THE UNCERTAIN FUTURE OF FAMILY FARMING: ISSUES FOR ECONOMIC ANALYSIS[1]

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Introduction

Claims about the imminent demise of family farms understandably arise during rural recession when some farmers are going broke and many more are 'tightening the belt'. Economists have generally seen the difficulties as part of the boom-bust cycle of most rural industries, and argue that reductions in the numbers of farms is inevitable but that economies of scale in Australian agriculture largely favour family farms. Makeham et al. (1979) saw the predictions of family farms being 'gobbled up by large corporate farming ventures' as largely unfounded. More recently, Lloyd has written in the farming press under the banner heading of 'family farms pass test of time'.[2]

Understanding what is happening to family farms requires a conceptual distinction between them and two other forms of production, namely family-run business and corporations. Family farms, accounting for most enterprises in Australian agriculture, are owner-occupied farms relying predominantly, though not exclusively on family labour. They are different to family-run businesses, also occurring across most agricultural industries, in which the contribution of employed labour or tenants is greater than family labour.[3] Lastly, corporations employ all labour including managers through the labour market; they produce, sometimes alongside family farms and family-run businesses, wool, feedlot beef, poultry, pigmeat, rice, vegetables and some other commodities.

The theory of the firm can explain much about the scale of enterprises in Australian agriculture, but not the circumstances in which rural restructuring will be accompanied by changes from one form of production to another. This question deserves more attention. It is only in the last 40 years that corporate farming has come to dominate pigmeat and poultry production. Further, while beef and wool have always had their share of family-run businesses and corporations, many corporately-owned feedlots have been recently established to supply the export market. In contrast, reductions in the farm workforce associated with mechanisation and rural downturns have transformed many family-run businesses into family farms.

There are no simple answers as to why one industry rather than another is based on family farming. The message to family farmers since the late 1960s, 'get big, or get out', could easily have meant a major shift towards family-run businesses or

1 Paper presented to the Australian Agricultural Economic Conference, Australian National University, Canberra, 1992.

2 Weekly Times, 6.9.89, p.63. Note that Lewis in 1968 stated that problems in acquiring equity capital could 'unduly favour some forms of agricultural organisation other than the family farm'.

3 ABARE includes many such farms as family farms because it defines family farms as using at least 48 work-weeks of family labour, and any level of employed non-family labour (ABARE, 1991).

corporate agriculture. Why didn't it? Milk production, like pig, poultry and beef production can be divorced from the uncertainties of climate and can have standard labour inputs and a certain planning period. So why has Australian dairying not also followed the path of feedlot production, as it has in some areas of the United States?

Form of production in dairying

Dairying has not 'naturally' been a small-scale family farm operation. Local histories refer to many nineteenth-century Australian estates which used wage or contract labour to milk very large herds, sometimes over 1,000 cows. Dairying by tenanted farmers predominated on other estates, such as Bodalla. Large-scale dairying declined as the numbers of small settlers grew, as cream production techniques changed, and as an export market for butter was established.

Nevertheless, since that time some large-scale enterprises based on wage labour or tenancy have operated in Australian dairying. Burnside Dairies supplied many Melbourne hospitals into the 1950s from a processing factory served by several dairyfarms each running about 250 cows. Commencing in the 1940s, one family company established over 30 dairyfarms in West Gippsland, and maintained most as sharefarms into the 1980s. Very large contract-supply dairyfarms have operated in N.S.W. - in 1984 one milked 2,000 cows and employed 16 workers on two farms, and another employed 12 staff to milk 940 cows three times a day.[4] The Charlton feedlot, later part of the Coles-Myer group, began in 1984 with 1,200 cows; it has now ceased operating.

The interesting question is why family-run businesses and corporations have accounted for only a small proportion of dairy production in Australia. They have not grown in number, either through expansion of family farms or by entry of new operators financed from outside the industry. The Bureau of Agricultural Economics (1973) found that in 1970 at least 95% of dairyfarms surveyed in Victoria, and other states, were held by single owners or some kind of family partnership, while on average 92% of labour was provided by the family.

The purpose of this paper is to outline the factors which gave a decisive advantage to family farming in Victorian dairying from 1945 to 1975. The paper also outlines the adaptation of family farms to changed circumstances in Victorian dairying over this period.

Theoretical approach

Family farms can be conceptualised as simple commodity producers (Friedmann 1978a, 1978b, 1980, 1986). Existing only within a capitalist economy, simple commodity producers rely predominantly on their own labour while owning the means of production. The characteristics of the social formation - economy and society - interact with the internal structure of each form of production in determining whether simple commodity producer or capitalist will be dominant.

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[4] The Australian Dairyfarmer, July 1984, pp.8-11 and September 1984, pp.8-11.

Markets - in products, labour power, credit and means of production - are the central mechanisms by which simple commodity production is integrated with the capitalist economy. As for internal structure, both the production process and relations between household members are important. Gender and generation shape the division of labour and 'the cyclical life of the enterprise'. The fluctuating family labour supply makes it necessary to periodically hire labour and send family members to work off-farm. Friedmann writes 'each form of production is characterised by specific social relations and a specific range of techniques' (1978a, p. 553). Family farms can potentially dominate the particular industry if available techniques allow them to achieve the same, or greater, productivity as capitalists. Friedmann (1978a, p. 563) emphasises repeatedly that the competitive advantages of family farming depend on:

> a very strict condition: that technical requirements allow combinations of means of production with the quantity of labour on average available within commercial households.

In the context of Victorian post-war dairying, the approach has been to examine the interplay between, on the one hand, the market imperative and intervention by the state and farmer organisation and, on the other hand, family dynamics, the production process and land ownership (Crosthwaite 1989b).

The state and farmer organisations

In spite of their avowed orientation to preserving the family farm, which in the parlance of the times included family-run businesses, the state and farmer organisations played a contradictory role. Protective devices, subsidy and co-operative processing helped insulate farms from the winds of change. At the same time the exigencies of retaining and expanding markets led to a continual drive for increased farm-level efficiency by Federal and State Governments, milk processors and the Victorian Dairyfarmer's Association.[5] Investment incentives and extension services benefited larger farms most (Hefford 1985; McAllister 1978).

The pressure for change from market forces and the state was probably strongest in two periods, each representing an intensified phase of investment. In spite of high returns from dairy products in the early post-war years, the size of milking herd needed to generate sufficient income to support the family required new production methods. It became imperative to mechanise field work and milking, if not already done, to improve pastures and to conserve large amounts of fodder. Although returns for manufacturing milk began to fall from the mid-1950s, pressures to expand production or leave dairying again became intense from the late 1960s when returns fell further and production costs escalated. This was compounded by pressures from the processing sector and the state to install refrigerated vats and hygienic milking equipment.

In spite of the pressures for farm-level change, there were limited opportunities for direct competition from capitalist farms or businesses operating tenanted farms in Victorian dairying.

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[5] The need to improve efficiency is repeatedly emphasised in the Association's paper The Victorian Dairyfarmer. The Association represented most dairyfarmers having more than 16,000 members in 1960 when the number of licensed dairyfarms was then 24,823.

Responses to pressures to expand

There were opportunities on many dairyfarms to resist the expansion pressures, at least for a time. Family farms had fewer claims on income. Profit and rent were not paid, relatively few had significant debts, and family members, who rarely received wages based on hours worked, adjusted living expenses according to circumstances and farm development priorities.

The following were notable features on many dairyfarms, particularly in the early post-war years: a reduction in the use of outside labour, which came to be employed primarily to overcome gaps in the family lifecycle and to provide relief from milking; a preference for purchase of land rather than other means of production; a reluctance to borrow to finance farm development; expansion of capital stock by means other than purchase; and little concern with slow milking times.

Such 'resistance' did not mean these family farmers behaved irrationally. Ultimately they were forced to expand or quit dairying. While not profit-driven, their goals were influenced by rising living standards and decreasing hours of work in cities and towns. Although they had an unpaid labour supply, the burden of physical labour fell increasingly onto a smaller family unit which was often strained by the competing demands of child-rearing, household work, milking and other farm work.

While many were obviously family members, Rothberg (1948) found that 58% of wartime dairyfarms were still able to rely on the equivalent of two or more full-time workers. From the early 1950s until the end of the period, BAE surveys show that most farms were primarily reliant on the 'operator's' labour, though an increasing proportion of the total labour was supplied by other family members. The labour contributed by family members, excluding the 'operator', increased from about 25% to 40% of farm labour over the 1960s, and to 50% during the mid-1970s slump. In 1952-53, on 54% of Victorian farms, wives took an active part in farming, mainly in milking and calf rearing. For the late 1960s and mid-1970s, about half the family labour was supplied by the spouse, one-third by sons, up to one-thirtieth by daughters and the remainder by other relatives (Powell and McFarlane 1972).

Milking generally required two or more milkers; the sole milker comprised only 11% of Victorian dairyfarmers in 1952-53 and 9% in 1976-7 (BAE 1956, 1980). In 1976-7, a further 6% had only 13 weeks of family labour in the year and most of these also employed very little labour. Two or more milkers provided company for each other during the long hours, allowed other tasks such as calf feeding to be undertaken at the same time, and reduced the length of time each spent in or near the dairy shed. Where the family could only supply limited or no labour for long periods, viable choices for family farms apart from quitting dairying, included reducing the scale of activities, hiring labour or engaging a sharefarmer.

Several measures to facilitate expansion of the capital stock, apart from borrowing, were also available to family farms. The variety and complexity of farm work, and often off-farm work experience, gave many farmers the skills to do some construction tasks using basic equipment like cement mixers and welders. Many farmers undertook the major task of converting their milking shed to a herringbone based on Department of Agriculture plans. Rearing herd replacements was an obvious means of expanding capital stock without outlaying additional finance. Sharing of equipment between farms could also be important, and in some cases the co-operative dairy factory owned machinery used by its members. Finally, family farms could ease the burden of capital purchase through several short-term means such as increasing the number of cows milked or calves reared, working off-farm, contracting out new equipment, and restricting household consumption.

By contrast to the backward farms, there were many innovative family farms throughout the post-war period. Especially in later years, these farms borrowed heavily to finance expansion and increased productivity of family labour as rapidly as possible. The cycle of family needs and family labour supply generally remained important on these farms thus distinguishing them from family-run businesses. Only a few modernising farmers came to rely predominantly on non-family labour, either employing labour or operating a tenancy arrangement.

There was not a rigid distinction between resistant and innovative family farms, and few farms matched either type in every respect. The progressive expanding farm of one period often became a backward farm twenty years later. If they had become owners at the age of 30, then farmers could reasonably expect to have the farm, initial equipment purchases and some development work paid off by the time they were aged 45 or 50. Then, providing expenditure had been productive, most farm families could generate considerable savings before a new round of investment was required. Most would then be reluctant to again borrow large sums or even invest out of savings. They relied instead on the existing farm organisation to generate sufficient income, even if declining in real terms, to support family consumption. Fewer family members to support, and acceptance of a lower standard of living by remaining family members, made this change possible.

An inter-generational cycle operated, and expansion was again initiated by the farm purchaser or the inheriting relative. Inheriting family members may well have had to support ageing parents and pay off debts within the family. The cycle of debt build-up and decline linked to farmer age is confirmed by 1950s survey data (BAE 1956) and studies by Barr et al (1980) in the late 1970s.

Some families would sell the farm rather than be pressured into investing the considerable sums required to generate income adequate to pay off new debts and meet family needs. Rather than re-invest, owners of marginal farms also continued dairying, accepted a declining real income possibly supplemented by off-farm work, and encouraged offspring to seek work elsewhere. As Salmon et al. (1973, p. 42) argue much of the 'human adjustment in response to economic and technical change ... occurs on an inter-generational time scale'.

The milking process

Although seemingly slow on many farms, there was more change in the milking process from 1945 to 1975 than in any previous period. Milkers had to: adjust themselves to the newly installed milking machine; modify their routines to incorporate larger numbers of cows; replace the back-out shed with a walk-through or herringbone shed; replace can collection and possibly cream separation with bulk milk vats; and reconstruct approaches to the dairy for both larger herds and the milk tanker. The changing milking techniques and the increased scale of production did not threaten the persistence of family farming (Crosthwaite 1989a).

The new technologies did not reduce labour requirements dramatically. Economies of scale that did occur were available to the most efficient family farm. Technical advance tended to occur as the family-farm enterprise expanded and pressures built for the restructuring of its production process. While scientific understanding of milk production, animal reproduction and extraction of milk rapidly developed in the post-war period, the research, in large part sponsored by the state, favoured small-scale operations as much as large.

With appropriately designed milking sheds and effective milking routines, throughput rates on small family farms could equal those in much larger sheds. Difficulties in adapting machine processes to the physical movements of the cow and its milk let-down, combined with the hygiene requirements in the dairy, all limited the scope for economies of scale. The cow's physiology posed a further limitation because milking cannot be easily accommodated within standard working arrangements. While technically possible, one and three milkings a day rarely prove financially worthwhile. Twice a day milking at large intervals apart is the most viable alternative for all but the last weeks of the cow's 10 month lactation. While the milking process does not yield the returns to scale of most industrial production, it does require a similar regularity and constancy but spread over a long day and seven days a week. With its unpaid labour supply, the family farm has a decided advantage. To a limited degree (see later discussion), family-run business have dealt with the labour requirements in dairying by engaging sharefarmers.

Complementary activities

Able to match the efficiency of large milking operations, small pasture-based dairyfarms had other advantages over capital intensive feedlot dairying operations because of the complementary nature of milking, fodder production and rearing of replacements. Very few farms bought in the bulk of stock fodder while most reared herd replacements rather than buying from specialist producers.

As with the milking process, great changes took place in field operations on family farms over the post-war period. Mechanisation greatly reduced the time taken and encouraged some activities like ensilage making. Chemical fertilisers, weedicides and pesticides were increasingly used to control growth patterns of wanted and unwanted plants. As techniques of intensive pasture management developed, a new set of activities controlling the cow's access to pasture also emerged. Herd replacement was increasingly based on precise measurement of production levels and artificial insemination was adopted. Calf-rearing was also systematised. Antibiotics were used to treat animal illness and veterinary services were increasingly demanded.

Dairyfarmers could make significant choices about how to structure the farming operation, including the extent to which the complementary activities were pursued. Further, the complexities of efficient machine production, animal husbandry and pasture management greatly increased the skill required by comparison to the physical grind of earlier years. Co-ordination of the various activities and the actual work was most suited to small enterprises where physical labour and management remained unseparated. These advantages mostly benefited family farms, and to a lesser extent the smaller family-run businesses.

The land market

The competition of family farms for the better dairying land also made large-scale pasture-based dairying or tenancy operations relatively uneconomic compared to other investment opportunities available to corporations and family-run businesses. The farms of families that 'failed' to secure their long-term continuity were in great demand by would-be family farmers and by others wishing to expand. The numbers wishing to purchase a dairyfarm were high partly because substantially less capital was needed than in the other major farming industries (Davidson 1981). Sharefarmers, rural and urban wage-earners, and children of farmers unable to remain on the home farm strove to avoid or escape wage labour. In 1959 there were 7,000 applicants for the first 350 farms in the Heytesbury settlement scheme (*Victorian Dairyfarmer* September 1959). The price that buyers were willing to pay was often based, not on capacity to yield a given return on capital, but on the capacity of the family, through hard work and constrained family expenditure especially in the early years, to pay off borrowed funds.

Families selling up sought large capital gains because the family had sacrificed income for years. The effort that had gone into building the farm up and future family plans were central to family estimation of farm worth. If land prices fell, intending sellers would not generally accept the market price. Using N.S.W data for all farm types, MacPhillamy (1972) shows very clearly that when price fell both the number of farms offered for sale and the proportion of auctions resulting in sale shrank. As Makeham et al. (1979, p. 173) emphasise:

> farm families will undertake a wide variety of fairly drastic changes - tighten belts, go out to work off the farm, set back the production potential of their farm - before selling at a capital loss.

Expanding herds meant that most dairy farmers had at some point to acquire rights to more land, or quit dairying. Family farmers could adjust relatively easily to the ad hoc availability of suitable land for expansion. Access to additional land for relatively short periods also fitted into the life cycle of farm family members. Corporations and family-run businesses could only partially break the dependence on land by intensifying dairy production; by contrast to the situation in manufacturing industries, this required investment <u>in</u> land.

Tenancy, also based on access to land, became less important over the period. Cash tenants occupied some 15% of Victorian dairyfarms in 1944, but this was a negligible 2% by 1969. Sharefarming was undertaken on 11% of dairyfarms in 1944, 16% in 1964, and 11% in 1975 (Rothberg 1944; BAE, 1966, Eager and Sturgess, 1970). Tax advantages sometimes made dairying profitable for absentee owners using tenancy arrangements; however, this was rarely long-term as they could realise capital gains by selling out to family farmers or urban developers. Dillon (1954) found in northern N.S.W in the 1950s that 4 out of 9 cash tenants as well as 5 out of 18 Sharefarmers were related to the owner. Similar data for Victoria is not available. However, Sharefarming based solely on profit probably became less common by comparison to its use in helping overcome discontinuity in the supply of family labour. In the post-war period, smaller families, children staying at school for longer, daughters leaving to work rather than staying at home until marriage, and sons moving away all contributed to the problem. Ageing farmers sometimes used Sharefarmers either in anticipation of children coming home to run the farm or as a source of retirement income in their last years.

Conclusion

The purpose of this paper been to show, through an historical study of post-war Victorian dairyfarming, the usefulness of drawing conceptual boundaries between the family farm, family-run businesses and corporations in addressing questions about the structure of Australian agriculture.

The distinguishing feature of family farming, or simple commodity production, is the absence of a structural need to pay wages and earn profit. In Victorian dairyfarming operative factors were a capacity to forgo household consumption, a willingness to work long hours and a determination to avoid being forced permanently off the farm. The capacity of families to expand and contract the size of the farming operation in relation to their lifecycle was also significant. Further potential advantages relate to the goals of families, their deployment of labour, their means of intensifying production, and their capacity to co-ordinate complementary activities.[6] The household plays a less important role in family-run businesses, particularly as the proportion of non-family labour grows.

The day-to-day requirements of dairyfarming and the pressures to expand put enormous pressures onto family units. Reluctance to expand, usually during the later part of the lifecycle, and break-down of the family unit, meant many families quit dairying. Where they were replaced, it was generally by other families, not by family-run businesses or corporations.

While the 'household economy' approach based on Chayanov's work (Durrenberger 1984) deals with similar questions, the concern here has been to place family farming in the context of commercial, modern-day agriculture in which the pressures to restructure are constant. In this context, there are limits to the advantages of household production; after all it predominates in only some areas of the economy. The nature of dairy production and its reliance on land in Victoria help explain the dominance of family farms. The production process changed primarily in response to the increasing scale of production sought by family farmers. Further, the land market operated to reinforce the dominance of family farms.

While open to conjecture, only detailed investigation will determine how secure the future of family farming is in Victorian dairying, and in Australian agriculture. The increasingly 'free market' regime in which Australian agriculture now operates has led Lawrence (1987, p. 259) for one, to argue that family farming is threatened and that 'larger-than-family-farm units' will probably become more important. Given the demonstrated adaptability of family farms, and the continued reliance of food producers on processes of nature, the evidence for such tendencies should be treated cautiously.

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[6] The framework used in this paper can incorporate more recent changes in the survival mechanisms of family farms; notably the increased reliance on off-farm work and on income earned from off-farm investments (ABARE, 1991).