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Farm Management Adjustments with Falling Prices on Fat Lamb and Cropping Farms

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The purpose of this bulletin is to look into the possibilities of making adjustments in farm organisation with a view to maintaining net incomes on farms in the face of the current recession in prices.

As a generalisation it is true to say that the farm is relatively inflexible as a production unit, and the adjustments which can be made on most types of New Zealand properties are not very substantial. In the first place the farming environment in most areas is specifically suitable for only one or two principal types of farming. For example the soils and climate of the high producing dairying areas of the North Island are suitable for a very narrow range of remunerative products. The hill and high country properties of both islands, by reasons of topography and climate, are even less adaptable. To the extent that the bulk of New Zealand's farm output is produced on these highly specialised properties, our farming economy is highly vulnerable to changes in the demand for these products.

Farms may be quite inflexible from the point of view of their size. For example, dairy farms with a carrying capacity of 50 cows or less are not likely to be able to switch to any other type of farming, say sheep farming, because the unit would be too small to make an economic sheep enterprise. Again, an important consideration is that production adjustments in agriculture normally require considerable time. There is always a substantial lag between decisions to make major structural adjustments to the farm organisation, and their final implementation; its length depends upon the nature and type of farming involved. Thus where there is any degree of uncertainty about the course of future prices, these adjustments may not appear sensible to the farmer.

Also the whole question of farm management flexibility cannot be considered without due emphasis being placed on the incidence of overhead costs. As has been emphasised in a previous bulletin in this series (Number 293), overheads constitute a much higher proportion of total costs in farming than in industry, where variable labour and raw material costs are much more significant. The impact of these overhead costs, which may be associated with highly specific plant and machinery, and buildings, is such that major changes in farm management policy in the short run cannot be justified. Further than this, as will be emphasised below, the existence of heavy fixed overheads minimises the scope for economies on the input side of the farm business.

In the final analysis the profitability of any planned major adjustment to the farm economy can be determined only by careful budgeting of the alternatives. This is called comparative budgeting and it can be a very useful tool in the hands of the farm manager or farm management advisor.

We have chosen to confine this discussion to the sheep and mixed arable farms of the plains and downs of Canterbury, but it will also be appropriate to other similar farming regions in the South Island. Dairy farming has been fairly exhaustively treated by other writers elsewhere. We approach the problem from two points of view: (1) the possibilities of production adjustments on mixed arable farms; and (2) the possibilities of cost economies on sheep farms.

But before proceeding to these sections we think that it is desirable to emphasise that the most important way of meeting price reductions on the individual farm is to increase managerial efficiency. This means, above all, maximising physical production with the given resources of land, labour and capital. For example, on most Canterbury farms it means utilising the feed which farmers are growing so successfully in a much more efficient way than has been done in the last two years. Farmers will recognise that the maintenance of their net incomes during periods of falling incomes depends more than anything else on managerial efficiency of a high order.

Adjustments on Mixed Farms

On the arable sheep and cropping farm, fodder crops and pasture renewal are a regular feature of the farming programme. With the farm devoted predominantly to fat-lamb production cultivation is at a minimum commensurate with the provision of rape for lamb fattening, roots for winter feed, and greenfeed for lambing. However, on these properties there will normally be one or two tractors and a full range of cultivation implements. With regular pasture renewal, there has also been considerable emphasis on ryegrass and white clover seed production. Frequently small seed production is designed for a limited area—say the first year after sowing the pasture for ryegrass seed, and in subsequent seasons for white clover, depending on the class of country. Under both these circumstances such farms normally possess a header. In other words over the mixed cropping districts there is at present the full range of plant for cash cropping.

Cash cropping can very easily be fitted in with fodder crop production and pasture renewal. Fertility lost by grain production can be readily restored with present-day techniques of pasture and lucerne production and utilisation. This involves establishment of vigorous clover based pastures assisted by liming, top-dressing and the use of DDT. Thus we can reduce fertility by grain production on the one hand and restore it by pastures and fat-lamb production on the other. The only problem here is the amount of cash cropping that any one farm should undertake and the choice of cash crops for that farm. When soil fertility in Canterbury was much lower than it is today, Flay established, in an article in the Wheat Review 1947, that grain crops could occupy annually one-third of the medium heavy soils, one-fifth of the medium land and one-eighth of the medium-light land, while at the same time fertility could be maintained by good husbandry and management.

However, the decision as to the area in cash crops can be made only by the individual manager. For example, a preliminary approach could be to compare gross receipts from a pure sheep economy with that from an economy including some crops plus sheep. Similarly gross incomes per acre may be compared. The following table gives estimates of gross incomes per acre for an average medium land farm.

TABLE 1

Gross Returns per Acre at Quoted Yields and Prices for Average Arable Sheep and Cropping Farm

	Gross Return per Acre £ s. d.
Sheep—3½ E (Lamb 50/- Wool 30/- per ewe, equals 80/- x 3½)	14 0 0
*Wheat—40 bus. at 13/6 ..	27 0 0

Barley—50 bus. at 8/10½ ..	22	3	9
Oats—55 bus. at 7/6	20	12	6
**Chaff—2 1/5 ton at £20	44	0	0
Partridge Peas—30 bus. at 15/-	22	10	0
Garden Peas—25 bus. at 16/-	20	0	0
Linseed—10 cwt. at £40 per ton	20	0	0
***Perennial Rygrass seed (Cert. Mother)—20 bus. M.D. at 17/6	17	10	0
***Short Rotation Grass Seed (Cert. Mother)—25 bus. M.D. at 17/6	21	17	6
***Italian Ryegrass (Cert. Mother)—25 bus. M.D. at 17/6	21	17	6
White Clover Seed (Cert. Mother)—120lb. M.D. at 3/-	18	0	0

* New varieties of wheat could easily raise this yield by 10 per cent to 20 per cent.

** This year chaff is in short supply and the price varies from £28 - £33 per ton.

*** Price for good germinating seed.

It will be appreciated that small seeds are not competitive with sheep on an annual basis, but, in a sense, are supplementary to sheep.

It is not suggested that these figures indicate the need for farmers to rush into a maximum area of wheat. There is the question of its most economical position in the rotation, the extra cash expenditure associated with its harvesting and the fact that the farmer is left with a bare stubble. These questions involve the estimation and comparison of running costs in an all sheep economy with running costs under a mixed sheep and cropping economy.

There is also the problem of determining the allocation of the variable costs between the different enterprises. What proportion of the fertiliser costs, lime costs, machinery expenses, hired labour charges are to be charged against the wheat enterprise, and what proportion against the fat-lamb enterprise. This is not an insoluble problem but it has complexities which put it beyond the scope of this short bulletin.

However, what we can do, with the aid of comparative budgets, mentioned in the introduction, is to indicate the likely outcome of a number of different management systems on representative farms. As an illustration we have taken a representative farm of 405 acres of medium land and with yields and prices similar to those in Table 1, have budgeted the farm under two systems: (a) Maximum fat lamb production; (b) A balanced fat lamb and cash cropping economy. Again, it is not possible to publish the details here, but in Table 2 we reveal the prinicipal results.

TABLE 2

Budgetary Analysis of Representative Medium Land Farm, Area 405 Acres*

Method of Farming	Gross Revenue.	Run. exps. —incl. ewe replace-ments.	Wages of manage-ment.	Depre-ciation & rates etc.	Amount left for Int. on Capital.	Interest as a % of total Capital.
Maximum Sheep Economy	6875	4299	895	561	1120	3.7%
Balanced Cash Cropping Economy	7576	4183	895	565	1933	6.5%

* Exact details supporting these results are available upon request.

For the sheep economy 1400 ewes were carried with fodder crops only and 30 acres of small seeds, while for the mixed cropping economy 950 ewes were carried together with 70 acres in wheat, 30 acres in Partridge peas, 40 acres in small seeds and necessary fodder crops.

This table, along with other similar analyses being undertaken, shows that at the prices quoted the arable mixed farm now devoted dominantly to fat lamb and wool production must return to cash cropping if profits are to be maximised; but what is the present day position in this field? Chaff fluctuates violently in price with varying quantities put into stacks, linseed and barley are fully contracted with established clients, oats are uncertain as regards price, and peas are grown only on contract for the sake of a reliable sale, Small seeds which are restricted to limited areas of new or nearly new pastures must give high yields to be worth while with prices uncertain and the risk of disease. The position then virtually resolves itself into one of growing more wheat. The point is that diversification is a feature of mixed farming and can take place to the extent that markets are available. There is much discussion about diversification in New Zealand farming but the alternatives available on the most payable basis even in mixed farming are limited.

Maximising of incomes on medium and medium heavy land farms quite clearly now involves a balanced programme of maximum sheep numbers commensurate with an increased area of cash crops, basically wheat, and limited areas of small seeds.

Some suitable rotations for mixed farms are:

Medium Land

Old grass ——) rape ——) wheat ——) turnips and new grass (or new grass alone).

Old grass ——) turnips or chou moellier and swedes ——) rape ——) wheat ——) wheat ——) greenfeed ——) new grass.

Old grass ——) roots ——) rape ——) wheat ——) oats and grass.

Old grass ——) wheat ——) new grass.

Medium-Heavy Land

Old grass ——) rape and/or peas and/or potatoes ——) wheat ——) wheat ——) barley and new grass ——) white clover seed.

Old grass ——) rape and/or peas and/or potatoes ——) wheat ——) barley ——) oats ——) greenfeed ——) new grass ——) ryegrass seed ——) white clover seed.

Old grass ——) wheat ——) rape and/or peas and/or potatoes ——) wheat ——) barley or oats ——) greenfeed ——) new grass.

Many of the medium-heavy and heavy land farms will already have contracts for barley and peas and will be saving some ryegrass and white clover seeds. Some will be growing potatoes. It is not suggested that all or any of these should be increased in area at present. There is no market unless the pig industry should desire barley. But there is scope for 400,000 acres of wheat to be produced in New Zealand for local consumption. If prices of fat lamb and wool settle at 47/6 and 3/- respectively or fall further, farmers occupying our cropping land will have little choice. Wheat will again come into its own and Canterbury will regain its reputation by displacing Australia as the granary of New Zealand.

Cost Economies on Sheep Farms

With certain classes of land the fertility is too low or the land lies too wet for cropping. Hence the maintenance of net income centres around sheep farming. The natural reaction to falling prices is to increase output. This can be done and should be done on all farms but on some the rate of increase must necessarily be slow because the farms are already highly developed or the necessary capital or labour is not available. The other item to be examined is costs. The ideal of course is to increase output and reduce

costs or at least maintain output and reduce costs. In this way net returns which have been depleted by the downward movement of our wool and meat prices can be increased and the standard of living of the farmers maintained. It is therefore wise to look to those items of expenditure not connected directly with output. The first of these is repairs and maintenance. If we turn to the work of the Economic Service of the Wool and Meat Boards it can be seen in Keen's "Patterns of Expenditure on New Zealand Sheep Farms" that expenditure on repairs and maintenance on fat lamb farms runs at 12 to 15 per cent of total expenditure, or some 7/- per sheep in 1952/53. There has been a small rise to probably about 8/- with the advancing costs in the intervening period. The prudent farmer and especially the man who has been on his holding for some years will have put the unit into first class order as far as fencing, buildings and machinery is concerned. He should be able to cut his repairs and maintenance costs by 3/- to 4/- per sheep for several years without deterioration of the property. This is a promising start as far as recovering the £1 per sheep which has been lost in lower prices is concerned. Those who have recently taken over their farms, or those who have not brought their properties up to a good standard will not be able to make the same reduction without allowing deterioration to set in on the holding.

Most fattening farms purchase replacements. Costs of these run at 25 to 30 per cent of total expenses or some 15/- per sheep carried. It seems a logical assumption that with revenue down by 25 per cent replacement costs will also fall by about this amount or say 3/- to 4/- per sheep carried.

It would be good to think that reductions in costs could continue along these lines leaving the farmer with the same net income as before but unfortunately this does not seem possible in the meantime. There is no indication that costs will fall—in fact following the budget of June, 1958, the chances are that some costs such as transport will rise.

A big item of expenditure is involved in fertiliser, lime and seeds—some 27 to 30 per cent of total expenditure or about 15/- per sheep carried. Under the circumstances it would not be surprising to see expenditure in this section considerably reduced. There will be a carry-over of fertility for a period—certainly one year and perhaps two or three, but any marked fall in expenditure on manures must be reflected in a lowering of output. The wise procedure is to lower expenditure only in those avenues which do not affect output. In only one respect does this appear possible—with lime. The latest information from the Experimental Station at Winchmore suggests that where initial liming has been up to the required standard a maintenance dressing of only 1 ton per 8 to 10 years is necessary and not 1 every 4 to 5 years thought to be needed up until recently. In fact there is some suggestion that stock thrift may improve with these lesser dressings, always provided that the initial lime requirement has been supplied in the past. This could cut maintenance liming from say about 1/10th of a ton per ewe carried per annum to 1/15th or even less—a saving of about one shilling and fourpence per sheep per year—say 1/- per year. There should be some slight saving also in the cost of seeds for sowing pastures and fattening crops but this may take a year or two to take effect.

There seems little prospect of a reduction in charges for wages or general farm requisites—in fact the outlook may well be for an increase.

The fixed costs in the form of interest, rates, insurance and rent offer no prospect of reduction and if prices fall any further, these will be a heavy burden on many farms, particularly those which are capitalised and indebted at recent values.

Cattle

A bulletin concerned with the prospects of adjustments on mixed arable and sheep farms would not be

complete without some mention of cattle. Economically, the place of cattle will be determined on these farms by the efficiency with which they will convert a given amount of feed into money. There is no question of cattle being absolutely necessary to control roughage on these farms as on hill country farms, for adequate stocking and efficient grazing with sheep, associated with a policy of maximum conservation of surplus feed, will take care of this.

While lamb was at 22d per pound, wool at 60d per pound and beef at 80/- per hundred pounds, there was no question that the return per unit of feed consumed was definitely in favour of sheep. Trials at the Department of Agriculture's Research Station at Ruakura and Winchmore have demonstrated that on high producing pastures approximately the same amount of meat per acre is produced whether fat cattle or fat lambs are produced. In addition, of course, sheep produce a fleece of wool. It is therefore clear that while the change in the ratio of prices to say 20d per pound for lamb, 40d per pound for wool and 120/- per hundred pounds for beef, has moved the pendulum towards that point where beef production would be profitable, it has not moved it far enough. It is our opinion that these price ratios as they stand do not justify any substantial change in emphasis in favour of cattle on our mixed arable and sheep farms.

Of importance too is the outlook for beef, and the question of whether the present boom is likely to have any permanence. One fact is clear, the market for beef products is versatile and universal. The mutton and lamb-eating communities of the world are relatively few. Therefore it is more likely that in our search for new markets we are likely to have a wider reception for beef products than for mutton and lamb. On the other hand, there are indications that the United States will emerge from the trough of her current cattle cycle during the 1960s and that policies being followed in the United Kingdom may result in her providing a much more substantial proportion of her own beef requirements. Farmers cannot be expected to plan on the basis of this uncertain future, and their only real guide is the present level of relative prices.

In addition to the net profit considerations, there are other important points which must be taken into account. For example, fencing and water supply requirements are much more rigorous for cattle than for sheep and any large scale switch to cattle may involve substantial capital costs.

Summary

To conclude, it seems probable that of the 20 to 25 per cent loss in revenue from falling prices amounting to some 20/- per ewe, economies per sheep can be made amounting to possibly one-half this sum. The rest will come under the heading of reduced net income. The farmer on mixed cropping land is in a more favoured position, for with wheat he has a profitable alternative with a domestic market.

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