 1980s Australia's grain cooperatives and institutions faced challenges from deregulation and changing market structure that exposed extensive inefficiency in the

traditional cooperative ownership arrangements. This article will review the origins, successes and eventual transformation of Australia's major grain marketing institutions.

Implications and Conclusions

Australia offers evidence to support the Cook model. Compulsory handling and outdated regulations led to significant inefficiency in Australia's grain handling and marketing sector by the 1970s and 1980s. These inefficiencies were exposed by internal reviews following a popular wave of deregulation in Australian industry, but traditional cooperative ownership became problematic in addressing the needs of the market.

The removal of various pieces of compulsory delivery legislation and improvements in the coordination of grain handling led to major opportunities for the once protected bulk handling authorities of the Australian grain sector. As they began to compete with one another, the limitations of the traditional cooperative ownership structure led to various investor benefit sharing schemes, exactly as Cook had predicted.

The implications of this example are numerous. As cooperative firms adjust to new environments around the world, the example of Australia's grain sector illustrates that the traditional cooperative may need to consider some form of transformation to include investor sharing in order to survive in the long run.

Background

This article uses Cook's framework of evolving cooperatives to consider the institutions and firms of Australia's grain industry. He suggested that cooperatives begin by addressing legitimate market failure and offer valuable services to their patron members. As technology and competition change the total costs of these services, the cooperative can be limited by poor access to capital linked to the traditional structure of a cooperative. The cooperative then goes through a self-examination facilitated by efficiencies observed in other firms, including investor-oriented firms (IOFs). Cook's framework will be further explained in a following section. First, however, we need to consider the nature of Australia's grain sector and the origins of the various institutions considered in this analysis.

Australia's Grain Sector

Wheat and barley are the dominant crops grown by Australian farmers. They account for 75 percent of all harvested area (ABARE, 2007). The dominance of wheat and barley led to a historical focus on the marketing and handling of these grains. Climate conditions led to significant variation in the level of production. The total wheat crop has ranged between 10 and 25 million tonnes over the last several decades (USDA – FAS, 2007).

The region of Australia that produces wheat and barley is commonly called the "wheat-sheep zone". It is a fairly narrow band near the southern coast of Australia, with approximately 35 percent of the wheat production happening in the state of Western

Australia and the rest happening in the southeast. Western Australia, with a lower domestic population, also tends to export more than the eastern states (ABARE, 2007). Australia exported around 16 million tonnes of wheat in the 2005/2006 crop year from a crop of 25 million tonnes. That was around 14 percent of all wheat exported to international markets (USDA – WADSE, 2007).

Compared to other major grain exporters like Canada and the United States, Australian rail transportation is not as extensive. In numerous parts of Australia it is less efficient to move grain to port by rail than by truck (Fisher and Rose, 2006). Australian farmers also tend to truck their grain to local silos or strategic commercial sites directly from the harvested field, avoiding on-farm storage.

Despite some of the differences mentioned, Australia has gone through many of the same changes other major grain exporters have gone through. The number of grain farmers has been falling. Between 1978 and 2002 the number of grain farmers in Australia fell by a third (Hooper, Barret and Martin, 2003). Deregulation in handling has led to major scale economies. Since deregulation, the Australian Wheat Board Limited, a major domestic shipper, has lowered rail costs by 25 percent at some sites (Fisher and Rose, 2006).

Australia's Institutions

Australia's statutory institutions evolved from early 20th century efforts by growers to form marketing cooperatives (Productivity Commission, 2000). At the time, growers were concerned with middlemen profiteering and unstable prices (Piggott, 1990). These cooperatives were designed to cheaply move farmers' grain to export positions and, using terms of trade, support prices. Because of troubles with free riders in pooling, farmers lobbied the Australian government to make grower participation in these cooperatives compulsory. Various cooperatives were given statutory powers to make delivery to these grain handlers compulsory; also, the government created some statutory bulk grain handlers at this time. The grower orientation led to a particular feeling of entitlement regarding these grain handling institutions. A.S. Watson (1999) describes this perception:

> Farmers do not see themselves as purchasers of marketing services from statutory marketing authorities in the same way as marketing services or inputs are purchased from private firms. Instead, farmers regard statutory marketing authorities as operating on their behalf…. The creation of statutory marketing authorities reflected fears in the farming community concerning the efficiency and conduct of agricultural marketing…. [They] cannot be thought of as merely marketing institutions.

Orderly marketing through a "single desk" in charge of all export sales was implemented through the Australian Wheat Board (AWB) first during World War I and then reestablished permanently in 1938. Since that time the AWB managed a compulsory pooling scheme as well as government guaranteed pricing arrangements (Whitwell, 1993).

Unlike Canada and the United States, Australia's handling system never developed using on-farm storage with periodic deliveries to the handling system over the crop year. At least partially due to government support, large bulk handling authorities eventually took over the tasks of initial storage and further handling of grain in Australia (Whitwell and Sydenham, 1991). When initial utilization of the government-sponsored bulk handlers was poor, delivery to these handlers was made compulsory. State-owned bulk handlers or cooperatives with exclusive statutory powers were established in all the major grain-growing states of Australia, starting with New South Wales in the 1930s and ending with South Australia and Queensland in the 1950s. These authorities were highly regulated. Most of them were controlled by governing boards with grower majorities, many of whom forced various versions of equity of access to facilities and of equality in returns to farmers that ignored commercial returns (Whitwell and Sydenham, 1991).

Grain transportation was also highly regulated for Australian grains, with limitations on road transportation in favour of state rail authorities (Royal Commission into Grain Storage, Handling and Transport, 1988). Coordination problems between state rail authorities, including rail gauge variations, led, in some cases, to inefficient movement to port (Cracknell and Sing, 2000). It is still cheaper, by 6.7 Australian dollars per tonne, to move grain to port by road than rail in parts of New South Wales (Fisher and Rose, 2006).

Deregulation

In 1988 Australia's Industry Assistance Commission, which had been pushing for more flexibility in wheat marketing since 1978, suggested the removal of the AWB's export single desk authority. Trevor Flugge, president of the Australian Wheatgrowers Federation in 1983, favoured deregulation of the Australian domestic grain handling system. He later became chairman of the AWB (Whitwell and Sydenham, 1991).

The pressure of a general push for deregulation across Australia's industrial base and looming economies of scale in the handling sector led to the passage of the Wheat Marketing Act in 1989 by the Australian parliament (Ireland, 1998). The act deregulated compulsory acquisition powers for the bulk handlers; established a Wheat Industry Fund for use by the AWB; included cost minimization as part of the AWB's mandate; permitted the AWB to buy other grains and acquire facilities; and put a sunset clause on the single desk authority. Overall, the passage of the act represented a move away from regulation of the Australian grains sector and created an impetus for the AWB and the bulk handling authorities to become more commercially responsive (Ryan, 1994).

Cooperatives

Any discussion of cooperatives must clarify how the word "cooperative" is being applied. In Australia various firms and institutions arose to handle grain due to the political support of farmers in the early 1900s (Bielik, 2004). Some of them were traditional cooperatives that were later given further power from regulators. Other institutions were formed when the government identified a market failure in bulk handling and created

cooperative institutions controlled by their patrons with the objective of offering favourable services to their users. The wide range in the possible structures of control and ownership leads to some confusion in the discussion of cooperatives. Chaddad and Cook (2002) suggested the "traditional cooperative" was owned only by patron members, with non-transferable, non-proportional capital investment and no benefits shared with outside investors. By this definition all of the original statutory bulk handling authorities were cooperatives.

Model of a Cooperative

The goal of this article is to review evolution of Australia's grain handling institutions as possible illustrations of the life cycle of cooperatives. Cook (1995) and Harte (1997) were the first to suggest that any cooperative faced a predictable pattern of challenges when markets changed and that this often led to reform of the cooperative or its exit from the market. Cook's framework of the life cycle of cooperatives was separated into five steps, shown here in table 1. In the first stage, various types of market failure in the supply chain and local user support lead to the formation of a cooperative. It is basically a defensive reaction by the cooperative patrons to some imbalance in their market.

In the second stage, a new cooperative operates successfully in a market that had been troubled by some type of market failure, often due to an oligopoly or oligopsony from investor-oriented firms (IOFs). As the IOFs or the market in general adjust to the new

Table 1 Cook's (1995) 5-stage Cooperative Life Cycle Model

Stage one:	A cooperative is formed as a response to market failure: individual producers act collectively. **Cooperative's strategy is defensive in nature**.
Stage two:	The cooperative provides net benefits by marketing products or providing services on more favourable terms than original IOFs, olgopolists or oligopsonists.
Stage three:	The market changes and cooperative benefits relative to IOFs are less certain. Focus turns inward to examine cooperative's own transaction costs, especially free rider, horizon, portfolio, control and influence cost problems.
Stage four:	Managing the cooperative becomes exceedingly difficult and cooperative leaders consider strategic alternatives: exit, continue or transition to new ownership structure.
Stage five:	The cooperative leaders implement a new strategy: 1) exit by liquidating, merging or converting to IOF; 2) continue but address tendency to undercapitalize by a) seeking outside equity without complete restructure to IOF or b) pursuing proportionality strategy of internally generated capital; 3) transition into a new generation cooperative. **Cooperative more offensive in nature**.

Source: Adapted from Cook (1995) and Beilik (2004)

balance of power, the original cooperative moves into Cook's stage three, and the benefits of the cooperative from the rebalance start to be offset by institutional problems associated with the traditional cooperative structure.

Cook, and other researchers like Harte (1997) and Fulton and Gibbings (2000), suggested that one of the key areas of concern in cooperative development was the control of residual equity value. A lack of clearly defined property rights and a market for the transfer of those rights led to capital constraints as the market changed or as the pool of patrons became more heterogeneous. These researchers suggested transformation of the traditional cooperative to facilitate capital needs. Chaddad and Cook (2002) differentiated among these new entities by the ways in which they addressed the ownership problems identified in Cook's five-stage life cycle of a cooperative. *New generation cooperatives* have non-redeemable but transferable ownership, *member-investor cooperatives* have benefit sharing arrangements with investors, and *proportional-investment cooperatives* distribute earnings proportional to shares, which may be forced on patrons through links to patronage, but the earnings encourage capital supplies.

It is in stage three of Cook's model that the cooperative encounters costs not encountered by their competitor IOFs. These costs include problems associated with property rights, including a *free rider problem,* when individuals inside and outside the cooperative benefit from costs paid unequally by others; a *horizon problem,* when the return generated to a member owner is over a shorter period than the productive life of a purchased asset; a *portfolio problem* due to differences between the risk-return profile of an individual patron and that of the cooperative as a whole; a *control problem* between the management of a cooperative and its owner members that lacks the external pressures seen in IOFs with publicly traded stocks and other types of discipline; and finally an *influence cost problem,* when patrons pursue self interests in the distribution of wealth or benefits among members and not cost reduction or income growth (Bielik, 2004).

When the cooperative finally recognizes its structure is problematic in terms of its long-term survival and changes must be made, it has entered Cook's fourth stage. The leadership convinces the membership that alternative structures should be considered, including the following: an exit from the market and return to IOF control, or conversion of the cooperative to an IOF or merger with an IOF; a restructuring of ownership and equity sharing that includes proportionality devices that address the most important problem identified in the current structure; or the cooperative creates a new generation cooperative with an asset appreciation mechanism, share liquidity, a base equity plan and a closed membership policy.

Analysis

Now we consider the evolution of Australia's major grain institutions within the framework of Cook's cooperative life cycle model. Table 2 presents the analysis as an overview. Stage one began with the demands of stable supplies during World War I and

Table 2 The Cooperative Life Cycle Applied to the Australian Grain Sector

Stage one:	1920s to 1950s: Instability due to depression and war lead to grower fear of exploitation by middlemen and processors. Grower cooperatives convert quickly to "compulsory" marketing and handling authorities.
Stage two:	1950s to 1970s: Statutory arrangements remain in place for a significant period, with general grower support for perceived stability and income benefits.
Stage three:	1980s: Concerns about inefficiency in handling begin to surface. Deregulation becomes a popular concept in Australian parliament. Royal Commission increases awareness of system costs. 1989 Wheat Marketing Act deregulates domestic grain handling and threatens export monopoly.
Stage four:	1990s: AWB and bulk handling authorities recognize opportunities of efficiencies, mergers and capital accumulation in newly deregulated market. Leaders start to explore changing the ownership of these institutions under new regulatory environment.
Stage five:	1990s onward: Various new firms and institutions undertake strategies of growth and diversification along the supply chain. Key organizations implant structural changes: • AWB Limited and ABB Grain implement dual class share structures; • GrainCorp and AusBulk implement holding company structures; • CBH remains traditional cooperative, members reject dual class restructuring; • all organizations remain under grower control; • new shares are publicly listed.

Source: adapted from Beilik (2004)

with grower concerns of exploitation between the wars. In Western Australia, grower cooperatives emerged on their own in the form of the Westralian Farmers Cooperative and the Western Australian Wheat Pool. In Southern Australia, the South Australian Wheat and Woolgrowers Association was formed. When bulk handling problems began to emerge in the 1930s, statutory bulk handling authorities were created in each of the affected Australian states. The western cooperatives merged to become Cooperative Bulk Handling Limited (CBH) and were given statutory powers, including compulsory delivery in Western Australia. The Southern Australian Wheat and Woolgrowers Association was given statutory powers in that state, and it eventually transformed into AusBulk (Whitwell and Sydenham, 1991).

The other institutions discussed below, the AWB, the Australian Barley Board (ABB) and GrainCorp Limited, originated with the support of government fiat. The AWB and ABB were created to use "orderly marketing" to capture values for farmers from the

export market. GrainCorp began when the Grain Elevators Board of New South Wales (a government body) was given statutory powers for compulsory delivery (Keen, 1998).

Stage two, the period of successful operations, may have been shorter than the period listed (1950s to 1970s). Although there were twenty to thirty years of calm in the grain sector in Australia starting in the 1950s, little attention was given to the rising costs of regulated marketing and handling until the popularity of deregulation swept the country in the 1980s. The sector might have been quite inefficient before then. Stage three, the period where transaction costs are clarified and strategies to deal with them emerge, was not facilitated by efficient and competing IOFs as is normally the case. The costs were identified by observing operations in other countries and through the work of internal reviews, including the Royal Commission into Grain Storage, Handling and Transport in 1988. With the support of grower leadership, the Australian parliament enacted the Wheat Marketing Act in 1989, allowing a wide range of options to the now deregulated bulk handling authorities and to the AWB and ABB, which now had some capacity to raise capital and buy assets.

As predicted, in the final stages eventually all of the major Australian grain marketers except one transformed into investor-share cooperatives, with some grower control but with investors sharing in earnings to attract their capital investments. The lone holdout, CBH, considered restructuring in 2000 but rejected it. They have, however participated in various joint ventures that have allowed access to new capital. CBH remains an aggressive grain cooperative in Western Australia. Bielik (2004) argued that continued success for CBH would increase the pressure from some members for eventual redemption of equity from shares and thus force the transformation of CBH into a new type of cooperative. That final shift has not yet happened, but Cook's predictions regarding the evolution of Australia's cooperative organizations were clearly prescient. The case of Australia's grain marketers fully supports the dynamic model of Cook's five-stage life cycle of cooperatives.

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