CHAPTER 16

Economic Damage Quantification in Trademark Matters

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One approach to splitting the profits between owners and users of a trademark is the "25 percent rule" attributed to Goldscheider (Goldscheider and Marshall 1980). This rule of thumb states that typically one-quarter to one-third of the profit should be apportioned to the licensor for the use of the trademarked product. Regardless of the validity of the rule, there is no question that the rule is commonly cited and applied in the licensing community. The purpose of this chapter is to develop an econometric estimate of the trademark fraction based on an economic analysis of trademark value. Trademark fractions determined for five products using econometric demand analysis show considerable variation and are generally much larger than the 25 percent rule would suggest.

INTRODUCTION

Brand names and trademarks have long been recognized to confer value to their owners. Meanwhile, a hodge-podge of methods for determining these values exists, and often they appear to have no clear economic foundation or support.[1] (One such method, the income method, forecasts the future profit stream arising from the sales of a given branded product and then allocates a fraction of this profit stream to the brand. If a licensor and licensee are involved, the fraction of future profit attributable to the brand should be the basis for the royalty payment that the licensee would pay the licensor for use of the brand. One approach to splitting the profits between owners and users of a trademark (or in determining a reasonable transfer price for a firm with international operations) is the "25

percent rule." This rule of thumb states that typically one-quarter to one-third of the profit should be apportioned to the licensor for the use of the trademarked product.

The 25 percent rule and is sometimes known as the Goldscheider rule or Goldscheider fraction, or simply the trademark fraction.[2] Some empirical support for the rule comes from analyzing actual transactions and comparing these to estimated operating profits. Other justifications for the rule appear to be weak.[3] One justification is that 25 percent is what numerous others have agreed to and "that's just how it is" Another explanation is that 25 percent of the work to get a product to market is in the idea, and the remainder is due to the going concern of the business that will actually sell the product. Yet another explanation is that a buyer/user will require a three times return on costs before making the investment and commitment in a new project. Regardless of the validity of the rule, as a practical matter there is no question that it is commonly cited and applied in the licensing community. The purpose of this chapter is to develop an alternative estimate of the trademark fraction based on an economic fundamentals analysis of trademark value.

Specifically, I consider the economic value for five trademarks of the Carnation Company circa 1985—Coffee-mate, Carnation Evaporated Milk, Carnation Instant Breakfast, Mighty Dog (dog food), and Fancy Feast (cat food). These five brands were among Carnation's best-known brands; each has a relatively large market share, and each commands a price premium relative to its unbranded competitors. For this group of brands, there was both sufficient data to estimate product demand reliably and enough variety among the products to illustrate the nature and range of trademark values. The tools of demand analysis are used to quantify these characteristics and to calculate the trademark's economic value. I estimate trademark fractions with systematic variation across products and in overall magnitude relative to the one-quarter to one-third rules of thumb.

In brief, there are two basic components to the economic analysis of trademark value. First, historical sales data on branded products and their competitors are used to estimate respective demand functions. The demand function can be used, with knowledge of production costs, to determine the profitability of a product under alternative pricing strategies. The demand function summarizes all relevant information about the market for a product, such as special population segments that purchase a particular product, seasonal variations in purchases, levels of advertising spent, and characteristics of similar products in the same market. The second component of the economic analysis is a method for calculating the value of a brand trademark from the demand functions for the brand and its competitors. From an economic perspective, the value of a brand trademark to a producer is the difference between the profits that it would earn operating with the trademark and the profits it would earn operating without that trademark.

A formula giving the appropriate split of total profit between the trademark and nontrademark components is derived in Section III. The fraction of total profits attributable to the trademark, that is the "trademark fraction," is shown to depend on the market shares of the trademark brand versus that of the unbranded product (private label and generic goods) and their respective price elasticities.[4] In general, the greater the price elasticity of

the branded good relative to the price elasticity of competing unbranded goods, the lower the fraction of profit which should be allocated to the brand trademark.

Basis for the Demand Approach

The economic value of a brand or trademark reflects a manufacturer's ability to command a higher selling price and/or market share for the branded good than it would attain for an essentially identical unbranded good. Uncertainty about the quality of, or lack of familiarity with, unbranded alternatives makes many consumers reluctant to purchase such products even when they sell at a considerable discount to branded goods. This has two consequences, which will be demonstrated mathematically later.

1. Because consumers prefer the branded good to its unbranded competitors, the branded good can be sold at a higher price than the unbranded good.
2. Despite the price premium, the producer of the branded good is usually able to sell larger quantities than the unbranded producer.

The combination of price premium and increased market share determines the relative profitability of branded and unbranded goods. From an economic perspective, the appropriate value for a trademark relates to the loss in profit that would ensue if the branded producer were denied use of the trademark. The purpose of econometric demand analysis is to estimate what price the producer of a branded good would charge if forced to sell the identical good without the brand label, and what quantity it would be able to sell at that price. If these prices and quantities can be estimated with sufficient accuracy, it is possible to determine the value to the holder of the brand trademark, as a portion of profit or sales.

The econometric method is based on two assumptions:

1. Consumers would perceive that unbranded goods produced by the branded producer were identical to other private-label goods. Quality differences in many goods are often in the eye of the beholder. To the extent that quality or technological differences exist or are perceived, the value of these is reflected in the econometric method, because any such differences are incorporated in consumer demand.
2. A branded producer's unit costs are the same whether it produces branded or unbranded goods. If the branded product is, in fact, superior to private-label alternatives, then the branded producer may be able to lower its costs by producing goods equivalent to those currently sold under private label. However, the branded producer may possess technological advantages that allow it to produce superior products at little or no additional cost, so that it could eventually reestablish its brand advantage over private-label products.

In summary, econometric demand analysis can be used to estimate the hypothetical profits of a branded producer selling without its brand trademark. Using this method, the value of the trademark (expressed as a percentage of sales) due to the holder is equal to the

difference between its actual (with the brand) economic profits and its hypothetical (without the brand) economic profits, divided by total actual sales revenue.

Demand Analysis and Brand Profitability

Generally, the holder of a brand trademark has a monopoly with respect to the differentiated demand for its branded product, although the existence of close substitutes—other branded and unbranded goods—constrains its ability to set prices. The maximum profit earned by the branded producer represents price (set to maximize profits) in excess of cost at a volume determined by the demand function. The profit, in this case, is $\pi = Q(P - C)$, that is, the quantity sold (Q) multiplied by the per-unit profit ($P - C$). However, the value of a brand trademark in contributing to operating profits generally will be less than the total operating profits from selling the branded good. The reason for this is that even without use of the brand trademark, the producer would still be expected to earn some economic profit. The profit earned by the branded producer while selling unbranded goods is given by $\pi' = Q'(P' - C)$, that is, the quantity sold (Q') multiplied by its per-unit profit ($P' - C$).

The economic value of the brand trademark is the difference between what the producer can earn selling the branded product (π) versus what the producer could earn without the trademark (π'). This difference may be expressed as:

$$V = \pi - \pi' = Q(P - P') + (Q - Q')(P' - C)$$

The first component, $Q(P - P')$, is the per-unit price premium associated with the brand, $(P - P')$, multiplied by sales quantity, (Q), of the branded good. In effect, this first component equals the total value of the price premium for the brand. The second component, $(Q - Q')(P' - C)$, represents the increase in sales volume attributable to the brand trademark, $(Q - Q')$ times per unit profits of the unbranded producer, $(P' - C)$. The second component therefore represents the value of increased market share. Using Lerner's rule, it follows that for the brand producer:

$$\frac{P - C}{P} = \frac{1}{\varepsilon} \tag{16.1}$$

where ε = differentiated demand price elasticity in brand market.

As noted, if the branded producer were to switch to production of unbranded goods, it would no longer be a monopolist. The branded producer, because of the scale of its production, would still have market power in the unbranded market, but competition with other unbranded producers would tend to reduce its markup rate $(P' - C)/P'$. Under Cournot oligopoly, the markup rate for an oligopolist (producing an unbranded product) is:

$$\frac{P' - C}{P'} = \frac{S'}{\varepsilon'} \tag{16.2}$$

where

S' = branded firm's quantity share in the unbranded market

ε' = price elasticity of demand in the unbranded market.

The economic value of the trademark (R), determined as a percentage of sales, equals

$$R = \frac{V}{PQ} = \frac{Q(P-C)}{PQ}\left[1 - \frac{Q'(P'-C)}{Q(P-C)}\right] \tag{16.3}$$

which represents the per-period value of the trademark divided by the per-period total sales revenue. As can been seen from the structure of equation (16.3), the value R is the product of two factors. The first factor, $Q(P-C)/PQ$, is the economic operating margin (total economic profits divided by total revenues). The second factor:

$$\begin{aligned} G &= 1 - \frac{Q'(P'-C)}{Q(P-C)} \\ &= 1 - \frac{P'Q'S'/\varepsilon'}{PQ/\varepsilon} = 1 - S'\frac{\alpha'_0 T'P'\varepsilon}{\alpha_0 TP\varepsilon'} \end{aligned} \tag{16.4}$$

is the proportion of economic profits realized due to the brand or trademark (i.e., the "trademark fraction"), where $\alpha_0 = Q/T$ and $\alpha'_0 = Q'/T'$ are the branded producer's shares of total industry unit sales (including other branded goods as well as unbranded goods) before and after its switch to unbranded production, and T and T' are total industry unit sales before and after the switch.[5] Since:

$$\frac{P'}{P} = \frac{C/P}{C/P'} = \frac{1-\frac{1}{\varepsilon}}{1-\frac{S'}{\varepsilon'}}. \tag{16.5}$$

we obtain:

$$G = 1 - S'\frac{\alpha'_0}{\alpha_0}\frac{T'}{T}\frac{\varepsilon - 1}{\varepsilon' - S'}. \tag{16.6}$$

The analysis is completed by making a few assumptions about aggregate market response to the elimination of a brand. The first assumption is that total industry sales are unaffected by a brand elimination, that is, $T' = T$. Next, I make some assumptions about how relative market shares change in response to elimination of a brand. In Dubin (1998) the market share model for branded and unbranded goods was assumed to be multinomial logit (MNL). Specifically, that study assumed that when a specific branded alternative was eliminated, a proportional increase in the market share of the remaining branded and unbranded goods would occur.[6]

Let α_1 denote the market share of unbranded alternatives. Then the MNL assumption implies that α_1 increases to $\alpha'_1 = \alpha_1/(1-\alpha_0)$ after brand zero is eliminated. Let S denote brand zero's quantity market share of its own sales and of unbranded sales prior to the hypothetical loss of the trademark (i.e., $S = \alpha_0/(\alpha_0 + \alpha_1)$). I assume that the branded

producer will continue to capture this relative market share after brand loss so that $S' = S$ where S' denotes the relative market share after brand expiration. Under these assumptions, brand zero's market share changes from α_0 to $\alpha'_0 = S'\alpha'_1 = S\alpha'_1$. Since $(1 - S)/S = \alpha_1/\alpha_0$, we have:

$$\frac{\alpha'_0}{\alpha_0} = \frac{S\alpha'_1}{\alpha_1}\frac{\alpha_1}{\alpha_0} = (1 - S)\frac{\alpha'_1}{\alpha_1}.$$

and under MNL:

$$\frac{\alpha'_0}{\alpha_0} = \frac{(1-S)}{1-\alpha_0}.$$

Finally:

$$G = 1 - S\left(\frac{\alpha'_0}{\alpha_0}\right)\left(\frac{\varepsilon - 1}{\varepsilon' - S}\right)$$

$$= 1 - \frac{S(1-S)}{1-\alpha_0}\left(\frac{\varepsilon - 1}{\varepsilon' - S}\right). \qquad (16.7)$$

Data Description

This section describes the data used in the demand analysis presented in the next section. Three categories of variables are used in the demand analysis: sales data, macroeconomic and demographic indicators, and product specific variables. Data on sales (quantity sold and average selling price) are drawn from two different sources, the "Nielsen Research Report to Carnation Company Inc." (Nielsen Research 1979–1984) and the "SAMI Basic/Special Report" (Selling Area Marketing, Inc. 1979–1984), found in Carnation's marketing files. The use of Nielson and SAMI data for elasticity determination is similar to elasticity measurement based on store-level scanner data. My analysis controls for demographic factors in the demand analysis and computes product-level rather than store-level elasticities. A variety of different sources are consulted for variables anticipated to affect the demand of particular products.

Nielsen Reports

The primary source for data on selling prices and quantities is a series of surveys conducted by the A. C. Nielsen Company. Nielsen uses a national probability sample of 1,050 stores in the continental United States to calculate its estimates. The data are obtained bimonthly through in-store audits. During each store visit, Nielsen personnel count all products on the shelf, in displays, and in the back room or storage area. Sales volume is computed as the sum of purchases from warehouses, brokers, or other distributors over a two-month period (as shown on invoices), less the increase in inventory from the previous visit. Shelf prices are recorded as the retail price after adjustment for any promotional pricing that may have been in effect on the day of the visit. Data are reported on total pounds or cases sold, retail

price, percent of volume sold with retail advertising support (local advertising, special prices, ad coupons, and displays), total inventory quantities, and total store sales for those selling the particular product or brand (called "all commodity volume" or ACV).

SAMI Reports

An alternative source of sales data for some of the products are reports on warehouse withdrawals compiled by the Strategic Areas Marketing, Inc. (SAMI) service (a division of Time-Life until the late 1980s, but subsequently sold to Information Resources, Inc.). SAMI reports average shelf price and case volume every four weeks for 54 market areas. The SAMI data are not based on a probability sample. Instead, SAMI personnel collect data on withdrawals made by individual retail stores from participating food distributor warehouses in each of the 54 markets. The data cover approximately 80 percent of the total ACV in each market, so that any bias introduced by the lack of full coverage is expected to be small.

Socioeconomic Data

A number of demographic variables are anticipated to affect demand. To account for these effects, as well as shifts in consumer demand caused by unemployment and population growth, area demographic and economic indicators are collected from various editions of the *State and Metropolitan Area Data Book* (U.S. Department of Commerce, Bureau of the Census 1982, 1986, 1991). These variables include: total population, percent of population of Hispanic origin, and per-capita personal income. The variables are collected for each metropolitan statistical area (MSA) for the period 1979 through 1984 on an annual basis, although not every year is available. (Missing data are interpolated.) Data are then matched to either Nielsen or SAMI regions as appropriate.

Leading National Advertisers Data

Leading National Advertisers (LNA) tracks multimedia advertising expenditures across the United States in six major media: consumer magazines, newspaper supplements, network television, spot television, network radio, and outdoor billboards. LNA publishes quarterly breakdowns of spending in these media by brand and company in its "LNA Multi-Media Report Service" (Leading National Advertisers 1979–1984). LNA includes only companies that spend over $25,000 in all six media combined. Bimonthly expenditures are interpolated from the quarterly totals.

CPI Data

Prices in this study are deflated using a monthly consumer price index (CPI) for four census regions, published by the U.S. Department of Commerce, Bureau of Labor Statistics (1979–1984).

Analysis

To estimate an economic value for the trademarks at issue, I rely on the brand price elasticity and the price elasticities for the unbranded competitors. The demand elasticities used to calculate the trademark fraction are estimated using retail price data. A complete presentation of the econometric analysis for each of the five products is presented in Dubin (1998). Here I illustrate the methodology for the coffee creamer demand model.

The demand models for coffee creamer were estimated for 16-ounce size products. The basic demand equation relates the logarithm of the bimonthly sales of creamer to the logarithms of the real price per pound for the creamer in question and to the logarithms of the real prices of substitute creamers.[7] The demand equation also allows for trend and seasonality in the consumption pattern as well as for regional effects. Finally, the demand equation specifies that creamer sales are potentially influenced by the level of real income per capita, the frequency of coffee consumption (measured in coffee cups consumed per day per capita), the total volume of all sales in the region (all commodity volume), real advertising of branded creamers, and retail support, including in-aisle displays, in-ad coupons, or special pricing.

The demand function has the log-linear form:

$$\log Q_{bsrt} = \alpha + \log P_{bsrt}\beta_1 + log P'_{bsrt}\beta_2 + X_{bsrt}\gamma + \varepsilon_{bsrt}$$

where

Q_{bsrt} = bimonthly quantity of creamer sold by brand b in size category s, in region r, in period t.

The price of the creamer is P_{bsrt} and denotes the average selling price for the brand b, in size s, sold in region r, at time period t.

The price vector P'_{bsrt} captures the prices of substitute brands and sizes in the same period and region. The explanatory factors X_{bsrt} depend on the brand, size in question, location, and time period. The vector X_{bsrt} includes seasonal effects, time trend, advertising, real income per capita, cups per day per capita, special promotions, and so on. The own-price elasticity—that is, the price elasticity of quantity-demanded of a particular brand with respect to its own price, holding all other prices fixed—is:

$$e = \frac{\partial log Q_{bsrt}}{\partial log P_{bsrt}} = \frac{P_{bsrt}}{Q_{bsrt}} \times \frac{\partial Q_{bsrt}}{\partial P_{bsrt}} = \beta_1$$

The price elasticities of quantity-demanded of a particular brand with respect to the prices of substitute goods are similarly the coefficients β_2.

Exhibit 16.1 summarizes the dependent and explanatory variables for the coffee creamer demand models.

The model for coffee creamer estimates the demand for 16-ounce creamer as a function of the prices of 16-ounce creamers and the prices of 22-ounce creamers. Exhibit 16.2

EXHIBIT 16.1 VARIABLE DEFINITIONS FOR COFFEE CREAMER MODEL

Variable	Definition
lscm16	logarithm of sales of 16-ounce Coffee-mate, pound basis
lscr16	logarithm of sales of 16-ounce Cremora, pound basis
lspl16	logarithm of sales of 16-ounce Private Label, pound basis
lpcm16	logarithm of price of 16-ounce Coffee-mate
lpcr16	logarithm of price of 16-ounce Cremora
lppl16	logarithm of price of 16-ounce Private Label
lpcm22	logarithm of price of 22-ounce Coffee-mate
lpcr22	logarithm of price of 22-ounce Cremora
lppl22	logarithm of price of 22-ounce Private Label
trend	linear time trend
seas1	December–January period
seas2	February–March period
seas3	April–May period
seas4	June–July period
seas5	August–September period
lrinc	logarithm of real personal income
lcpd	logarithm of cups of coffee consumed per day
lacv16	logarithm of all commodity volume
rscmdis	retail support displays Coffee-mate
rscmiac	retail support in-ad coupons Coffee-mate
rscmsp	retail support special prices Coffee-mate
rscrdis	retail support displays Cremora
rscriac	retail support in-ad coupons Cremora
rscrsp	retail support special prices Cremora
rspldis	retail support displays Private Label
rspliac	retail support in-ad coupons Private Label
rsplsp	retail support special prices Private Label
ladcar	logarithm of real advertising expenditure for Coffee-mate (LNA derived)
ladcrm	logarithm of real advertising expenditure for Cremora (LNA derived)

shows the regression results for the 16-ounce models. (Coefficients significant at the 95% significance level are marked in red).

The demand for Coffee-mate 16-ounce dry creamer depends significantly on relative prices. As the price of 16-ounce Coffee-mate creamer rises, consumers are predicted to purchase less 16-ounce Coffee-mate creamer. The other price effects show that 16-ounce Private Label and 22-ounce Coffee-mate creamer are economic substitutes for Coffee-mate 16-ounce creamer. The pattern of seasonal effects reveals that significantly more 16-ounce Coffee-mate creamer is purchased in the February–March bimonth as compared with the June–July and August–September periods. Additionally, the summer periods show generally lower demand than either the fall or winter periods. These results are consistent with a commodity that is consumed with coffee, where the seasonality of coffee consumption leads to the seasonality of creamer consumption.

EXHIBIT 16.2 ESTIMATED COFFEE CREAMER DEMAND MODELS

	CM #1 LSCM 16	CM #2 LSCR 16	CM #3 LSPL 16
trend	−0.024	0.028	−0.064
lpcm 16	−2.006	−0.023	0.145
lpcr16	0.220	−1.491	0.236
lppl16	0.359	0.123	−1.441
lpcm22	0.918	0.254	0.605
lpcr22	−0.058	−0.160	−0.066
lppl22	0.232	0.255	0.675
seas1	0.020	−0.278	−0.330
seas2	0.166	−0.109	−0.173
seas3	−0.007	0.000	−0.105
seas4	−0.154	0.244	−0.036
seas5	−0.166	0.059	0.025
lrinc	0.118	0.935	0.169
lcpd	0.419	2.562	1.939
lacv16	0.139	0.070	0.176
racmdis	−0.003	—	—
rscmiac	0.007	—	—
rscmsp	0.003	—	—
rscrdis	—	−0.003	—
rscriac	—	−0.001	—
rscrsp	—	0.005	—
rspldis	—	—	0.001
rspliac	—	—	−.002
rsplsp	—	—	−0.001
ladcar	0.001	0.037	0.016
ladcrm	0.020	−0.045	0.002
R-Squared	0.892	0.894	0.823
Number of Observations	404	404	404
Standard Error of the Regression	0.179	0.280	0.247

The real per-capita income and coffee consumption per day variables were not always statistically significant from zero. However, all commodity volume was highly significant, indicating that areas with larger markets will also sell more creamer. The retail support variables indicate that of the three forms—displays, in-ad coupons, or special prices—only in-ad coupons and special prices have a significant impact on the demand for 16-ounce Coffee-mate product. The presence of each of these leads to higher sales. Finally, the LNA advertising variables suggest that advertising for Coffee-mate did not significantly increase

the demand for Coffee-mate. The regression model provides an excellent fit to the historic pattern of sales, as 82 to 89 percent of the variation in demand was explained by the models.

Estimated Trademark Fractions and Conclusions

To calculate the trademark fraction (the percentage of profits attributable to the trademark), I use elasticity values from the branded and private label estimated demand models. These elasticities are summarized in Exhibit 16.3.[8]

In order to calculate the trademark value as a percentage of revenues using the formulas derived in earlier, it is necessary to calculate economic operating margins. Accounting operating margins do not include a charge for a "normal" rate of return on plant, equipment, and other assets that have alternative uses. As a result, I have utilized the identifiable fixed assets for each division of the Carnation Company, plus an allocation of the general corporate assets, times a rate of return for alternative uses of capital, to obtain an economic operating margin. These figures are listed in Exhibit 16.4.

For example, with Coffee-mate 16-ounce creamer, in 1984 the fixed assets associated with the Instant Division of the Carnation Company as a percent of sales were 29.1 percent (combining fixed and general assets). I assume a weighted average cost of capital of 13.0 percent, which leads to an offset in the accounting operating margin of 3.8 percent. The results for the trademark fractions are given in Exhibit 16.5.

For example, selecting the numbers for Coffee-mate 16-ounce creamer gives us:

α_0 = market share of the branded commodity = 51.3%

α_1 = market share of the private-label commodity = 28.2%

EXHIBIT 16.3 SUMMARY OF MARKET SHARES AND PRICE ELASTICITIES

	Coffee-mate 16 oz. Creamer	Carnation Evaporated Milk	Carnation Instant Breakfast 6-packet	Mighty Dog Dog Food	Fancy Feast Cat Food
Market share of the branded commodity	51.3%	30.8%	80.3%	5.9%	3.9%
Market share of the private-label commodity	28.2%	47.8%	17.6%	2.2%	8.7%
Elasticity of the branded commodity	2.01	2.03	1.47	2.42	4.27
Elasticity of the private-label commodity	1.44	1.22	1.74	2.25	1.61

EXHIBIT 16.4 SUMMARY OF CAPITAL CHARGE CALCULATION

	Coffee-mate 16 oz. Creamer	Carnation Evaporated Milk	Carnation Instant Breakfast 6-packet	Mighty Dog Dog Food	Fancy Feast Cat Food
Fixed assets (as a percentage of sales)	25.8%	11.8%	25.8%	11.3%	11.3%
General corporate assets (as a percentage of sales)	3.3%	3.3%	3.3%	3.3%	3.3%
Resulting total assets (as a percentage of sales)	29.1%	15.1%	29.1%	14.6%	14.6%
Weighted average cost of capital	13.0%	13.0%	13.0%	13.0%	13.0%
Margin attributable to return on fixed assets (as a percentage of sales)	3.8%	2.0%	3.8%	1.9%	1.9%

ε = elasticity of the branded commodity = 2.01

ε' = elasticity of the private-label commodity = 1.44.

Using these numbers results in:

$$S = \frac{\alpha_0}{\alpha_0 + \alpha_1} = \frac{0.513}{0.513 + 0.282} = 0.645$$

Applying this result to equation (16.7) results in:

$$G = 1 - \frac{S(1-S)}{1-\alpha_0}\frac{\varepsilon - 1}{\varepsilon' - S)} = 1 - \frac{0.645(1-0.645)}{1-0.513}\frac{2.01-1}{1.44-0.645}$$

$$= 1 - 0.470 \times 1.270 = 0.403$$

This value of 40.3 percent corresponds to the value listed in Exhibit 16.5 under "Coffee-mate 16-oz. Creamer" for its trademark fraction percentage of economic profit. The trademark fraction is then multiplied by the economic operating margin in order to arrive at a royalty rate.

As can be seen from Exhibit 16.5, the economic value of the trademark, expressed as a percentage of revenues, ranges from 1.3 percent for evaporated milk to 26.4 percent for Carnation Instant Breakfast. The percentage value for Coffee-mate, Mighty Dog, and Fancy Feast are 17.5 percent, 18.5 percent, and 11 percent, respectively. These royalty rates are consistent with expectations. The most unique and differentiated products have higher royalty rates, while the least differentiated products (such as evaporated milk) have the lowest

EXHIBIT 16.5 SUMMARY OF TRADEMARK FRACTION CALCULATIONS

	Coffee-mate 16 oz. Creamer	Carnation Evaporated Milk	Carnation Instant Breakfast 6-packet	Mighty Dog Dog Food	Fancy Feast Cat Food
Accounting operating margin (as a percentage of sales)	39.8%	5.2%	46.5%	25.0%	26.9%
Rate of return on fixed assets (as a percentage of sales)	3.8%	3.0%	3.8%	1.9%	1.9%
Economic operating margin (as a percentage of sales)	36.0%	2.2%	42.7%	23.1%	25.0%
Trademark fraction percentage of economic profit	40.3%	57.2%	61.8%	80.3%	43.8%
Percentage of revenues	14.5%	1.3%	26.4%	18.5%	11.0%

royalty rates. The trademark fractions just determined show considerable variation and are generally much larger than those touted in typical profit-split rules of thumb. Of course, practitioners of the profit-split methodology reasonably argue that the one-quarter to one-third allocation is only a starting point for an exact calculation in any given situation with discretion left to the analyst. This analysis casts doubt on the usefulness of the Goldscheider rule while providing an alternative based on economic and econometric analysis.

NOTES

1. *See, e.g.,* Reilly and Schweihs (1998) or Smith (1997).
2. The 25 percent rule is reviewed in Goldscheider, Jarosz, and Mulhern (2002) and Lee (1992). It is called the Goldscheider fraction in Goldscheider and Marshall (1980) and the trademark fraction in Dubin (1998).
3. *See, e.g.,* Razgaitis (2003).
4. Generics, while different from private-label commodities in packaging and marketing, account for less than 1 percent of total food sales. In my analysis I do not distinguish between private-label and generic commodities.
5. As discussed in Dubin (1998), equation (16.4) embodies five useful observations:
    1. The greater the price difference between the branded and unbranded products (i.e., the lower the ratio of P' to P), the higher is G.
    2. The greater the difference between the branded producer's market shares before and after the switch to unbranded production, the higher is G.

3. The greater the branded producer's prospective share of unbranded production (i.e., the higher S'), the lower is G.
4. The greater the drop in total industry unit sales resulting from the switch to nonbranded production, the higher is G.
5. The more elastic branded demand is to unbranded demand (i.e., the higher the ratio of ε to ε'), the lower is G. It is also important to note that equation (16.4) shows that merely comparing elasticities in the branded and unbranded markets may not be revealing of relative profits to the producer without also considering market share in the unbranded market.

6. The multionomial logit assumption is relaxed in Dubin (2004).
7. Data on powdered non-dairy coffee creamer sales are taken from Nielsen research reports (described above), covering the time period from December 1978–January 1979 to October–November 1984. The analysis is limited to sixteen and twenty-two ounce sizes of Coffeemate, Cremora, and Private Label creamer. Sales are reported in thousands of pounds. Retail support is measured by the percentage of sales involving displays of the product, coupons, or special prices. Coffee consumption is derived from two sources of data: Nielsen research reports (1979–1984) and the "United States of America Coffee Drinking Study—Winter 1987," published by the International Coffee Organization (1987). The Nielsen report has the same format as described above. The Coffee Drinking Study is conducted annually. It is based on telephone interviews with approximately seventy-five hundred persons aged ten and over and representative of the population in the continental U.S.
8. A complete discussion of the five products appears in Dubin (1998).

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