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## Research Programs to Address Price Discovery Concerns

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### Introduction

This paper is intended to be a bit like the price discovery process itself. Within this symposium setting, we intend to throw out some research related ideas and see if you buy them. You will be a marketplace for our offered research perspectives, and we will let you go through a “discovery” process as to their worth. Good ideas may get bought, but bad ideas will be and should be hard to sell. Further, it was our agreed to responsibility to discuss research programs addressing price discovery concerns, questions and issues. This we will do, but not from the standpoint of developing a formal literature review, although one may be needed. Rather, the focus is on a general discussion of what we know, what we do not know and some questions that will, in turn, question our readiness as a research community to provide answers. We intend to challenge you as participants and to challenge our readers, and we hope to initiate and encourage continued discussion on this important topic.

As a word of warning, we are both products of the Land Grant University system and true believers in the Land Grant University mission. The portion of the mission that interests us the most is service to agriculture and the public interest. This belief colors our discussion. Our intention will be to encourage discussion on problem-oriented topics. The “problems” include those perceived by industry participants, policy makers, and producer groups as deserving of attention from the research community.

The motivation for this symposium came from general observations about the rapid structural and behavioral changes in the production and processing segments of the livestock and meat sector. These changes have resulted in substantial changes in price discovery. Of late, however, the pace of change has increased sharply. The data and graphics in Schroeder and Ward’s paper illustrate this clearly. We may have a radically different world of markets in as few as five years. Within this environment of accelerated change, populist pressures are resulting in proposed legislative and regulatory solutions that may or may not address the perceived problems and the “solutions” could have unintended and negative influences on the competitiveness and effectiveness of our markets. But the pressures on legislators to “do something” are intense. Extension specialists and researchers who have had the opportunity to interact with producer groups on these topics can attest to the depth of the emotions involved.

Liquidity in traditional cash cattle and hog markets is rapidly declining. Spot markets are being replaced with contracts, marketing agreements, partnerships, and alliances between producers and processors. Retailers have recently started to come to the same bargaining table. The demise of spot markets has numerous implications for the livestock industry and raises several quandaries for public university research programs.

Why are these changes an issue? It is the “omelette” side of Rhodes’ argument that grabs our attention. We find the following paraphrase memorable and good motivation for the perspective we bring to the discussion:

The final point here is that I understand on good authority that unscrambling omelettes is very difficult. Far better not to break the eggs if you don’t want them in the omelette. That’s why some of us keep worrying about market structure. We know how messy it is trying to get it back if it gets where you don’t want it. That’s why some economists raise the warning flag before they see any trouble. And I say that to you industry people who think we are a bunch of worrisome old maids always hollering about what might happen and who say to us, “When it ain’t broke don’t fix it”, there’s the omelette side as well as the broken watch side.

V. James Rhodes (Purcell 1988)

The observation was made in reference to industrial organization and investigations of market power. However, it applies to concerns with any structural change. It also speaks to the need for research and extension university faculty to be pro-active, especially in times of rapid change.

### **What Do We Know?**

In our minds, the structural and behavior changes that are taking place in the livestock industries satisfy a lot of economic intuition. The changes are completely consistent with the economic evolution of these industries. The growth of livestock and meat production in the 1950s, 1960s, and 1970s followed the growth in U.S. population and income. Production systems were developed that stressed specialization and improved technology. The marginal returns to these changes were largely exploited by the 1970s, and the industries began to search for other means of reducing costs. Methods to reduce risk and transactions costs then saw significant gains through the 1970s and 1980s. The most recent decade, the 1990s, has seen growth in exports of livestock and meat and efforts to focus on managing production to allow consumer-driven modifications to product form. Population growth and income-quantity effects in demand now appear to be small relative to the convenience, consistency, and income-quality effects. Simple means of achieving coordination that were functional into the 1970s are now seen as inefficient and outdated. We are now seeing substantial changes in the forms of vertical coordination, forms that have been in the process of development since the 1980s.

A primary catalyst for change in the 1980s and 1990s has been the need to restore some portion of lost consumer demand. Demand indices monitored by NCBA show declines in beef demand of nearly 50 percent from 1980 through 1998. Research at Kansas State University to identify the “drivers” of change confirms the long-standing declines and reconfirms the need to revise the product offering. Across the same time period, a comparable index for pork shows cumulative decreases in demand of 35 percent.

In efforts to address the demand problems, alternative and non-price means of vertical coordination have emerged to allow needed quality control and to direct production of more consistent and consumer friendly fresh beef and pork offerings. The traditional price-based system has failed to price to value, failed to communicate needed changes to producers, and failed as an effective price discovery mechanism. The economic incentives associated with a revitalized consumer level demand are huge, and non-price means of vertical coordination were inevitable and quite predictable. We wonder why it took nearly 20 years for the profits and potential from better serving the modern consumer to prompt movement by the big processors.

There is relatively little research, in spite of decades of uncertainty and controversy associated with the non-price means of coordination, specifically on the price discovery processes in these markets and on why the pricing systems failed. However, there is much research that has implications to our understanding of price discovery in livestock and meat product markets.

Most of the recent research on price discovery has measured the dynamic relationships between various market prices within the temporal, spatial and product forms in the commodity system. (Better examples of this work include Goodwin and Schroeder, and Schroeder and Goodwin.) The research examines leader/follower relationships between different price series. Formally, the model results can be tests for the existence of arbitrage opportunities. More informally, the models reveal markets that do the most effective job of discovering and incorporating the emerging supply and demand information into a market-clearing price. That market then usually becomes a focal point for economic agents in other market areas and there are subsequent price adjustments in these related markets. There is an enormous volume of literature in this area.

Specifically, research has examined the relationship among spatial fed cattle markets and hog markets. It has also examined the relationships among beef product markets and pork product markets. Futures contracts prices have been included in the set of markets and the futures exchanges are often found to be the focal point markets. Research has usually looked at farm-level prices and prices up through the wholesale sector. The work is voluminous and new pieces of research have paralleled the development of time series econometric methods. But virtually all of the existing research assumes market institutions as given. This is a serious limitation in addressing emerging issues as we move to a new millennium.

These comments are not intended to disparage the usefulness of recent research. An issue that needs to be addressed in these studies is how the pricing processes change over time. Most research estimates models and documents relationships for a given time period. The implicit

assumption is that the relationships do not change over time. This is unlikely to be the case. Conclusions drawn with respect to how leader/follower relationships have changed over time. There is a need for replication that is especially important given recent trends in structural change. Many of the grassroots observers of the price discovery in cattle and/or hogs believe that the effectiveness and the competitiveness of the price discovery process are being destroyed or changed by market concentration. And when the available research does not support those beliefs, then the public perception is that the research is flawed or dated and there are clamors for new policies and more strict market regulation that run on unabated.

This may be the research community's fault. One of the concerns about the changes away from price-based system is that markets are becoming thin and handling too little volume to be competitive or effective in price discovery. Except for research efforts attempting to explain the volume of futures contracts traded for various commodities, there are almost no studies that examine the implications of changing volume or quantities through various market institutions.

There are a considerable number of past studies that document the trading institutions of agricultural commodities at some point in time. The history of research on price discovery for a given institutional setting is considerable. These more nearly historical approaches are considerably different from more recent research. Whereas recent price discovery research generally employs time series methods and regression, the older research is descriptive and any analysis tends to be focused on analysis of transaction costs.

Much of the early research was published through the NC-117 regional committee. The landmark works include the monographs *Coordination and Exchange in Agricultural Subsectors*, *Pricing Problems in the Food Industry (With Emphasis on Thin Markets)*, and *Market Information and Price Reporting in the Food and Agricultural Sector*, and the textbooks, *The Organization and Performance of the U.S. Food System* and *The Food Manufacturing Industries: Structure, Strategies, Performance, and Policies* that emerged from committee member efforts and cooperation.

The most recent textbook coverage of research on price discovery is best summarized by Chapter 11 in Tomek and Robinson's *Agricultural Product Prices* (1990) and the chapter, "Alternative Pricing Mechanisms in Agriculture" by Tomek in *Future Frontiers in Agricultural Marketing Research*, edited by Farris. The chapter by Tomek makes some innovative suggestions for future research. The first is the need to study pricing mechanisms as they respond to changing market structure. Are the mechanisms that are chosen the result of power or in response to power? Second, how do pricing mechanisms respond to the changing boundary of the firm? The firm may be more of an efficient market than the actual marketplace. However, the firm may also choose to eliminate the signals usually performed in the pricing function. After all, pricing transactions consumes resources. In this case, does the change result in a free-rider problem? If the firm abdicates pricing for cost reasons, does this create a larger and long-term market failure?

All-in-all, Tomek has sited the need to integrate transaction cost and pricing efficiency literature, where pricing efficiency is not simply the existence of arbitrage profits but where it addresses the question of bias and minimum variance efficiency of the prices discovered. The approach allows us to answer if a particular pricing mechanism is better than alternatives. However, Tomek recognizes the difficulty of measuring the relevant costs and benefits. These issues are still relevant today, but there is almost no research that has taken up this call.

In early 1987, the Research Institute on Livestock Pricing was formed. During volatile markets and in the presence of increasingly strident opposition to trade in futures, the Chicago Mercantile Exchange provided some financial support and helped start the Institute. Positioned in the Department of Agricultural and Applied Economics at Virginia Tech, the Institute coordinates research program and helps support research at other Land Grant Universities on a sub-contract basis. Early focus was on issues that relate to policy and market regulation and a number of research efforts dealing with price discovery, especially price discovery in concentrated markets, were published and disseminated through national conferences (Purcell, 1990, 1992 and 1997). The 1997 efforts dealt specifically with price discovery in concentrated markets and covered captive supplies, non-price vertical arrangements and market structure as they reflect changing institutions, and changing pricing processes and price discovery in concentrated markets. More recent publications from the Institute include an effort on price discovery in pork (Kenyon and Purcell, 2000) and a White Paper on issues and needs in the beef sector (Purcell 1999). Ward, Feuz and Schroeder looked at formula pricing and price grids for fed cattle in a 1999 release.

The Institute has also helped finance investigations into the methodology employed in tests for market power in concentrated markets. Jones et al. (1997) conducted a Monte Carlo investigation and determined the often used methodology that models marginal costs and marginal revenues and tests for a “wedge” of market power is sensitive to the level of aggregation and to the choice of functional form in estimating the cost curves. If data are aggregated over time and across decision periods of the plant or firm, or if data are aggregated across firms, the tests are not statistically reliable. And there are still further reasons to be concerned about the efficacy of the tests. The “market power” test is based on a very strict assumption of profit maximizing behavior that requires the plant or firm make production level decisions for each weekly or other short run decision period to maximize profits. Driscoll et al. tested beefpackers’ decisions on weekly production levels at the plant and firm levels and concluded the strict profit maximizing behavior assumption is not met, and this violation renders the market power test unreliable. This research indicates that the agricultural economics profession need to consider approaches which allow for more attention to the way firms behave in concentrated markets versus testing cost and revenue flows. The studies referenced here and other related studies can be found on the net at [www.aaec.vt.edu/rilp](http://www.aaec.vt.edu/rilp).

There is, it is apparent, a wealth of agricultural marketing research that is useful for thinking about price discovery issues. The research on captive supplies, on formula pricing, on concentrated markets and on price spreads all contributes to our understanding. Often, however, the authors of this body of research continue to encounter calls for market and business behavior

regulation that appear to be grounded in a lack of understanding of the important distinction between price discovery and price determination. The \$10 hog prices in late 1998 were not due to any emerging and/or additional shortcomings in the price discovery system. They were related to processing capacity, a cyclical and seasonal surge in slaughter hog supplies to record levels, and the long observed “sticky” retail prices that failed to decline and encourage increases in quantity consumed. A market-clearing price that dipped to \$10 and below had to be determined to reflect the unusual supply-demand situation and no matter what the price discovery process happened to be, record low prices would have been discovered.

A U.S. Senate hearing in June of 1996 was called at the behest of cattle producers who had seen calf prices go below \$50 per cwt. and well below costs of production. But corn was at record high prices with cash transactions pushing above \$6.00 per bushel in some deficient grain producing areas in the summer months of 1996. Those unusual price levels, very painful to producers of livestock, were not the result of a total failure of competitive price discovery processes. They belonged in the domain of price determination and were largely explainable by supply and demand levels, but many if not most producers and a number of producer groups certainly do not believe that assertion on our part. They believe the disastrous prices were attributable to problems with price discovery in a system characterized by large first buyers and high levels of buyer concentration. If our research and/or our interpretation of what was happening in terms of economic theory and reasoning are right, the results have not been presented in such a way that they were and are believable to many at the producer level.

The array of research that helps us think about price discovery extends into still broader areas of activity. Significant research efforts address futures market efficiency, futures market event studies, and applied price forecasting work. Futures market efficiency studies have revealed that new supply and demand information is quickly incorporated into the discovered price. These markets are generally very efficient. The futures markets play a leadership role in price discovery because of their capacity to register the impact of new information quickly and efficiently. Event studies suggest similar proficiency at the futures market level. Futures markets perform an anticipatory market function. They reveal the market consensus prior to events, usually the release of USDA market information reports, and adjust rapidly to surprises in market information. Arbitrage opportunities then provide the impetus for adjustments in cash markets.

Forecasting studies, sometimes used in market efficiency studies, often reveal a dichotomy of information. Prices can be successfully forecasted through incorporating the proper fundamental variables. However, there are limits to the degree with which forecasts can be improved. A large portion of price behavior may be attributable to various stochastic processes, which can be successfully modeled but are difficult to forecast.

### **What Do We Not Know?**

What we do know is considerable but the number of interesting questions about price discovery to which existing research cannot contribute is also considerable. There are significant

shortcomings. Some of these shortcomings are problems with economic research in general, but part of the problems and shortcomings is due to the areas on which agricultural economists have chosen to focus.

The shortcomings in the general economics literature were well summarized by Tomek, who himself is referencing Morgenstern. Tomek states, "Research on pricing institutions has not been based on a unified conceptual framework, since economic theory has had relatively little to say about the process of price formation (Morgenstern, 1972)." And later he notes, "There is no unified theory of why price mechanisms evolve and change. Some concepts are borrowed from industrial organization and some from the theory of the firm. Some research is commodity specific and examines factors peculiar to that commodity."

The industrial organization line of reasoning relates changes in pricing mechanisms to changes in market structure. Increased concentration among agricultural product buyers may result in concentration among sellers as transaction costs are reduced. But concentration and the often-related vertical integration may be in response to price and price-related risks such as quality and quantity variation. The theory of the firm reasoning relates to the age-old question of make or buy. The boundary of the firm activities is determined in part by the efficiency of different functions. Firms will internalize functions when the transaction costs of performing the function through a marketplace are relatively high. The agricultural economics literature is relatively devoid of research on these issues.

The lack of a theoretical treatment of price discovery, or price formation, has also been recognized in the economics profession. In his book on the informational role of price, which is a compilation of a number of articles, Grossman (1989) states, "The mainstream economics understanding of competitive markets treats prices like walls of a maze and people as blind rats. Running about, crashing into walls, constrained by but learning little from price."

There is also a general lack of recognition that markets, and the marketing and pricing process, consume resources. The collecting of information, analyzing it, and forming price expectations can be costly. But the costs of price discovery and the conscious decision by some firms to rely on discovered prices in other market areas have not received much research attention. We have not had much to say about the pros and cons of some firms essentially choosing to be "free riders" and to use the prices being discovered by others in sometimes-distant markets. With the new legislation on mandatory pricing, however, this choice will no longer be available to livestock processors of significant annual volume. They will be required to get into the business of collecting and organizing for dissemination huge volumes of price and related information.

Attitudes of researchers on the importance of the issue of whether all firms are involved in assimilating and interpreting price may be changing, however. But if attitudes are changing, it is happening primarily in the economics literature that is most closely aligned with business research and education. The transition from spot market purchases to transfer pricing, vertical integration, and into contract-based vertical coordination have been common problems for corporate business



for some time. Economic models of business behavior that explicitly account for transaction costs and varying degrees of involvement in collecting and interpreting information are more frequently seen in this literature. These models are often used in conjunction with contracting decisions.

## **The Questions**

Positive externalities associated with publicly quoted spot market transactions are disappearing. What are the implications of this for competition and market efficiency? Can viable commodity futures contracts exist without active and liquid cash markets? How important are cash markets for efficient price discovery? When are thin cash markets too thin for efficient price discovery?

Should university research and extension programs refocus efforts away from studying cash market trade toward issues associated with long-term contractual developments? Will we have access to data in the contract world or will it be proprietary in nature? By shifting our emphasis, would we be contributing to the demise of cash markets? Should our efforts shift from farm-level price discovery to wholesale and retail price discovery? With less data, do we have adequate tools to correctly estimate impacts?

What are the changing information needs of producers as cash markets disappear? What role do public university researchers and extension specialists have in an environment that is increasingly substituting private negotiations for public price discovery? What impacts are there of working explicitly or implicitly with vertically coordinated systems involving a few, large agribusiness firms instead of a broader taxpayer base? If the livestock-meat sector is making the transition from spot market price discovery to privately-determined price discovery, what can the public sector do to guide and assist participants in the transition? Can we identify the most desirable pricing system for the future?

An example of the lack of thinking about the issue of price discovery is evident in the growing literature on financial derivatives. Derivatives are financial instruments whose value is derived from the value of another asset. Futures contracts and options on futures contracts are simple examples. There is an extensive literature on derivatives and this area is credited in the finance literature with being one of the important developments of our recent decades. However, derivative pricing models are revealing, perhaps, in terms of what they do not stress. Derivative prices are usually expressed as a function of the underlying asset price and time to maturity:  $F_t = F(S_t, T-t)$ , where  $F_t$  is the derivative price,  $S_t$  is the spot market price, and  $T$  is the expiration date. The entire literature is built around an understanding of the function  $F()$ . Almost no consideration is given to the discovery of the spot market price  $S_t$ . This is one of the main questions in the hog and pork industry but the widely applauded financial derivative literature has nothing to contribute to the question of valuation of the underlying asset.

Will the solution to the hog pricing question be a success similar to successes the agricultural economics profession had in the late-1970s in instigating changes in the pricing of meat. Extensive research documented problems with thin markets and formula pricing. Following the

recommendations of this research, the industry moved away from some of the problem practices. Possibly the hog industry will also recognize the problem of formula pricing off a thin or uninformative reported cash price range, and will move to a more logical alternative. However, the lack of an NC-117-like effort to achieve this and address other pricing questions is notably missing.

No discussion of what we don't know from research would be complete without a commentary on the research and publication process. We teach our graduate students to formulate a model, collect secondary data, run econometric models, draw conclusions, and then publish in journals. We think, sometimes, that we teach them too well. We seem to be forgetting the public service component, and we don't mean just extension. Shouldn't research be useful? Shouldn't it be useful to someone other than another agricultural economist, or a finance type or a theoretical economist? Shouldn't it all be useful? Perhaps it does not all have to be useful, at least not immediately. There is room for development of methods that will allow even more useful research in the future, but there does need to be a "usefulness" component. How useful was the research of the 1980s, with arguments in the journals that spanned nearly the entire decade, on whether the beef sector had seen structural demand change? The industry absorbed huge hits from a continuing reduction of the demand surface, with declines in inflation-adjusted prices of over 30 percent from 1979 through 1986 in the presence of roughly constant per capita consumption of beef. Of what value to the industry was the long running discussion on methodology and the testing for change in structural parameters?

We collectively wonder why our profession is shrinking. Are we actively involved in addressing problems the industry thinks important? Is there any industry involvement in agricultural economics associations and meetings? To bring this point home, are there any non-academics at this symposium? We contrast this with our experience at animal and meat science association meetings, producer association meetings, and other industry group meetings. Academic professionals and industry members in other scientific disciplines mix regularly, but that does not always happen at the agricultural economics meetings. Where are the organizations and meetings in which academic agricultural economists, government policy makers and market regulation agencies, business professionals, and producers groups interact? Is it because there are a lack of economic problems? We do not think it is the lack of economic problems in agricultural markets. Do we have a responsibility to change this?

This change may be the most difficult because it speaks to the research and publication process, the dissertation research process, and the academic evaluation process. It also calls to light another possible market failure within our own profession.

Academics are evaluated, in part, by the number of journal articles that they publish. And there is some difficulty determining the quality and contribution in various pieces of published research. Thus, there are incentives to work on short-term publishable projects. This trend can be seen fairly clearly in the more popular and recent approach to dissertation research. Instead of tackling very difficult questions, sometimes without success, more and more current dissertation research

is focused on producing a series of publishable essays. This is not in itself bad, but the hard questions go unanswered. Perhaps our younger colleagues would suggest that is what tenure is for and thereby, justifiably, put the ball back into our court. Further, the professional agricultural economics journals took a decidedly neoclassical turn in the 1980s – especially the American Journal Agricultural Economics. The agricultural marketing research that has since been published is also exclusively neoclassical. The time it takes to bring the price discovery questions into the neoclassical framework is prohibitive and the current publication and evaluation process is a real impediment to meeting our Land Grant University mission. This is a difficult statement to make because we believe the neoclassical approach is the most ideal. This should be evident in our work. Further, we believe in faculty accountability. However, more inclusive research and publication approaches may be needed to address pressing issues.

There is a need to demand that research address real problems in the publication process. There is a need to address high-risk and measurement-difficult problems. There is also a real need to extend research to policy makers and producers groups. The market failure is that no one has the direct incentive to change what is happening to the academic community, the agricultural economics profession, and agricultural marketing research.

### **Perspective on Needed Research**

We intend in this section to outline some of what we perceive as the most important topics for future research. And in the process, we will reflect a growing recognition that the most interesting questions we encounter are basic in nature and need long-term research programs for satisfactory answers.

The most common questions and issues have to do with market institutions, with public goods, and market failures in our traditional pricing systems. There is a rising chorus of concern about the move to contracts, formula pricing arrangements, and various types of vertical arrangements and alliances. But we would argue these changes were inevitable and guaranteed by the inability of the traditional pricing systems to provide the needed quality control and vertical coordination that is essential in moving to a consumer driven system.

Pork processors could not get to consumer driven and into discriminating global markets like Japan with the slaughter hogs they were being offered in the late 1980s and the early 1990s. The hog quality was simply too variable. There was no pricing to value because the product attributes of value to consumers, including but not limited to leanness, were not being brought into the pricing process. There was no move in the USDA to be pro-active in developing technology to measure leanness and changing grades and the way the product was described. The policy in USDA is to wait for the industry to come demanding changes in grades and grading. But that is not going to happen in an industry with fewer and larger processors who were trying to develop private branding. The result has been a swing to non-price means of vertical coordination, including vertical integration, of almost unbelievable magnitude and quickness.

There was no surge of research on grades, grading, technology in measuring leanness and other product attributes, and on how and why effective grades and grading is a public good. In effect, we have watched the traditional price driven system disappear and then started to bemoan the demise of the independent product that has come with the changes.

In beef, the situation has been and is even worse. The meat scientist community agrees that 10 to 20 percent of USDA Choice grade fresh beef is a poor eating experience, i.e., too tough to chew. But there has been very little attention paid to the implications of this abysmal product performance and what it has meant to consumer demand for beef. Moving to non-price means of gaining some quality control and at least a minimal level of vertical coordination, in quality and quantity flows, was necessary to efforts to get to consumer driven. The societal returns to efforts to develop technology to measure tenderness (and other product attributes) and to allow them to be brought into the price discovery processes would have been huge. And the current rapid demise of the price driven system and the independent producers that system tended to sustain might have been avoided. Is there a study that deals with this important topic in a way that might have influenced what is happening in this commodity sector?

It is undeniably true that traditional agricultural marketing and price analysis training is short on these topics. Public goods and market failures raise questions more nearly related to natural resource economics. Transaction cost economics, which has much to say about the type of structure that will tend to evolve, is more nearly in the realm of institutional economics.

It may well be the case that these topics cannot be addressed following traditional journal article methods. Game theory will be needed if we start to focus more on how big firms in concentrated markets behave, and there may be less need for the econometrics that the journals favor. And the game theory approaches will likely need to extend perspective beyond the traditional industrial organization approach. We may need instead more nearly an experimental economics approach that may necessarily involve the collection of primary data.

Trading through electronic media has to be given more research attention. What about electronic markets for livestock or meat? How about e-trade in futures markets? Why are there relatively few hedgers and why aren't futures markets used for pricing instead of the increasingly problematic cash markets? Even if all these questions start getting more attention through research, we are not especially optimistic. There is something here that is difficult to put in words -- a "creeping conservatism" of public opinion toward agriculture that also tends to exist within the agricultural institution. It has to do with immediacy of demand and the addressing of all public choice activities at the margin: "if it doesn't pay now, we don't want to do it." We are not advocating wasting resources but there are short-run and long run tradeoffs that are hard to evaluate, especially when dealing with those "omelettes." The payoffs may not be immediate and short run when you are trying to analyze the implications of ongoing structural change, especially when that change might be at least partly due to the inability of governmental agencies to make progressive changes. But this perspective runs counter to the fact that those institutions now involved in public policy and public choice always want to "do something." Usually this means

assessing blame on the large processor and clamoring for regulations to limit or control conduct. Rarely will institutional or policy change solutions to such problems be considered.

With respect to the price reporting issue, what producers really want is access to information about non-price methods of coordination. This was, arguably, why we have seen legislation to support mandatory price reporting. Producers really want to know the terms of trade. Provision of this information, one could reasonably argue, does not fall into the realm of price reporting, but not many of the current advocates of market regulation would agree with us on this.

The issue of price reporting was one of the main discussion points in the *Report of the Committee on Concentration in Agriculture*. The conclusion from the committee was that more information on prices is needed. The USDA data collection system is already focused on counting noses, bushels, pounds, and dollars. In the changing and concentrating agriculture of the year 2000 and beyond, producers will want and feel they need more information than that of just numbers and dollars. But there are major issues of what is to be reported as data that must be considered and addressed. What is proprietary? What is too important to remain proprietary? And what do we do to future investment decisions of the large processors if we insist they provide data and information that has historically been seen as proprietary?

Market power issues are by definition confrontational. Competition in concentrated and concentrating marketplaces must be improved, we hear. But the only avenues of change that seem to be considered are through litigation and congressional initiatives to limit behavior of buyer and seller and regulate the marketplace. Are any institutional solutions going to be considered? For example, will the use of electronic markets as a means of expanding access to buyers and sellers be considered as a way of improving competitiveness? The answer is probably “not likely” because we encounter once again a dearth of research-based information on ways the traditional pricing system might be boosted in its race with vertical integration, contractual coordination and other means of achieving vertical coordination.

As a profession, we have a responsibility to get involved in these ongoing policy and market regulation processes. It will not be easy, because at least some of our research results have not been and will not be what the advocates of market regulation want to hear. And it is very likely that we have not identified and dealt with all the negatives of highly concentrated markets. The level of activity needs to increase and the tendency to be pro-active needs to be encouraged, but those changes will not be easy. A first step, we would suggest, is more of the interactions within our community of professionals that this symposium was designed to encourage. Let’s all get involved and generate the good research efforts that are needed to guide the important decisions that are being made in Washington and in the headquarters of state and national producer organizations.

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