Financial Recording and Analysis Systems on Irish Dairy Farms: 
The Role Played by Extension

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Abstract

The increasing pressure on farm profits in the Republic of Ireland (ROI) has created a need for vigilant and ruthless monitoring of the financial performance of the farm business. Recognising the changes that are taking place in Irish agriculture, the Agricultural and Food Development Authority, Teagasc, reorganised its advisory resources into two new services in 2001; (1) Technology and Business Service and (2) Rural Viability Service (Teagasc, 2001). Two survey instruments were developed, to examine the role played by the Teagasc in farm financial management in the ROI. The first survey consisted of a small questionnaire attached to the Autumn 2000 supplement of the National Farm Survey (NFS). The second survey consisted of an interview survey of 140 dairy farm proprietors who were members of Irish extension-organised dairy discussion groups.

The results from the NFS showed that dairy and tillage farmers were most likely to have used farm advisory reports to aid them in making farm financial management decisions for the farm business. The interview survey results showed that the majority of respondents reported that the accountant was the most useful source of professional farm financial advice. The respondents used annual tax accounts (98%) and the Teagasc developed Dairy Profit Monitor (53%) and DairyMIS (60%) for farm business assessment and analysis. This shows that Teagasc have an important role to play in farm financial management support for farmers.
Introduction

Agriculture in the Republic of Ireland (ROI) has undergone a revolution since entry into the EEC in 1973. Major adjustments have occurred in the enterprise mix on farms and in the scale and efficiency of farms (Bogue, 2001). All boats were to be lifted by the rising tide of the Common Agricultural Policy (CAP) and although the CAP has been successful in raising the incomes of some farmers, it has failed to do this for others (Phelan, 1994, p.106). This is evident in the dairy sector, which is the most profitable mainstream farm enterprise in the ROI, but there continues to be a significant exodus out of it (Kinsella, 1995). In addition between 1990 and 1999 aggregate farm income in the ROI fell by an average of 0.9% annually in real terms and most of this decline occurred between 1996 and 1999 (DAFRD, 2000, p.7).

The business environment for dairy farming continues to change, through local and global rationalization of milk processing and marketing, and the introduction of new technology on farms. Margins for producing milk are being squeezed through competition from other milk-producers and substitutes for milk products (Brosnan, 2001). These changes have brought a sharp focus on the need for farmers to improve their business management as well as to continue best practices in production husbandry (McCarthy, 2001). Increased business risk and tighter margins means that knowledge and skills in financial management, long-term planning and effective monitoring are mandatory for dairy farmers (Parker, 2000).

Recognising the changes that are taking place in Irish agriculture, the Agricultural and Food Development Authority, Teagasc, reorganised its advisory resources into two new services in 2001; (1) Technology and Business Service for full-time and more commercial farmers and (2) Rural Viability Service for the less intensive and smaller scale farmers, both part-time and full-time (Teagasc, 2001). Teagasc, as part of its Technology and Business Service will continue to promote best technology but will put business management centre-stage (McCarthy, 2001). Over the past twelve months Teagasc has expended considerable time and money in the development of new aids to business management. Yet, no research has been able to demonstrate that accounting will improve farm management and produce better farm performance (Poppe, 1991), as cited by Argiles, 2001.

Purpose of the Paper

This paper examines the current practices in financial recording and analysis on Irish farms and the extent to which the individuals (agents) involved in the provision of agricultural extension are used as a source of professional farm advice. The specific objectives were: (1) To identify the measures and resources that are used by Irish farmers to aid them in making farm financial management decisions on their farm business, (2) To determine the extent to which extension agents are used as a source of professional farm production and financial advice by dairy farmers, (3) To identify the individuals involved in making farm production and financial management decisions for dairy farm businesses, (4) To examine the current practices in financial recording and analysis on Irish dairy farms.

Methods and Data Sources

A joint study between the Agribusiness, Extension and Rural Development Department, National University of Ireland and Teagasc, was undertaken in 2001. Two survey instruments were prepared. In the first survey, a small questionnaire was attached to the Autumn 2000 supplement of the National Farm Survey (NFS), to ascertain the degree to
which Irish farmers were using various instruments to help them make farm financial management decisions for their farm business. In the Autumn 2000 supplement of the NFS data was collected from a nationally representative sample of 897 farms. The sample is a stratified random sample by farm system and size. The method of classifying farms into farming systems was based on EU farm typology (Connolly, 2000). The questionnaire obtained data on the use of financial management information in various farming systems in operation in the ROI.

The second instrument consisted of an interview survey of 140 dairy farm proprietors who were members of Irish extension-organised dairy discussion groups in the ROI. The interview questionnaire was prepared and pre-tested to insure the adequacy of the information sought, to estimate the duration of the interview and to highlight sensitive issues. The survey was carried out by telephone due the ‘Foot and Mouth’ restrictions that were in place in the ROI, in the spring of 2001. The completed questionnaires were analysed using the Statistical Package for Social Sciences (SPSS).

### Results

Financial Management Information for different ‘farming systems’ from NFS.

The 897 respondents that were involved in the NFS were classified into six different ‘farming systems’ (Table 1). The respondents were asked if they used any of the following instruments to help them make farm financial management decisions for their farm business; (1) farm advisory reports (prepared by Teagasc and private agricultural consultants); (2) output from on-farm computer based farm financial analysis; (3) annual tax accounts, and; (4) monthly bank statements. In most cases the respondents identified at least two instruments that they were using, for this purpose.

<table>
<thead>
<tr>
<th>Instruments</th>
<th>Dairy &amp; Cattle (n=141)</th>
<th>Dairy (n=234)</th>
<th>Fattening* (n=172)</th>
<th>Sheep (n=111)</th>
<th>Tillage (n=67)</th>
<th>Rearing* (n=172)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm Advisory Reports</td>
<td>20%</td>
<td>21%</td>
<td>7%</td>
<td>9%</td>
<td>15%</td>
<td>5%</td>
</tr>
<tr>
<td>Farm computer Analysis</td>
<td>4%</td>
<td>6%</td>
<td>3%</td>
<td>5%</td>
<td>8%</td>
<td>0.3%</td>
</tr>
<tr>
<td>Annual Tax Accounts</td>
<td>32%</td>
<td>33%</td>
<td>11%</td>
<td>10%</td>
<td>38%</td>
<td>7%</td>
</tr>
<tr>
<td>Monthly bank Statements</td>
<td>34%</td>
<td>43%</td>
<td>13%</td>
<td>23%</td>
<td>54%</td>
<td>8%</td>
</tr>
</tbody>
</table>

*Relates to the Cattle Enterprise

The results showed (Table 1) that less than a quarter of the respondents in each of the ‘farming systems’ identified were using farm advisory reports or reports from on-farm computer-based farm financial analysis to aid them in making farm financial management decisions for the farm business. When farm financial management decisions were made, annual tax accounts and bank statements were the instruments tillage and dairy farms said
they mostly used but it should be taken into account when interpreting this result that the vast majority of Irish farmers have access to their annual tax accounts and monthly bank statements. It is mandatory for self-employed farmers to keep annual tax accounts in the ROI, for tax compliance purposes.

In addition to this, each participant was asked if they used the ‘individual farm management report’ from the NFS. This report is a detailed analysis of the financial performance of their farm business, prepared by the NFS, relating to the most recent production year. Seventy per cent of dairy farmers involved in the study were using the individual farm management report from the NFS. Sixty nine per cent of the respondents with a combination of diary and cattle farming systems were using the report along with 64% of tillage farmers. Less than half of the respondents in the remaining three ‘farming systems’ were making no use of the report.

Based on these results the research was focused on the intensive and technology-driven enterprise of dairy farming for stage two of the project.

Interview Survey – Personal, Situational and Farm Characteristics of Dairy Farmers

One hundred and forty dairy farm proprietors, who were members of Irish extension-organised dairy discussion groups, were invited to participate in the survey. Of the 121 utilisable responses (86%) in this study, 97% of the respondents were male, 84% were married, 82% were aged from 20 –50 years, 69% were sole proprietors of their farm business and 95% were educated to secondary level. Over 11% of respondents had off-farm employment and almost half of their spouses were working off the farm. Over 70% of respondents had dependent children, but only 17% of them had identified a potential successor for the farm business. In 2001, the average area of land farmed was 81 hectares (ha), but this ranged in size form 24ha up to 272ha.

Relationship between Dairy Farmers and the Extension Service

The relationships between farmers and the sources from which they sought professional farm advice were examined (Table 2). In most cases the respondents identified at least two sources from which they sought professional farm advice.

<table>
<thead>
<tr>
<th>Sources of Advice</th>
<th>Farm Financial Advice</th>
<th>Farm Production Advice</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Source</td>
<td>Most Useful</td>
</tr>
<tr>
<td>Teagasc</td>
<td>46%</td>
<td>16%</td>
</tr>
<tr>
<td>Private Ag. Consultants</td>
<td>21%</td>
<td>11%</td>
</tr>
<tr>
<td>Accountants</td>
<td>93%</td>
<td>65%</td>
</tr>
<tr>
<td>Co-op/PLC’s</td>
<td>-</td>
<td>n.a.</td>
</tr>
<tr>
<td>Agribusiness Suppliers</td>
<td>-</td>
<td>n.a.</td>
</tr>
<tr>
<td>Other**</td>
<td>-</td>
<td>8%</td>
</tr>
</tbody>
</table>

*n=121, **Other: Bank employees, discussion groups, media/literature.

Although the provision of professional farm financial advice to Irish dairy farmers was not limited to Teagasc, 46% of the respondents were seeking advice from this source. Private agricultural consultants and accountants also offer professional farm financial advice.
Nearly all of the respondents sought financial advice from their accountant but this high figure might reflect the requirement for tax compliance purposes in the ROI. Therefore, professional farm financial advice, from accountants, may relate more to taxation requirements than farm management issues. The sources from which Irish dairy farmers sought professional farm production advice were also examined (Table 2). Nearly all of the respondents sought this advice from Teagasc. Private agricultural consultants, co-op/PLC’s and agribusiness suppliers also offer professional farm production advice.

When asked to identify the most useful source of professional farm financial advice for managing the financial side of their farm business (Table 2), 65% of the respondents indicated accountants, 16% reported Teagasc and 11% cited private agricultural consultants. When asked to identify the most useful source of professional farm production advice for managing the production side of their farm business (Table 2), 74% reported Teagasc and 12% indicated private agricultural consultants.

Involvement in making Management Decisions on Dairy Farms

Upon identifying the individuals that were involved in making farm production and financial management decisions for the farm business the respondents were then asked to rank (on a scale of 1-5 where 5=most important person involved) these individuals in terms of their importance/contribution to making these decisions. In most cases the respondents only identified two or three individuals that were involved in making farm management decisions for the farm business. Adopting a methodology as described by Kinsella (1995), the ‘scores’ presented in Table 3, reflect the cumulative ratings by respondents for the respective individual involved in decision making for the farm business and as such they reflect the importance/contribution of that individual to making farm production and financial management decisions for the farm business.

<table>
<thead>
<tr>
<th>Individuals</th>
<th>Production Decision</th>
<th>Financial Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm Proprietor</td>
<td>601</td>
<td>603</td>
</tr>
<tr>
<td>Teagasc Advisor</td>
<td>152</td>
<td>134</td>
</tr>
<tr>
<td>Private Ag. Consultant</td>
<td>49</td>
<td>46</td>
</tr>
<tr>
<td>Accountant</td>
<td>8</td>
<td>169</td>
</tr>
</tbody>
</table>

From Table 3 it can be seen that the farm proprietor considered him/herself to be by far the most important person involved in making farm production and financial management decisions for their farm business. Teagasc was ranked second in terms of its importance/contribution to making farm production decisions and ranked third in relation to making farm financial management decisions. The accountant played a significant role in relation to making farm financial management decisions.

Financial Recording and Analysis on Dairy Farms

The respondents identified three categories of recording systems (both production and financial records) that were in place on their farms. Recording systems in use included ‘manual and computerised’ (57%), ‘manual only’ (40%) and ‘computerised only’ (3%).
When categorised by recording system, respondents using ‘manual only’ recording systems cited accountants (75%), (18%) and private agricultural consultants (7%) as the most useful sources of professional farm financial advice. Similar results were observed for those using a combination of ‘manual and computerised’ recording systems, accountants (68%) were cited as the most useful source, followed by Teagasc (18%) and private agricultural consultants (14%). For those with ‘computerised only’ recording systems, the group was evenly divided among the three sources of advice as the most useful source.

Instruments used by farmers to manage farm finances in practice were also examined. Nearly all respondents (96%) used a chequebook to record financial transactions. Other mechanisms used included manual management account books (34%), manual accounting systems to keep records for accountants (30%) and computerised accounts packages (36%).

A variety of instruments were employed to process all the data captured for farm business assessment and analysis. Ninety-eight per cent of respondents used annual tax accounts to assess business performance. In addition, a number of other systems such as DairyMIS1 (60%), commercial dairy management software packages (55%) and Dairy Profit Monitor2 (53%), were used to analyse their business performance. When these systems were examined the four most important financial performance indicators used on Irish dairy farms were gross margin, profit, costs and net worth. Nearly all respondents were using annual tax accounts to assess their farm profit. Profit monitor, DairyMIS and commercial dairy management software packages were more likely to be used for cost analysis.

Time Allocated to Financial Management on Dairy Farms

The majority of respondents (65%) were spending three hours or less per week working on the financial management side of the farm business (Table 4). The remainder of the respondents (35%) were spending four or more hours per week working on this area.

Table 4. Proportion of Respondents categorised by the Hours per week spent working on the financial management aspects of the farm business and the most useful sources of professional farm financial advice (n=121)

<table>
<thead>
<tr>
<th>Most Useful Source</th>
<th>Hours per week spent working on farm financial management by respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt; 1 Hour (n=25)</td>
</tr>
<tr>
<td>Teagasc</td>
<td>4%</td>
</tr>
<tr>
<td>Private Ag. Consultants</td>
<td>8%</td>
</tr>
<tr>
<td>Accountants</td>
<td>76%</td>
</tr>
<tr>
<td>Other *</td>
<td>12%</td>
</tr>
</tbody>
</table>

*Others include: Bank employees, discussion group members, media and literature.

When categorised by the hours per week, spent working on the financial management aspects of the farm business, the respondents in each of the four categories identified (Table 4), cited accountants as the most useful source of professional farm financial advice. However, the more hours per week the respondent spent working on the financial management aspects, the less likely s/he was to consider accountants as the most useful source of professional farm financial advice. The converse applies for Teagasc and private agricultural consultants, for those respondents spending less than five hours per week
working on the financial management aspects of the farm business. Seventy six per cent of the respondents who were spending less than one hour per week working on the financial management aspects of the farm business considered accountants to be the most useful source of professional farm financial advice. Only 4% of respondents in this category considered Teagasc was the most useful source. However, 25% of the respondents who were spending between four and five hours per week working on these aspects, considered Teagasc was the most useful source of professional farm financial advice.

Discussion and Conclusions

From the NFS it emerged that dairy farmers were most likely to employ Farm Advisory Reports (21%) to aid them in making farm financial management decisions for the farm business. The decision to focus on the more intensive and technology driven enterprise of dairy farming came from this initial examination of the use of financial management instruments across different farming systems.

In the dairy farmer survey, when the respondents were asked to identify the most useful source of professional farm financial advice, 65% of the respondents indicated accountants, 16% reported Teagasc and 11% cited private agricultural consultants, but it should be taken into account that it is mandatory for self-employed farmers to keep tax accounts in the ROI. Almost three-quarters of the respondents considered Teagasc was the most useful source of professional dairy farm production advice.

Teagasc advisors were also heavily involved in making farm production and financial management decisions for the farm business. Teagasc was ranked second in terms of its importance/contribution to making farm production decisions and ranked third in terms of its importance/contribution to making farm financial management decisions.

Three categories of recording systems (both production and financial records) were in place on Irish dairy farms; (1) manual and computerised (57%), (2) manual only (40%) and (3) computerised only (3%). Nearly a fifth of the respondents (18%), with ‘manual and computerised’ and ‘manual only’ recording systems in place on their farm cited Teagasc as the most useful source of professional farm financial advice.

A variety of instruments were employed for dairy farm business assessment and analysis. Ninety-eight per cent of the respondents used annual tax accounts to assess business performance. A similar result was observed by, Sabate and Enciso (1997), as cited by Argiles, 2001. They pointed out that when farmers used tax accounts, it is mainly to comply with tax requirements. In addition to this, many of the respondents were using dairyMIS (60%) and dairy profit monitor (53%) to analyse their business performance.

The association between the most useful source of professional farm financial advice and the hours per week the respondent spent working on the financial management aspects of the farm business was also examined. It emerged that the more hours per week the respondent spent working on the financial management aspects of the farm business (up to less than five hours per week) the more likely that s/he was to consider Teagasc and private agricultural consultants as the most useful source of professional farm financial advice. Conversely, the less time farmers spend at this endeavour, the more likely they are to rely on the services of their accountant.

Education Importance and Application

The question of how farmers do, as opposed to how they should, manage their financial affairs, receives surprisingly little coverage in the farm management literature. Yet it is critical in managing a successful profitable farm business. For those involved in teaching, training and advising in farm business management, more information about the use of financial management techniques in practice could prove useful in undergraduate university education and training for extension providers.
References


1 DairyMIS is an in-depth recording system operated by Teagasc. Its primary use is as a monitoring tool for individual farmers and for discussion groups. Farmers complete a monthly record sheet detailing changes in stock, milk sales, quality and composition, feed usage in the dairy herd, fertiliser usage and forage conservation. A detailed analytical report is returned to farmers with their own figures for the relevant month, comparisons with previous years and comparisons with other farmers.

2 Dairy Profit Monitor is a program run by Teagasc to provide farmers with a detailed analysis of financial performance for the most recent production year to allow them to improve farm profitability. It is a programme into which financial accounts information is inputted to give: detailed management analysis of dairy and other enterprises; a breakdown of costs per gallon; an assessment of fixed costs and net margin; an analysis of the capital position of the farm; comparative analysis between farmers; and a yearly comparison for individual farmers.