Although some people might think of auctions as relics of a past and slower-paced age of buggies and barn raisings, they are still an important part of today’s world. You can still go to a country auction to look for bargains or see what went into your neighbor’s estate sale. News programs report the latest record sale price or just interesting collections being sold at Christie’s and Sotheby’s. eBay and Amazon draw both bidders and curious browsers to their popular auction sites. In the past few years the Federal Communications Commission (FCC) has auctioned off billions of dollars worth of spectrum licenses to providers of mobile telephones and paging services. Competitive bidding is now being used for pricing a lot of things that were formerly priced by other means, such as electricity auctions for the short-term purchase of electricity between producers and distributors.

Oral auctions are used to sell a great variety of goods, especially when the goods or the bidders vary considerably from one auction to the next. Commonly, items such as artwork, used cars, cattle, estate contents, used machinery, and miscellaneous junk are sold by oral auction. The most active Internet auction sites are also closer to oral auctions than sealed-bid auctions, and the FCC spectrum auctions resembled simultaneous oral auctions.

In oral auctions bidders are able to use the bids of others (and at what point others stop bidding) to help determine the value they put on an object at auction — that is, the amount they are willing to pay for an item. But the information provided to bidders by the bids of their competitors tends to drive up the price, and, therefore, sellers prefer oral auctions to sealed-bid auctions.

Oral auctions are simpler than sealed-bid auctions. UIUC Professor of Business Administration Richard Engelbrecht-Wiggans believes that oral auctions are so popular because of their simplicity. Bidding strategies for sealed-bid auctions typically depend on learning more than the value that the bidder puts on the item for sale. Such other factors as the number of other bidders, the various values they might place on the item, the seller’s reserve price, and details of auction rules all affect the decision of how high to bid. Bidders in sealed-bid auctions can suffer from the “winner’s curse” and find that they have paid too much for the object they have just bought. In contrast, bidders in oral auctions may have the simple strategy of bidding up to an amount that equals the value they place on the item. Bidders need less information to bid sensibly in oral auctions.

Engelbrecht-Wiggans argues that bidders in oral auctions may need or want to expend less effort acquiring and interpreting information than that required in sealed-bid auctions. Since less effort is required, more bidders are likely to take part. And since, everything else being equal, the auction with more bidders generates more revenue for the seller, in most cases oral
Engelbrecht-Wiggans believes that oral auctions are so popular because of their simplicity.

Auctions are more advantageous for the seller. Engelbrecht-Wiggans was able to confirm his assumptions by means of a mathematical model.

The researcher also notes that anecdotal evidence supports the idea that potential bidders are more willing to take part in oral auctions than bid in sealed-bid auctions. He reports knowing several people who made major real estate purchases at oral auctions but were unwilling to bid in sealed-bid auctions.

Engelbrecht-Wiggans acknowledges that sealed-bid auctions persist in some settings. Construction contracts and the procurement of relatively standard, but rather specialized, supplies tend to be sealed-bit auctions. In these cases, the same bidders may compete against each other repeatedly and may have a lot of information available when bidding. In certain circumstances the seller might prefer a sealed-bid auction. Sometimes the effort for bidders to acquire information is, for some reason, greater in an oral auction, and the cost of running an oral auction can be more than for a sealed-bid auction. In short, Engelbrecht-Wiggans would expect to see sellers chose oral auctions when dealing with inexperienced bidders, who would have good reason to need a lot more information in a sealed-bid rather than an oral auction, and he would not be surprised to see sellers use sealed-bid auctions when dealing with very experienced bidders.

Richard Engelbrecht-Wiggans is a professor of business administration at the University of Illinois at Urbana-Champaign. For more information about this research, contact Professor Engelbrecht-Wiggans at eplus17@uiuc.edu.
Firms often make a line of products with one or more common features. The practice is increasingly popular in products from automobiles to household appliances to such service products as credit cards and automobile clubs. The Toyota Camry and the Lexus ES300 entry-level sedan are built on the same design platform. Answering machines in different price ranges share common features such as “memo” and “remote control,” while they are differentiated by the length of recording time and the number of outgoing messages. Both basic and premium memberships in auto clubs such as AAA offer locksmith services, while they are differentiated by how far the club will tow the driver for free and the amount of emergency cash reimbursement available.

There are many reasons, from the point of view of both consumers and firms, for companies to offer products with common features. In some cases, limits to the technology of the specific product can produce common features: At present, answering machines can use only tape or a memory chip to record messages. In other cases, customer preference dictates common features. Even when there is some variation in demand for an attribute, the firm may limit the choice to simplify production and inventory control. By producing a line of items with common features, a firm is able to offer a variety of products while taking advantage of economies of scale in production and distribution to keep costs down and to keep its prices competitive. Other benefits of creating products with common features from the perspective of a firm’s production and operations include reduced costs for inventory and reduced time and costs for developing new products.

Despite the widespread use of common features in product lines, little is known about how the practice affects the value that consumers place on the products or on the choices they make. For example, recently Volkswagen has been criticized for designing too many of its brands and models with common features. The October 25, 1999, issue of the New York Times noted that, “some consumers wonder, why pay more for Volkswagen’s premier Audi brand when you can get much of the same technology more cheaply in a VW or even a Seat or a Skoda?” The article further pointed out that already a prestigious German automotive think tank had concluded that VW “has erred by creating models that are too similar.” Understanding the consumer, or demand-side, reaction to common features in a product line or across brands is essential for firms to make the best decisions about using common features. Some relevant questions that need to be answered are: How do common features influence the value that consumers place on products? Do such common features dilute the perceived difference between products? How much differentiation in unique attributes is necessary to make products meaningfully different from the buyers’ perspective? How should products with common features be priced? What are the factors to be considered when designing products using common features? Answers to all of these questions require, in part, an understanding of the effect that common features have on the value that consumers place on products.

To try to get a scientific handle on what effect common features have on the perceptions and preferences of consumers, Professor Dilip Chhajed of the UIUC Department of Business Administration, and a colleague, Kilsun Kim of Middle Tennessee State University, undertook an experimental study. Specifically, the experiment was designed to examine how common features affect the value that consumers put on products and the factors that influence the amount of change in the value consumers place on the products. Suppose that a firm wants to design a product line consisting of two products. Having already determined a description for the low-end product, it can now design a higher-end product with or without features in common with that low-end product. Will the decision on the higher-end product influence the customers’ valuation of the low-end product? If so, how? And what about the opposite case in which a description of a higher-end product...
is given and a lower-end product can be designed with or without common features?

Chhajed and Kim hypothesized that consumers value a low-end product more when it shares common features with a higher-end product and value a high-end product less when it shares common features with a lower-end product. They also hypothesized that these changes would occur regardless of the buyers’ level of knowledge of the product, and that these changes in value would be moderated by a large difference in the level of unique features in the products.

In designing their experiment, they concentrated on product lines that offered both high- and low-end products. They used nine manufactured goods and services (bicycles, stair climbers, laser printers, credit cards, answering machines, cordless phones, notebooks, airlines, and auto club membership) for which the firms routinely use common features to design products in different classes. The products in each line are differentiated from one another by levels of a set of features and, as compared with the low-end product, the same or higher attributes are offered for higher-end products. For example, in the case of computer printers, a low-end printer may print four pages per minute while a high-end model may give eight pages per minute.

In all of the experiments, Chhajed and Kim used undergraduate students as subjects. They found that the results mostly supported their hypotheses.

The subjects in the experiment did perceive an enhanced value in low-end products when they were presented in the context of a higher-end product with common features.

Data also supported the second half of the hypothesis, that consumers would have a lower perceived value for the high-end product when it appeared in the context of a lower-end product with common features. These revised values take place because the common features reduce the contrast between products. The researchers were surprised to find that the amount of change in the value was not always the same for premiums for the low-end products and discounts for the high-end product. The added value for products sharing features with high-end products was greater than the decrease in perceived value in high-end products sharing features with low-end products.

This is an important finding for firms faced with decisions about product design. From the firm’s perspective, a high valuation premium and low discount are, of course, always preferable — although the choices are also affected by such other factors as the size of the segment of the product line or cost savings due to economies of scale.

Chhajed and Kim’s second hypothesis held that the buyers’ knowledge of the product has no effect on the magnitude of the change in value that consumers put on products in such situations. This does seem to be the case, but the data did not support the hypothesis very strongly. Apparently, regardless of the subjects’ knowledge of the product, they observed the common features and changed their valuation accordingly. Neither the theory that knowledgeable buyers are more independent of the context when making choices or that knowledgeable buyers react more to common features dominated in the results.

Chhajed and Kim also proposed (their third hypothesis) that the difference in unique features between high- and low-end products affects the value change consumers perceive because of the common features. Specifically, they expected that subjects would put a smaller premium, or no premium, on lower-end products because they would pay more attention to the large difference in unique features and that would moderate the premium. This was not, in fact, the case. Subjects did not perceive less value in the lower-end product when there were higher levels of unique attributes between higher and lower-end items. In the case of a discount of the value of high-end products, however, subjects did moderate their discounts on the values of the high-end products when there were higher levels of unique features. A large difference in a unique attribute, meaning a distinctly low level of the unique attribute in the low-end product, kept the subjects’ attention so that the common features did not discount the value of the high-end product. The extremely low level of the attribute in the low-end product did keep subjects from changing their value lower when there were many attributes in common. Possibly, subjects felt that, although there was a large difference in the Is that Lexus Really a Toyota, or What?

Introducing a new product that shares important attributes with an established or leading competitive product provides customers with easy reference for product comparison.

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Easier to Understand and More Complete Financial Disclosures Improve Investor Decisions

Associate Professor of Business Administration Don N. Kleinmuntz, along with former UIUC accountancy faculty members J. Richard Dietrich and Thomas J. Linsmeier, and Steven J. Kachelmeier of the University of Texas at Austin, have completed a study on how providing investors with easier-to-use and more complete financial information can improve the efficiency of both traders and financial markets. Their work, which was supported by a grant from the PricewaterhouseCoopers Foundation, is related to current efforts to extend financial reporting to serve the changing needs of those who use financial statements. In 1994 the American Institute of Certified Public Accountants Special Committee on Financial Reporting recommended supplementing traditional financial reports with disclosures of information predicting the future of the firm, including management’s plans, opportunities, risks, and measurement uncertainties. Management always has information about future possibilities, both positive and negative, that could affect the value of their firm. Traditional financial statements simply do not provide all the information about future prospects that users might want to have. First of all, traditional financial statements are not always “user-friendly,” so that alternative presentations of the information in those statements might be considerably easier to use. One question the researchers addressed was whether “repackaging” financial statements might improve investors’ interpretation of this information. Further, while traditional balance sheets and income statements might help investors arrive at point estimates of future cash flows, actual outcomes can and do vary either to the upside or downside. A second research question was whether supplemental disclosures focused on these uncertainties would actually help investors make better trading decisions.

How do investors and markets react to these variations in the information provided through financial disclosures? The traditional thinking on market reporting has been based on “efficient-markets theory,” which holds that market prices reflect the economic implications of all public information, regardless of the format or presentation of the information. The key assumption is that prices are formed in a way that makes it impossible to earn abnormal returns from a trading strategy based on public information. The argument that underlies this theory requires three things: that there be traders who can identify and act upon instances of securities that are priced above or below real value; that the traders have an unlimited ability to buy under-priced securities and sell short; and that there is a well-defined process that will eventually reveal the true cash flows of firms to the market as a whole.

Some recent research has raised doubts about whether markets are, in fact, efficient. Many of these deviations from efficiency have been linked to the information-processing biases of individual traders. According to this alternative perspective, investors are subject to biases in how they process information because of general human cognitive limitations that lead them to adopt relatively simple strategies for arriving at decisions that may deviate from the principles of rational choice. Often, two conflicting motivations drive this behavior: the desire to make an accurate decision and the desire to minimize the cognitive effort needed to reach a decision.

In order to test these contrasting perspectives, the researchers devised a market laboratory experiment in which university students acted as investors reacting to differing amounts and types of financial disclosure. An important feature of this setting was that students actually bought and sold shares of stock, and the compensation they received for participating was largely determined by their individual success (or lack thereof) as traders.

The laboratory market investigation by Kleinmuntz and his colleagues yielded three primary findings. First, explicit disclosures lead to more efficient market reactions, even

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when the same information could be inferred from financial statements. Second, when supplemental disclosures were limited to one-sided disclosure of upside future opportunities, market prices demonstrated an upward bias, but only when the firms had unfavorable economic news to report. That is, firms that had to report bad economic news could mitigate the negative impact on their stock price by also reporting their “upside.” Third, a balanced, simultaneous presentation of both upside opportunities and downside risks mitigated this bias. The researchers suggest that reactions to such disclosures are affected by decision-makers both over-weighting explicitly presented information and reacting more strongly to perceived losses than to perceived gains.

These findings are consistent with how many psychologists view human decision-making. First, decision-makers tend to avoid cognitive effort by using information in the form in which it is presented to them. When faced with vague or incomplete information, decision-makers discount the missing elements. That is, explicit information is weighted more heavily than information that must be inferred. Another common psychological trait, loss aversion, leads people to react more strongly to negative surprises than positive ones. These tendencies do not mean that the markets in the experiment failed completely: The markets always reacted in the appropriate direction, but prices failed to move as quickly as an “efficient-markets” analysis would suggest.

This study by Kleinmuntz and his colleagues suggests two potential implications for how financial reporting standards ought to be revised. First, there is an important role for changing financial reporting standards in ways that make disclosures easier to understand and interpret, since this will help more investors make better investment decisions, in turn making capital markets more efficient. Second, standards that mandate disclosure of both upside opportunities and downside risks could limit management’s ability to manipulate market prices through voluntary presentation of upside opportunities alone. Investors would benefit from the clearest possible presentation of what management knows about both their downside risk and their upside opportunities.

With the support of PricewaterhouseCoopers, Kleinmuntz and his colleagues are currently building on this work. A follow-up experiment is concerned with evaluating new and emerging rules that address how companies must disclose their exposure to financial-market risk and how they use sophisticated financial instruments, like derivatives, to manage those risks. Understanding how investors think about risk promises to provide important insights about how to make financial disclosure as useful as possible to investors.

Donald N. Kleinmuntz is an associate professor of business administration in the College of Commerce and Business Administration, University of Illinois at Urbana-Champaign. J. Richard Dietrich and Thomas J. Linsmeier are former members of the UI accountancy department, and Steven J. Kachelmeier teaches at the University of Texas at Austin. For further information on this research you can contact Professor Kleinmuntz at dnk@uiuc.edu.
Research News

This page highlights the recent research achievements of the faculty of the UIUC College of Commerce and Business Administration. To find out more about any of the projects mentioned, contact the editor, Janet Fitch, who can put you in touch with the appropriate faculty member.

Grants

The Office of Research has again awarded quarter-time research assistants to college faculty for summer research. This year’s winners are Ruth Aguilera, Business Administration; Anil Bera, Economics; Joseph Broschak, Business Administration; George Deltas, Economics; Lorna Doucet, Business Administration; Hadi Esfahani, Economics; Ruth King, Business Administration; Jeffrey Krug, Business Administration; Ravi Madhavan, Business Administration; Nada Nasr, Business Administration; Nicholas Petruzzi and Dilip Chhajed, Business Administration; Michael Pratt, Business Administration; Jeffrey Schmidt, Business Administration; Anju Seth, Business Administration; Anne Villamil, Economics; and Mary Waller, Business Administration.

From the Center for International Business Education and Research, Anju Seth and Tailan Chi, Business Administration, $6,000 for data acquisition for the project “Entering New International Markets: Uncertainty as a Source of Opportunities and Risk.”

Ravi Madhavan and Joseph Mahoney, Business Administration, have received $15,700 from the Center for Human Resource Management for the project “Strategic Outsourcing.”

From the Center for International Business Education and Research, Ravi Madhavan, Business Administration, $7,000 for “The Globalization of the U. S. Venture Capital Industry: A Network Perspective.”

From the Steven H. Sandell Grant Program for Junior Scholars in Retirement Research (Boston College and the Social Security Administration) to Elizabeth Powers, Economics and Labor and Industrial Relations, $25,000 for “Public Retirement Programs and the Low-Income Population: The Impact of the Supplemental Security Income Program.”

Honors and Awards

Roger Koenker and Zhijie Xiao, Economics, were the winners of this year’s Excellence in Research Awards from the Office of Research.

Andrew D. Bailey, Jr., Ernst and Young Professor of Accountancy, will spend the coming year as an Academic Accounting Fellow in the Office of the Chief Accountant of the Securities and Exchange Commission, Washington, D.C., from August 1, 2000, to July 31, 2000.

Anil Bera, Economics, was invited to serve as a Lansdowne Visitor at the University of Vancouver, Canada, in March 2000.


Publications


unique attribute, the level of the unique attribute in the low-level product was still adequate, so that it was not distinctly low from their point of view.

The differences in the results for value premium and value discount could be due to factors specific to the product or consumer behavior. There is a theory that the amount of perceived similarity between high- and low-end products due to common features is not necessarily the same for both products, a low-end product is more similar to a high-end product than the other way around. Therefore, a consumer is more likely to perceive a valuation premium in a low-end product than a value discount in a high-end product.

Chhajed and Kim have shown that common attributes do, indeed, cause a change in the perceived value of products and that the effects occur even when the subjects have different levels of knowledge about the product. Their results also indicate that the change in perceived value takes place both when price information is known and when it is not, and that sometimes it can be moderated by a large difference in the unique attribute. There are several implications of this research for the design and marketing of products. Introducing a new product that shares important attributes with an established or leading competitive product provides customers with easy reference for product comparison. Knowledge about moderation can be used to design and position products with respect to a rival product with common features. For example, by attaching “Intel inside” marks on their products, PC companies try to create the perception that their products are functionally as good as any other computers — at a lower price. Furthermore, the price of high-end products may need to be reduced since the valuation discount makes a high-end product less attractive, whereas the price of a low-end product can be increased to take advantage of the valuation premium. It is useful for firms to bear in mind that common attributes may get more attention from buyers, and the valuation of the high- and low-end products tend to converge since they look more similar to one another. Sharing an important attribute may cause a higher degree of change in perceived value since buyers tend to pay more attention to important than less important attributes. However, the change may not be very large if the shared attribute is only present at a low level. Creating a large difference in a unique attribute can moderate a perceived discount in value, and adding such unique features could be a sensible design strategy.

Dilip Chhajed is an associate professor of business administration, College of Commerce and Business Administration, University of Illinois at Urbana-Champaign. Kilsun Kim received his Ph. D. in business administration from the UIUC and now teaches at Middle Tennessee University. For further information on this research, contact Professor Chhajed at chhajed@uiuc.edu.