Direct Produce Profit for Small and Intermediate Size Grocery Retailers

by

Michelle Roberts Blanchard
Instructor
Calhoun Community College
Decatur, AL

George K. Criner
Associate Professor
Department of Agricultural and Resource Economics
University of Maine
Orono, ME

Abstract

Direct product profit (DPP) is a retailing tool used to analyze product sales performance. Although the concept is over 20 years old, its widespread use in grocery stores is a fairly recent phenomena. A product's DPP is calculated as its adjusted gross margin less its direct selling costs, which normally include transportation, warehousing, and retailing or store costs. A product's DPP and sales volume classifies it in one of four categories to assist in merchandising options.

Fifteen small and intermediate size grocery retailers cooperated with a study of produce DPP. Based on weekly produce sales, the stores were separated into three groups. As store group produce sales increased, produce adjusted gross margin and DPP increased. Based on produce sales volume and DPP level, various merchandising strategies are suggested.

Introduction

For a retail store, DPP is a measurement of each retailed item or each section's contribution to overall profitability. Essentially, DPP is a retailed product's gross margin minus its direct retailing costs. Depending upon a product's sales volume, level of DPP and other factors, the DPP methodology suggests various merchandising strategies. DPP is recognized as a useful tool in enhancing store profitability and is used, at least periodically, by most large chain grocers.

The DPP concept has existed for over 20 years. At present, there are a variety of proprietary shelf management software systems that estimate DPP, such as Higher Operating Profits through Efficiency (HOPE). In 1985, in an effort to standardize DPP usage, the Food Marketing Institute (FMI) released the Unified DPP model (Boyle). Although the initial FMI model was most useful in analyzing wholesale operations, subsequent revisions have made it more generally useful to grocers. For the independent grocers that are currently using a microcomputer spreadsheet for cost and sales analysis, creating their own unique DPP model is a viable option.

The use of DPP requires large amounts of detailed information as well as a significant invest-

ment of time to start and maintain the system. For all practical purposes, DPP applications require the use of a computer. These requirements have made it difficult for some grocers, particularly small and intermediate size grocers, to use DPP.

A hope of the authors is to keep the discussion of DPP among food industry and university personnel, particularly those of the cooperative extension, ongoing. It is vital that the use of this technique be extended to the smaller grocers. Using DPP will enhance management knowledge of store costs and will help stores remain efficient and competitive. Store management should also be familiar with DPP since some manufacturers promote their brands based on reported DPP performance.

Objectives

The objectives of this study are to provide an overview of the direct product profit methodology and demonstrate an application of DPP to produce.

DPP Procedures

The first step in calculating DPP is to calculate the Gross Margin:

Gross Margin =
Gross Sales - Cost of Goods Sold

Next, the adjusted gross margin is derived by adding in manufacturer deals, promotions, and any other allowances or income:

Adjusted Gross Margin =
Gross Margin + Allowances and Income

And lastly, the direct product costs (DPC) of warehousing, transporting, and store retailing are subtracted from the adjusted gross margin, resulting in the direct product profit of an item.

For the small and intermediate size grocery retailers the most important direct product costs are those incurred within the store, such as handling labor, refrigeration or other product specific equipment, and building space:

DPP = Adjusted Gross Margin -
Direct Product Costs

Once the DPP has been determined, the usual procedure is to consult the DPP merchandising matrix (Figure 1) for suggested merchandising strategies. However, the use of this matrix requires the manager to first judge the relative level of both DPP and sales volume as compared to other store products. This judgement is basically subjective, but once a manager calculates DPP for a range of products or store sections, making relative rankings will be easier.

Once DPP and sales volume levels are established, the DPP merchandising matrix suggests several merchandising options. Depending upon where a product is located in the matrix, it is classified into one of four categories: "winners," "underachievers," "sleepers," and "losers."

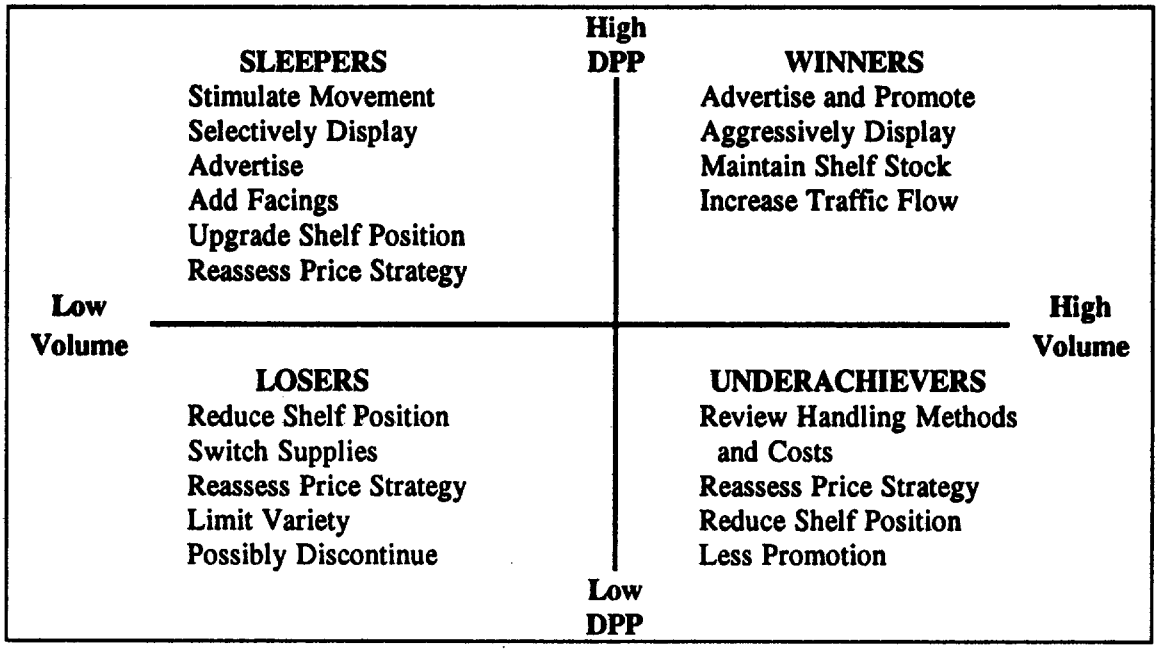
Items with high DPP and high sales volume are obviously performing well and are considered "winners." Merchandising options to be considered for "winners" include heavy promotion, aggressive display, and location within heavy traffic flow areas.

"Underachievers" are products which have high sales volume and low DPP. These items are popular with the store's customers, but have low returns with respect to direct costs. When faced with this type of product a retailer should consider one or more of the following: review handling methods and costs, reassess pricing strategy, degrade shelf position, and consider reducing advertising and promotion allocations to that product.

"Sleepers" are products which may not be performing at their full potential. "Sleepers" have low volume and high DPP and the general merchandising goal is to stimulate movement. Some options to be considered are to selectively display the product, change and/or increase advertising and promotion, add facings, upgrade the shelf position, and reassess the pricing strategy.

The final category, "losers," includes products with low volume and low DPP. Merchandising options to be considered include degrading

Figure 1.
DPP Merchandising Matrix



Source: Focus. 1987-1988. "A New Slant on the Bottom Line", p. 21.

the shelf position, switching suppliers, reassessing pricing strategy, limiting variety, or possibly discontinuing the product.

The DPP merchandising matrix suggests possible merchandising strategies, but the action taken by grocers must take into account the overall store merchandising plan. For example, a store known for its selection of meats may find this section to be categorized as an "underachiever." Given the role that the meat section plays in the store's popularity, it would not be wise to abide by the "underachiever" recommendation of reducing shelf position and promotion.

A DPP Application to Produce

Due to the time investment and information requirements for DPP implementation, many small and intermediate size grocery retailers have avoided DPP analysis. In an effort to introduce DPP to this segment of the grocery industry, 15 cooperating small and intermediate size grocery retailers were selected to participate in a study. Although the sample stores were locally selected, the procedures are relevant to all regions of the country since the calculations of costs and revenues is identical. Many small grocery retailers, whether in Maine, Georgia or California, have yet to adopt this important information technology.

The focus of the study was on applying DPP methods to the store produce sections. Produce was selected since funding for this analysis was provided through the U.S. Department of Agriculture's Southern Regional Research Project: *Competition and Change in the Fruit and Vegetable Production and Marketing System.*

Unlike the Unified DPP model, this application focuses on in-store costs and excludes a detailed analysis of warehousing and transportation costs. Many small and intermediate size grocery retailers receive most of their goods from member organizations where transportation and warehousing costs are essentially constant.[1] These retailers include warehousing and transportation costs as a portion of "costs of goods sold."

The DPP analysis was conducted using the Lotus 1-2-3 spreadsheet software. The spreadsheet model created for this study calculates DPP in three steps. First, the adjusted gross margin is calculated by subtracting total produce cost of goods sold from gross produce sales, and then adding in any deals, promotions, or allowances.

Next, direct retailing or store costs are calculated. For produce, direct costs include the labor of stocking and cleaning the display, electricity used by lights and refrigeration, produce cooler equipment costs, and a portion of building and land cost attributable to the produce section.

Lastly, the DPP is calculated by subtracting direct costs from the adjusted gross margin.

Results

Fifteen Maine grocery retailers with annual gross sales under three million dollars participated in this study. Information was collected with a mail survey and follow-up store visits. Based on produce sales volume, each store was sorted into one of three groups. Table 1 presents the produce sales classification for the three groups, as well as average produce gross sales and produce sales as a percent of total store sales. Average weekly produce gross sales increased from $641 to $18,896 in moving from Group A stores to Group C stores. Produce as a percent of total store sales increased from 4.52 percent for Group A stores to 8.33 percent for Group C stores.

Table 2 shows each store group's average produce adjusted gross margin, direct retailing costs, and DPP. Group A stores have the lowest produce gross margin as well as negative DPP. On average, Group A stores had a weekly adjusted gross margin of $175, and a negative $39 DPP for their produce section. Group C stores performed the best of the three store groups with high produce adjusted gross margin and produce DPP. Group C weekly produce gross margin equaled $4,636 and produce DPP equaled $3,163.

Analysis

The results of the analysis of the 15 Maine stores revealed that as produce gross sales increased the produce adjusted gross margin and produce DPP increased. To demonstrate a DPP

Table 1.
Produce Average Weekly Sales by Store Group

Store Group by Sales	Produce Gross Sales	Produce Percent of Store Sales
A) Under $1,000	$641	4.52
B) $1,000 to $10,000	$3,279	7.16
C) $10,001 and up	$18,896	8.33

Table 2.
Produce Adjusted Gross Margin, Direct Costs and DPP, by Store Group

Store Group by Sales	Produce Adjusted Gross Margin	Total Direct Costs	Produce DPP
A) Under $1,000	$175	$214	($39)
B) $1,000 to $10,000	$781	$568	$213
C) $10,001 and up	$4,636	$1,473	$3,163

application, the averages for store groups A, B, and C will be discussed in terms of the DPP merchandising matrix shown in Figure 1. Using these averages, store groups A, B, and C are classified as "losers," "underachievers," and "winners," respectively.[2]

The Group A produce section is classified as a "loser," with a negative grocery section DPP and lowest sales volume of the three groups (4.52 percent of total store sales). The suggested strategy is to either improve DPP or reduce the sales of this store section. In an attempt to reduce sales, the store could consider locating the produce section away from the main traffic flow areas as well as reduce produce area and variety. Management may wish to reduce shelf space by retailing only the major produce items, such as apples, oranges, tomatoes, carrots, and lettuce. Another option for the "loser" product is to increase the store's gross margin by purchasing lower priced goods or increasing retail price. Discontinuing the produce section is the final option and must be approached with considerable caution since the produce section adds to the store's variety and attracts customers. This is especially true for stores that have a strong rural service component.

In instances where direct product cost consist primarily of fixed costs, reducing sales of the product will worsen its DPP. Of course a product with very low or negative DPP coupled with high fixed retailing costs would be a candidate for elimination. What is important to note, however, is that this DPP strategy will normally allow for the shelf space expansion of a product with higher DPP, thus increasing overall store profitability.

The Group B produce section is classified as an "underachiever" since produce sales are relatively high and DPP is relatively low. The DPP merchandising strategy for "underachievers" is to raise DPP. Since "underachiever" sales volume is relatively high, increasing DPP would transform Group B produce from "underachievers" to "winners." Methods for improving DPP are increasing gross margin or decreasing retailing costs. Stores with produce sections that fit this category should consider one or more of the following options: review handling methods and costs of the produce section, reassess pricing strategy, and reduce advertising and promotion spending.

Since produce in Group C stores are classified as "winners," the merchandising options include heavy promotion and advertising, aggressive displays, and locating the produce section in heavy traffic flow areas. The goal of these merchandising efforts is to "make a good thing even better" by expanding the sales volume of the well performing produce section.

DPP should never be the sole basis for a decision to radically change or discontinue a section (Focus, 1987-88, pp. 30-32). Since DPP is a cost oriented approach to profitability it does not consider additional factors that must be addressed when making merchandising decisions (Stoops and Pearson, 1988, p. 14). Management should also consider factors such as variety, consumer demand, competition, and the firm's goals before such decisions are made.

Concerns and Limitations

There are several concerns and limitations associated with the use of DPP. The issues vary by the type of grocery retailer being considered. For the chain supermarkets, their primary concern is that the technique be used correctly. For instance, a possible misuse is management interpreting DPP as a break-even price. DPP excludes indirect costs (such as general store management labor, checkout costs, record keeping) and therefore it is below the actual break-even price.

Concerns and limitations are much more numerous for small chain grocers and independent stores. Large chain grocers usually have personnel specializing in management information systems. With fewer resources, smaller chain grocers and independent stores are less likely to have personnel skilled in this area. Perhaps an even more serious problem is that smaller stores lack the equipment to efficiently track sales. Computers can track this information by scanning universal products codes (UPCs) or through cashiers entering price look-up codes (PLUs). Without this technology it is extremely difficult to routinely capture an accurate picture of sales and

shrink.[3] As the cost of computers and scanning systems decline a greater number of smaller stores will be able to afford this valuable technology.

Another consideration for retailers attempting to implement DPP is that produce may be the most challenging of all store departments. More than other departments, produce lacks standardization of units, experiences large price fluctuations, and has tremendous product seasonality. With effort, however, the use of DPP can assist in determining whether it is profitable to carry more than one kind of lettuce, or if featuring bananas is more profitable than featuring local produce.

Implications

Small and intermediate size grocery retailers will benefit from the use of the DPP methodology. Although the information and management required to conduct periodic DPP analysis are tremendous, adopting DPP use will improve management understanding of product costs and profitability. Given the competitive pressures these grocers are experiencing, adapting some aspects of DPP should enhance their long-term survival chances.

In this analysis the DPP results for the store averages were in keeping with expectations. Larger stores had higher produce sales as a percent of total store sales with associated higher DPP. However, on an individual store basis there were some surprises. One store operator was quite sure that the leading contributor to the store's profitability was the produce section. In this case, however, excessive walk-in cooler space and handling requirements resulted in negative produce DPP. This type of periodic health check of a section or even a particular product may be the greatest virtue of the DPP methodology.

DPP Program Availability

The DPP model was developed for a Master's thesis using Lotus 1-2-3. Although this model has not been validated with other DPP studies, it is available. To obtain the model send requests and two IBM compatible diskettes to George K. Criner at 206 Winslow Hall, University of Maine, Orono, ME, 04469.

Endnotes

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[1]Many small and intermediate sized grocery retailers belong to purchase-warehouse-delivery associations or cooperatives and typically take delivery of goods on an arranged dollar amount basis. These stores are committed to regular purchases of goods within a dollar value range. The associated warehousing and distribution costs for these goods are based on this standing committed level of purchases.

[2]The DPP and sales levels necessary for classification with the DPP merchandising matrix will vary by store size and type. In this study the DPP classifications are made somewhat arbitrarily for demonstration purposes. In actual use, however, the DPP and sales levels for several different store sections would be required in order to properly classify items with the DPP matrix.

[3]Shrink is the difference between the quantity of a good purchased and the quantity of that good sold. The usual causes of shrink are theft, damage, and spoilage. Product shrinkage is generally high for perishable products and thus is an important factor in a DPP analysis of produce.

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