

"Mutato nomine de te/Fabula narratur". "Change the name and the Tale is about you". Or about us. That we felt was the dominant consideration when this article was presented anonymously. It emerges obviously from respectable experience and commitment to Co-operative development; its figures for societies are realistic for British experience; it explores constructively a statistical method available to managers for measuring the importance of certain factors in profitability; and indeed, in the absence of precision about origin, there is even the merit of helping to concentrate attention on a method which may be of value to U.K. societies.

A French Experience

What importance should one attach to higher gross margins, sales expansion and higher sales per square foot in the struggle to increase profitability amongst small shops with similar characteristics?

From Pays de Cockaigne comes some interesting evidence sent by Jean Martin reporting on a statistical analysis of an isolated group of 42 such shops, which he feels warrants further investigation. The material is made available in the hope that other Co-operatives, similarly placed, might match these figures with examples from their own small branches. Of course the main ingredient of relative commercial success must be the calibre of local management, but local management cannot easily be measured objectively. An analysis of criteria which are measurable - gross margins, increased sales and turnover per square metre of selling space - offered a fertile prospect.

Trade profit is what remains of gross margins (sales less cost of goods sold) after expenses have been deducted. Rent and other occupancy costs, and the all-important personnel costs, have not been separately analysed in the main study but they are included in working out the profit. (The relationship of occupancy and personnel costs to gross margin rates has been looked at in a subsequent study). These vital components of expenses could be regarded as overheads in the short run.

Scope of the Enquiry

All these shops are small, averaging some 240 square metres selling space ranging from 100m² to 600m². At 20.5 per cent the gross margin was surprisingly low - but this may have been due to the proximity of neighbouring hypermarkets. The rate was equivalent to an average mark-up of 26%. Expenses averaged 13% of sales, yielding a trade profit of 7½% of sales.

The question arises as to what extent the profitability of the particular shops was related to factors such as the three mentioned above (the gross margin achieved, the throughput per square metre of selling space and the increase in sales) over the last two years, assuming that the overheads of the shops were fairly stable during the period. The relationship between profitability and these three factors has been examined by statistical analysis.

Gross Margins

The Cockaigne group of Co-operatives maintained the same general price list for each of their shops, so differences in gross margin will have been due to differences in the mix of goods sold and in leakage rates. Pricing policy for the group encouraged a higher mark up to match the differences in selling and stockholding costs of any lines where the overall competition allowed it. For this reason changes in the proportion of alcohol, tobacco, and fruit and vegetables or of non-foods might affect the gross margins in particular shops. If a shop could "trade up" by selling foods commanding higher margins, the extra receipts were kept for the benefit of the business. The concept of having to pass these benefits directly on to the customers, cost-driven retailing (see Roger Dickinson, University of Texas) leading to a convergence of retail margins, had not been forced on the group by the competition of cut price retailers. Leakage affects the total gross margin for the shop because any shortfall in closing stock exaggerates the apparent cost of goods sold.

The average gross margin in these shops was 20.5 per cent of sales, with all but two of the shops falling within the range of 18 and 23 per cent of sales. One would have expected a close correlation between a shop's achieved gross margin rate and its profitability, and this is indeed the case. Statistical analysis shows that two thirds of the variation in trading profits is associated with differences in gross margin¹. One might also have expected that selling high margin goods would require a higher staff input. In fact, the opposite seems to hold - there is some statistical support for high margins and low staff cost going together², perhaps because both reflect the good local management of the shop concerned.

$${}^1 r = +0.8 \quad {}^2 r = -0.5$$

Sales per Square Metre

Most surprising is that there seems to be only a moderate relationship between profitability and sales per square metre of net selling area. It is commonly held that Co-operative retailers are held back by their inability to match private enterprise multiples' high sales from the area of selling space they bring into operation with their heavy capital requirements for land and building. This does not seem to have had as much relevance within these small shops. They

have been established and much of their buildings and fittings will have been fully depreciated, having already exceeded their allotted time span and therefore incurring no further depreciation costs. The average sales per week per square metre was Fr 9.7 with a range of Fr 16 to Fr 5.5. Sales per square metre accounted for little more than a quarter of the variation in profit³.

Increase in Sales

The average of the increases in sales in these shops over the last two years was 11.35 per cent which is slightly less than the increase in retail prices and significantly less than the increase in consumers' expenditure: the shops were losing market share. The rival multiples were mopping up the increased income in shoppers' purses. There were very considerable variations around the average increase in sales - from increases of 25 per cent over the two years to an actual reduction in the value of sales of as much as 5 per cent. The correlation between increased sales and profitability accounted for less than one fifth of the variation in profitability⁴: it was the least important of the three factors considered.

$${}^3 r = +0.5 \quad {}^4 r = +0.4$$

The Inter-Relationship between the Components

So far each of the components has been treated separately - but each has an inter-relationship with the other two. For instance, a shop might be more likely to record higher sales per square metre if it had increased its sales over the last two years. The variations from each of the three averages (sales per square metre, gross margin and sales increase) for the 42 shops in the sample are set out in Chart 1.

The statistical device of calculating a multiple regression is the accepted way of identifying the inter-relationships between more than two series. The multiple regression gives the best estimate of profit as a percentage of sales:

Variation from the average of trade profit	= 0.03	variation from the average of sales increase	+ 1.4	variation from the average gross margin
	+ 0.3	variation from the average sales per square metre	+	a residual, a constant 0.1

Chart 2 compares the actual profits in decreasing order with the estimates based on this multiple regression. Altogether the formula is a good fit: it shows that more than 80 per cent of the variations in trade profitability in these 42 shops are accounted for⁵.

$${}^5 r = +0.9$$

Chart 1

Deviations from the average

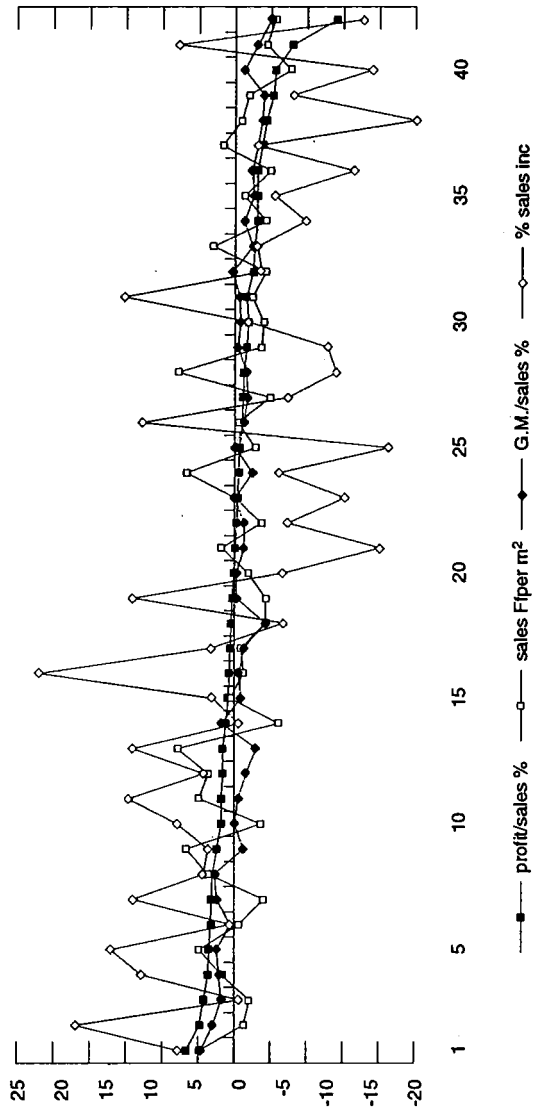


Chart 2

Projected & actual deviations from the average trade profit compared

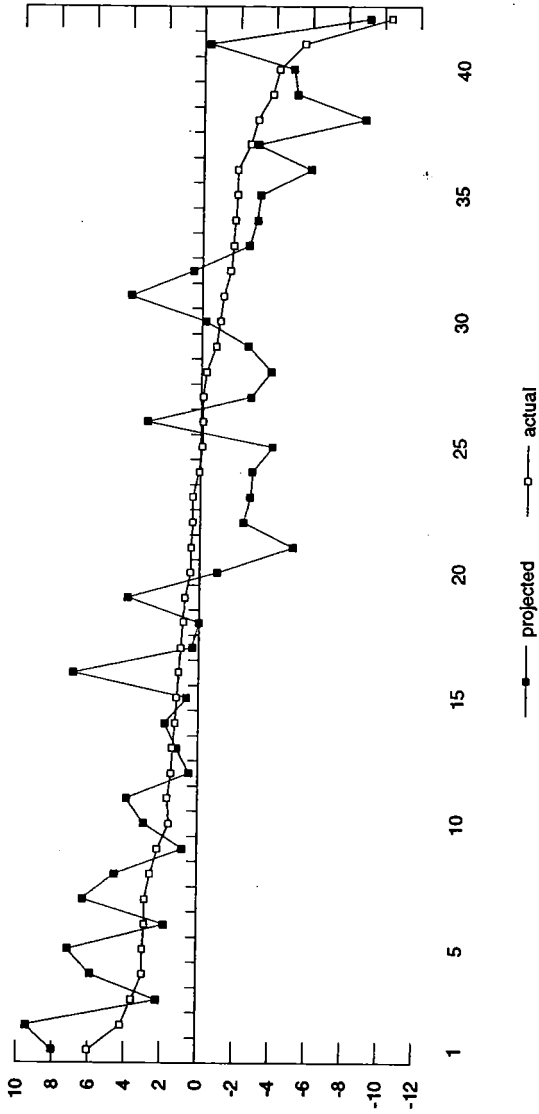


Chart 2 illustrates that there are some interesting differences - the actual for branches numbered 42 and 41 was much worse than was expected, perhaps because they were demoralised by decline. On the other hand, branches 27, 22 and 3 were much better. These variations from expectations are worthy of further research. Superficially it would appear that there is not much room for independent variations in other factors not listed to affect the results.

This exercise seems to have been worthwhile in showing the importance of gross margins and the lesser significance of short term increases in sales in relation to profitability. Increasing profit as a percentage of sales cannot be the sole objective of Co-operative shops - they must also be interested in building sales (albeit profitable sales) if there is to be any progress towards a Co-operative Commonwealth!

There is no doubt but that this pioneer work could be improved upon - and it is very much to be hoped that some Co-operatives in other countries will be forthcoming in matching these figures with their own. And perhaps producing a regression which fits these or other variables better.

In Passing

Nevertheless for me the need for autonomy (which means the ability to choose my life and satisfactions) has always taken second place to the need for belonging (which means the need to find my life and satisfactions inscribed in a social reality greater than myself).

Roger Scruton – The Times 12 March 1992