Financial Management Practices on Irish Dairy Farms

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Key words: dairy farm financial management, dairy farm performance, case farm studies

Abstract

With increasing globalisation, deregulation of trade and competition in the markets for dairy products, farmers are facing major adjustments and impacts in their farm businesses. Within the European Union, farmers are already facing significant change following the Common Agricultural Policy Mid-term Review in 2003. Farmers will need to take strategic decisions to remain competitive in dairying, and must focus on improving their financial and business management as well as production efficiency. The primary focus of this research was to examine farmers' financial practices and their impact upon farm financial performance. The case study research with 12 dairy farmers illustrates the linkages between sources and suppliers of financial and production advice with dairy farm performance in cost and profit terms by the participating farmers.

Introduction

The land area in the Republic of Ireland (RoI) is 6.9 million hectares (ha's), of which 4.4 million ha's are used for agriculture (Department of Agriculture and Food, 2004). The contribution of agriculture to Ireland's Gross Domestic Product (GDP) was 8.8% in 2004 and continues to decline (Department of Agriculture and Food, 2006). Trends of falling farm incomes, rising costs of farm inputs, rising levels of off-farm employment, increasing diversification of farm enterprises, and further polarisation of larger, more innovative commercial farmers and smaller, state reliant farmers have been observed (CSO, 2003; Connolly et al., 2003). Phelan (2005) showed that the contribution of farm income to household income declined from 70% in 1973 to 41% in 1999/2000 in the Republic of Ireland. Between 2000 and 2003, aggregate farm income levels decreased in real terms by 14 points (Department of Agriculture and Food 2004) and this is likely to continue. Byrne et al. (2003) using the National Farm Survey data in Ireland observed that farmers obtain their production advice mainly from *Teagasc* – the Irish Agricultural and Food Development Authority, and from private agricultural consultants. Accountants, Teagasc and private agricultural consultants provided the financial advice.

With the operating costs of €28,000 p.a. for a typical rural farm household in 2000, the annual farm household income should exceed €40,000 to ensure that living expenses, loan repayments and taxation can be met. By 2008, annual farm household income will need to exceed €57,000 to keep pace with predicted inflation. To achieve the same level of profit by 2008 through increasing scale, an increase of 40 to 50 per cent would be required in milk production. To obtain the same profit level through cost efficiencies by 2008, requires a reduction in costs of 6.0 c/l (O'Dwyer, 2002).

Purpose of the Paper

The research reported here is part of a larger research programme to obtain a comprehensive insight into the financial practices of Irish dairy farmers (Byrne, 2005). This paper has two objectives: (i) To examine certain farm financial management practices of dairy farm managers with different sized businesses (measured by herd size) who spend varying amounts of time working on the financial management side of their dairy farm (ii) To examine the impact of these financial management practices on the financial performance of these dairy farms.

Methods and Data Sources

Case study analysis was undertaken to obtain a comprehensive insight into the financial management practices of a sample dairy farmers in Ireland. Participants in the research were selected from the Dairy Farmer Survey completed in 2001 (Byrne et al., 2003), based upon the hours per week that case farmers self-reported that they spent working on the financial management aspects of their farm business, and on the number of dairy cows in their herds (Table 1).

Table I *Number of Respondents by the Hours per Week Spent Working on the Financial Management Aspects of the Farm Business and the Number of Dairy Cows in the herd (n=121)*

Number of Dairy Cows in the herd	Hours per Week spent Working on Financial Management			
	<1 Hour (N=25) Category 1	1 – 3 Hours (N=54) Category 2	4 – 5 Hours (N=20) Category 3	> 5 Hours (N=22) Category 4
< 56	11 (1-1)*	20 (2-4)	6 (3-7)	1 (4-10)
56 – 85	7 (1-2)	21 (2-5)	8 (3-8)	5 (4-11)
> 85	7 (1-3)	13 (2-6)	6 (3-9)	16 (4-12)

Pearson's Chi Square = 19.931 D.F. = 6 Sig. = 0.003
*figures in brackets refer to the individual case study farmers participating in the research

A case-farm from each of the 12 groups in Table 1 was randomly selected to participate in the research. Three categories of dairy farm were recognised, based upon the number of milking cows. The categories ranged from less than 56 cows, between 56 and 85 cows and to more than 85 cows. For example, case study farm 1 was selected at random from category 1 respondents who had less than 56 dairy cows and termed 1-1; case study farm 2 was selected from those respondents in category 1 who had between 56 and 85 dairy cows, and termed 1-2. Prior to the case study selection, the case-study interview schedule was piloted with three dairy farmers and adjusted to take account of the views expressed in the pre-testing phase.

Each participant, with the assistance of the researcher, was required to complete the Teagasc Dairy Profit Monitor Input Sheet (a computer-based system developed by Teagasc to provide dairy farmers with a detailed analysis of their farm financial performance). This was followed by a discussion of the financial management practices on their farms. The purpose of completing the Teagasc Dairy Profit Monitor Input Sheet was to determine the financial performance of the dairy farm business, and to examine the financial management tools used by the participating farmers in its completion.

Results

To measure farm economic performance in the dairy enterprise, common costs[1] and common profit[1] are useful benchmarking measures. The prevailing Teagasc guideline figure in 2001 for common costs was 10.9c/l and common profit was 20.2c/l. The common costs and common profit outcomes for all 12 farms are summarized in Figures 1 and 2. The results show common costs and common profit ranging between 6.6 and 15.4 c/litre and between 14.08 and 23.98 c/litre (Euro) respectively over the 12 farms.

The results for each farm are summarised in Tables II a and II b. As farm size and activity increases, some farmers employed full-time hired labour (Case farms 1-3, 3-9 and 4-12). So the exclusion of 'hired labour' in the calculation of common costs benefits those farms. For example, case farm 3-9 has high common costs and the addition of 'hired labour' to this figure, would greatly reduce the farms common profit.

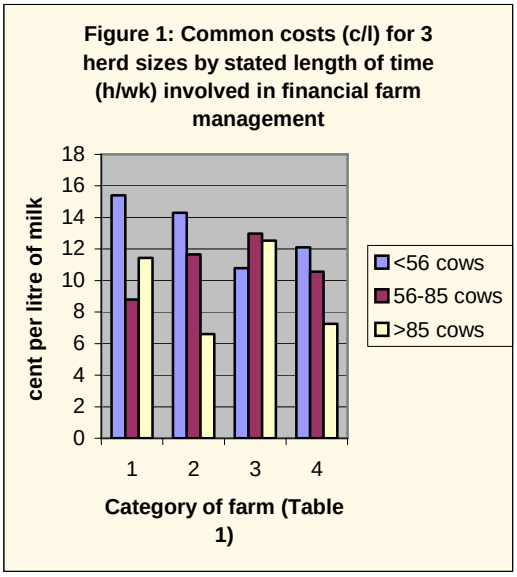

Figure 1: Common costs (c/l) for 3 herd sizes by stated length of time (h/wk) involved in financial farm management

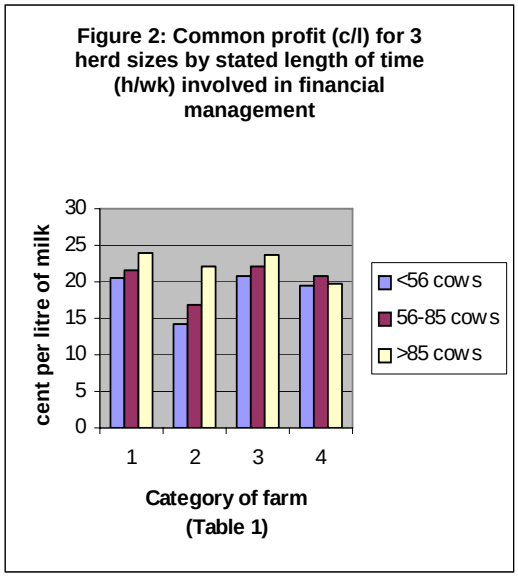

Figure 2: Common profit (c/l) for 3 herd sizes by stated length of time (h/wk) involved in financial management

Category 1

Teagasc common profit targets for category 1 farms were achieved. Common costs targets were met in one (case farm 1-2) of the three farms. This respondent demonstrated a willingness to adapt to new management practices as

[1] Common costs are all variable and fixed costs excluding hired labour, interest, land and quota rental or lease costs. Common profit is total dairy output less common costs.

an active participant in a DairyMIS[2] (Management Information System) discussion group which focuses on reducing costs per litre of milk and improving milk quality.

There were no financial management records kept on these farms. Case farm 1-3 used a bookkeeper to record financial information in a commercial accounts package. As there was high farm debt on case farm 1-3, recording all cash-flow activities was a requirement laid down by the lender. The three farmers all sought professional farm financial advice from agricultural consultants. Two respondents used accountants and discussion groups. The research found that the respondents had limited commitment to their dairy business due to imminent retirement (1-1), off-farm employment (1-1), no immediate successor identified (1-2, and 1-3) and commitment to off-farm investments (1-3).

Table II a: Farm and financial management characteristics of dairy farms

Category and Case Farm	Area Farmed (Ha)	Total Farm LU's[1] (Dairy Cows)	No. of Dairy Cows			Hours Spent per Week on Financial Management				Common Costs (c/l)[2]	Common Profit (c/l)	Financial Records	
			< 56	56-85	> 85	< 1	1-3	4-5	> 5	Target 10.9	Target 20.2	Manual Account Book	Comp [3] Accounts
1-1	38	69 (29)	√			√				15.40	20.46		
1-2	81	168 (64)		√		√				8.80	21.56		
1-3	123	442 (262)			√	√				11.44	23.98		√
2-4	37	81 (35)	√				√			14.30	14.08	?	√
2-5	123	197 (75)		√			√			11.66	16.94	?	√
2-6	93	253 (102)			√		√			6.60	22.00	?	?
3-7	81	117 (54)	√					√		10.78	20.90	√	
3-8	59	117 (79)		√				√		12.98	22.00		√
3-9	63	178 (114)			√			√		12.54	23.76		√
4-10	74	147 (49)	√						√	12.10	19.58		√
4-11	114	102 (60)		√					√	10.56	20.68	√	
4-12	272	359 (241)			√				√	7.26	19.80		√

[1] LU = Livestock Units [2] Currency is € (euro) [3] Comp. is computerised

[2] DairyMis is a computerised dairy management information system operated by Teagasc

Though they expended less than one hour per week personally working on the financial management, case farms 1-2 and 1-3 seemed to have a strong understanding of their farm financial situation and their business performance as reflected in their common profits outcomes (Table II a). Case farmer 1-2 achieved this target through frequent involvement in discussion group activities, farm walks and demonstrations, while case farmer 1-3 achieved a better business financial understanding having hired a book-keeper.

Table II b Farm and financial management characteristics of dairy farms

Cate-gory and Case Farm	**Financial Analysis**		**Sources of Professional Farm Financial Advice**			**People Involved in Making Farm Capital Investment Decisions**				**Farm Goals**	**Farm Business Plan**
	Compiled by farmer	Compiled by a professional	Account-ant	Agricultural Consultant	Discus-sion Group	Partner	Account-ant	Parent	Profes-sional Advisor		
1-1		√	√	√			√	√			
1-2		√		√	√	√			√		
1-3		√	√	√	√						
2-4	√	√	√	√		√	√			√	√
2-5	√	√		√				√	√	√	√
2-6	√	√	√	√	√		√				
3-7		√	√	√	√		√				
3-8	√	√		√	√			√	√		
3-9	√	√	√	√	√		√	√	√	√	√
4-10	√	√		√	√			√	√	√	√
4-11	√	√	√	√	√	√	√		√	√	√
4-12	√	√	√	√	√	√	√		√	√	√

There was no major capital investments contemplated in their businesses in the near future. This ignored professional advice that expansion would be a key contributor in maintaining and increasing dairy farm incomes in the years ahead

(O'Dwyer, 2002). However, perhaps this advice was not relevant to these farmers' circumstances as one farmer was close to retirement, another worked off the farm and the third farmer had no immediate successor. The financial records were completed on these farms by professionals and were for compliance and tax reporting purposes. Case farmers 1-1 and 1-2 did seek financial advice from professional sources unlike case farm 1-3, the larger farm.

The interaction between farm business and lifestyle goals with farm business plans is complex. While none of the farmers in category 1 have developed formal business plans, all three case farmers have a strategy in place for their business i.e. retirement, off-farm employment, off-farm investment etc. Traditional measures of farm success are generally financial and production based; personal and family goals are rarely contemplated with respect to their measurement (Rawlings et al. 2000).

Category 2

Case farmers 2-4 and 2-5 financial performances were inferior to case farmer 2-6 (Table IIa) relative to the guidelines. It should be noted that Case farmers 2-4 and 2-5 represent over a third of all the dairy farmers participating in the case study research (Table I) and perhaps this indicates that the Irish extension service need to concentrate on improving the financial management skills of this set of farmers in particular. Case farmer 2-6 participated in discussion group activities and adopted best practices (Table II b). Case farmer 2-4 was not involved in any discussion group in contrast to case farmer 2-5, but the discussion group only focused on production issues. Case farmers 2-4 & 2-5 maintained detailed financial records in Microsoft Excel, which they used to account for current spending, and to supply financial information to the accountant for annual tax accounts. The financial data on these case farms were compiled by the respondents and by professionals. However, farmer 2-6 was the only respondent to use this data to advantage to increase farm profit. All three respondents sought professional farm financial advice from their agricultural consultants. Case farmers

2-4 and 2-6 also sought this type of advice from accountants (Table II b). But farmer 2-6 also used a discussion group and Teagasc advisor for financial advice.

Case farmers 2-4 & 2-5 indicated that they would seek advice from professional and family members if making a farm capital investment decision. Case farmer 2-6 had no plans for any immediate capital investments in the farm business due to family educational commitments. Case farmers 2-4 and 2-5 had identified farm goals and business plans for their farm businesses. They were younger dairy farmers who planned expansion in their farm businesses in the near future.

The major difference between case farmers 2-4 & 2-5 and case farmer 2-6 was the stage of development of their farm businesses. Case farmer 2-6 had made previous investments in his farm, was now operating efficiently, but will need to monitor the farm's performance to maintain efficiency including the non-farm costs. While case farmers 2-4 & 2-5 were at the initial stages of developing their farm businesses at the time of the research, farmer 2-4 was in receipt of non-farm income from his spouse's business. However, neither case farmers were involved in discussion groups dealing with farm finance.

While case farmers 2-4 & 2-5 had strategies in place, their stated goals were not being achieved due to lack of knowledge (both production and financial). Farm goals and plans need to be revised to include a learning and growth element, which would enable these young enthusiastic dairy farmers to expand more efficiently. These farmers need to focus on their businesses' ability to change and improve, to adapt their products and processes as well as the ability to develop and introduce new improved products and services (Kaplan and Norton, 1992). A business must set targets that respond to continuous change in customer needs (Newing, 1995). Therefore, as well as measuring the financial performance of the farm business, these farmers require non-financial measures of performance. Non-financial indicators are usually leading, that is, they inform the manager of likely future performance. For example, the learning of a new skill is a lead indicator of the farmer's future focus and ability to manage (Rawlings et al. 2000).

Category 3

All three respondents exceeded common profit Teagasc guidelines (Table II a). While all farmers kept detailed financial records, which were used as part of discussion group activities, only 3-7 in this group had common costs lower than the Teagasc guideline. Case farmer 3-8 was a new monitor farmer and that may indicate an intention to focus on reductions in costs going forward. But opportunities existed for case farmers 3-8 & 3-9 to improve the efficiencies of their farm businesses. While case farmer 3-9 prepared detailed financial budgets and farm business plans, the annual financial figures used in his participating discussion group were not current as they were taken from annual tax accounts.

All of the case study farmers in this category used professionals to compile financial analyses of their farm businesses. Case farmers 3-7 and 3-8 only started to compile their own financial analyses in 2001, expecting to improve financial performance in future years. All three respondents sought professional farm financial advice from agricultural consultants and discussion group members and case farmers 3-7 and 3-8 also sought advice from their accountants. Case farmers 3-8 and 3-9 involved their parents and their professional advisors when making farm capital investment decisions. Case farmers 3-7 and 3-9 involved their accountant in these decisions also. Only case farmer 3-9 had farm goals and a business plan in place for the farm business. Farmers 3-7 & 3-8 have made capital investments in their farm business during 2001 and may be representative of dairy farmers at the earlier developing stages of their farm business. However, Case farmer 3-9 was a larger dairy operator with few options left to expand the farm business except through the purchase or leasing of additional land.

All three case study farmers are younger, committed dairy farmers. Case farmer 3-9 farmed in partnership with a parent who managed the financial side of the farm business with a business plan in place. Case Farmers 3-7 and 3-8 had recently commenced farming but had no farm business plans in place. Progress in areas of farm efficiency and business expansion requires developing a strategy for the farm business (O'Dwyer, 2002). Inflation and the increasing costs of living

continue to erode dairy farmers' incomes in a price-cost squeeze and this will continue unless farm profitability is improved.

Therefore case farmers 3-7, 3-8 & 3-9 need to develop a more strategically appropriate approach in their farm businesses in the years ahead. They are young and enthusiastic, and in the early stages of developing their farm businesses. Improvement of their knowledge and skills in all areas related to the farm business e.g. in production and finance and with a developed knowledge of the farm environment, safety and regulatory requirements, is necessary. (Kaplan and Norton, 1996; Shadbolt and Rawlings, 2001 and Parker, 2000).

Category 4

These case farmers spent the most time on financial management, but common profit exceeded Teagasc guidelines only on farm 4-11. Common costs were below Teagasc guidelines on farms 4-11 and 4-12. All three case study farmers had detailed financial records for participating in discussion group activities. An opportunity for improvement in performance as measured by common costs and common profit existed for case farmer 4-10.

The financial analyses for these respondents were compiled with professional help. This should have provided an opportunity for respondents to obtain a full comprehension of the impact that a well-managed financial function has upon the farm business. All respondents sought professional farm financial advice from their agricultural consultants and discussion group members and farmers 4-11 & 4-12 further sought this type of advice from their accountants. Case farmer 4-11 had made previous capital investments in farm buildings, machinery and milk quota, over the past years. While case farmer 4-12 had made no recent major capital investment in the farm business, this respondent entered a number of long-term leases for both land and quota. Case farmer 4-10, who was in a farm partnership arrangement with a parent, was anxious to double the size of the farm business over the next 10 years while the view of the parent was more conservative and disagreed with the proposed plan to invest further in the farm business. This is an example of generational conflict in terms of future investment.

All three case study farmers had farm goals and a business plan in place for their farms. Case farmers 4-11 & 4-12 are typical of farming couples with commitment to the development of a dairy business and who have invested substantial amounts of time and money on their farms over the last 10 years. The major contributor to a more successful performance for case farmers 4-11 & 4-12 was their willingness to increase their knowledge base, whether this related to production, financial, EU regulations, safety and other issues over the last ten years. They involved themselves in a number of discussion groups, research trials, relevant meetings and farm demonstrations among other activities. Non-traditional areas of the farm business such as the farmers' personal growth and development should be monitored, since farmers' knowledge and skills may be often the barrier to change rather than a physical resource, and because these factors are usually lead indicators of future performance (Parker, 2000).

Discussion and Conclusions

The farm, personal and financial management characteristics of the case study farmers who were most efficient in terms of costs and profit and who expended different amounts of time on the financial management aspects of their farm business are outlined above. Using a modification of the model outlined by Shadbolt and Rawlings (2001) enabled these case farms to be examined under the following headings: Financial Issues, Production Issues, Learning Issues and Regulation Issues.

Financial Issues

All case study farmers expressed strong interest in the financial performance of their dairy business. However, financial comparisons (Table II a) showed a large variation in terms of common costs and common profit. Farmers 1-2, 2-6, 4-11 & 4-12 had common costs lower than Teagasc guidelines and were farm businesses established more than 15 years ago. The common factor enabling these four case study farmers to maintain their common costs below the cost guideline figure may, in part, be their active participation in Dairy MIS discussion

group activities. This comparative analysis of production and financial outputs may increase awareness of relative performance. Subsequent corrective action in farm practices, if identified, may be taken if needed. The other major factor in enabling these farmers to have lower common costs was their wisdom from age and their experience of farming.

While the other respondents completed some form of 'financial analysis' and were involved in various 'discussion groups' (except case farmers 1-1 & 2-4), they were not using the relevant information to reduce their costs of production. Farmers 3-7, 3-8 & 4-10 were actively involved in discussion-group activities, but were comparative newcomers to dairy farming and so had not yet fully benefited from this activity. For case farmers 1-3, 2-5 and 3-9, discussion group activities were focussed upon off-farm investments, production issues and tax account analysis. Case farmers 4-11 and 4-12 also had detailed business plans in place for their farms. However, the limitations of managing solely with financial measures have been recognised for decades and the case study farmers must also focus on other relevant issues (e.g. on production) when managing their farm businesses.

Production Issues

Production management has historically been the strongest focus of farm business management, both in practice and in the literature (Parker, 2000). This is evident on all the case study farms, where production advice was sought from at least one source and detailed production records were recorded. All case study farmers except 1-1, 1-3 & 2-4 were involved in discussion groups, which focused on the production side of the farm business. This tactical focus of the case study farmers may be influenced by a common belief that high production levels are responsible for a healthy business (Deane, 1993). This is exacerbated by both a community and industry perception that success is dependent on the quantity of milk solids produced per cow or per ha.

However, farmers 1-2, 3-6, 4-11 & 4-12 were participating in the comparative analysis of the farms' production and financial performace, which enabled farmers to assess their comparative farm business performances. Subsequently corrective action in farm practices may be taken then, if needed.

Learning Issues

A factor common to case farmers 1-2, 2-6, 4-11 & 4-12 is their 'wealth of experience and knowledge'. Farmers 2-6, 4-11 & 4-12 were continually involved in activities to increase their knowledge and skills such as research trials, attending farm meetings, demonstrations etc. Respondent 1-2 was planning retirement and was ceasing these activities.

Case farmers 3-7, 3-8 & 4-10 were young farmers committed to their farm businesses, but were very inefficient at the time of the study. To survive in an increasingly competitive business environment they need to understand the critical importance of 'learning' in improving farm business performance. An increased emphasis in organisational learning has been advocated by Argyris (1991), Kreigal & Brandt (1996) and Porter (1997). How effectively staff learn the new capabilities required to realise strategies is a lead indicator of future business performance. Without knowledge and understanding of new technologies or better management practice it will be difficult for farmers to make continuous improvement or a transformational change (e.g. trebling herd size to improve profitability and enable succession for children). Even where the base system of milk production remains similar over time, there is a demand for learning with respect to food safety, milk quality, environmental sustainability and animal welfare. Learning should be targeted towards the demands for future growth.

Regulation Issues

All Irish farmers operate in a context of strict environmental regulations and under the Common Agricultural Policy (CAP). These have a major influence on any decisions taken by Irish farmers for their farm businesses. The two main opportunities available to Irish dairy farmers are to improve efficiencies and to increase scale (O'Dwyer, 2002). However, to increase scale operating under the restrictions of the CAP (quota regulations) as illustrated in the case study results is difficult. Only Case Farmers 2-4 & 2-5 planned to invest in their farm businesses over the coming years, as access to quota was seen by them as a restricting factor.

Negotiations are currently underway to free-up access to quota for Irish farmers from 2007 onwards.

The research illustrated the management actions in place on farms of different land areas and herd sizes. Though commitment to their farm financial business was assessed through self-reporting of the time spent by the farm operator in working on financial aspects of their dairy farm business, other factors may have been more important in dairy farm financial performance than the time expended at this activity**.** The case studies showed that while the case study farmers consistently used professionals for financial advice and analysis, there was less professional involvement by some farmers in developing farm business plans and goals and in financial record-keeping. Seven farmers having higher common costs than those recommended suggests significant management improvement was required on these farms. Four case farmers had common profit levels less than the Teasgac guidelines, two of these because of investment levels made previously and two because of apparent lack of commitment to their dairy business. The case studies demonstrated the individuality of farmers in financial farm management activity demonstrating a weak to strong commitment to action across the spectrum of farm sizes.

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