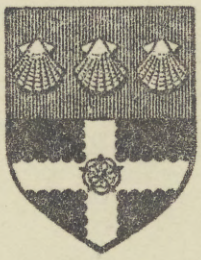
Farm management



UNIVERSITY OF READING

DEPARTMENT OF AGRICULTURAL ECONOMICS

GROSS MARGINS AND THE FUTURE OF ACCOUNT ANALYSIS

By

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Miscellaneous Studies No. 23

June, 1962

2/6

With

Professor Edgar Thomas' compliments

University of Reading

GROSS MARGINS AND THE FUTURE OF ACCOUNT ANALYSIS

The last two years have seen a rapid development in the use of gross margin analysis as a farm management tool. This study examines some of the advantages and limitations of the technique and considers its future role in practical advisory work.

I

During the last ten years, farm management advisory work has been developed into a fairly specialised branch of agricultural economics and, at the same time, has played an ever increasing role in the work of the National Agricultural Advisory Service. Much of the advice that has been offered to farmers during this period has been based on the analysis of financial accounts, supported by a wide range of composite efficiency measurements. Partial or complete budgeting has then been used at the planning stage.

More recently, however, a "wind of change" has been blowing. The newer 'gross margin' approach has been widely and enthusiastically publicised - sometimes as a complete substitute for more traditional methods. The mere existence of two apparently different methods has led to some confusion in the minds of both the adviser and the farmer. There is a need, therefore, to consider how permanent this wind of change is likely to be and in precisely which direction it will blow. The relative future importance of the two methods - or the extent to which they might be blended into one - is of particular interest.

In any discussion of the two approaches, it is important to remember, at the outset, that the traditional method was developed at a time when the average farmer had few farm records beyond his trading account (frequently showing little detail) and, perhaps, a copy of his 4th June Return. Also, it was natural that it should have been harnessed to the only large body of comparative data readily obtainable at the time - the Farm Management Survey. Replanning, with partial or complete budgeting then followed as a second and,

in some ways, separate process.[1] The last two years, however, have seen a growing questioning of these methods. Partial budgeting has been described as a 'hit or miss' method of planning. The validity of the whole concept of comparative analysis is viewed with increasing suspicion and if account analysis is to survive at all, then it seems that the adviser himself will be increasingly divorced from its arithmetical chores - however helpful to him these might be.

The strongest single motive behind this change of attitude is a genuine desire on the part of the adviser to look more rigorously, and as early in the analysis as possible, at the individual enterprises that make up a farm business. This is not to overlook the need - implicit in account analysis - to regard the farm as a complete trading unit. Instead, it is, perhaps, a recognition of the fact that when advisory economists turned their backs on full cost accounting, they allowed the pendulum to swing a little too far in the opposite direction. Their preoccupation with 'whole farm' measures of efficiency may have cloaked some of the very facts that a penetrating analysis should uncover, namely, the technical and economic performance within each enterprise on the farm. The use of gross margins is, amongst other things, an attempt to rectify this situation.

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(1) Gross Margin analysis is a combined analytical and planning technique. In no sense, therefore, could orthodox account analysis be claimed as a complete alternative to this, unless accompanied by some form of budgeting.

II

The current crop of new farm management techniques vary in their degree of sophistication from linear programming down to an elementary juggling with enterprises on a gross margin basis differing little, if many respects, from partial budgeting. Somewhere in between these two, lies the so-called 'programme planning' method. This is an arithmetical technique, involving an initial selection of enterprises in descending order of gross margins per unit of the scarcest factor of production (i.e. land, labour or capital; followed by the marginal substitution of enterprises when a bottleneck is reached in the supply of another fixed factor of production e.g. labour, when land has been the initial basis for selection.

Underlying all of these techniques is the principle of the selection of enterprises on the basis of gross margins, i.e. the difference between the gross output from each enterprise and the direct or variable costs (e.g. seed, fertilisers, fuel, sprays and feedingstuffs) of obtaining that output. This recognition of variable costs - as distinct from fixed or overhead costs - is no new concept in agricultural economics. The significance of these two types of farm costs has been recognised from the beginnings of the subject. It was, for example, the basis of the system of analysis developed by J. S. King in his "Cost Accounting Applied to Agriculture" as long ago as 1927.(1) More recently it could justifiably be claimed that during the last decade most advisory economists have thought, if not formally expressed themselves, in terms of

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(1) "Cost Accounting Applied to Agriculture" by J. S. King. Reading University Studies 1927.

crude gross margins. Indeed, the 'gross profit', as Liversage called it, has in fact been used formally in Northern Ireland for many years.(1)

Nevertheless, it is true to say that only within the last year or two has the gross margin principle been formally applied in this country in any systematic analysis comparable with the 'worksheets' of the last ten years. And it is, perhaps, in this formal application of an accepted principle that the most important contribution to farm management work has recently been made.

The mechanics of gross margin analysis in its various forms have been fully described in a number of recent publications,(2) and it is not intended to repeat them in detail here. Briefly, some combination of the following steps is involved:-

1. Considering and listing the enterprises which are feasible in the programme of the farm concerned.

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(1) Accounting for Farm Planning. V. Liversage. Journal of Agricultural Economics. Vol. XI, No. 4. (January 1956).

(2) A theoretical approach to the profit maximisation problems in farm management. G. B. Clarke and I. G. Simpson. Journal of Agricultural Economics. Vol. XIII. No. 3. (June 1959).

New tools in farm management. G. B. Clarke and J. White. N.A.A.S. Quarterly Review. No. 49 (October 1960).

Planning for profit. C. Selly and D. Wallace. Farm Economics Branch, School of Agriculture, University of Cambridge. (1961.)

Guide to Programme Planning. J. E. Harrison. University of Bristol, Department of Economics, Bristol II Province. (January 1961).

Recent Development in Farm Business Analysis. D. B. Wallace. Agriculture. Vol. 68. No. 2 (May 1961).

The Gross Margin Technique of Farm Planning. B. Peart and J. D. Rowbottom. The Edinburgh School of Agriculture. (February 1962).

2. Calculating the 'normalised' gross margins for each of these possible enterprises. When the maximisation of returns to land is the basic criterion, the initial selection will be based on gross margins per acre. Alternatively it could be based on gross margins per unit of capital or per unit of labour.

3. Examining the efficiency of each enterprise and considering what improvements, if any, it would be reasonable to incorporate in a budget.

4. Determining the technical, physical or other relevant 'limits' to each enterprise.

5. Combining enterprises into a farming system by selecting in descending order of gross margin per unit, to the prescribed limits.

6. Substituting one enterprise for another when the originally selected programme becomes unworkable due to the exhaustion of a second factor of production e.g. labour, when land has been the initial basis for selection.

7. Examining overhead costs for possible reductions within the prescribed system, or changes associated with alternative systems.

8. Calculating the total gross margin for the selected system; and subtracting the overheads to show the estimated final profit.

9. Checking the availability of labour and capital if this has not already been done at item 6. It may sometimes be necessary to construct a capital and/or labour profile at this stage - but in many cases, in practice, it will be sufficient to consider with the farmer the feasibility of the selected plan in relation to the availability and flexibility of labour and capital.

At various stages of this procedure it is necessary to obtain

information from the farm trading account e.g. to determine normal output levels and overhead costs. For this reason it is often convenient and helpful to carry out a brief analysis of the trading account in the orthodox way - before proceeding to gross margin calculations.

III

The following example illustrates the application of the programme planning technique to one of the Reading University farms. As far as possible, this farm is managed on commercial lines although the demands of teaching call for a rather more mixed system than might otherwise be found. Gross margins can be used to advantage in precisely these mixed farming conditions.

The farm is one of 382 acres and the soils are a combination of gravels and alluvial silts. In recent years, some 30 acres of sugar beet and 130 acres of corn have been grown annually. Adequate grain storage is available and the farm is fairly intensively mechanised, with five tractors, a combine harvester, grain drier, forage harvester, sugar beet and irrigation equipment. Ninety cows are milked through an eight-stall four-unit parlour and 170 Clun ewes are kept for fat lamb production. The regular staff consists of a manager, two cowmen, one tractor driver/shepherd, two other tractor drivers, and a boy.

The principal purpose of this exercise was to determine the most profitable combination of enterprises within the present structure of 'overhead costs'. In particular the value of growing sugar beet had been

questioned by the management. The initial selection of enterprises was on the basis of returns to land, with a labour 'bottleneck' likely to operate in the October-December period. It was estimated that after allowing for livestock work and possible interruptions due to bad weather, some 1260 man hours would be available for field work during October, November and December. Of this total, 536 hours would be available in October only, by the end of which the planting of winter wheat must be completed. The remaining 726 would be available in November and December together.

Step 1. The possible enterprises

Crops	Sugar beet
	Early potatoes
	Winter wheat
	Spring barley
Livestock	Sheep
	Dairy cows and followers
	Sale heifers
	Intensive beef

Step 2. Calculation of gross margins

In descending order:-

	£ per acre
Sugar beet	63.5
Dairy cows and followers	54.8
Early potatoes	50.8
Winter wheat	31.1
Sheep	30.5
Spring barley	26.8
Sale heifers	24.6
Intensive beef (per head)	29.6

Step 3. Examination of efficiency of each enterprise

The component parts of the individual gross margins are shown in the Appendix.

Step 4. Determination of 'limits'

Enterprise	Limit	Limiting factor
Sugar beet	45 acres	Rotation.
Dairy cows	90 cows	Buildings.
Early potatoes	7 acres	Quota.
Winter wheat	230 acres	Total arable limit, but winter wheat must be planted in October.
Sheep	300 ewes	Policy decision not to expand sheep beyond this limit.
Spring barley	230 acres	Total arable limit.
Sale heifers	20 head	Surplus to herd requirements.
Intensive beef	30 head	Buildings.

Step 5. Selection of enterprises

Enterprise	Scale	Gross Margin per acre	Total Gross Margins	Field Labour in Oct-Dec.
	Acres	£	£	Man-hours
1. Sugar beet	45	63.5	2,857	990 (1)
2. Cows & followers	145 (2)	54.8	7,946	
3. Early potatoes	7	50.8	356	
4. Winter wheat	178	31.1	5,545	890 (1)
5. Sheep	7 (3)	30.5	213	
6. Intensive beef	30 (head)	29.6 (per head)	886	
Totals	382		£17,803	1,880

(1) Field labour requirements during the October-December bottleneck period were estimated at 22 man hours per acre for sugar beet and 5 man hours per acre for winter wheat.

(2) Acreage based on present stocking rate of one cow and share of followers per 1.6 forage acres.

(3) Acreage based on present stocking rate of one ewe per 0.17 acres.

Step 6. Substitution of enterprises

It will be seen that the labour requirement for the selected programme (1880 man hours) exceeds the labour available for field work during October, November and December (1260 man hours). If this labour constraint is to be accepted, it is necessary to introduce alternative enterprises or to expand existing ones so that:-

(a) the field work required in the bottleneck period is reduced, and,

(b) no enterprise exceeds its limit.

The only enterprises to satisfy these requirements are sheep (not yet to their limit of 300 ewes), spring barley and the rearing of heifers for sale, neither of which featured in the initial selection. The labour requirements of 45 acres of sugar beet (990 hours) will occupy all the available field labour during November and December (724 hours), and, in addition, 266 hours of October labour (724 + 266 = 990). The remaining 270 hours of October labour (526 - 266) will permit only 54 acres of winter wheat (270 ÷ 5), compared with 178 acres in the original selection. Of the original acreage destined for winter wheat, therefore, 124 (178 - 54) must now be devoted to:-

(a) 43 extra acres of sheep. Tbis 43 acres plus the seven acres in the original selection[1] will bring sheep up to their limit of 50 acres i.e. 300 ewes at a stocking rate of six ewes to the acre.

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(1) Small residual acreages are an inevitable feature of the system and would not, of course, be accepted in practice.

(b) 81 acres of spring barley, which will utilise the remaining acreage (124 - 43) and require no labour in the bottleneck period.

The revised selection, with a reduced total gross margin, but constituting a manageable system, will now be:-

Enterprise	Scale	Gross Margin per acre	Total Gross Margins	Field Labour in Oct-Dec.
	Acres	£	£	Man-hours
1. Sugar beet	45	63.5	2,857	990
2. Cows & followers	145	54.8	7,946	
3. Early potatoes	7	50.8	356	
4. Winter wheat	54	31.1	1,679	270
5. Sheep	50	30.5	1,525	
6. Spring barley	81	26.8	2,171	
7. Intensive beef	30 (head)	24.6 (per head)	886	
Totals	382		£17,420	1,260

It will be noticed that of the possible enterprises considered at step 1, only the rearing of surplus heifers has been omitted from the system. Sugar beet, which was in danger of being eliminated, has in fact been increased from a previous 30 to 45 acres.

Step 7. Examine overhead costs

The labour, machinery and sundry costs all tend to be high on this farm (see below) and reflect the necessarily mixed system. It is likely that under purely commercial conditions these items could be reduced by the introduction of a simplfied corn and livestock system.

Step 8. Estimate of profit

	£	£
Total gross margin from Step 6:-		17,420
Less:-		
Rent and Rates	666	
Labour (manual and managerial)	5,036	
Machinery	4,195	
Others	2,798	
Total		10,636
Estimated profit =		£6,784

If the 'normalised' gross margins have been accurately assessed, and correct judgements made about the limits to each enterprise this estimated profit is the maximum that could be expected from the present farm system with the existing fixed resources.

IV

The rapidity with which the gross margin type of analysis has recently gained ground - either as programme planning or as a simplified form of it - suggests that it offers certain advantages over previous farm management techniques.

Foremost amongst these advantages is the attempt to combine a number of different enterprises in a way that will produce the highest return to a given set of fixed resources. In the long run, of course, few, if any, farm resources are really fixed and it is, perhaps, less misleading to refer to these items as 'overheads' rather than fixed costs. Nevertheless items such as rent, regular wages and many machinery and miscellaneous costs usually do not alter within a limited range of changes to a production programme. In these circumstances, the straight forward selection of enterprises in descending order of gross margins ensures that the total gross margin from all enterprises and, therefore, the final profit margin over the general 'pool' of overhead costs, is maximised. If, in the long run, the overheads are themselves changed, then an entirely fresh selection process may be needed to meet the new situation.

Apart from providing a logical basis for planning, gross margin analysis also offers a direct means of assessing the technical efficiency of individual enterprises. The component parts of the gross margin - i.e. yield levels, physical inputs and prices - are precise pointers to this efficiency. These details become lost, of course, in the gross margin calculation itself and it may sometimes be misleading to compare these

margins, too closely, on an inter farm basis. The use of casual labour for a root crop, for instance, may have a substantial effect on the level of the gross margin for that crop - as well as on the regular wages and farm profit. Also, where there is complimentarity between enterprises it may not be possible to assess accurately, in financial terms, the true contribution that a particular enterprise is making to the farm economy. The value of sugar beet tops or the F.Y.M. from intensive beef cattle are cases in point. Nevertheless in many cases the gross margin itself can undoubtedly provide a clue to the level of technical efficiency; and certainly more so than many composite efficiency measurements of the past.

The combination of orthodox account analysis and partial budgeting has recently been criticised because the two are separate procedures, using separate data. First, the trading account and accompanying physical data are analysed in order to detect weaknesses or strengths in the farm economy. Secondly, the remedy is tested by budgeting. How well the prescribed remedy is in fact the most likely one to correct the weaknesses depends greatly on the experience and ability of the adviser to correctly interpret his analysis. By contrast, in gross margin analysis, the same data provide the basis both for diagnosis and for replanning. In the first place the gross margins indicate (within the limitations noted in the paragraph above) the efficiency of each enterprise; in the second place, the hierarchy of gross margins automatically indicates the direction that a farm plan should, or could, take. The predetermined limits indicate how far in each direction it can go - and in so doing help to keep economic and technical planning closely in step.

A rigorous consideration of just where the technical or other limits to each enterprise exist, is an essential and valuable part of the gross margin procedure. It not only keeps economic planning in step with the various other technical, physical and personal factors involved, but also provides an essential step, or series of steps, in the logical building of the farm plan. Indeed, it would be no exaggeration to say that the accurate determination of enterprise limits is in many respects the crux of successful farm planning. Admittedly, no two advisers may arrive at precisely the same set of limits for any given farm, but hard questioning at this stage can often help to remove prejudices and plant new ideas in the farmer's mind. In some cases the true 'limit' to each enterprise may well have been 'thrashed out' in the process of partial budgeting. In many others it would probably be true to say that they have not been - hence the 'hit or miss' charge.

Although partial budgeting and gross margin analysis frequently employ the same input/output data, it is argued in favour of gross margins, that the information is conveniently 'parcelled up'. For example, the gross margin from an acre of corn (say £25) can be multiplied by any appropriate acreage, and compared with alternative land uses, far more quickly than can each of the various component parts that normally make up a partial budget. Thus, although, as previously noted, some detail is lost at this stage, once gross margins have been determined, variations to a plan, within a given set of overheads, can be easily explored.

One of the more important claims made for the 'gross margins' approach is the fact that it is so readily understood by farmers and by their

advisers. As one advisory officer recently put it, "the system ensures that the farmer is with you at a much earlier stage in the analysis than he ever has been before". This is a vital factor. Most economists and advisers would agree that it has been a long uphill battle to educate farmers in the principles of budgeting i.e. a recognition of the fixed and variable costs appropriate to the matter in hand. The battle is by no means won, but gross margins may help significantly in its winning.

Finally, it could be claimed that by highlighting variable costs and gross output, gross margin analysis points to the relatively few records that the average farmer really needs to keep. Apart from a reasonably detailed trading account, an accurate record of the use of concentrates is often the only other indispensible requirement. If they have not been recorded in a field diary or notebook, most of the other variable costs - seeds, fertilisers, sprays, etc. - can be related to the physical quantities normally used which most farmers can easily call to mind. In narrowing down record keeping to these proportions, gross margin analysis may help to remove a lot of dead wood from the maze that exists in many farm offices. The 'small notebook' approach to records, recommended by Selby and Wallace[1] is an eminently practical one.

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(1) see page 4.

V

The advantages that have been claimed for gross margin analysis make an impressive list. Analysis and planning are served by the same data, economics and husbandry are kept closely in step, and the technique itself is relatively simple and easily understood. It is not surprising, therefore, that to many it appears as little short of a 'major break through' in farm management work. Nevertheless, there are many who are somewhat less enthusiastic, and to whom, for example, the very ease with which gross margins can be manipulated, suggests also certain dangers. Some of these dangers deserve mention.

First, there is the possibility of variations in the so-called 'fixed' costs themselves. It is generally agreed that more often than not items like rent, wages and machinery depreciation do not alter with marginal changes to a particular system. There must be a time, however, when the accumulation of these marginal changes (not to mention the larger once and for all change) means also a change in the level of these 'fixed' costs. In the example shown, for instance, the increase in the size of the ewe flock, or the sugar beet acreage, might, in other circumstances, have necessitated changes in the labour or machinery complement. Similarly, the gradual building up of a dairy herd must reach the stage where the next increase means, also, the addition of a second cowman.

At precisely what point a series of relatively small changes becomes large enough, in total, to alter previously 'fixed costs', is of great importance in assessing the financial effect of a particular change. The

very ease with which gross margins can be 'juggled' in the field - with the fixed costs left on one side - could mean that this point is overlooked. By contrast, orthodox partial budgeting examines what changes are likely to occur, upwards or downwards, in all items of expenditure and receipts. There is no prior definition (as with gross margins) of fixed or variable costs; every cost that enters the budget in question is automatically a variable cost at that point of time, and may include wages, machinery depreciation and repairs and even rent. For this reason the partial budget has been called a 'more wholesome' tool than its slicker gross margin counterpart. Wrongly used, the latter could be only one step better than the old concept of net profit per unit, which has died so hard.

Before leaving the subject of fixed or overhead costs it should be emphasised that the important implication is that there is no point in allocating these costs to individual enterprises. Although changes in the level of overheads may be associated with a particular change in a farm system, they should normally be regarded, in total, as a charge to the whole farm business to be met by the sum of the gross margins from all the enterprises. Any suggestion that they have a particular level per acre should be guarded against for this may lead to the false inference that there is no place on the farm for an enterprise whose gross margin per acre fails to cover its allocation of overheads. In fact, if there is no better use for the land, enterprises such as cattle rearing, selling hay or letting keep, can often fit conveniently into a system, helping to cover the total overheads, which they may not, however, cover on an acreage basis. Also, the overheads may

well include the cost of resources employed by the factory enterprises - pigs, poultry or intensive beef (as in the example) - the gross margins from which bear no relationship to the farm acreage.

Secondly, there is some danger that gross margin analysis may be used to explore the financial effect of changes to a system without due regard to the effect of these changes on the gross margins themselves. In the absence of detailed knowledge of precisely how marginal costs and returns alter with changes in the scale of production, it is commonly assumed that they are linear in character. This assumption may be justified over a limited scale, but few farmers would admit to maintaining a given level of efficiency for a particular job, beyond a certain scale. Corn yields, for example, may well fall due to disease factors or lack of timeliness of cultivation as the corn acreage expands, while the level of stockmanship and rationing of animals may well decline as herd or flock sizes increase. Would the lambing rate and the density of stocking remain unchanged, for instance, with the near doubling of the ewe flock suggested in the example? If changes in the level of performance are properly allowed for, it could be argued that gross margin analysis is ideally suited to handle them, since it takes account of the entire enterprise over which any deterioration will presumably take place. It is doubtful, however, whether possible changes in performance will always be considered, in this way, in the field.

Thirdly, the whole concept of gross margin planning implies that, in each case, a farm is replanned, on paper, from the beginning. In fact the majority of changes to farming systems are marginal in character. And

one weakness of complete budgeting of any sort is that errors in forecasting tend to be multiplied up when they are built into the whole farm plan. When assessing 'normalised' yields, for example, most farmers remember the field "that did 40 cwts." and overlook the failures; 'average yields' are invariably quoted to the nearest five cwts.; the 1000 gallon cow is remembered long after the 500 gallon one. It is by no means easy to arrive at correct 'normalised' yields and experience suggests that despite efforts to 'write down' gross margins, they can still be optimistic. If they are then written into the whole system, this will lead to inflated forecasts of total gross margins and profits.

It might be argued that this is not important if the correct hierarchy of enterprises has been established and, therefore, the best system selected. Nevertheless if the farmer is weighing his total return against the capital invested in his business the forecast of this return should be as accurate as possible. If, for example, the corn acreage on a particular farm is to be increased from 150 to 200 acres, the effect of this is best measured in terms of the net addition to profit resulting from 50 extra acres of corn and 50 acres less of something else. If, in the process of assessing the 'normalised' returns from corn, the gross margin is overstated by say, £2 per acre, then any error in the forecast of final profit is restricted to £100 (50 acres x £2). Where, on the other hand, the change is shown by means of a total budget, the error in the forecast could be £400 i.e. 200 acres x £2. There is, therefore, a strong case for considering the financial effect of a given change in the form of a partial budget - and adding this to the existing

farm profit in order to show the new total.

There are, finally, two important practical reasons why traditional account analysis, supported by partial budgeting, may in many cases still be preferred to gross margin analysis.

First, it has been demonstrated that the gross margin technique is most appropriate where there is a wide choice of enterprises. Frequently, however, and especially on the small and medium grassland farms there is, either, no such choice, or, the choice is so limited as not to warrant the sophistication of gross margin analysis. Indeed, in many cases a complete analysis of the trading account may not even be necessary. Direct checks on the technical performance of individual enterprises are often more appropriate tools. For example, numerous dairy check sheets exist in order to examine the efficiency of milk production, and on certain farms no other analysis may be required.

Secondly, an important advantage of account analysis is that it uses the one record that is always available on every farm - the 'profit and loss account' itself. Admittedly the figures for any one year may not resemble a 'typical' year. But they do represent a year's trading that actually occurred, and they are always available. In contrast the information required for gross margin analysis - particularly the all important allocation of concentrated and forage feed - is, often, simply not available. Despite all the publicity that has been given to the importance of sound records the sad fact is that relatively few farmers have much better records today than they had ten years ago. Account analysis was geared to this situation and if for no

other reason it may continue in use for a long time to come. Incidentally, without easy access to the information required the accurate calculation of more than a few gross margins may be a time consuming job by comparison with account analysis - especially with the advent of mechanical processing units - and the adviser might even be deterred from using the technique for this reason.

VI

Some of the criticisms that have been levelled here at gross margin analysis, might also be levelled at orthodox partial or complete budgeting. Overestimating performance levels, overlooking the side effects of an increased scale of operation, or overlooking changes in the level of overhead costs - these are dangers inherent in any form of budgeting. It is possible, however, that some of these pitfalls are less likely to occur, and certainly less likely to have serious repercussions on the forecast of profits, where the partial budget is used. Confining the budget to the marginal 'area of change' is more in keeping with reality.

On the other hand, gross margin figures are, in themselves, a valuable guide to the direction a given farm plan should take. In the predominantly arable counties, where the ease of determining variable costs makes gross margins relatively simple to calculate, the technique is already in extensive use. Elsewhere, the number of farm management problems that are dealt with in this way appears to be still in the minority and some form

of traditional account analysis coupled with orthodox budgeting still forms the basis of most work.

What forecasts, then, can be made about the possible course of management work in the field in the immediate years ahead?

First, it seems certain that there will be no single technique used universally to the exclusion of all others. So far as practical work in the field is concerned there are at the moment two main approaches to analysis and planning. Each will continue to be used where appropriate, and the rigid use of either one, to the exclusion of the other, would be undesirable.

It is also likely that the gross margin technique, because of the link it provides between analysis and planning, because of its logical approach to the farm problem and because of the relative ease with which it can be understood will continue to gain ground. It will do so more especially in those areas where farming systems, and the availability of information, lend themselves most readily to the method. It seems likely, however, that so far as the general advisory officer is concerned, the actual technique employed will be less elaborate than programme planning in its fullest sense, involving the substitution of enterprises at the margin. The arithmetic involved in this procedure may well be the biggest obstacle to its adoption.

In the mixed grassland regions, gross margin analysis and planning seems likely to be used (as it already is) where appropriate, but not to the exclusion of more traditional methods. It seems likely also that the calculation of gross margins may well be used increasingly as a guide to orthodox partial budgeting i.e. purely to indicate the direction of the farm

plan. Many experienced farm advisers would contend that they are in fact usually concerned with 'pushing' the farmer a little further in the right direction rather than with any outright attempt to maximise his returns.

For the reasons discussed, it seems fairly certain that some form of traditional account analysis will continue as the basis of much advisory work. It has the merit that it can nearly always be carried out and, wherever the choice of enterprise is fairly limited, nothing more sophisticated may be required. Even where gross margin analysis is contemplated an initial analysis of the accounts can often provide a useful background to what is happening on the farm as well, of course, as providing information that is common to both methods. Much of the information on the management forms currently used in the South Eastern Region (MA1 and MA2) has been included with this object in mind. The recent establishment of a Farm Management Data Processing Unit will also almost certainly give a fresh impetus to account analysis. Far from implying a swing back to the more composite measurements of the fifties the emphasis will be on a greater use of accounts to help pin-point the performance of individual enterprises. Thus, 'crude gross margins' for single enterprises or groups of enterprises (e.g. corn crops, grazing livestock) will be used more and more, and comparisons with standards will be increasingly on an enterprise basis rather than between roughly 'similar' farms.

These various tendencies are already discernible and this suggests that the most commonly used approach to farm management work in the immediate future may well be some compromise between 'gross margin' and 'traditional

account' analysis as we now know them. One thing, however, seems certain. Ten years ago, farm management analysis was geared to the comparative standards available from the Farm Management Survey. Now, as farm management analysis itself undergoes change, so the information obtainable from the Survey, in its present form, becomes increasingly inadequate to meet the full needs of the adviser. One of the objectives of this Survey is "to extend the funds of information available for farm management advisory purposes". If it is to continue to satisfy this objective, it is the task of the economist to keep it in step with changing analytical techniques.

APPENDIX. DETAILS OF GROSS MARGINS USED IN EXAMPLE

Enterprise:-	PER ACRE				PER ENTERPRISE			PER HEAD
	Sugar Beet	Winter Wheat	Spring Barley	Early Potatoes	Sheep	Dairy Cows & followers	Sale Heifers	Beef
Gross Output	16 tons at £6 per ton + £10 tops = £106	28 cwts at 27/- per cwt + £5 straw = £44	24 cwts at 27/6 per cwt + £5 straw = £38	Average Sales = £95	150 ewes Sales:- 150 lambs at £900 30 culls at £120 Wool at £225 Total = £1245	90 cows Sales:- Milk 90 x 131 = £11,790 20 culls at £1200 60 calves at £480 Total = £13470	20 head Sales:- 20 x £90 = £1800 less 20 x £10 (from dairy) = £200 Total = £1600	Sales:- at £85 less calf at £7 (from dairy) = £78
Variable Costs:	£. s.	£. s.	£. s.	£. s.				£. s.
Fertilisers	8.18	4.13	4. 2	14. 0	)25 acres	)145 acres[1]	)35 acres	)
Seed	3. 4	4. 0	3. 0	20. 0	)at £5.5	)+ hay, straw	)at £5.5 per	)
Spray	1.10	2. 0	2. 0	-	)per acre	)and tops =	)acre + hay,	) 14.10
Fuel	3.10	1. 4	1. 4	2. 4	) + S.B.)tops =	) £2416	)straw and) tops =	) (hay and straw)
Casual labour	2. 0	-	-	-	) £137	-	) £477 -	) -
Contract and haulage	20. 8	-	-	7. 0	-	-	-	-
Miscellaneous	3. 0	1. 0	18	1. 0	£ 75	£ 690	£ 60	1. 0
Concentrates (bought & home grown[2])	-	-	-	-	£180	£2414	£200	32.19
Total V. Costs	42.10	12.17	11. 4	44. 4	£482	£5520	£737	48. 9
Gross Margin .	63.10	31. 3	26.16	50.16	£763 or £30.5 per acre	£7950 or £54.8 per acre	£863 or £24.6 per acre	29.11

(1) Includes 60 acres at £17.4 variable costs per acre.

(2) Homegrown concentrates that are fed to livestock are treated as cash crops and then charged to the appropriate livestock enterprises at market value.