family is a very important agent of socialization for both factual and emotional uses of money. It is hoped that the study(**) will be useful in identifying ways in which more effective consumer education programs can be developed. Consumer education contributes to one of the most important life competencies, the creation of economic security. Schools and families are important partners in the development of these human resource attributes.

(**) See footnotes

Footnotes

(**) Rettig, K. D., Ries, C. Buckley, H. M., Morganosky, M., and Anderson, J. (1984). Consumer socialization in the family: A preliminary report. Department of Family and Consumer Economics Paper Number 121. School of Human Resources and Family Studies. Urbana, Illinois: University of Illinois at Urbana-Champaign.

THE PERFECT INFORMATION FRONTIER: A TOOL FOR TEACHING THE PAYOFFS TO COMPARISON SHOPPING

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Consumer educators frequently advocate comparison shopping, stressing the payoffs that result. Yet unfortunately students may be more strongly influenced by the conventional wisdom — price and quality differences for most products are relatively small in most markets. Indeed, in a 1982 survey by Atlantic Richfield [1, p. 50], con-

sumers were asked how much difference in value for the money con-
sumers could expect to find by comparison shopping for six products
and services: physicians, new cars, electrical appliances, food, credit,
and gasoline. For each of these six items 40 percent or fewer of the
consumers expected to find large differences. Moreover, 70 percent
expected to find no differences or only small differences by com-
parison shopping for food.

To present a more convincing argument concerning the potential
benefits of comparison shopping, educators need an easily
understood tool with relevance to students. This article will describe
the use of one method to visually emphasize the payoffs that may
result from comparison shopping, the perfect information frontier. (E.
Scott Maynes has written extensively on this subject; see [4, Chapter
3], [5], and [6], as well as [2].) Additionally, guidelines for involving
students in collecting the price and quality data needed to construct
perfect information frontiers for their local markets are given.

Constructing a perfect information frontier begins with a
graphical representation of the prices at which the various quality
levels of an individual product are sold in a given market. Consider
Figure 1 which represents a hypothetical case in which a product is
sold at three stores (A, B, and C) in a market. The good is available at
three different levels of quality, represented on the horizontal axis as
1, 2, and 3, with 3 the highest quality level. Price is shown on the ver-
tical axis. In this example, each of the three stores sells the highest
quality variety of the product at $30. Similarly, each of the two lower
quality varieties of the product are available at an identical price at
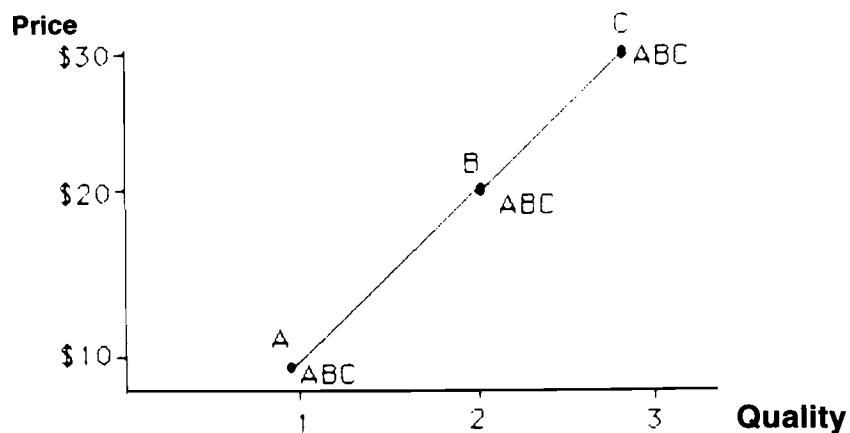each of the three stores.

Price

Figure 1   An informationally Perfect Market

The market illustrated in Figure 1 is informationally perfect since
price and quality are perfectly correlated; each increase in price is ac-
companied by a corresponding increase in quality. Additionally, since
a single price is charged by all sellers for the same quality, all prices
lie on the perfect information frontier (line AC), the positively sloped
line segment connecting the points representing the lowest price
charged in a market for each level of quality. Obviously in such a
market, there are no payoffs to consumers to search, each seller
charges the same price for a given quality level. The consumer's only
decision is whether a higher quality product merits the additional cost.

In an informationally *imperfect* market, however, price and quality
are not perfectly correlated; higher prices do not necessarily indicate
higher quality. Different prices are charged for products of the same
quality. Prices above the perfect information frontier exist because of
buyer's lack of information about price-quality relationships as well as
insufficient information about the prices charged by different sellers in
the market. Maynes [4, pp 82-84] has identified three factors which
increase the cost and/or difficulty of consumers acquiring information
in pre-purchase search.

1.   the technical complexity and multi-component nature of
      products making it difficult for consumers to assess the
      relationship between price and quality accurately.
2.   the affluence of our society which has increased the value
      of an individual's time and concomitantly the cost of search
      activities as well as the range of choices financially acces-
      sible to the family and the number of purchases it makes,
      and
3.   urbanization which has increased the set of products,
      brands, and retailers to which the consumer has access.

When information imperfections exist in markets, there are con-
sumer payoffs to search since purchasing power is decreased by the
extent to which consumers pay more than the lowest price for a given
level of quality. Three informationally imperfect markets are describ-
ed in the next section.

**INFORMATIONALLY IMPERFECT MARKETS: SALAD DRESSING,
TUNA, AND WALKAROUND STEREOS**

Figures 2, 3, and 4 present the price dispersions for three pro-
ducts in a Southern Illinois market. Figure 2 shows prices collected at
nine different retailers (A through H) for a 6½ ounce can of chunk light
tuna in water. Prices are measured on the vertical axis. Quality is
measured on the horizontal axis in three groups. The first quality

group consists of those brands rated by *Consumer Reports* [3] as poor. In the second quality category are those brands rated as good. A final group is composed of two brands which were sold in the local market but not rated by *Consumer Reports*.

Figure 3 presents similar information for an 8 ounce bottle of French dressing sold by 14 retailers (A through N). Quality groups are again based on *Consumer Reports* [7] ratings; prices for the numerous unrated brands sold in the local market are also shown.

Look first at Figure 2. Considering only the brands rated poor by *Consumer Reports*, it can be seen that the prices at which those brands were sold ranged from a low of $.96 to $1.47. The index of price dispersion for those brands rated poor is 1.51 ($1.47 ÷ $.96). In an informationally perfect market, the index would obviously be 1. For the brands rated good, prices ranged from a low of $.99 to $1.38. Thus, depending on the quality level chosen by the consumer, search could result in savings ranging from $.51 ($1.47 − $.96) to $.39 ($1.38 − $.99. The perfect information frontier, line GA, has a positive slope indicating that as price increases quality also increases.
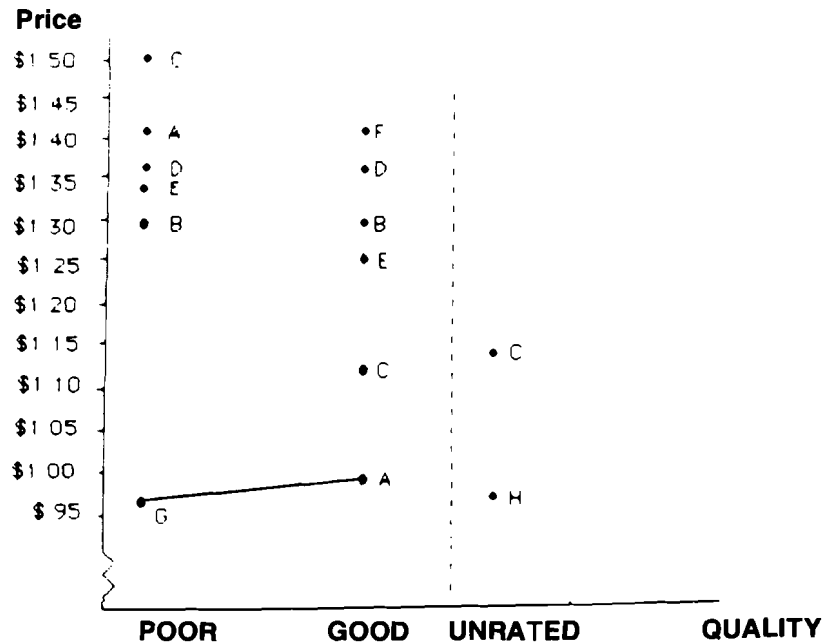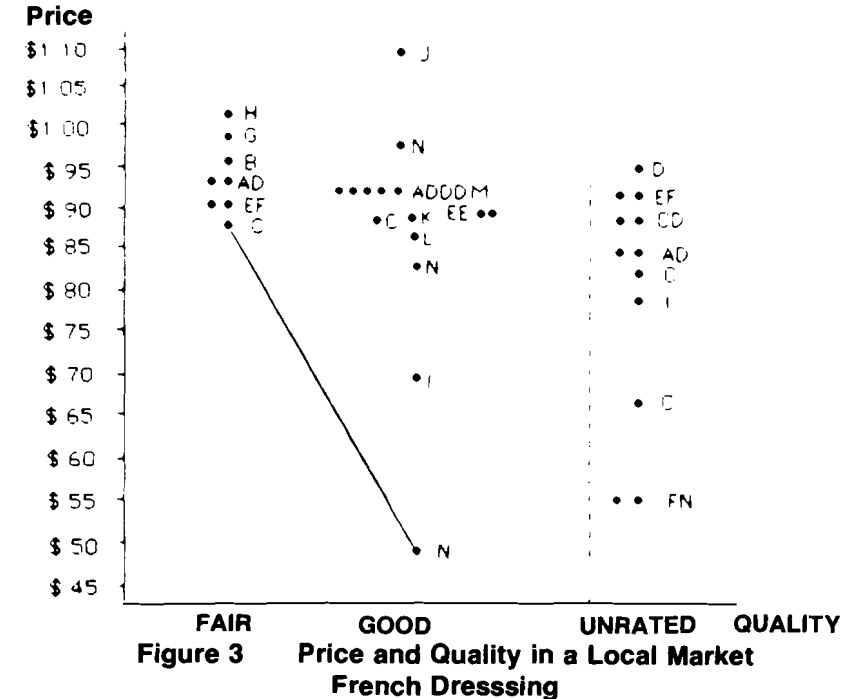
Price

Figure 2   Price and Quality in a local Market.
Chunk Light Tuna in Water (6½ oz.)

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Consider Figure 3. The price dispersion index for brands of French dressing rated as good was 2.22. For brands at that quality level, the highest price $1.09) was over twice as large as the lowest price ($.49). Moreover, the perfect information frontier, line CN, should more correctly be termed an "imperfect" information frontier since it has a negative slope, indicating that as quality increases, price *decreases*. Obviously, in such a market search has positive rewards. The guideline, "price is an indicator of quality" would only lead the consumer astray.

Price

Figure 3   Price and Quality in a Local Market
French Dresssing

A third example is shown in Figure 4 which presents prices collected for walkaround stereos at seven different retailers in a local market. Prices are again measured on the vertical axis. There are, however, three important differences between Figure 4 and the two previous examples. First, unlike the two food products used earlier, in its rating of walkaround stereos Consumer Reports [8] used quality scores (ranging from 37 to 73) rather than placing varieties (brand/model specifications; e.g., Sony Walkman MG16D) in quality groups. Second, the various points (A-J) on the perfect information frontier represent ten specific varieties of walkaround stereos rather than retailers as in the previous examples. Finally, mail order retailers (indicated by "xx" in Figure 4) were also included in the market for this product.
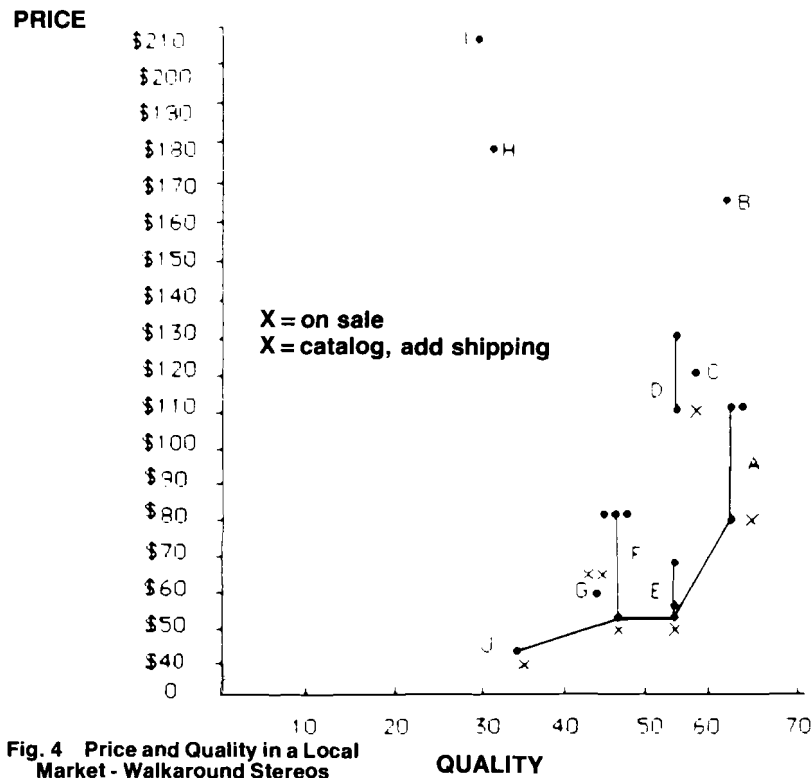
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PRICE

Fig. 4   Price and Quality in a Local Market - Walkaround Stereos

The data for walkaround stereos can be used in several ways to illustrate the payoffs to search for this product. For example:

1. Variety I, at $210, is approximately(*) the same quality as Variety J at $45, a price difference of $165.
2. Variety H at $180 is approximately the same quality as variety G at $60, a price difference of $120.
3. A consumer could pay $169 for Variety B or obtain the same quality by purchasing Variety A — at either $110 or $79. The consumer who finds Variety A at $79 would obtain the same quality at less than one-half the price as if s/he had purchased Variety B.
4. Variety F could be purchased for $80 at three retailers or at a sale price of $59 (indicated by "x" in Figure 4) from a fourth retailer.

(*See Footnote on Page 15.)

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CONSTRUCTING A PERFECT INFORMATION FRONTIER

Constructing a perfect information frontier using data collected from a local market is an interesting learning activity that can be used to teach a variety of concepts. Below are listed the necessary steps along with discussion topics that may accompany each stage.

1. Selection of a product: Maynes [4, p. 53] defines a product as "a set of goods or services which, for an acceptable range of outlay, will, in the consumer's judgment, serve the same general purpose." Thus defining the product involves not only specifying characteristics (e.g. a 19 inch color television) but also excluding those products priced above the upper price limit most consumers would set for the product. Additionally, the product chosen may be one offered at different quality levels, as were the examples used earlier in this article, or the quality may be constant. An interesting discussion can arise in attempting to identify products for which all varieties sold are approximately the same quality; however, aspirin and notebook paper are two examples on which agreement may be reached. As a final note, choosing a product which students purchase (such as walkaround stereos) obviously heightens interest.

2. Compiling *Consumer Reports* ratings: If a quality variable product is chosen, the next step is to locate the most recent product ratings. Because ratings often become rapidly outdated, choosing a product rated within the last three months is wise. At this point, a discussion of the evaluation process used by Consumer's Union in developing ratings would be more appropriate. Additionally, limitations of the ratings (e.g., the exclusion of seller characteristics and differences between characteristics considered important by Consumer's Union and those important to individual consumers) could be discussed.

3. Definition of the market: Once a product has been selected, the next step is to identify "the set of sellers the consumer might consider if s/he possessed accurate information about sellers, brands, prices, and quality." [4, p. 55] Defining the market may involve determining whether to include sellers in outlying areas, neighboring towns, and mail order sellers. A discussion of the time costs of search activities would be highly relevant in determining the scope of sellers to be included in the market.

4. Data collection: Students could be assigned to groups, with each group given a list of the brands (and model numbers, if appropriate) under consideration. Each group

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could then be given the responsibility to collect data from a subset of sellers in the local market.

5. Construction of the perfect information frontier: At this point, the data needed to draw a perfect information frontier should be available. The examples provided earlier in this article for quality variable products should be useful. If a quality constant product is used, all prices would be plotted on a single vertical line.

6. Discussion: Discussion could center around a number of issues including those outlined in the following questions:

   a. What conditions may explain a low correlation between price and quality? Possibilities might include the omission of important product characteristics and/or seller characteristics from the *Consumer Reports* ratings as well as consumer ignorance.

   b. Why might a consumer who is knowledgeable about the market still purchase a variety above the perfect information frontier? Discussion could focus on the fact that some consumers might value characteristics not included by *Consumer Reports* in their ratings or that some consumers may weight characteristics differently than did the *Consumer Reports* staff.

   c. Do the findings negate any rules of thumb that consumers generally use in shopping? Guidelines such as "price is an indicator of quality" and "you get what you pay for" may be analyzed.

Generally, the perfect information frontier is a tool that can be used to heighten students' interest in an important topic, comparison shopping.

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FOOTNOTE

Consumer Reports [8] indicates that differences in quality scores of seven or less should be considered insignificant.

PURCHASING A HOME COMPUTER:
IS THE INFORMATION WHERE IT IS NEEDED?

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Four out of ten households in America plan on purchasing a home computer in the next five years[1]. These families need information about computers to make well-informed purchase choices, but where is this information? Without highly available and utilizable information, consumers can become frustrated and unsatisfied during the purchase process. This frustration can result in the consumers not completing their plans to buy or result in their making an unsatisfying purchase.

One point at which confusion begins when purchasing a computer is not knowing the terminology nor the concepts of computer usage. The buyer may actually ask, "what is a home computer?" A home computer is defined simply as any computer to be used primarily in the home costing between $50 and $1000. This basic com-