

Nontransactional Data in Managerial Economics and Marketing

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INTRODUCTION

Neoclassical microeconomics in its present state has relatively little to say to business (Kay, 1991). In the past, branches of economics have been useful to business executives. The modern theory of finance, for example, is an offspring of economics. Operations research has also been heavily influenced by economics. Much 'business strategy' as taught in business schools is based on economics (e.g. Porter, 1980). Today, however, business executives see economics mainly as a tool for forecasting macroeconomic variables such as income, trade and price levels. Microeconomics, which would seem to have the most value to business, is in fact unimportant.

This should not be taken as a criticism of economics. Economists make an important distinction between positive and normative analysis, and pride themselves on doing positive analysis.¹ Microeconomics is quite useful in its relevant domain, and does have 'practical' significance as well. It is, for example, the basis of current antitrust policy and is widely regarded as having been quite successful in this area (Eisner, 1991).

Nonetheless, the limited use of economics in business is from the demand, not the supply, side. There would be no dearth of economists willing to provide advice based on economics to business if only they were asked (and paid). Businesses, however, do not commonly ask. Business decisions can be explained using the tools of microeconomics, but

business executives seem not to believe that these tools help them do a better job of making these decisions.²

One way of viewing the issue is this. If firms make incorrect decisions, they will be eliminated from the marketplace (cf. Alchian, 1950; Nelson and Winter, 1982) so that the equilibrium survivors will be firms that make more correct decisions. For predicting equilibrium, the goal of positive economics, this is all that counts. Real resources are used up in the process of reaching this equilibrium, however, and the adjustment process takes time. If economists can improve firm decision making, we may be able to economize on these resources and speed up the process, and so make a direct contribution to economic welfare.

We submit that there are two main reasons why microeconomic analysis attracts so little demand from business. One is simply the failure of economists to present, and of practitioners to appreciate, some of the more recent theoretical developments that in fact are of immediate practical use. Several such theoretical topics are discussed below, and some of their applications to business are addressed.

The second reason lies in the kind of data usually employed by microeconomists. Traditional economic analysis, in order to test hypotheses, requires data on market 'outcomes'—i.e. prices, sales revenues, and other observable data from actual transactions. This insistence on using what might be

called 'market data' or 'transaction data' places economists in a world radically different from that of business executives. Businesses usually must act before transaction data are available, and often would benefit from data that will *never* be revealed in transactions. Advertising content and placement, point-of-sale promotion, product attributes, and myriad other essential elements of marketing must be decided upon before the market transactions that economists require will occur. Many of these decisions also rely on data regarding 'attitudes' and other variables that economists traditionally ignore and that are never directly revealed in transactions.

It is understandable that marketing specialists pay relatively little attention to the writings of microeconomists. What they need is a body of work that deals with things like consumer attitudes and knowledge, information processing, and the role of emotion and cognitive shortcuts—all of which can be thought of as 'nontransactional data' in the sense that they usually occur and must be assessed independently of transactions.³ Research on these topics does exist, and is referred to below, but it is not part of mainstream economics.⁴

One branch of microeconomics that might appear useful is game theory. We believe, however, that this analysis has relatively little use in business applications. Most models are too abstract and contingent (i.e. dependent on a multitude of hypothetical conditions) to be useful. Economists may also find the output of the models unacceptable for providing advice to business executives since the main practical application might be to make collusion more effective, to raise entry barriers, or to otherwise achieve anticompetitive results. Economists may have a professional distaste for teaching people how to agree to behave inefficiently, so the explicit use of game theory may be inherently limited, at least in a business school and classroom context.⁵ A recent book by two distinguished theorists, Dixit and Nalebuff (1991), has provided an analysis of game theory for practical applications. It is worth noting, however, that relatively few of their applications are directed at business.

There are branches of economics that do provide inputs potentially useful to business. These are the closely related areas of transactions cost economics, law and economics (and particularly economics of antitrust), and agency theory. All these analyses were developed with a positive purpose in mind. They can, however, be used normatively as well (Rubin, 1990; Milgrom and Roberts, 1992).

In what follows, we will first discuss transactions cost. We then discuss the use of nontransactional data, and show how these data can solve some of the problems associated with applications of economics to business. Finally, we provide an example of applications with reference to vertical controls.

TRANSACTIONS PROBLEMS AND SOLUTIONS

Opportunism

The overarching concept in transactions costs analysis is opportunistic behavior, what Williamson (1985) calls 'self interest seeking with guile'. An important goal of management is to avoid being put in a position of being the victim of opportunistic behavior. There is a large literature detailing types and forms of opportunism. Key sources, in addition to Williamson are Akerlof (1970), Klein *et al.* (1978), and Jensen and Meckling (1976). Recent summaries, with reference to business decision making, are available in Rubin (1990) and Milgrom and Roberts (1992). Bergen *et al.* (1992) provide a summary with particular reference to marketing.

To an economist, the result of opportunism is a market failure. If businesses or consumers cannot guard themselves against exploitation, valuable deals will not be done and there will be welfare losses. What is to an economist a market failure, however, may represent a profit opportunity for business. Indeed, most market failures (such as the 'lemons' market described in Akerlof, 1970) are the direct result of the inability to make mutually profitable exchanges. Economic analysis of these failures may suggest means to achieve the exchanges that otherwise do not take place. We now discuss some potential solutions.

Contracts

One possible remedy to problems of opportunism is an explicit contract. Contracts are valuable, and no important transaction should be made without one. The usefulness of contracts, however, is limited. It is not worth attempting to write clauses to anticipate all contingencies that might arise, even if this were possible. (Consider only the myriad mortgage agreements written before the 1970s lacking an inflation adjustment.) Moreover, clever opportunistic agents can often find ways to cheat on a

contract is greater than the short-run gains from behaving opportunistically (for example, by degrading quality) and breaching the agreement. This basis for mutually beneficial action can be undermined, however, when the parties anticipate the last period of the contract, at which time the incentive to abide by the contract's terms disappears—which in turn undermines the incentive to act honestly in the next-to-last period, and so on. Thus an important principle of self-enforcing agreements is to avoid any last-period problem by not establishing any predetermined ending date for the agreement. Another principle is that any violation should be punished by termination of the agreement, although as there is more noise in the system (more chance of nonwilful nonperformance), punishment should become less certain (Kreps, 1990). A third principle is that there must be some profits (or at least quasi-rents) in the system. If the party who might breach is exactly covering costs, he has no incentive not to breach. If a bargainer forces the other party to his reservation price, opportunism is more likely.

The analysis we are proposing has other useful things to say about contracts. Lawyers drafting contracts are concerned with legal issues, such as contract law, and with questions of enforceability. If these attorneys also understand the economic principles of complex contracting, they will have a better understanding of the business purpose behind the contracts, and will be able to do a better job of drafting for their clients. Contracts ultimately serve a business purpose, and understanding that purpose will help in drafting contracts.

Self-enforcing Agreements

If contracts are not the correct solution, what mechanisms are available? In general, methods of enforcement involve use of various forms of credible commitments that generate some self-enforcing property, so that it is in the interest of the party creating the commitment to honor any promise. The most general form of credible commitment is the offering of what Williamson has called a hostage. A hostage is something that will be sacrificed if the party giving the hostage breaks its promises. One example is a stream of quasi-rents, generated by a series of transactions, that will be sacrificed if there is cheating.

Such a stream of quasi-rents can lead to a self-enforcing contract (Telser, 1980). The expected future stream of quasi-rents from continuing to

behaving opportunistically (for example, by degrading quality) and breaching the agreement. This basis for mutually beneficial action can be undermined, however, when the parties anticipate the last period of the contract, at which time the incentive to abide by the contract's terms disappears—which in turn undermines the incentive to act honestly in the next-to-last period, and so on. Thus an important principle of self-enforcing agreements is to avoid any last-period problem by not establishing any predetermined ending date for the agreement. Another principle is that any violation should be punished by termination of the agreement, although as there is more noise in the system (more chance of nonwilful nonperformance), punishment should become less certain (Kreps, 1990). A third principle is that there must be some profits (or at least quasi-rents) in the system. If the party who might breach is exactly covering costs, he has no incentive not to breach. If a bargainer forces the other party to his reservation price, opportunism is more likely.

Mechanisms

Many mechanisms make agreements self-enforcing. One is reputation. A firm can invest in creating a reputation in an input or output market. This reputation serves as a hostage: if the firm cheats in some way, it may lose the value of its reputation. Firms can invest in creating reputations in various ways. One is to offer high-quality goods for sale at the price associated with low quality for a time (Shapiro, 1983). Another is through advertising of the brand name of the firm (Klein and Leffler, 1981). Resources spent on reputation creation are a form of nonsalvageable capital, an investment which becomes valueless if the investor breaches some agreement, and therefore creates a credible commitment.

Other enforcement mechanisms are available in addition to hostages. One is explicit monitoring. Several principles of monitoring may be identified (Heimer, 1985). One is to look for changes in the condition of the trading partner. A second principle is that if transactions are large and infrequent, it may pay to monitor the inputs used by your supplier in addition to examining outputs. Third, there may be advantages in dealing with a small number of suppliers because monitoring may be easier. When possible, a third party, such as a trade

association or a bonding agency, should be enlisted to help with monitoring. We discuss below the use of nontransactional data in monitoring.

A final method of enforcement is to pay on the basis of relative rather than absolute performance. A firm may use a tournament, for example, to reward employees (Lazear and Rosen, 1981). Such a reward system is best when there is some common nonobservable element determining performance of many horizontally equal employees. In this circumstance, each will have an incentive to perform well.⁶

USE OF NONTRANSACTIONAL DATA

Economics Has Largely Dispensed with Nontransactional Data

We noted earlier that a hallmark of most microeconomic research is a strong preference, even an insistence, on using 'market data', which usually does not come into existence until after the relevant business decisions (a new-product introduction, for example) have already been made. The effect is that most economic research looks backward to explain what has already happened. This is a paradox, because the positive tradition in economics is based on the idea that economics has no valid test other than meeting predictions (Friedman, 1953). But in fact, most 'predictions' of economics are formulated after events have taken place, and are tested with historical data. Even predictions of the future are usually couched in terms of data that will not appear until long after the predicted events have taken place—as when one predicts that eliminating prohibitions on advertising will reduce consumer prices. Thus economics, in which predictions of the near future should reign supreme, in fact appears to many business executives as a science that, like history, only explains what has happened after it is all over.

Most business decisions must be made on the basis of 'nontransactional' data, i.e. data collected in advance of market transactions, and perhaps never to be revealed in a transaction. These are data regarding items such as consumer knowledge, information processing and attitudes. Modern economics' refusal to use nontransactional data, and the fact that businesses value such data, has fostered the creation of entire disciplines outside of economics. One is market research, which is concerned with collecting and analyzing data for marketing

decisions (regardless of whether the data are transactional or nontransactional). Another non-economic discipline essential to business is what is loosely referred to as 'consumer research' or the science of 'consumer behavior', which is devoted to opening up for inspection the 'black box' that in traditional microeconomics represents the decision-making capability of consumers (Wilkie, 1990).

An understanding of such common but difficult marketing processes as demand for new products or consumer reaction to advertisements about risk and safety require extensive knowledge found in market research and consumer behavior textbooks, but not in economics texts. These topics are taught in marketing departments of business school, along with a variety of other specialties (such as retailing and marketing channels) that are based on *ad hoc* theory applied primarily to nontransactional data (Kotler, 1991).

Moreover, business spends large sums of money gathering and generating this nontransactional data. Economists traditionally believe that commodities are valuable if someone will pay for them, and that businesses have strong incentives not to spend money uselessly. Thus, normal canons of economic analysis would indicate that these data are valuable and serve an important business function. There is no *a priori* reason for economists to ignore such data.

This gulf between microeconomics and the everyday needs of business has been recognized in the past, if forgotten later. Alfred Marshall's (1920a) early twentieth-century masterpiece of applied economics noted the value of marketing research for advertising (p. 307 and note 2): '... Academic students and professional advertising agents in America have united in applying modern methods of systematic and progressive analysis, observations, experiment, record, and provisional conclusion, in successive cycles to ascertaining the most effective forms of appeal. Psychology has been pressed into the service ...' In a statement that unfortunately has easily stood the test of time, he adds in note 2, 'The task [of assessing advertising effects] is more difficult than appears at first sight ... the attainment of trustworthy general results seems yet far off'.

The separation of economists from nontransactional data and its associated disciplines is by no means complete. Isolated examples of mainstream economists using nontransactional data occasionally crop up (see Beggs *et al.*, 1981; Magat and

Viscusi, 1992), and sub-fields such as consumer economics have long used survey and other non-transactional data. Moreover, some marketing research models make explicit use of utility-maximizing models such as conjoint analysis (Green and Srinivasan, 1990). The pages of *Marketing Science* are full of models that often are indistinguishable from those in the best known microeconomics journals, and even outlets such as *Journal of Consumer Research* have lately contributed to some of the more obviously relevant research streams in economics such as that on information (Ford *et al.*, 1990). But the separation described here is largely valid, as is evident from the courses and textbooks provided in graduate courses in economics and marketing.

The Benefit of Joining Economic Theory and Nontransactional Data

The burden of these remarks is not to argue that business executives and business economists should ignore what is taught in economics and turn to other fields. Economic analysis provides the theory and intuition essential to an understanding of market dynamics. Market research has little to say at a theoretical level about behavior. Consumer behavior, as the discipline exists now, is rich in theory about individuals but poor in theory about markets. To give but one concrete example, there is a large literature on how consumers process price advertisements (Grewal and Compeau, 1992, and references therein). But most of these findings come from laboratory experiments that exclude most or all the essential elements of competition, including brand names, retailer reputations, competition among retailers in both prices and services, and the evolution of prices and advertising through time. Such research can say a little about how consumers will perceive specific advertising elements (e.g. a 'reference' price such as 'regularly sells for . . .'), but it cannot inform businesses about the dynamics of consumer behavior in a competitive market.

What is needed is an analysis of the interplay of incentives and expectations. This is the stuff of economic analysis, which (to continue the example of reference-price advertising) has shown that price advertising generally results in market equilibria with lower prices, but has not thus far addressed directly the immediate impact of particular advertising elements. This attempt to marry market competition with consumer information processing

occasionally emerges in the consumer research literature (Wright, 1986), but it is still rare.

The focus on different kinds of data by economists and marketing scholars (which includes those who study marketing research, consumer behavior and other topics in the marketing process) often leads to differences in theory. Scholars in the non-economic fields draw heavily on psychology and sociology, and work with survey data and psychological scales. They are naturally sympathetic to theories framed in terms of mental processes and non-market variables such as power or relationships. Some examples of this, and of the potential interplay between economic analysis and nontransactional data, can be found in an analysis of vertical arrangements in marketing, discussed in detail below.

AN EXAMPLE: VERTICAL CONTROLS

Vertical controls imposed by producers on sellers or retailers of products form an interesting case study. These controls have often been the subject of antitrust attack. As a result, economists have analyzed these restrictions very carefully. The fact that controls have been attacked in antitrust suits allows us to infer that they are effective; unsuccessful competitors are seldom the subject of antitrust challenge. If an effort were made to inform business executives about the range of vertical controls available and their uses, business decisions might be improved or markets might reach equilibrium more quickly. Economic analysis indicates that vertical controls are complex and can be used for many purposes, and it is unlikely that all businesses would achieve the best use of such controls.

Several types of vertical controls stand out. One is resale price maintenance (RPM), which is the practice of requiring retailers to sell for a specified amount. Manufacturers also require that dealers offer certain services for consumers, including provision of information, displays, stock turning, etc., even though it might appear that retailers themselves would be the best judge of the level and type of services useful for selling products. Exclusive territories are another vertical control. Manufacturers sometimes require retailers to carry only the product of the particular manufacturer ('exclusive dealing'). Finally, manufacturers often provide 'suggested' prices or other pricing information, including information about margins, to retailers.

In her empirical study of RPM, Ippolito (1988) finds that virtually all examples of RPM can be explained as an attempt to '...correct a variety of principal-agent problems in the relationships between manufacturers and dealers ...' (p. 4). Because activities desired by manufacturers are complex and performance is subtle, there are many observable but not verifiable contractual terms that manufacturers want to enforce. In cases such as these, the manufacturer creates a quasi-rent as a subsidy to a retailer to induce the retailer to provide the services. Any retailer who would not provide these services would be free-riding on the payments from the manufacturer. Such free-riding would be inefficient and would lead to an equilibrium without the service being provided. Manufacturers therefore use these devices to eliminate this free-riding. Ippolito indicates that RPM can be used to correct both horizontal problems where dealers compete with each other in ways detrimental to manufacturers and consumers and also purely vertical problems where retailers would not behave as the manufacturer would want.

The first explanation for vertical restrictions as efficiency-enhancing behavior was an important article by Lester Telser (1960). Telser dealt specifically with RPM. His explanation was in terms of services provided by retailers to consumers patronizing a retail establishment, such as product demonstrations. Such services are expensive for retailers to provide, so some retailers would free-ride on services provided by other retailers. The equilibrium would be a market with no services, harming consumers and manufacturers. RPM would eliminate retailer incentives to free-ride on valuable services to consumers provided by full-service stores, by eliminating the possibility of offering lower prices.

Free-riding is not the only explanation for vertical controls. Robert Bork (1978) has provided an explanation of the value of information regarding prices, such as contained in suggested retail prices. A manufacturing firm is often in a better position than any given retailer to undertake marketing studies regarding price. Moreover, the manufacturer is in a position to monitor many retailers, observe their prices, and assess the level of success associated with alternative prices. As a result, retailers often seek information from their suppliers about the prices and gross margins the suppliers' products are able to obtain elsewhere. Manufac-

turing firms might find it worth keeping this information in a form that would be useful to their retailers.

Mathewson and Winter (1984) provide a spatial model of the behavior of retailers and manufacturers. They show that a manufacturer cannot achieve efficiency by simply establishing a wholesale price. There are externality (free-rider) effects among retailers which make additional constraints efficient and profitable for the manufacturer. One externality is that some share of advertising by one retailer will benefit other retailers, so there is an incentive for retailers to advertise less than the efficient amount. Manufacturers may decide to pay for co-operative advertising programs and also to require a minimum amount of advertising by retailers. Since co-operative advertising is aimed at promoting both the product and the retailer, it is efficient for the manufacturer to enforce some control over this advertising, and to limit the amount if advertisements do not convey the message the manufacturer wants conveyed.

Advertising and reduced prices are substitute methods for one retailer to increase its business, but preferences of manufacturers and retailers differ on amounts. The manufacturer has a stronger preference for advertising relative to reduced prices, since advertising increases sales at other retailers as well, and thus leads to increased total sales of the product. Since some advertising benefits other retailers, any given retailer would have a relative incentive to reduce advertising expenditures and instead increase sales by reducing price. Manufacturers can use vertical controls to align retailer and manufacturer incentives more correctly. In some circumstances manufacturers would want to increase the number of dealers to save transportation costs for consumers, even though this might lead to a higher money price (Bittlingmayer, 1983). Manufacturers can also use other vertical control devices, including territorial restrictions, quantity requirements for retailers, and franchise fees, as possible responses to externality problems. The literature under discussion can be used to show when each of these devices is useful.

In a recent working paper, Winter (1988) has provided a more complete justification for much RPM. Winter shows that retailers care about lost sales to other retailers. Manufacturers, by contrast, care only about lost sales to other brands, whether or not these brands are carried by the original retailer. If demand at the margin between retailers is more price elastic (relative to service elasticity) than

demand at the product margin, then RPM is desirable. Otherwise, there will often be incentives for retailers to reduce price inefficiently to induce customers to shop in their store. Therefore, inducements to consumers to purchase in a particular store do not benefit manufacturers, and this means that there will be excessive price cutting from the manufacturer's perspective. In these circumstances, manufacturers will want to use some form of control.

Vertical controls can also be used to certify quality (Marvel and McCafferty, 1985; Goldberg, 1984; Overstreet, 1983; Marvel, 1985). In this view, manufacturers of certain goods want high-quality retailers to certify the quality of the goods. This certification may apply to the quality of the goods, or their 'style'. Certification, however, can be expensive. Retailers must spend resources in learning about the quality of various products, or hire persons with up-to-date information about fashion. Manufacturers can use RPM or other vertical controls to assure retailers of being able to cover the costs of certification and to prevent other retailers from free-riding.

Many manufacturers desire RPM because they claim that without this protection their product would be used as a 'loss leader' and would ultimately face reduced distribution and sales. Marvel and McCafferty (1985) present a scenario under which this would be plausible. If new entrants to retailing attempt to advertise their price structure by advertising low prices for well-known brands, established retailers might respond simply by ceasing to carry this brand. Thus, producers of the advertised brand will gain in the short run but lose in the long run as they receive reduced distribution, and particularly reduced distribution from more established retailers. This provides an additional incentive for manufacturers to use RPM.

Klein and Murphy (1988) argue that RPM and other vertical control devices such as exclusive territories create a stream of quasi-rents for the retailer. Similar excess returns can be provided by subjecting distribution to restrictions, such as limiting the supply allocated to discounters. Direct payments from manufacturers to retailers, such as co-operative advertising expenditures, can also generate quasi-rents. Manufacturers monitor retailers to make sure that retailers are providing services that manufacturers desire. There are many types of such services, including advertising, prominent displays, informed sales people, and provision of services such as clean dressing rooms for trying on the

product. The stream of quasi-rents earned by retailers serves as a reward to those who provide the desired services. Conversely, the threat of loss of those quasi-rents if the retailer shirks is an important part of the enforcement mechanism. This use of RPM requires that manufacturers be able easily to terminate retailers who are not providing the desired services.⁷

An important class of services is associated with promotion of products to marginal consumers, i.e. those at the margin between purchase and non-purchase. If manufacturers make higher profit margins on products than do retailers, they may want retailers to spend more on promotion than would be in the interest of retailers themselves. For example, many consumers know the size they wear, and for these consumers, a fitting room would provide little value. But marginal consumers would want to try on the product, and for these consumers a fitting room is valuable. Similarly, some retailers might choose to carry an inventory of only popular sizes, while it might be in the interest of the manufacturer to have retailers carry a larger inventory.

Exclusive dealing is the restriction of retailers to carrying only one line of a product (Marvel, 1982). If manufacturers promote their product, consumers may enter retail establishments planning to buy the product. This is particularly likely if there is co-operative advertising providing information about both product characteristics and availability. The retailer may make a greater profit on another, similar (but cheaper because unpromoted) product and desire to switch the consumer to the other product. Exclusive dealing can eliminate this behavior.

In sum, the uses of vertical restrictions are complex, and the discussion above has been by no means exhaustive. Business executives might use such restrictions correctly in some cases. Each such restriction has presumably been used at least sometimes correctly, or economists would not have the sample to analyze. It is likely that there are many cases where input from economists could benefit businesses and lead to more efficient use.

Moreover, there are still legal prohibitions in place against formal RPM, and other forms of vertical restraint may be subject to legal attack. Therefore, manufacturers may be limited in the forms of vertical controls they can use. The theory can show ways of substituting one control for another, and can indicate to producers what forms of restrictions can best be used when the preferred restriction is illegal or legally risky.

Vertical marketing arrangements typically involve difficult problems in monitoring, which is required to prevent parties from engaging in opportunistic behavior. Such monitoring directly raises questions that are often best handled by applying economic analysis to nontransactional data.

An important element in many of the models is reputation. Firms invest in reputation to provide a hostage for honest behavior. It is important for a firm to determine the success of such investments. Nontransactional data are useful to a firm to establish and monitor the value of its reputation. A firm might sometimes need to separate the effects of advertising from other forces (including luck) that may play a role in market-generated data, revenues or profits. The only feasible methods for this assessment involve nontransactional data such as surveys.

Advertising can serve many purposes, one of which is the creation of a reputation. Theory can identify advertising messages that are more likely to generate reputations, and monitoring can determine which function a given advertising message actually serves. In fact, the reputation a firm enjoys with consumers is itself valuable information to consumers, so firms often advertise the results of surveys showing that consumers value the firm. For similar reasons, firms advertise their high position in the market, again often determined from nontransactional data that economists would not utilize.

In many of the models discussed above, the role of advertising raises potential conflicts between manufacturers and retailers. This potential for conflict extends to almost any multi-level marketing arrangement. Consider, for example, agreements to share the costs of advertising and promotion. As mentioned earlier, advertising and reduced prices are substitute methods for a retailer (or a manufacturer) to increase its business. But there are always at least two kinds of competition taking place simultaneously: brand versus brand and retailer versus retailer. A given volume of advertising (measured in dollars, exposure, etc.) may serve either or both kinds of competition, depending on the content of the advertising, when and where it is placed, and other factors. Thus retailers and manufacturers have different preferences not only for the amount but also for the type of advertising.

Any attempt to monitor nontransactional data requires an agreement to promote the common goals of manufacturer and retailer must examine the content and other aspects of advertising, and often must consider how advertising affects consumers. Economists are accustomed to working only with the 'volume' of advertising, and when it comes to examining the effects of advertising, economists usually look only at the impact on sales. But disentangling the sales impact of advertising from other factors is notoriously difficult, even after waiting for years for the most complete market data possible. To discern the effects of advertising on sales in the brief time span necessary to monitor vertical arrangements remains as difficult as it was when Marshall wrote the words quoted above.

One solution is to bring nontransactional data to bear on the problems of monitoring. One can use the methods of content analysis to monitor advertising content (Kolbe and Burnett, 1991). Day-after surveys can compare consumer awareness of specific ads with awareness of crucial advertising content such as brand name, retailer name, availability, price reductions and other factors. These methods could provide an objective way to settle questions of whether advertising provided by, say, retailers, conforms with the goals of the manufacturer who subsidized the advertising.

Agency theory is a rich source of theory and data for the resolution of problems in vertical relationships. This can be seen in information and data. The discipline of market research arose to solve the most obvious information problem in marketing—sellers' imperfect knowledge of consumers' preferences, especially for new products. More recently, purely economic analysis has emphasized information problems among intermediaries, i.e. among principals and agents. But, as recently emphasized by Bergen *et al.* (1992), agency relationships permeate the marketing process, and information asymmetries arise in nearly every such relationship.

Nontransactional data can be used to reduce adverse-selection problems. If manufacturers can observe characteristics of consumers of particular products, they can tailor warranties to these characteristics. For example, if certain types of cars are driven by careless consumers (perhaps teenagers, or consumers who indicate attitudes inconsistent with taking care), manufacturers might offer shorter warranties on such cars. There are many possibilities for observing such associations.

One class of issues involves retailer reputations. For example, manufacturers might want to sell their products in those retail establishments that consumers view as the most prestigious. Survey data could be useful for making this determination. Manufacturers could also use this sort of data to determine which services offered by retailers are most valuable to consumers, and also to assess whether retailers are in fact offering these services. It is also possible to determine which advertising venues generate the most attention.

Another class of problems relates to incentives for retailers to use relatively more price competition (relative to advertising or service competition) than manufacturers would prefer. One effect of this excessive price competition might be that consumers would travel further to buy products than manufacturers would find optimal. Data can be used to determine distance between the consumer's home and the outlet where a product was purchased, and consumers can be asked the reasons for such decisions.

Just as the source of theory (economics versus consumer behavior disciplines) can affect the kinds of data used, data can affect theory. Theories of vertical relationships in marketing have proliferated in recent years. Some of this derives directly from transactions costs analysis and thus represents an application of recent economic theory (Dant *et al.*, 1992, have a brief survey). Much recent theory in the marketing literature, however, is based on ideas developed by psychologists or sociologists, or those who sympathize with such approaches and with the kinds of data used in psychology and sociology. Some of these theories start with a standard economic concept, opportunistic behavior, but move on to concepts such as power (which occupies the attention of political scientists or more radical forms of political economy rather than mainstream economics), 'authority', 'autonomy', 'dependence', and 'trust' (again, see Dant *et al.*, 1992, and citations therein). These and other concepts often defy operational definitions in terms of market data and instead rely on nontransactional data from surveys and other sources.

SUMMARY

In this paper we have indicated only a few of the uses of the 'new managerial economics', based on

transactions costs, for businesses. We have ignored, for example, the entire field of finance. Even though there are many important lessons and significant implications for this field. We have by no means exhausted even those areas which were discussed. We have, however, shown that there are many areas of business behavior where an explicit transactional economic analysis could improve profits and welfare. Moreover, the use of nontransactional data, based on such things as consumer surveys, can interact with transactional reasoning in several ways. In particular, such data can be very useful in monitoring performance. The economics profession can benefit itself and also provide social benefits if it expands the areas of application into direct uses of economics for business.

NOTES

1. The major exception is government policy; economists do not hesitate to provide advice to government.
2. Even more anecdotally, consider the following statement from Lewis (1990), after describing the desire of investment banks to hire students with economics degrees: 'The only inexplicable aspect of the process was that economic theory served almost no function in an investment bank.'
3. In what follows, we will use 'nontransactional' data to refer to two types of data. Some are data that are valuable before a transaction would have a chance to occur, such as the amount of a new product a consumer would buy at a given price. Other data, such as the attitude of a consumer towards a particular retail store, would never be revealed in a transaction. Economists tend to ignore both types of data, and both are useful to business.
4. Indeed, while we will not pursue this point, the non-transactional data used by business executives may be more closely related to the subjective data discussed by 'Austrian' economists. See Buchanan (1965) and O'Driscoll and Rizzo (1985).
5. Oster (1990) has a chapter on competitive pricing but, in spite of her use of game theory throughout the book, she does not have an analysis of collusive pricing. Although Milgrom and Roberts have written articles providing game-theoretic models of noncompetitive behavior (e.g. 1982), there is no reference in their book (1992), aimed at business students, to this topic. Rubin (1990, p. 96) in a book aimed at business executives indicates that he will not provide information about inefficient methods of transacting.
6. Risk aversion is not a fundamental part of the theory. The existence of risk aversion however, means that some otherwise desirable contracts will not be feasible. In many cases, the most efficient contract would be to make one party, often a worker, the ultimate residual

claimant for all surplus, which will place a large risk on the worker, and this may not be acceptable. In this case, a two-part tariff, a payment schedule consisting of a fixed and a variable payment, may be optimal.

7. Telser (1990) criticizes the Klein–Murphy paper, arguing that allowing the manufacturer to collect damages is more efficient than merely forfeiting a stream of quasi-rents. Telser does not address the issue of the collection of damages. If the manufacturer were in a position to collect, this would create an incentive to falsely allege that the retailer was cheating. Moreover, damages would more likely lead to litigation than the mere canceling of a contract. Thus, the alternative proposed by Telser does not seem workable.

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