By Stephen Lacy

A Model of Demand for News: Impact Of Competition on Newspaper Content

Model explains why intense competition may produce higher quality.

► In 1959 and 1960, *Journalism Quarterly* was the scene of a debate concerning the appropriateness of economic theory for studying newspapers. Currier argued that economic theory had much to offer in understanding the newspaper industry.[1] Davenport and Landau contended that economic theory was generally inadequate and inapplicable.[2] As with many debates, both sides held measures of truth. Assumptions underlying much of mainstream economic theory limit its applicability to the study of newspaper news and editorial content. However, modification of assumptions can make economic theory useful in examining newspapers and other media.

The model of news demand presented in this article is an effort to expand on the use of economic theory by developing a model based on alternative assumptions. However, the underlying paradigm for this model, as with most economic analysis, is that people are basically rational. They act in relatively consistent ways to satisfy their needs and wants. This doesn't mean that people actually maximize their utilities, as microeconomic theory assumes; it means they come close enough to allow for prediction and understanding using an economic approach.[3]

Two assumptions concerning price competition and the nature of commodities

limit the use of economic theory for media. First, pure competitive economic theory assumes that individual demand is determined by price of a commodity, prices of substitute and complementary commodities, income, and taste.[4] Taste, which is a catchall for things other than prices and income, is usually assumed constant. Yet, newspaper price tends not to vary much,[5] while content does.

A second assumption concerns the homogeneity of commodities. Pure competition assumes the commodities are almost identical. They are good substitutes, and price becomes the important variable in determining demand. Although newspapers have common characteristics, they show greater variation than assumed by pure competition theory. Thus, tradi-

[1] Fred Currier, "Economic Theory and Its Application to Newspapers," *Journalism Quarterly*, 37:255-258 (Spring 1960).

[2] Edmund Landau and John Scott Davenport, "Price Anomalies of the Mass Media," *Journalism Quarterly*, 36:291-94 (Summer 1959); and Edmund Landau and John Scott Davenport, "Replies from Davenport and Landau," *Journalism Quarterly*, 37:258-60 (Spring 1960).

[3] The concept of utility and maximization have a long history in economics. Arguments have raged about whether consumer utility is a measurable concept. See Armen A. Alchian, "The Meaning of Utility Measurement," *American Economic Review*, 1953, reprinted in Edwin Mansfield, ed., *Microeconomic: Selected Readings*. 3rd. ed., (New York: W.W. Norton & Co., 1979) pp. 31-54. Here utility will be defined generally as the satisfaction of a consumer's wants or needs. Maximization is an assumption that has generated much debate about behavior. It is, however, a useful concept. In fact, research into various types of behavioral assumptions applied to firm behavior have shown behavior such as revenue maximizing and individual satisficing result in performance that is consistent with the assumption of profit maximizing. See Douglas F. Greer, *Industrial Organization and Public Policy* (New York: Macmillan, 1980). Utility maximization is not an assumption of this model.

[4] George J. Stigler, *The Theory of Price*, revised edition, (New York: The Macmillan Co., 1952) p. 43.

[5] Royal H. Ray, "Competition in the Newspaper Industry," *The Journal of Marketing*, 15:444-50 (April 1951), also see Landau and Davenport, "Price Anomalies of the Mass Media, *op. cit.*

tional demand and utility theory are not entirely appropriate. The purpose of this article is to develop a general model of demand for news commodities, which can be used in lieu of neoclassical utility theory and indifference analysis.[6] Then, this demand model will be used to adapt the concept of "consumer surplus" for analyzing monopoly and competitive newspaper markets. This adaptation will serve as an

example of how economic theory can be useful in understanding news media.

Review of Research

The impact of newspaper monopolies[7] on content has been examined and disputed for years. Studies that found no difference between monopoly and competitive newspapers have tended to use categorical measures for competition and to look at the geographic and topic differentiation of news.[8] Studies that found differences have defined competition as a matter of degree and have examined dependent variables that emphasis the possible impact of news.[9]

Some recent research into this area suggests a relationship between competition and the amount of money spent to produce a newspaper. Litman and Bridges found that competitive newspapers tended to carry more wire services and have more space devoted to their newshole. They called this increased investment in coverage the "financial commitment theory."[10] Lacy found that as intensity of competition increased the number of wire services carried increased and the number of reporters used to fill a given amount of space increased.[11] Kenney and Lacy reported that as competitive intensity increased newspapers used proportionately more graphics and color on their front pages.[12] The intensity of intercity newspaper competition was found to be positively related to the percentage of the news section given to local news and to newshole.[13]

These results are consistent with the application of the theory of monopolistic competition[14] to newspapers.[15] The increase in money spent represents an effort to differentiate one newspaper from another, while still remaining a substitute with similar geographic emphasis among news categories. This process explains why earlier studies that looked at content distribution among geographic and news categories tend to show few differences among newspapers. The geographic emphasis of news is consistent so newspapers can remain substitutes. The increased expenditure on reporters, wire services

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[6] Neoclassical utility theory and indifference analysis are central to developing a general theory of demand for commodities. Discussions of the areas can be found in any microeconomic text.

[7] The term monopoly is used here to indicate an extensive degree of discretionary power to make decisions about pricing and nature of product and not the absolute power to set prices. This definition is taken from Bruce Owen, *Economics and Freedom of Expression* (Cambridge: Ballinger Publishing, 1975).

[8] For example see: Ralph O. Nafziger and Thomas F. Barnhart, "Red Wing and Its Daily Newspapers," No. 9 in the Community Basis for Postwar Planning. Minneapolis, Minn.: University of Minnesota Press, May 1946; Stanley K. Bigman, "Rivals in Conformity: A Study of Two Competing Dailies," *Journalism Quarterly*, 25:127-31 (Spring 1948); Gerard H. Borstel, "Ownership, Competition and Comment in 20 Small Dailies," *Journalism Quarterly*, 33:220-22 (Spring 1956); Raymond B. Nixon and Robert L. Jones, "The Content of Noncompetitive Vs. Competitive Newspapers," *Journalism Quarterly*, 33:299-314 (Summer 1956); and David H. Weaver and L. E. Mullins, "Content and Format Characteristics of Competing Daily Newspapers," *Journalism Quarterly*, 52:257-64 (Summer 1975).

[9] For example see: Galen Rarick and Barrie Hartman, "The Effects of Competition on One Daily Newspaper's Content," *Journalism Quarterly*, 43:459-63 (Autumn 1966); David J. Stakun, "Content Analysis of the Bloomington *Herald-Telephone* During and After Publication of the Competing *Courier-Tribune*," unpublished master's thesis, Indiana University, 1980; and Neil A. Woerman, "The Effects of Competition on the *Beloit Daily Call* and a Comparison with Its Competitor, *The Solomon Valley Post*," unpublished master's thesis, Kansas State University, 1982.

[10] Barry R. Litman and Janet Bridges, "An Economic Analysis of Daily Newspaper Performance," *Newspaper Research Journal*, Spring 1986, pp. 9-26.

[11] Stephen Lacy, "The Effects of Intracity Competition on Daily Newspaper Content," *Journalism Quarterly*, 64:281-90 (Summer-Autumn 1987).

[12] Keith Kenney and Stephen Lacy, "Economic Forces Behind Newspapers' Increasing use of Color and Graphics," *Newspaper Research Journal*, Spring 1987, pp. 33-41.

[13] Stephen Lacy, "The Impact of Intercity Competition on Daily Newspaper Content," paper presented to the Association for Education in Journalism Mass Communication, San Antonio, Texas, August 1987.

[14] Edward H. Chamberlin, *The Theory of Monopolistic Competition*. 8th ed. (Cambridge: Harvard University Press, 1962), and Edward H. Chamberlin, "The Product as an Economic Variable," *The Quarterly Journal of Economics*, 67:1-29 (February 1963).

[15] James N. Rosse, "Daily Newspapers, Monopolistic Competition, and Economies of Scale," *American Economic Review*, 57:522-33 (May 1967); and W. B. Reddaway, "The Economics of Newspapers," *The Economic Journal*, 73:210-18 (1963).

and visuals allows the opportunity to differentiate the newspapers.

The implication of these recent financial commitment studies is that monopoly newspapers are not as "good" as competitive newspapers from a reader's point of view. The mechanisms that connect financial commitment to quality of content have not been established, but some studies suggest a connection. Danielson and Adams found that completeness of coverage of the 1960 presidential election was related to staff size and number of wire services carried.[16] A negative relationship has been found between number of stories produced and number of sources used in stories.[17] Another study found that fairness in stories decreased as intracity newspaper competition increased and increased as in intercity competition increased.[18]

While additional empirical examination of monopoly newspaper content is needed, a theoretical examination would also be useful. A systematic model of newspaper demand can provide a sense of understanding that is missing from the ad hoc testing of hypotheses.[19] After the demand model is set up, the concept of "consumer's surplus," which is a traditional method of economists for examining effects of monopoly, will be adapted to explain the impact of monopoly on newspaper content. In other words, the model of news demand consists of axioms from which a set of theoretical statements that relate to newspaper monopoly are drawn. Other sets of theoretical statements can be derived from the demand model.

Consumer's Surplus.[20] According to economic theory of perfect competition, firms cannot charge different prices to different consumers. If they did, another company would move in and under-price those firms. As a result all firms sell at one competitively set price. This price means that a firm is not getting the additional profit that charging different prices to different consumers would generate. The value of this lost profit accrues to the consumer and is called consumer's surplus. In Figure 1, the total value of the product in a market is shown by the area DOC_1E. This area is defined by the point where

supply equals demand (at point E). This is also the point at which marginal costs, represented by the supply curve (P_1E), equals marginal revenue, represented by the demand curve (DE). With the large number of firms, the marginal cost is a straight line parallel with the horizontal axis. No one firm can charge more than the price (P_1) determined by this intersection. If a firm did charge more, consumers could substitute the cheaper product of another firm. No firm would charge less than this price because if it did, it would lose money. The individual firm's demand curve in the market is represented by the line P_1E (the industry supply curve). This horizontal demand curve for the firm represents the fact that no one firm can affect prices. Each firm then has the price equal to marginal revenue. The market demand curve is DE.

As a result of this interaction of supply and demand, firms produce a quantity equal to C_1 at a price of P_1. The consumers pay the equivalent of P_1OC_1E and get a

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[16] Wayne A. Danielson and John B. Adams, "Completeness of Press Coverage of the 1960 Campaign," *Journalism Quarterly*, 38:441-452 (Autumn 1961).
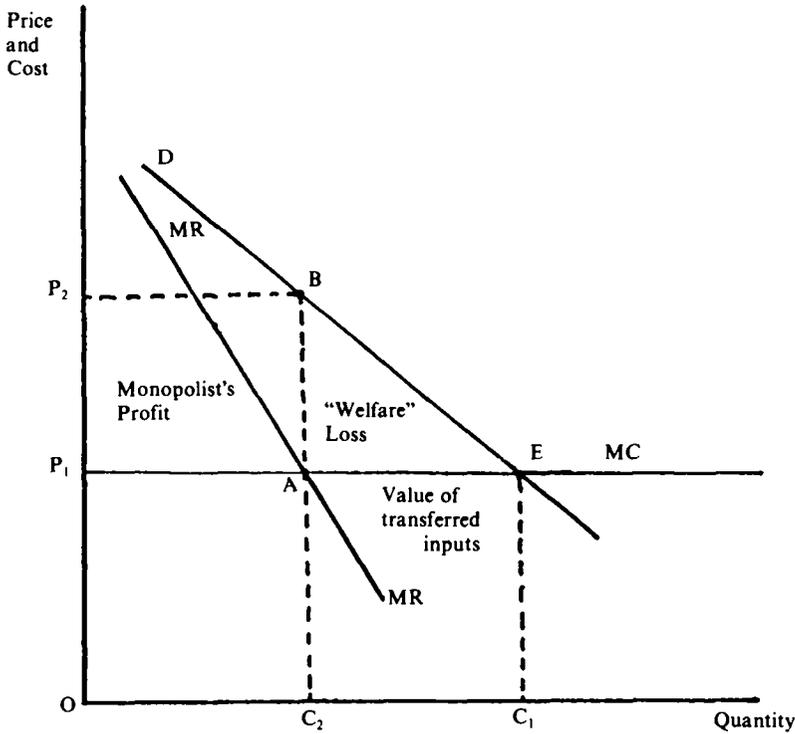
[17] Frederick Fico, "A Comparison of Legislative Sources in Newspaper and Wire Service Stories," *Newspaper Research Journal*, Spring 1984, pp. 35-43; and Frederick Fico, "The Replication of Findings on Newspaper and Wire Service Source Use in Two Statehouses," *Newspaper Research Journal*, Fall 1985, pp. 74-80.

[18] Stephen Lacy, Frederick Fico and Todd Simon, "The Relationships Among Economic, Newsroom and Content Variables: A Path Model," paper presented to the Association for Education in Journalism and Mass Communication, Portland, Oregon, July 1988.

[19] Paul Davidson Reynolds, *A Primer in Theory Construction* (Indianapolis, Indiana: ITT Bobbs-Merrill Educational Publishing, 1971). The following model is based on Reynolds and on Jerald Hage, *Techniques of Theory Construction in Sociology,* (New York: John Wiley & Sons, 1972).

[20] The following analysis is taken from Walter Nicholson, *Intermediate Microeconomics and Its Application,* 2nd ed. (Hinsdale, Ill.: The Dryden Press, 1979), pp. 318-320. The analysis assumes that a monopoly produces under conditions of constant marginal cost and the competitive industry has constant costs with the same minimal long-run average cost as the monopolist. Most microeconomics texts have a discussion of consumer's surplus. The concept of consumer surplus has been attacked by some. It has been criticized for being an inappropriate use of the demand curve (see Chamberlin, *op. cit.,* 1962, p. 27) and for resulting in only a small misallocation of resources ((See Arnold C. Harberger, "Monopoly and Resource Allocation," *American Economic Review* (1954), reprinted in *Microeconomics: Selected Readings,* 3rd ed., Edwin Mansfield, ed., (New York: W.W. Norton, 1979), pp. 206-217). However, the concept of consumer surplus is still useful as a starting point to demonstrate the potential misallocation of resources by monopoly in the newspaper industry.

FIGURE I

The effect of monopoly on allocation of Consumer's Surplus.

value of DOC_1E. The difference in the area (DP_1E) is the consumer surplus.

When a firm becomes a monopoly in the market, the firm demand curve becomes the same as the market demand curve. With a negatively sloping firm demand curve, the marginal revenue curve is always below the demand curve. Since companies maximize profits at the point where marginal revenue equals marginal cost, the new level of output will be C_2 instead of C_1 as in a competitive market. Since the monopoly results in a lower output, it results in a higher price. The new price is P_2. The value of the output is redistributed as a result. The value represented by the area under C_1EAC_2 is trans-ferred to other goods and the amount equal to P_1P_2BA is transferred to the firm as monopoly profit. The area under ABE is not transferred to anyone and becomes a deadweight loss. Thus, little of the surplus value (the amount under DP_1E) that flowed to the consumer under a competitive market remains.

A Model of Demand for News Products. As mentioned, the problem with using this analysis to explain the impact of newspaper monopolies on consumers is that it assumes price is the important variable in determining demand. Since this is not the case for newspapers circulation, it is necessary to describe the nature of newspaper demand curves in single-newspa-

per and competitive markets and then to determine the impact on the consumer. First, a more general model will be developed that is applicable to all news media.

Concepts

Primitive Terms

User—one who reads a newspapers or magazine, or watches TV or listens to radio.

Media news product—a newspaper, news magazine, radio or television news broadcast.

Product attributes—categories of visual, spoken and written content in media news products. Examples are sports pages of newspapers, use of graphics in newscasts, and columnists carried by a newspaper.

Need—a physical or psychological necessity. Examples are food and affection.

Want—the conscious desire for something. Examples are designer clothes and expensive sports cars.

Derived Terms

Utility—satisfaction of wants and needs.

Value—the utility a user expects from a product attribute.

Substitutes—media news products that are equivalent in use in the eyes of the user.

Quality of media news products—how well the media news product serves the wants and needs of the aggregate of users across time.

Number of users of a media news product—this is the average number of people who buy a newspaper or magazine or who watch a television news program or listen to a radio news program during a given production cycle.

Financial expenditures on media news product—the amount of money spent on producing the media news product.

Acceptable values—values of attributes that will still motivate the users to use a media news product at a given price.

Degree of substitutability—the percentage of total media news product users who accept another media news product as substitutes for a given media news product.

Intensity of competition—this means the comparative share of the market. The closer two firms are to sharing the market equally, the more intense will be the competition. Intense competition is associated with a high degree of substitutability.

Aggregate demand—the summation of numbers of media product users who are willing to use a media news product at a given price and level of quality.

Theoretical Statements

1) *The product quality of a media news product is positively related to the financial expenditure on the product.* While there is not necessarily a perfect correlation between quality of product and financial expenditure, with all other things equal, a media news firm that spends more on its product will produce a higher quality product.

2) *The number of media news product users is positively related to product quality of the media news product.* Readers will be more likely to use a media news product if it meets the readers' needs and wants.

3) *Individual media news product users use media news products on the basis of a group of product attributes.* Since media news products are packages of many different types and topics of information, media news product users are likely to use media news products for more than one type of information. A media news product is evaluated along the various dimensions represented by these individual groups. Many non-media products are bought in similar ways.[21]

3A) *The importance of individual product attributes in the group will vary from user to user.* The variety of information in a media news product and the variety of information needs and wants among users means that users will vary in the group of product attributes applicable to a media news product. The users who like sports and business may buy the same newspaper as a user who wants shopping and cooking advice, but they each buy for different reasons.

[21] R. A. Jenner, "An Information Version of Pure Competition," in D.M. Lamberton, ed., *Economics of Information and Knowledge.* (London: Penguin Books, 1971), pp. 83-108.

3B) *The individual elements of the user's group of product attributes have minimal levels of acceptable values to the particular user.* Over time, a user develops an idea of what type and amount of information associated with the group elements will serves his or her demand for information from news media. This impression can be called a minimum level of acceptable values.

3C) *The minimal level of acceptable values is related to an individuals needs, wants and the overall quality of available media news products.* The minimal level of acceptable values will vary with the information wants and needs of individuals. The overall quality of available media news products will affect the minimal level of acceptable values because of cognitive dissonance. If all the available media news products are not meeting an individuals needs and wants, the individual will lower the acceptable minimal values in the face of frustration. As the quality of available media news products increases, so will the minimal level of acceptable values.

3D) *A user has a composite impression of a media news product that is positively related to the quality of the media news product.* The exact nature of this overall impression, whether additive or multiplicative, probably varies with the individual, but an exact understanding of the nature is not crucial to this analysis. It is sufficient to know that a newspaper or media news product is used for a variety of reasons and its use is related to quality.

3E) *The degree of substitutability of another media product is related to how well a user's composite impression of a media news product matches the minimal level of acceptable values.* If a user perceives a newspaper or other media news product is providing the minimal level of quality he or she needs and wants, other media news products will rarely be substituted, controlling for other factors. If a user perceives a newspaper or other media product is not reaching a minimal level of quality, other media products will become acceptable substitutes.

[22] Kinked demand curves were originally developed by P. M. Sweezy for explaining inflexible prices in an oligopoly market. See Nicholson, *op. cit.*, pp. 344-45.

A Model of Newspaper Demand. As an extension of the above model, the following statements are related to developing demand curves for newspapers in both markets with one newspaper and markets with two separately owned and operated newspapers.
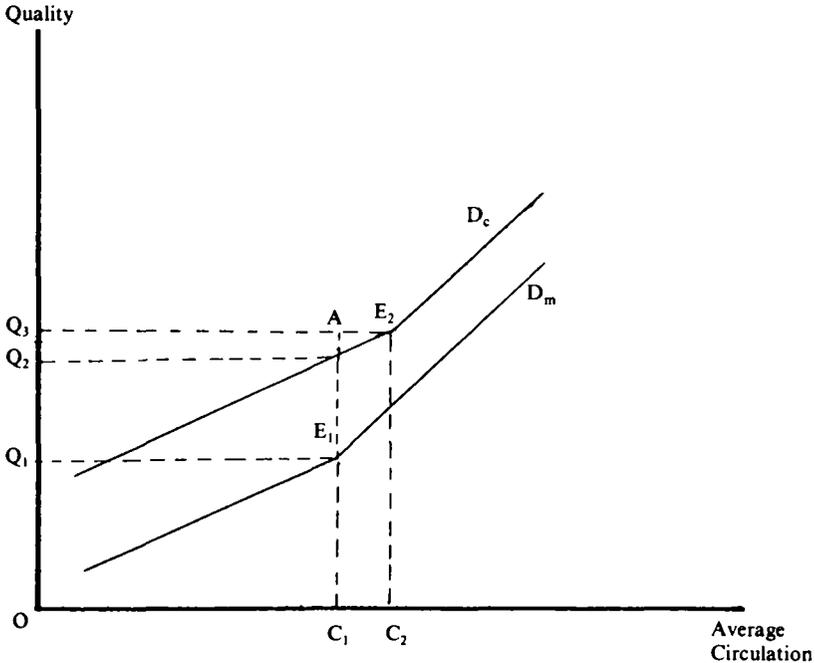
4) *The demand curve of a newspaper with respect to quality will be kinked. It changes slope at a given point.*[22]

4A) *The point at which the curve is kinked represents the point where the quality of the newspaper just reaches the minimal acceptable level of values for a large number of readers.*

4B) *The slope of the curve to the left of the kink will be slight and the slope of the curve to the right will be steep.*

At the point where the slope of the curve changes, the newspaper is providing a minimal acceptable fulfillment of most readers' wants and needs. This is shown as points E_1 and E_2 in Figure 2, which is where the kink occurs. (Curve D_m is the demand curve for a newspaper that has no other newspaper located within the same city. Curve D_c is the curve for a newspaper in a market with two or more separately owned and operated newspapers.) In the range to the left of E_1 and E_2, more users are likely to substitute another media news product that costs less while having the same level of quality, or which has a higher level of quality while having an equivalent price. The failure of the impression to match the minimal level of acceptable quality means an elastic demand for the newspaper with respect to quality at a given price. In other words, users will be more likely to substitute one media news product for another. The slopes above E_1 and E_2 are less elastic because most users' impressions of the newspaper indicates it is of a higher quality than their minimal acceptable level of quality. There is little incentive to substitute under these conditions, unless another news media product far exceeds the newspaper in quality. Another way of describing the process is that above point E_1 the single newspaper in a market appears to meet the minimal needs and wants of most readers relatively better than other media news products.

FIGURE 2

A comparison of demand curves for markets with one newspaper and markets with two or more separately owned and operated newspapers.

4C) *The exact location of the kink for a given price and the slopes of the two portions of the curve are related to the quality of the available substitutes.* If the quality of the newspaper and its acceptable substitutes is high, users will tend to have higher minimal levels of acceptable quality. This will push the kink farther from the origin.

5) *The demand curve for a newspaper market with two separately owned and operated newspapers will shift to the left of where the demand curve would be if the market contained only one newspaper or two newspapers that are not intensely competitive.* In order for the impact to occur, the newspapers must be competitive, which means they have a high degree of substitutability. The higher the degree of substitutability, the greater the sift.

5A) *The curve shifts to the left because the availability of another newspaper with a high degree of substitutabil-*ity *means the firm must spend more money on the quality of the product.* A competitive newspaper must spend more money on its product because failure to do so will mean short-run movement of readers to the other newspaper and long-term failure in the market because of the circulation spiral.[23] The user now has a highly substitutable alternative. This shift is shown in Figure 2 with D_c representing the demand curve for a newspaper that has another separately owned and operated paper in the same city and D_m representing the demand curve for a single-newspaper city. Without an increase in

[23] The circulation spiral results from the joint product nature of newspapers. Advertisers buy ad space based on the number of readers, and readers read newspapers for news and advertising information. Thus, as a newspaper increases its circulation lead over a competing paper, it attracts more advertisers. As it attracts more advertisers, it attracts more readers. This attraction of more readers attracts more advertisers, and so on. The result is that a newspaper with the majority of readers in a competitive market tends to attract a disproportionate percentage of the advertising linage. See K. E. Gustafsson, "The Circulation Spiral and the Principle of Household Coverage," *The Scandinavian Economic History Review,* 26: 1-14 (1978).

spending on the quality of product, the composite impression of a given newspaper will decline as the competing newspaper spends money on its product. A decline in the impression, while the minimal level of quality remains stable, means the competing newspaper gains in the degree of substitutability.

5B) *The degree of shift is a function of how well the second newspaper meets the minimal level of quality for a majority of readers of the first newspaper.* If the second newspaper is of poor quality relative to the original newspaper, the original newspaper will not have to increase its spending on its product as much as if the second newspaper was more intensely competitive. A newspaper that does not meet the minimal level of quality for most readers is not an acceptable substitute and will therefore not affect the original newspaper's demand curve to a great degree. In other words, a poor competitor is like no competitor at all.

6) *The kink in the demand curve of a newspaper in a market with another separately owned and operated newspaper will be located further from the origin than if the newspaper were in a market by itself.* As the quality of both newspapers increase, the minimal acceptable level of quality will increase. Users will get use to a better quality newspapers and expect more of them. The difference is shown in

[24] There is evidence that some newspapers eliminate circulation in areas that have high delivery costs, such as inner city and areas distant from the printing plant. See William B. Blankenburg, "Newspaper Ownership and Control of Circulation to Increase Profit," *Journalism Quarterly* 59:390-98 (Autumn 1982). These practices put a geographic limit on the assumption of this model about supply, but the assumption is still acceptable within these limits.

[25] The increase in circulation for a newspaper to C_2 represents the change resulting from the increase in quality of the newspaper. It is not the final circulation level that would follow the introduction of competition to a market. The D_C demand curve simply shows the intermediate impact of increased quality on circulation. Ultimately, the circulation of a newspaper moving from a monopoly to a competitive market would likely drop because of the presence of a good substitute. This overall change would be represented by an additional shift of the D_C curve to the left. The extent of the shift would be a function of substitutability of the competing newspaper. Correspondingly, a movement from competition to monopoly would probably result in an overall increase in circulation, despite a decline in circulation due to a decrease in quality. This eventual increase in circulation would be represented in Figure 2 by the D_m curve shifting to the right. The degree of shift would be a function of whether the readers of the failed newspaper could satisfy their demand with the content of the surviving monopoly newspaper.

Figure 2 with E_1 representing the kink in the single-newspaper demand curve and E_2 representing the kink in the demand curve for a newspaper with competition from another paper.

Newspaper Supply Curves. The assumption underlying this analysis is that on average a newspaper, within the capacity of its presses, will be able to supply whatever demand exist. Thus, while there are day-to-day fluctuations in the number of newspapers printed, there is no real equilibrium circulation determined by supply and demand forces. First, price is not at issue here. Second, unlike price, which is easily measured, quality is too inexact a concept to establish a point of equilibrium. Rather, circulation will be any point within the range of printing capability where no more readers will buy a newspaper, and the firm will not sell any more. Effectively, that means a newspaper will provide as many newspapers as people will buy on average, as long as the additional issues are perceived as contributing to profit.[24] Any point on the demand curves will, with minor fluctuations, be met with supply.

Consumer's Surplus in Newspapers. Using the two demand curves developed above, the impact of having a single newspaper in a given geographic newspaper market can be seen in Figure 2. As a result of intense competition from a second newspaper, the demand curve has shifted left and the kink point has moved farther from the origin. The kink point of the solitary newspaper (E_1) moves to E_2 with the addition of a newspaper to the market. Under the new conditions, the amount of circulation will be C_2 compared to C_1 in a market with only one newspaper.[25] The level of quality has increased to Q_3 from Q_1. The circulation increase represents the result of increases in quality and the availability of another newspaper for people who would not take the single paper.

The demand curves in Figure 2 can be used to show the impact of competition on user utility. The level of quality needed to attract circulation at C_1 has increased from Q_1 in the solitary market to Q_3 in the competitive market. Part of this increase is

due to the movement of the kink point and part is related to the shift of the market demand curve.

The rectangles represented by points $Q_1Q_3AE_1$ and $C_1C_2E_2$ A give the total amount of aggregate utility that is lost by *all* readers due to a monopoly. This could be called the "consumers quality surplus." It represents the amount of utility that consumers receive from the higher level of quality competition brings. A single-newspaper market allows management to cut back on quality and in doing so capture the costs of providing more quality in a competitive market as profit.

The exact amount of the quality will depend on the slopes and locations of the two curves. This in turn depends on the available substitutes, their degree of substitutability, the taste of the audience, the price charged for newspapers, the revenue of newspapers and other variables. However, the competitive curve will always remain above the monopoly curve creating some level of surplus.

Implications of the Models

This model of newspaper demand is consistent with existing research about direct newspaper competition mentioned earlier. It explains why intense newspaper competition is preferable to slight or no competition from the reader's perspective.[26] It is inconsistent with earlier studies of competition for two reasons. First, this model emphasizes intensity of competition and not just presence or absences. This intensity can be operationalized as market share.[27] Second, the impact comes not from geographic area of coverage or whether news is hard or feature in nature. The impact would be in quality areas of content, such as depth of coverage, completeness of coverage, fairness and balance of coverage, accuracy of information and usefulness of content to readers. In other words, this model involves quality of information and not necessarily ideology underlying the collection and product of information.

Both the news demand model and the "consumer quality surplus" concepts sug-gest other implications and hypotheses. These include:

1) When a second newspaper goes out of business, the remaining newspaper will not have as much circulation as the two together.[28]

2) Readers in intensively competitive newspaper markets should be better at estimating how well a newspaper is meeting their information needs and wants than those readers in monopoly newspaper markets. They should be more satisfied with their newspapers than those readers in slightly competitive or non-competitive markets.

3) The financial commitment resulting from intense competition between newspapers should exist in competition among television and other types of media.[29]

4) The development of other quality news media should result in the improvement of quality for existing media that may be acceptable substitutes for the new media. Thus, the development of quality television news should have been related to the improvement of newspaper coverage.

5) Common ownership of television, newspaper and radio within a market should result in a lowering of quality for all news products.[30]

Further work in this area should concentrate on refining the news demand model by integrating non-economic theory, such as uses and gratifications and

[26] The key here is intensity of competition. Slight competition has little impact on "financial commitment." See Rarick and Hartman, *op. cit.* and Lacy, "The Impact of Intracity Competition on Daily Newspaper Content," *op. cit.*

[27] Market share must always have a geographic definition of the market. At least two methods can be used. The first has to do with the relative percentage of circulation within the central market. See Lacy, 1987, *op. cit.* The second deals with market concentration. See Robert G. Picard, "Measuring the Concentration in the Daily Newspaper Industry," *Journal of Media Economics,* Spring 1988, pp. 61-74.

[28] Walter E. Niebauer Jr., "Trends of Circulation and Penetration Following Failure of Metropolitan Daily Newspapers," unpublished paper presented to the Association for Education in Journalism and Mass Communication, San Antonio, August 1987.

[29] Unpublished research by the author found that intensity of competition in the local broadcast news market is related to the acquisition of satellite news gathering capabilities and the size of news staff and budget.

[30] Guido H. Stempel III, "Effects on Performance of a Cross-Media Monopoly," *Journalism Monographs,* No. 29 (1973).

the industry. Indeed, much of what was reported did not have to do with prices at all. Many reports during those years concerned the Alaskan pipeline, exploration activities off the coast of New Jersey, and a wide variety of government programs, both actual and proposed, which affected the oil industry (egs. the Windfall Profits Tax and the Strategic Petroleum Reserve). What made these stories newsworthy, however, was the fact that oil supplies were tight, which is reflected in the price of petroleum products.

The oil industry is not a single product market and not all oil products are equally important in determining mass media interest in the oil industry. Since the news media's target audience is the public at large, the news items of greatest interest are naturally those which are most closely tied to the public at large. By this criterion, gasoline is the most important refined product market. But price controls were in effect in gasoline in 1979; consequently, gasoline prices did not fully reflect conditions within that market. Because quantity rationing is a common response to binding price controls in a market, it is not surprising that gas lines formed during the 1979 crisis. These gas lines were perhaps the single most important symbol of the crisis during 1979. Our measure of gas lines and quantity rationing was found to be significantly related to oil industry news coverage.

The other important consumer oil product is #2 fuel oil. This product was not subject to price and allocation controls during 1979; therefore, #2 fuel prices more accurately reflect this product's market conditions. In particular, both spot and contract price changes are strongly related to news coverage. But this does not mean

that the media simply reported on the pricing policies of large companies within the market. Indeed, the most predictive contract price is that of Asiatic, a company which is essentially invisible to the public. Nevertheless, changes in this company's #2 fuel oil contract price provides a more accurate description of oil market conditions than those of major domestic oil companies, such as Exxon. A further interesting point to emerge from the analysis is that spot price decreases as well as spot price increases predict greater news coverage. It appears that large spot price decreases, which typically occur immediately after large spot price increases, offer a further signal of oil market instability.

The oil crisis affected all oil product markets but those effects are not newsworthy in product markets which do not directly affect consumers. Industrial product markets such as #6 fuel were affected by the oil crisis but that was not considered news by the mass media. This does not mean that the public is not affected by pricing in those markets. Indeed, fuel adjustment clauses were instituted by public utility commissions specifically to permit utilities to pass on fuel cost increases to customers. But fuel adjustment clauses do not work on a week-to-week basis and there are further lags in the recovery of fuel cost increases. Moreover, consumers see higher electricity prices, not their cause. Therefore, we would not expect pricing of an industrial fuel such as #6 fuel oil to be predictive of oil industry news coverage, and, indeed, it is not.

In conclusion, the data strongly support our major proposition, that news coverage of the oil industry can be largely explained by pricing within the industry.

A MODEL OF DEMAND FOR NEWS

schema theory into the model. Additional efforts to adapt economic theories and concepts, such as product functions and

joint products, to the analysis of news content would also serve to improve our understanding of the news business.