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HOG PORK SUBSECTOR STUDY IN REVIEW:
RESEARCH AND ADMINISTRATIVE EXPERIENCE

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SOME BACKGROUND

Ben French has discussed subsector research on a broad scale. We are discussing one particular effort which carried this label. In order for the reader to put this particular effort into context, we need to go back and sketch the outline of how it came into being.

As a result of Shaffer's paper and the Lincoln seminar in 1968, which French has reviewed, considerable interest in and discussion of the idea of subsector research was generated, both in ERS and the colleges. The ERS Administrator's office employed George Brandow of Pennsylvania State University under a cooperative agreement to outline a proposal for subsector research in one industry. In large part because of Brandow's interest, the hog-pork industry was selected.

Brandow's proposal was for a fairly narrowly-defined and tightly-structured study of the costs involved in the hog-pork subsector from farrowing to slaughter. (2) It involved a comparison of these costs under the free market and various forms of integration.

Shortly thereafter, a meeting was called of Department heads from approximately ten hog-producing States and representatives from ERS. This group expressed considerable interest in participating in a pioneering effort to carry out subsector research in the hog-pork industry. However, there was a general feeling in the group that Brandow's proposal was somewhat too narrow. A committee was appointed under the chairmanship of Wilfred Candler of Purdue University and including George Brandow, Richard Crom, ERS, and Lehman Fletcher, Iowa State. They submitted a "Proposed Hog Industry Subsector Research Program" in July 1969.

This proposal envisioned a comprehensive research program on the economics of hog production and pork marketing. It included many more aspects of hog production and marketing than were included in the Brandow proposal.

At this point, the present authors were appointed co-leaders of the study. In September 1969, they visited most of the States which had expressed an interest to explain the nature of the research envisioned and to obtain expressions of interest from them. Eight States (Illinois, Iowa, Michigan, Minnesota, Missouri, Purdue, Texas, and Wisconsin) indicated an interest. It then became evident that funds were not available to support research on this scale. The concept of a comprehensive research program in the economics of hog production and pork marketing was scaled down. The proposal which was approved in February 1970 was for a much more limited but still quite broad effort which involved approximately 10 scientific man-years plus a substantial number of graduate students. The number of participating parties was reduced substantially (Purdue, Michigan State and ERS) to fit the resources available. Research got underway July 1, 1970, and is scheduled for completion in 1974.

Output

This paper is not designed to report the research results from the Hog-Pork Subsector Study. Rather, it is designed to report on research and administrative experience in trying to "lead" this particular subsector study. Particularly, with respect to the question: Should more of our research be organized as subsector studies? A cursory review of the output

of the project is necessary, however, if the reader is to understand what the authors think was, and was not, achieved.

Major "lumps" of output from the project can be identified, by principal workers, as:

Schneideau and Duewer:	National Symposium on Pork Coordination. (14)
Babb and Frahm:	Behavioral Research on Attitudes of Farmers, Feed Firms and Packers to Contracting Features. (1, 7, 8)
Bursch and Hayenga:	Survey of Farmers, Feed Firms, and Packers Attitudes to Contracting Integration. (3, 4, 10)
Crom, Duewer, Sullivan, Liu, Vincent:	National Macro-Disaggregated Simu- lator of Hog Pork Subsector. (5)
Snyder and Candler:	Short Term Coordination Model of Hog Pork Subsector. (15, 16, 17, 18)
Kennedy and Candler:	Simulation Model of Hog Pork Stabilization Schemes. (6, 11, 12, 13)
Crom and Vincent:	Simulation of Alternative Coordination Strategies at the National Macro-Level

This is not by any means an exhaustive list of the work carried out under the subsector study, but it does give an adequate feel for the "lumpiness" of the research carried out, the relative lack of evident interface, and the people with major responsibility for particular topics. We certainly did not get a smooth, continuous, seamless study of the subsector.

On the other hand, the National Symposium, and the studies of farmer attitudes did give us a fairly clear indication that "integration" was not likely to become a hot political issue in the Midwest in the immediate future. (Immediate past at this writing.) The attitude of successful Midwest hog producers was that they were not afraid of competition from large organizations; that they would consider contract offers on their merits; and if these offers held realistic promise of higher incomes, they would sign. At the same time, Midwest hog producers were extremely skeptical as to whether any integrator would be able to offer this type of contract.

The studies of Bursch and Hayenga showed a markedly different managerial attitude between Midwest and Southwest hog producers. There are producers in the fringe areas who are ready to, and know how to, delegate managerial authority. There are very few Midwest farmers who know how to do this. Thus, the existing Midwest hog industry does not appear to be a fertile ground for integrated production. 1/

Jim Snyder's work has produced a "research utility" in the sense of an easily used computer model which permits a reasonable profile of retail sales to be "connected" to a profile of available hogs. This is at the research level, so that there is considerable aggregation within the model. Nevertheless, it permits a much less aggregated approach to the study of "quality" of pork products, and the "value" of hogs than has previously been available.

George Kennedy's work produced a simulator capable of reproducing the impact of various pork price stabilization policies over the last 15 years

(or such other price-quantity profile a researcher might wish to specify). It is, of course, necessary for the researcher to specify supply and demand elasticities, in order to use this model, but given these assumptions (or a range of assumptions) the model can investigate a wide range of stabilization policies, operating at the producer or consumer level.

Policy Issues

Since inception of the subsector study, we would nominate three policy issues which have been important. The first issue was foreseen, but did not emerge as a felt problem, while the other two were not foreseen, but did arise.

The issue which we foresaw concerned a rapid increase in integrated hog production, with a loss of managerial control by integrated producers and/or a downward pressure on incomes of un-integrated producers. This issue failed to arise. Our studies showed that it was unlikely to arise as a major issue within the Midwest. Due to budget limitations, we had, in any case, decided not to attempt any in-depth study of interregional competition.

The issues which overtook us were:

- a) The Degree and Form of Competition in the Subsector, and
- b) Price Control for Pork Products

The competitiveness of the subsector was studied by a USDA Marketing Team under the leadership of Jack Armstrong.

This Marketing Team concluded that there were inadequate premiums for "quality," and advocated competitive arrangements based on producers versus packers, and presumably packers versus retailers.

Results from the subsector study suggested two things:

- a) From Jim Snyder's work, that any underpayment for quality was relatively slight, and
- b) From Em Babb and Bob Schneideau's work, that there was a quite different way of looking at competition, i.e., as between one hog-pork subsystem and another. Retailers, packers and farmers working as a team, optimizing their decision for the benefit of the system as a whole, and competing at the retail counter with other retailer - packer - producer teams.

We take some satisfaction in the fact that these conclusions were available from the subsector analysis at the time of the Marketing Team study, although they were not fully incorporated into its thinking. More on that later.

On the second topic, price control, we again had an analytical tool available from the subsector study, at the time that decisions on pork price controls were being taken. Again, unfortunately, it was not fully incorporated into the policy decision on price controls. Since it was almost entirely a political decision, perhaps we should not be too surprised. On the other hand, the eventual decision to remove price ceilings on pork may owe something to analyses such as this.

Managerial Input

Each individual project had its own peculiar managerial features. Some such as the Babb-Fahm and Kennedy-Candler studies were standard major professor-graduate student efforts. Others such as Bursch-Hayenga, Crom

and team, and Schneideau-Duewer proceeded with less direct managerial input, once the decision to go ahead had been taken.

There are three areas where the management of the subsector research probably differed from more traditional forms of research management:

- a) Funding. After the rather traumatic period of getting the subsector financed, we believe the individual research workers found access to funds within the project to be easier and more direct than the normal approach to funding. This is because the funds were already ear-marked for the subsector study, and a verbal commitment to (or discouragement of) a project could be obtained essentially instantly. A written proposal and budget was still needed, but this followed a verbal discussion of the need for and scope of the project. The proposal did not need to be written to convince the decisionmaker, rather to confirm verbal agreement which had already been reached.

This was particularly clear in the case of the National Symposium, where publication of the proceeding, honoraria, etc., were agreed to with very little formality, thus leaving Bob Schneideau and Larry Duewer to get on with organization of the symposium itself. The conception of the usefulness of a symposium, the desire to publish proceedings, and the knowledge that funding would be available were essentially simultaneous. This is totally different from having to write

a proposal, send it to, say, Washington, and wait an unknown time to find out if it will be financed.

This same "quick response" is available in principle via traditional methods of research management. If funds are available, a researcher knows who can decide to fund the project, and if the administrator and researcher are enthusiastic about the project, then the availability, in principle, of funding could be agreed over the phone (leaving the "proposal" as a confirmation of the phone conversation). In practice, research administration does not often work this way, particularly in the universities.

- b) Coaxing: Particularly in Jim Snyder's coordination model, but also with other projects, there was an element of "coaxing" which is not usually a feature of research management. This took many forms, but, for instance, there were many times when an informal review of the status of the project was initiated by management rather than the researcher. On occasion these reviews would verify resource bottlenecks that the researcher had been subconsciously aware of (i.e., before the review the research worker would know he had to do something about x. After the review, we would have decided what we were going to do about x. If the project needed, for instance, extra technical backup, this is not something that the researcher can resolve alone. It is not only the availability of funds, but also who is available, whether they can be shared, etc.).

Similarly, questions arise on what degree of abstraction would be acceptable, exactly what policy questions the study may be expected to address, and so on. These are questions the researcher could resolve in isolation, but he would have little confidence he was solving them "correctly." After this type of informal review the researcher should be confident of the direction his study should take for the next few weeks, and with any resource bottlenecks clearly identified, and hopefully, resolved.

We do not think this informal review process typically takes place within traditionally-managed research projects.

- c) Interest: We would claim to have been successful in giving researchers an interested and critical audience for project discussion, in their formative stages.

In any research project, there are innumerable options and alternatives. It is very helpful to a researcher to be able to discuss these alternatives with an interested and informed audience. A number of these discussions were organized within the subsector project. We were able to discuss the relative importance of focusing on quality versus alternative production technologies, versus attention to timing of production/marketing decisions, etc.

We believe that these three research management features are attainable within traditional approaches to research management. To attain them, however, would require changes in current administrative practice and expectations. The most important change, however, concerns the relationship of research to policy.

Policy Considerations

In one area we were particularly unsuccessful in the subsector project. Namely, in getting our research findings and capabilities integrated into the policy-making process. We failed to influence the Pork Marketing Team report on competition within the subsector and we failed to influence the decision to control the price of retail pork products. This was not because we had nothing to say, and was not because the relevant policymakers were unaware of our existence. To be completely frank, I think it was because decisionmakers:

- a) Did not expect us, as researchers, to have anything useful to say, and
- b) Had not been involved in formulation of our research priorities and approach.

This policy failure is not unique to the subsector approach, rather it is characteristic of much research of the USDA-Land Grant College system.

This is not to argue that research never affects policy; merely to say that too little research is directed to a felt or anticipated policy need and too little of the relevant research is in fact used.

This leads back to a reconsideration of Jim Shaffer's review of the first twenty years of marketing research and his suggestion that a subsector approach would lead to a marked improvement in research productivity.

Firstly, let us enter the caveat that one experience of a so-called subsector study cannot disprove Jim's hypothesis. He, presumably, meant a well managed subsector study; and by "subsector study," he likely had some particular types of methodology in mind. The evidence from the hog-pork subsector study is only relevant to the authors peculiar management style and the types of work we have been able to elicit under the rubric of a subsector study. If the reader likes what we have done, he can say that Jim had a point. If he does not like it, he can say the authors messed up a good idea.

Secondly, let us address the question, "Are subsector studies a sufficient, or even a necessary condition for improved (marketing) research productivity?" After four years experience with a subsector study, and rather belatedly, the authors would answer "no." We would say that the necessary and sufficient condition for improved (marketing) research productivity within the USDA-Land Grant College System, is a fundamental and constant interaction with policymakers.

It may well be that the result of this interaction is an increased emphasis on large-scale "system-oriented" studies, of a type Jim Shaffer might describe as subsector studies; but this is very different from initiating a "subsector study," as we did more or less, as we now perceive, "in vacuo." The mandate as to the policy questions to be addressed was

less explicit than it seemed and, when faced with choices of emphasis, we did not have access to potential research users who could help us make these choices. We were expected, throughout, to use "our own good judgement."

To use a simile, which may or may not be due to Jim Shaffer, the first 20 years of marketing research can be likened to a pile of bricks, each a sound building component in its own way, but not arranged in such a way as to be additive, or form a building. The subsector approach may be likened to an attempt to ensure that the bricks are arranged in such a fashion as to constitute a building. Now, what we find is that it is important that policymakers want to use the building, since a building without tenants is really very little more use than a pile of bricks.

If we are right in this diagnosis, a number of suggestions could be made for increased professionalism in the formulation of U.S. agricultural policy. These suggestions would, however, take us rather beyond the intended scope of this paper.

Getting Started

Ex post the frustrations of the period when we attempted (with the assistance of Dick Crom, Lee Fletcher and George Brandow) to get the subsector study started can now be seen in part as the result of asking: "How to do better research?", rather than: "How to make better policy?"

This meant that there was a lack of focus on what the results of the study were to be used for (and hence what methodology would be most appropriate). In addition, when we came down to the funding question, it

became evident that we did not have the demand for a full-scale study of the subsector which we had been discussing.

A Learning Experience

In defense of the premise that we may have learned something in the course of the hog-pork subsector, let us describe briefly how another effort involving one of us approached a somewhat similar problem in another subsector. 2/ This experience says something more about the relationship between research and policymaking.

We set out to construct a systems model of the dairy industry which would be useful in answering a broad range of policy questions, although certainly not all possible questions. This is not intended to be a comprehensive research program covering all aspects of the subsector. The nature of the pricing system in the dairy industry obviously strongly conditions the kind of model one builds. Unlike the hog-pork subsector, the chief policy variables have a strong flavor of Government participation in the pricing process.

The ideal, of course, would be to build a single model including all policy variables--and perhaps this is a goal toward which to work. However, we suspect it is both wishful thinking and unnecessary in most instances. In the first place, the resulting model is likely to be so large as to be unnecessarily unwieldy even on modern-day computers. Furthermore, once the basic structural system which includes a few major policy variables is solved, we see no reason why other policy variables cannot be examined via "side analyses." For example, in the dairy model

we may be particularly interested in returns from dairy farming by regions and by size of farm. But this information can be derived from a model that is solved independently of the basic price-allocation model. How much of this can be done will depend to a large extent on the nature of the model as conceived--i.e., its recursive versus its interdependent nature.

Models with which to conduct these "side-analyses" may be constructed by different individuals or teams. Nevertheless this work must be coordinated so that eventually all such models can in a meaningful way be tied together and so that trade-offs between competing performance indicators can be realistically examined.

We seldom have enough information to cope with all details in the initial stages of model building--a lesson we learned painfully in the hog-pork subsector. Some details will only be learned as we become more familiar with the data and as we conduct experiments with the model. For example, what is the appropriate level of spatial and product aggregation or what is the appropriate functional form for the demand equations? How much detail should be ignored because it is empirically intractable or would not warrant the expense of including it?

A sensible procedure seems to be to begin with a relatively simple model, then add more detail at later stages. In the dairy effort, for example, we have begun with a basic supply-demand model which has sufficient constraints built in to approximate reality in a broad or macro sense. It has limited normative capabilities and by no means includes all policy or instrument variables.

There are several advantages in operating in this fashion. First, it assures that a model is developed and available at all times--it will not answer all of the questions we may like to ask it nor will it answer these questions as precisely as we would like but it is available for generating a limited amount of information in response to some policy questions. Furthermore, it is available so that administrators can view some accomplishment--a not unimportant consideration since what we are talking about is not a shortrun research project.

Second, by starting with a relatively simple model and progressing to more complicated ones, we are not as apt to lose sight of the trees for the forest. This has two dimensions--model construction and model testing. Every effort must be made to see that all components of the model are sufficiently detailed and constructed so they are related in a logical and consistent manner. Also, we are likely to find it to our advantage to be able to test out each component of the system on progressively more complex models.

Finally, by progressing in this manner, we will force ourselves to build the model in such a way that it can easily be added onto, revised, and updated. Model formulation is critical but not independent of refinement and testing. Models must be subjected to whatever tests are available to guard against internal inconsistencies or logical errors.

Concluding Remarks

In retrospect, we do not wish to argue that a whole new level of research sophistication has been achieved in the hog-pork subsector

research--but we do wish to argue that more real question-answering capacity was produced than has been used to date. This, unfortunately, is not new, nor is it an exclusive characteristic of subsector research. It does suggest to us, however, that Jim Shaffer's original critique of the first twenty years of marketing research should have been even more critical than it was. To paraphrase Jim's criticism, he said in effect "if you want to build a building, it doesn't help much to make bricks," i.e., "There has to be some way of fitting the bricks together to get the synergistics of a building." Five years later we would add: "What is more, there is no point in building a building (or baking a brick) unless someone wants to use it."

There is no doubt the research output from the project was lumpy. It is easiest to think of it initially in terms of Jim Shaffer's brick analogy. Whether it is/was capable of being assembled into a building we do not know currently, since it has not been tested. Why not? Well, what problem do you want answered?

In general, we believe that the diversion from actual research of two people to supervise, or over-see, the subsector work, was productive. Some of the original uncertainty as to the scale of the project and subsequent funding problems provided a real test of the flexibility which can be obtained within large research projects.

As indicated earlier, one suggestion would be a much closer relationship of research and policy than has been customary in the U.S. in the past.

Even if this suggestion is rejected, we believe that some of our experiences with the subsector study can be used to make constructive suggestions.

There were two aspects of management of the subsector work which we believe differ from usual practice, though they could easily be arranged for:

- a) The authors had a general overview of the work being conducted on the subsector (whether covered formally by subsector money, or financed independently), and
- b) A number of ad hoc one day meetings were arranged of related researchers to discuss research proposals. Thus the interaction amongst researchers which is so often talked of in theory, was actually carried out in practice.

We believe, therefore, that it would be helpful if ERS nominated people to be responsible for keeping up with research in fairly general areas (subsector if you like), along the lines of Ben French's proposal for Economic Research Information Centers. And that research grant/contract recipients agree to make themselves available for ad hoc seminars, and travel money be budgeted for these seminars. And that the research monitor be responsible for organizing seminars to consider proposals and in progress research as seems appropriate, on an ad hoc basis. Our seminars were held irregularly with a changing cast. The topic being considered should determine the participants.

Two somewhat different sets of interests provided motivation for the hog-pork subsector research effort. There was an interest in the idea of an integrated study of the entire hog production-pork marketing complex. Another set of interests were more organizational--how to organize several different institutions to carry out such a large-scale study. The latter reflects the general despair with regional research committees as an organizing device for anything other than surveys and seminars.

One's answer to the question should then be more subsector studies obviously depends on which of the motives above attracts your attention. We are rather strongly of the opinion that there should be many more systems analytical studies of various subsectors. We are not particularly fond of the proposition that our collective experience with the hog-pork subsector provides a model for future organizational efforts in large-scale research.

Footnotes

- 1/ One exception should be noted. The fellow who commutes from a small farm to work, and runs a few hogs on the side, is a candidate for "integration." Many of these people would be very glad to have an integrator assume managerial responsibility for supply of feeders, sale of finished crops, supplies of feed, credit arrangements, etc. This is one small sliver of the Midwest industry which is ripe for integration, because it suits this type of part-time farmer to sell principally labor and facilities.
- 2/ For a more eloquent and comprehensive discussion of this endeavor, see (9). It should be unnecessary to say that this section draws heavily on that paper without benefit of quotation marks. A heavy debt to Milt Hallberg for these words and ideas is acknowledged.

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