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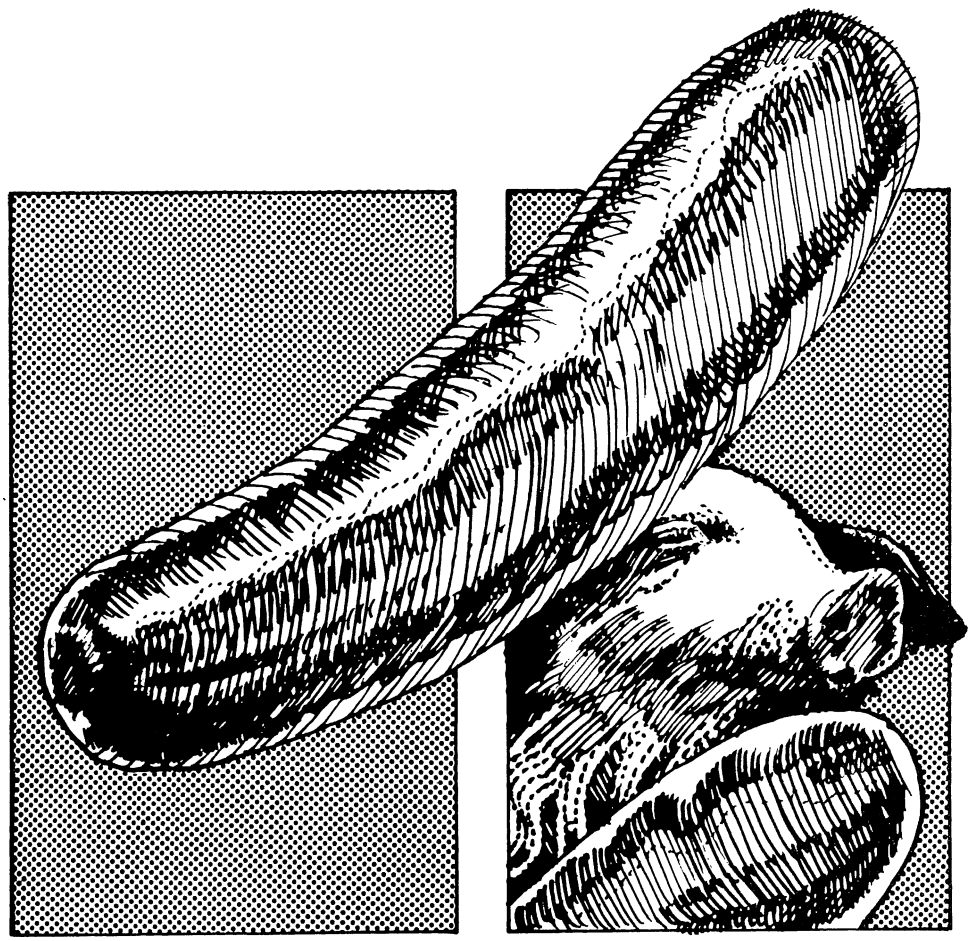
Three Kinds of Frankfurters: Retail Demand

Theresa Y. Sun
(202) 447-7321



Until recently, only two types of frankfurters were popular with consumers, those made primarily with minced beef and those made with a combination of minced pork and other red meats. But, in the 1970's, several manufacturers introduced poultry franks—frankfurters made from minced turkey and chicken, which seem to have caught on in the retail market.

In fact, poultry franks have increased in popularity from a 5.2-percent share of the market in 1978 to a 10.1-percent share in 1980. The gain was at the expense of beef frankfurters whose market declined from 38.8 to 28.9 percent, while the share for franks made from pork and other red meats increased from 55.9 to 61 percent.

From 1978 to 1980, annual sales of pork-type frankfurters increased from 494 million pounds to 545 million pounds; poultry sales went from 462 million pounds to 904 million pounds; while sales of beef frankfurters slipped from 343 million pounds to 258 million pounds.

Also, over that 3-year period, the average price for beef frankfurters rose 5.8 percent, while the price for those made with pork and other red meats increased 2.5 percent. The price of poultry franks fell 2.2 percent.

The price relationships among the three types of frankfurters significantly affected sales. Consumer income plays a minor role in determining sales because of the small amount, less than 1 percent of disposable income, spent for frankfurters. The weather plays a more important role. As might be expected, more frankfurters are sold in the summer.

Economists use the concept of demand elasticity to measure how much of a product consumers would likely buy given a change in the price of the product or the price of its substitute, or a change in the consumers' incomes. These elasticities are called the direct price elasticity, the cross-price elasticity, and the income price elasticity, respectively. If the absolute value of a demand elasticity is larger than one, demand is said to be elastic. If the demand is elastic, then total sales of a product may increase when its price declines, and salespersons or producers would be more than compensated for the lower price through increased sales, provided general market conditions stay the same.

A study analyzing bimonthly frankfurter sales and prices between June 1977 and November 1980 indicates that the direct price elasticity for beef frankfurters was -2.3. This meant that a 10-percent increase in the price of this product would, on the average, lead to a 23-percent decrease in sales. The elasticity factor for the poultry type was -1.7 percent which meant that if the price of poultry frankfurters rose by 10 percent, sales would decrease by 17 percent.

For other meat frankfurters, the elasticity rating was -1.0 which meant that a 10-percent increase in price would cause a 10-percent decline in sales.

The relatively large direct price elasticities for beef and poultry frankfurters (-2.3 and -1.7) indicate that consumers are likely to

Table 1. Market Change and Changes in Real Prices of Frankfurters, 1978-80

YEAR	MARKET SHARE			PRICE CHANGE (%)		
	Frankfurters			Frankfurters		
	Beef	Poultry	Other Meats	Beef	Poultry	Other Meats
	Percent					
1978	38.9	5.2	55.9	12.6	5.5	12.2
1979	34.6	8.5	55.9	7.1	-2.2	3.3
1980	28.9	10.1	61.0	-2.2	-9.8	-7.9
Average	34.0	8.0	58.0	5.8	-2.2	-2.5

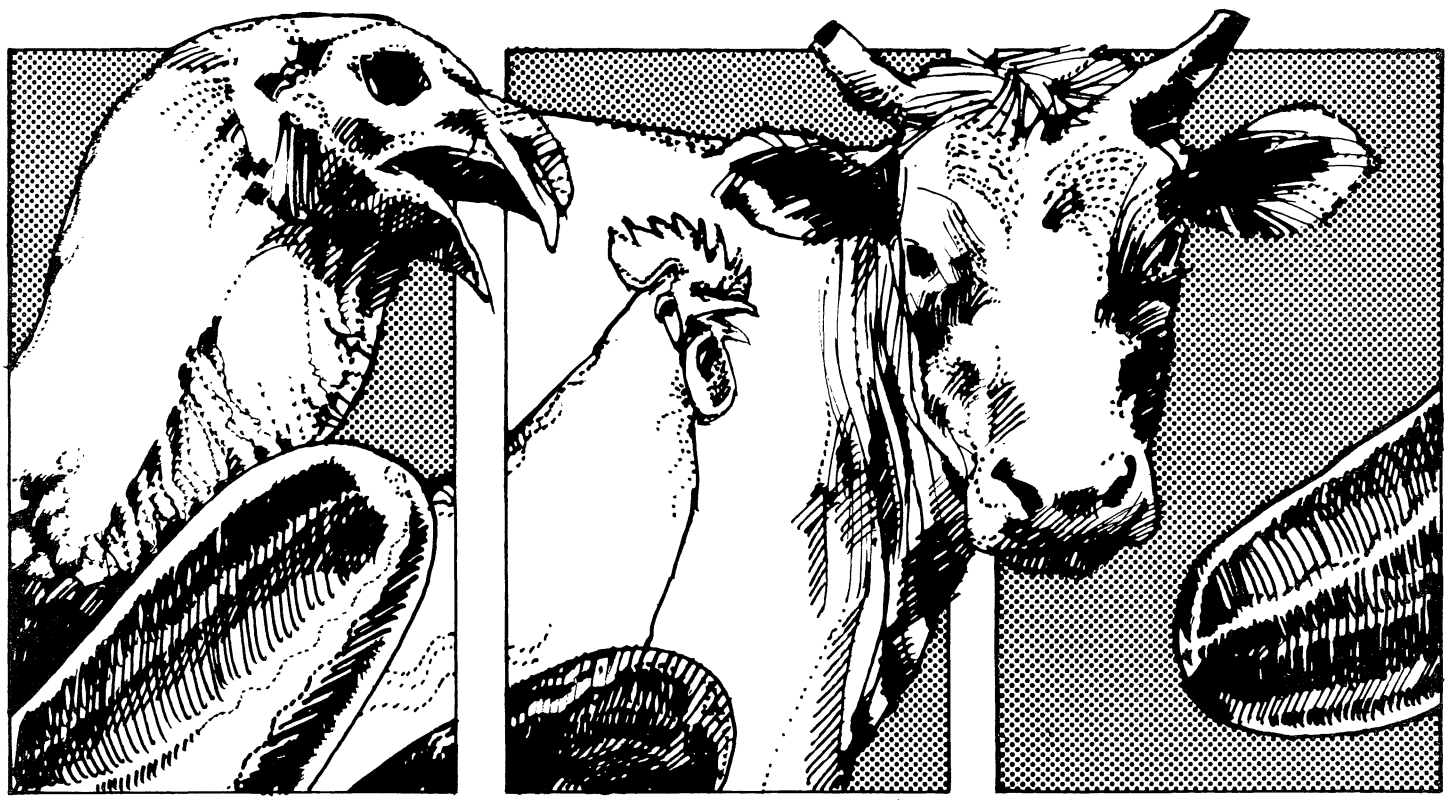


Table 2. Estimates of Elasticities for Frankfurter Demand[1]

One Percent Change	Percent Change In Sales		
	Beef Franks	Poultry Franks	Other Meat Franks
Beef Frank Price	-2.3	4.3	.2
Poultry Frank Price	1.1	-1.7	.2
Other Meat Frank Price	1.6	-2.8	-1.0
Total Food Expenditure	.2[3]	1.3[3]	1.0
Temperature Index[2]	.4	—	.5

[1]Bi-monthly average June 1977-November 1980.
[2]Population weighted U.S. average degree fahrenheit in hundredth unit.
[3]Statistically insignificant at 95 percent probability level.

substitute one for the other, or other substitutes (such as luncheon meats), when the price of beef franks or poultry franks rises. However, if the price of one type were to decline significantly, sales would likely increase disproportionately, thus offsetting what might have been a loss of retail revenue related to the lower price. This conclusion assumes an otherwise stable economic atmosphere.

For other meat frankfurters, total revenue of retailers may not change when the price changes, because sales respond in an equal but opposite direction to price change under generally stable economic conditions.

When prices of comparable products change, consumption levels also change. This is measured as cross price elasticity. The study found a cross price elasticity between beef frankfurters and those made with poultry of 1.1. This meant that a 10-percent increase in the poultry frankfurter price caused an 11-percent increase in beef frankfurter purchases. The same percentage increase in the price of other meat frankfurters would increase beef frankfurter sales by 16 percent.

A rise in beef frankfurter prices, on the other hand, would not have a symmetric effect because changes in product prices indirectly change the consumer's real income and influence sales of substitutes differently. A 10-percent increase in the beef frankfurter price would, on the average, induce consumers to purchase 43 percent more poultry frankfurters.

A preliminary study indicated that changes in total income are negatively related to frankfurter sales. However, when this demand is measured with respect to changes in total food expenditures rather than total income, sales of other meat frankfurters would change by the same percentage as changes in food expenditures.

Frankfurter sales are highly seasonal. In the winter, sales of beef frankfurters decline by approximately 36 percent from summer levels. For other meat frankfurters, the decline in sales is about 40 percent. Weather's gradual effect, estimated by the national average temperature, (31°-71° F), indicates that when the temperature increases by 10 percent, frankfurter sales average a 4- to 5-percent increase. ■