

Pricing Strategy Patterns

The desire to smooth prices has been posited by coffee manufacturers as one explanation for not fully adjusting prices to changes in costs. In an investigation by the United Kingdom Competition Commission, Nestlé commented:

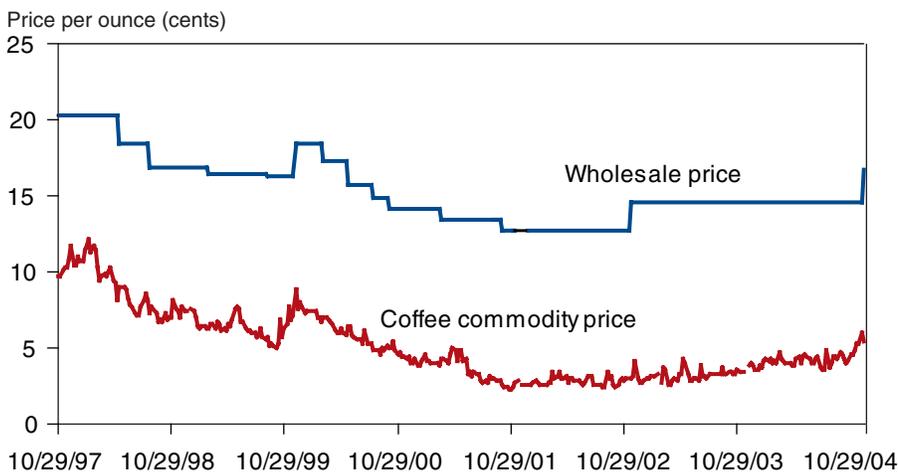
“In making price changes, Nestlé was influenced first by the need to avoid price volatility that could confuse the customer and be difficult for the trade to manage. Secondly, Nestlé aimed to smooth price increases to avoid sharp changes that could damage the confidence of the consumer. The company said that the history of recent price changes, given below, led to results which were overall more satisfactory to consumers than prices which changed more frequently in response to changes in green-coffee-bean prices, which fluctuated daily” (United Kingdom Competition Commission, 1991).

Starbucks spokeswoman Helen Chung stated, “We do not change our prices based on short-term fluctuations in the coffee market” (Seattle Times, December 7, 1999). P&G commented in conjunction with its 2004 price increase that P&G “increases product prices when it is apparent that commodity price increases will be sustained” (Associated Press, Dec. 10, 2004). Coffee manufacturers often cite movements in futures prices as motivation for price adjustments, further corroborating their stated desire to smooth prices.

Not evident from market-level averages is the fact that individual manufacturer prices often remain fixed for long periods of time. Figure 2 presents a typical manufacturer-price series for Folgers coffee.

Historically, adjustments in prices have occurred primarily when coffee commodity prices are relatively volatile. Table 5 presents the standard deviation of weekly coffee commodity prices by year, as well as the average frequency of manufacturer price adjustments during the year. These statis-

Figure 2
A typical wholesale price series



Source: Author's analysis of Promodata wholesale-price data and New York Board of Trade commodity data.

Table 5

Frequency of price adjustment and standard deviation of commodity costs

Year	Average number of price changes	Standard deviation of commodity cost index
1997	4.5	2.1
1998	1.7	1.6
1999	1.7	0.8
2000	3.2	0.9
2001	1.1	0.4
2002	0.5	0.3
2003	0.2	0.1
2004	0.7	0.5

Source: Authors' analysis of Nielsen, Promodata wholesale price data and New York Board of Trade commodity data.

tics calculate the number of price adjustments, not including the price adjustments associated with trade promotions.

There is a strong relationship (correlation coefficient of 0.84) between the frequency of price adjustments at the manufacturer level and the volatility of coffee bean prices over a given period. For example, the lowest standard deviation of weekly commodity costs and the lowest average frequency of manufacturer price adjustments both occur in 2003, while the highest standard deviation of weekly commodity costs and the highest average frequency of manufacturer price adjustments occur in 1997.

The data show, that in some years, price adjustments were very infrequent. In 2003, the average frequency of manufacturer price adjustments in the year over the different UPCs was 0.2 times and the standard deviation of weekly coffee bean prices was about 0.1 cent. Taking into consideration that green-coffee-bean costs constituted about 40 percent of marginal costs in 2003, this implies that the standard deviation of marginal costs was about 2 percent during that year.¹³

Another way of analyzing the data is to compare the frequency of price adjustments across brands (table 6). The frequency of price adjustments is relatively similar across the three major coffee brands: Folgers, Maxwell House, and Hills Bros. Starbucks is an outlier in having extraordinarily few price adjustments. One potential explanation for Starbucks' behavior may be that it is a premium product, with a considerably higher price range and perceived quality.

Table 7 uses Nielsen Homescan statistics to summarize the household income characteristics of customers of different brands of coffee and shows clearly that while customers of Folgers, Maxwell House, and Hills Bros. have similar demographic characteristics, far more (74 percent) Starbucks customers are from the upper two income brackets. These high-income customers are likely to have lower price sensitivity, potentially decreasing the incentive for Starbucks to adjust its prices.

¹³In calculating this figure, the fact that green coffee beans lose 15 to 20 percent of their weight during the roasting process was taken into consideration.

Table 6

Frequency of price adjustment by coffee brand, 1997-2005

Brand	Average frequency of price adjustment ¹
Folgers	1.77
Maxwell House	1.36
Hills Bros.	1.59
Starbucks ²	0.46

Source: Authors' analysis of Promodata wholesale price data.

¹The average frequency of price adjustment is calculated for weekly data for all universal product codes (UPCs) observed over 1997-2004. Since not all UPCs are observed in every time period, the sample period is somewhat different for the different brands.

²"Starbucks" refers to coffee products sold in grocery stores and supermarkets and not to coffeehouses.

Table 7

Demographics of coffee customers by brand, 1998-2003

	Income range			
	Under \$30,000	\$30-50,000	\$50-70,000	Above \$70,000
	<i>Percent of sales</i>			
Folgers	25	30	23	22
Maxwell House	23	31	21	24
Hills Bros.	22	31	26	20
Starbucks ¹	07	19	23	51

Source: Authors' analysis of Nielsen Homescan data.

¹"Starbucks" refers to coffee products sold in grocery stores and supermarkets and not to coffeehouses.

Price Change Announcements

Large coffee manufacturers often announce national price changes. Table 8 is a summary of these announcements for 1997-2005, showing that coffee manufacturers announced both price increases and decreases over this period. There were essentially no announcements of price changes between fall 2001 and fall 2004.

To what extent are price changes coordinated nationally for a particular brand? Do price changes always coincide with announcements (and vice versa)? In order to address these questions, figures 3, 4, and 5 present histograms of the frequency of price adjustments for Folgers, Maxwell House, and Starbucks.¹⁴

These figures show a great deal of coordination in price changes, both within brands and between Folgers and Maxwell House. For both Folgers and Maxwell House, there are several periods in which over 50 percent of prices adjust. There are also many periods in which less than 2 percent of prices adjust. While Folgers and Maxwell House instituted many price changes from 2001 to 2004, they were in general far less synchronized than the price changes that occurred in 2000 and before. Thus, price change

¹⁴For the purpose of creating these graphs, a price increase is coded as a "1"

Table 8

Historical coffee price announcements

Date	Announced price increase	Announced price decrease
March 2005	Kraft, Procter & Gamble, Sara Lee	
Dec. 2004	P&G	
Sept. 2004	Starbucks ¹	
Sept 2001		P&G
April 2000		P&G
December 1999		P&G
August 1999		Kraft, P&G
July 1998		P&G
May 1998		P&G, Kraft
Sept. 1997		P&G
July 1997		P&G
May 1997	Starbucks, Kraft, P&G	
March 1997	Starbucks, Folgers	

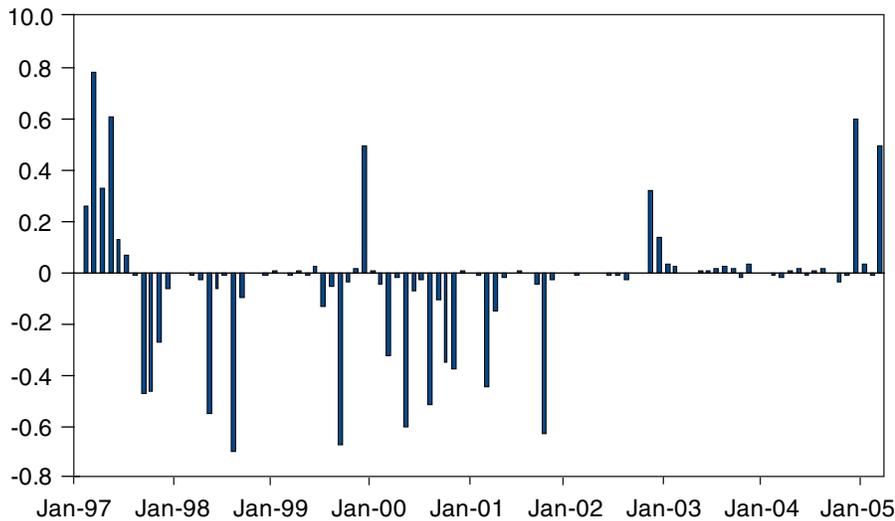
Source: Results of Lexis-Nexis search for 1997-2005.

¹“Starbucks” refers to coffee products sold in grocery stores and supermarkets and not to coffeehouses.

Figure 3

Average indicator for Folgers price increase/decrease

Frequency of price adjustments



Source: Authors' analysis of Promodata wholesale-price data.

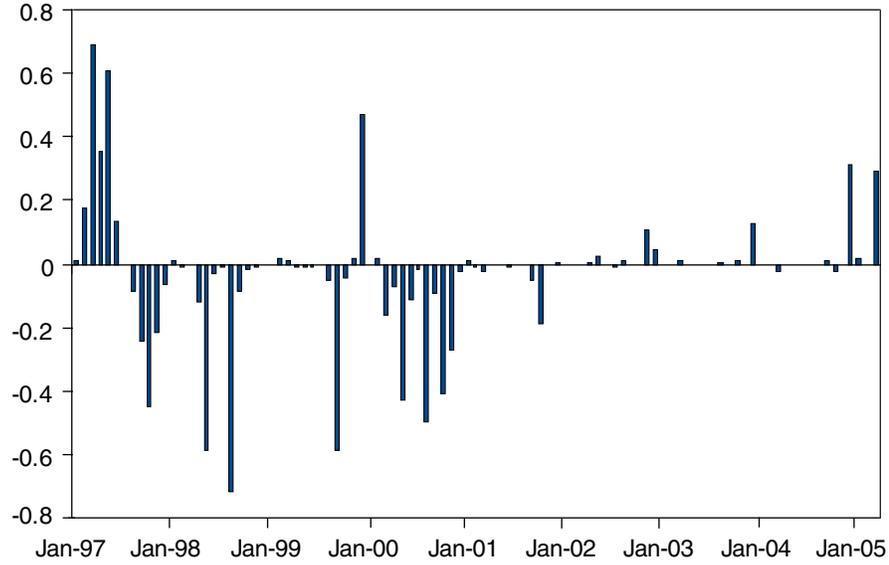
announcements tend to accompany price changes that are synchronized across products and markets.

Folgers is considered a price leader in the market for ground coffee. Regressing current price changes on recent price changes by Folgers or Maxwell House did not, however, reveal significant differences in the tendency of Folgers price changes to precede price changes by other brands. Of course, it may be that Folgers nevertheless announces price changes before other coffee brands. Indeed, newspaper announcements of coffee

Figure 4

Average indicator for Maxwell House price increase/decrease

Frequency of price adjustments

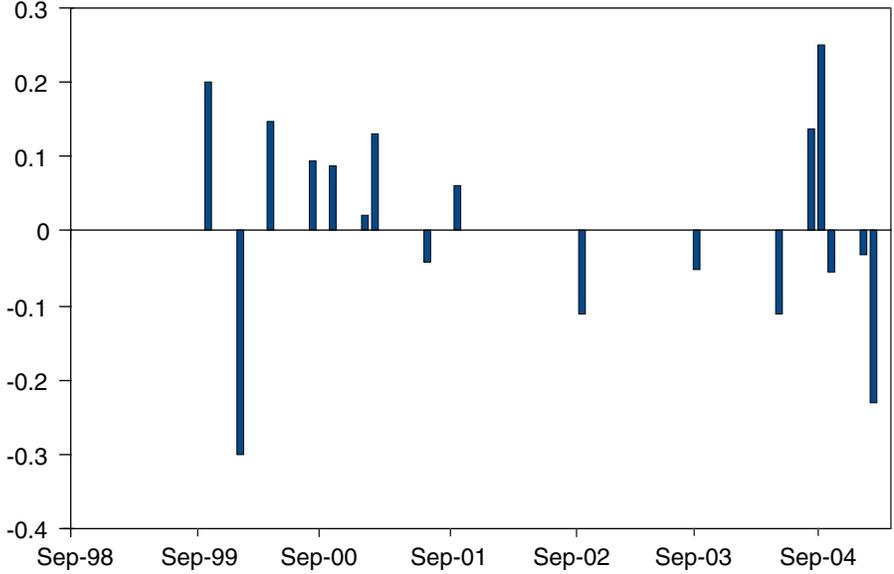


Source: Authors' analysis of Promodata wholesale-price data.

Figure 5

Average indicator for Starbucks price increase/decrease

Frequency of price adjustments



Source: Authors' analysis of Promodata wholesale-price data.

price changes often indicate that Maxwell House is “following the lead of Folgers” in making a price change.

Pass-Through From Manufacturer to Retail Prices

How quickly and to what extent do retail prices adjust to manufacturer prices in the coffee market? Table 9 investigates this question. One difficulty in estimating the effect of manufacturer prices on retail prices is that the manufacturer prices observed in our dataset may not be exactly the wholesale prices paid by a particular retailer. This measurement error has the potential to bias downward the estimates of pass-through from manufacturer to retail prices. To avoid this bias, table 9 uses two lags of commodity cost changes to instrument for changes in the manufacturer price. Given this econometric approach, retail prices adjust almost exactly cent-for-cent with changes in manufacturer prices.

Table 9
Regression of changes in retail prices on changes in net manufacturer prices¹ (quarterly data)

Variable	Net retail prices
Δ Cost (t)	1.023 (0.104)
Δ Cost (t-1)	0.024 (0.128)
Constant	0.005 (0.001)
Quarter dummies	Yes
Number of observations	3,247

Source: Authors' analysis of Nielsen retail price data, Promodata wholesale price data, and New York Board of Trade commodity price data.

¹The dependent variable in these regressions is the change in the net retail price in a particular quarter.