DISCUSSION: NON-FARM AGRICULTURAL FIRMS, AGRICULTURAL ASSOCIATIONS AND GOVERNMENT

by A. Allan Schmid*

I should like to begin with a theme used by J. K. Galbraith in his Reith BBC lectures last year.1/ He notes that when Henry Ford created his first automobile it was manufactured from parts that were readily available in stock or could be machined in general purpose shops. The steel, gears, wheels, etc. were those which were widely available and in general use. The machine tools needed were those available in many shops making bicycles and various other items. If these materials and tools were not used for one thing they could be used for another. When the idea for a new combination of these came to the creative mind of old Henry, the market could respond readily. Let's contrast this with the latest model, the Mustang. The development and design period stretched over many years. It contains materials specially made for it alone. For example, its planning involves making sure that metals of certain characteristics are available when a certain key part is to be made. No longer can a creative genius call up the local materials warehouse or bicycle shop and hope to find the appropriate components. Materials manufacturers no longer just toss out their product to see if anyone wants it nor do consumer goods manufacturers expect to find what they need in such materials heaps.

What has all this to do with agriculture and the subject at hand? Lester Kellogg tells us that it takes John Deere 5 to 7 years to develop, test and put into production a major new machine. If they do not correctly estimate the needs and demands years in advance they are in big trouble. Or conversely since they are a large supplier and other suppliers can make the same error, agriculture will just have to put up with the available machines and wait for the manufacturers to retool. I wonder if the cost of mistakes here are as significant as any errors that farm firms might make in resource combinations or even in buying one too many machines that Glenn Johnson talks about.

*Associate Professor, Department of Agricultural Economics, Michigan State University.

The new technological processes demand a degree of predictability and coordination which differ from the good old days. Some of the speakers have well pointed this out. George Allen notes that more fertilizer manufacturers are moving to company owned retail outlets. He also speaks of the broiler industry needing more rigorous control over nutritional balance in feeds and that this may require large scale mixing plants. The case of tomato canners who must balance acid content of their products illustrates that the simple product markets of the past are going the way of the dodo bird. Lowell Hill has another example of a meat packer offering contracts for future delivery at a specific price and time to achieve an orderly supply. A processor can't sit there with an expensive single purpose plant and hope that his publication of a periodic price list or making bids at an auction will call forth the correct products at the right time. The richness and detail of the communication needed seems to over-tax generalized market transactions. The expansion of administrative transactions to link different stages of production within the corporation and new devices for linking separately owned firms have made planners of us all and the only possible reversal is a denial of the technological process itself.

The speakers have done a good job in pointing out the impact of technological developments on profitable input and enterprise combinations, location of production, market concentration, and the like. I would like to extend this to consider how technology affects the market as an institution. Depending on the system of market rules and property rights, changes in technology produce effects which have feedbacks on the technological process itself. Let me try to explain. The beauty of the atomistic competitive market is that one man with a cost saving innovation can force others to follow. The innovator has great power to propagate change without considering what costs it might be creating for his fellows. This feature is sometimes forgotten in the much more praised characteristic that no one producer can affect price. Yet, one of the important economic growth features of competitive markets in the past is this ability of a few innovators to move others. When technological change was more modest this created few problems that couldn't be solved by the normal outmigration of the death rate. The few hardship cases could be treated by local charity. Now, when change is nonmarginal and the asset values and savings of large groups are wiped out in the process, the distribution of these losses can have an important impact on the process of technological creation and adoption and thus the future performance of the economy. Here, the old insistence in economic theory dogma of separating income distribution and resource allocation analysis falls flat. Let me illustrate further with some examples from Lowell Hill. He points to the dramatic increase in field shelling of corn. So a few small business men with truck mounted shellers
lose their shirts. So a few shellers are bombed, who cares? This changes things like enterprise locations and costs and returns but there is little impact in terms of future technological adoption or creation.

But, I wonder if the next generation of equipment will go so quietly. Hill mentions the big hopper cars being developed for transport of grain. I can't help but wonder if the "Whopper Hopper" will go as gracefully as will the truck mounted shellers. I wonder if their owners won't do something to protect the asset values of these costly and increasingly specialized pieces of equipment and plant. And, I wonder if this something might not be the slowing of the process of technological adoption itself. My research hypothesis is this: Unless we develop positive policies through our market rules and organization to systematically plan for and share the costs of these big technological changes we invite the application of much creative effort to the slowing down of innovation. We need to search for institutional alternatives here. The experience of Sweden might be useful. They give much aid to displaced workers so that they do not fear change. This aid includes retraining and housing help in their new location. Our own agricultural price support programs have surely put a firm base under the adjustment process and make it more palatable. It provides capital for further investment and the move out. Yet, it does not distinguish sufficiently between the needs of those staying and those leaving and does not provide enough tailor made help and incentive. But, the answers, if indeed there is a problem here, need not lie in direct governmental activity. The conglomerate firm has interesting implications. They may be better able to roll with the punches of technological change in one of their product lines since it has other enterprises to carry it over the adjustment period and pick up the overhead. An example is the diversification of the tobacco industry. Of course, the conglomerate firm is troublesome for its ability to use this same power to enter a product line by undercutting competitor's prices because of their flexibility in allocating costs.

To summarize a bit at this point, I see various rigidities being built into our whole economy as each individual group tries to protect themselves from change. Agriculture has done less of this than some other industries to the benefit of the country and hardship of many farmers. But, agriculture may be trying to catch up. Agricultural economists could perform a valuable service and provide a good example for the rest of the economy if they could solve this

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basic problem of a society with rapid technological change.

Before turning to some of the specific markets I would like to make one more general point on technological impact on market institutions. New innovations are the source of the great gains and profits in our economy. The power to allocate these gains will be the battleground for much future debate. Hill talks about the development of manufactured spun vegetable protein which can duplicate the texture of a wide range of products including meat. For another example, just allow your mind to contemplate the havoc that the development of a synthetic coffee flavor will have on Brazilian agriculture. I don't know enough about these to know whether anything on the horizon could have this kind of impact in American agriculture. But whether it is tomorrow or the next, I have a feeling that the past revolution in agricultural technology focused on farm practices (hybrids, fertilizers, pesticides, etc.) will be paled to second order by the changes to take place on the manufactured food side. The subsequent adjustments while they can't again affect such large numbers of people may be equally dramatic and costly.

But, let's leave the question of compensation and adjustment aid aside and ask a question about allocation of the net gravy. To dramatize my concern let me use another non-agricultural example. There is now a new communications satellite system which was developed in large part by public funds and immersed in the whole social enterprise of education and research where allocation of costs to individual developments is often impossible. Comsat, a private-public corporation, was capitalized in 1962 for $200 million to use the new technology primarily for international communication. By 1965, the technology had advanced so much that the firm was over-capitalized for its original mission. Now it appears that it is practical to use it for domestic TV transmission at half the present cost. Who is going to get this new windfall?

A.T.& T. says it would, through its corporate wisdom and according to sound business practices (whatever they are), spread the gain over its entire telephone rate base and make all phones a bit cheaper. The Ford Foundation suggests that the gains from domestic TV transmission sales be used to finance educational TV production instead of depending on tax revenues.

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This is an example of the great power that private and public groups have at their disposal as a result of our success in creating new knowledge. I don't know if there is anything as dramatic as Comsat in the agricultural industries, but I would guess that there may be numerous opportunities to allocate various costs and productivity gains among various product lines. To conclude here, I would suggest that the power to decide which prices to lower may be worth investigation along with the more traditional market power to raise prices.

May I summarize what I think I have said so far:

1. The problems of investment coordination and timing are more important with the new technologies. This is nothing new, but the process continues. We will need to search for new marketing institutions that can carry the richness and detail of communication that will be needed to avoid inefficient linkage of production processes and missed opportunities for new gains. The days when we could toss products on the market to see if anyone wanted them and adjust production in the next period accordingly are fleeting away.

2. If we fail to coordinate agricultural investments and plan for and share the costs of adjustments created by new technologies we may be inviting a costly reaction which will slow future technological advance. We need to know the macroeconomics of tossing out a new machine or food product. These past bombs, so disastrous to some farmers and so great for consumers up till now, may have a feedback which will slow future innovation, particularly on the industrial side of agriculture. To share in the costs of adjustment may be a good investment in future productivity gains.

3. Finally, the new technologies create gains to be distributed by the chosen ones. This could have a tremendous impact on the content of our growing G.N.P. Can research lay out some of the broad alternatives and choices here?

Now, I would like to address a few points organized by the topics of the 4 papers I am to discuss.

Product Markets

The lack of attention to consumer problems in the papers and the whole conference is notable. It's great to have efficient production and distribution, but . . . . I know that research on consumer difficulties with various package sizes and labels will not generate the political approval of a new study of feeding rations or farm supply inventory procedures. Still, every time I try to get the last ounce
out of a narrow-necked catsup bottle, I wonder if I am swearing alone. The fact that the price of catsup has been kept down or even lowered a few pennies doesn't impress. When are the home economists going to publish the results of their product tests? How can people decide how to allocate research resources for greater efficiency in production when they can't get good information on the products themselves? Enough sermonizing.

I applaud Hill's mention of some of the non-food and fiber outputs of rural land. How about developing a good management record book for farm recreation enterprises and some cost and return studies? Rural land produces water, landscape views, and air purification as well as food. How about some good production economics studies of these?

**Labor**

As various authors have pointed out we are likely to see labor laws developed in industry increasingly applied to agriculture. I do not have wide experience in agricultural labor but perhaps I can indicate the kind of problem that concerns me by another example. D. Gale Johnson tells the story of his secretary who likes to eat her lunch in the office while she handles her own correspondence and types for outside hire. While she is there, an occasional telephone call comes in which she is perfectly willing to take. This was fine in the good old days. Now under the fair labor practices law, answering the phone during noon break will have to be compensated as over-time and there is no way for the secretary to agree otherwise. The result is that Dean Johnson may be forced to prohibit her to stay in the office and use the typewriter at noon. The employer and employee and the whole society are the losers. Yet, the law probably has a good purpose to protect employees from being taken advantage of.

I suspect that agriculture with it's demands for flexibility, timeliness, and multi-skilled work patterns may not fit some of the rules that made sense in industry. Bob Jones mentions the potential for part-time workers in agriculture but this may be restricted by the paper work and labor rules not appropriate for their employment. Are we going to be creative enough to figure out ways to protect workers rights and still retain flexibility? Here is another chance for agricultural economists to make a contribution to a problem that plagues the whole economy.

Jones also points out the prospect for unionization of agricultural workers. Food is one place where work stoppages could be very costly for the whole society. Again, I wonder if we can be creative enough to somehow separate the wage bargain from the work process.
In a less interdependent economy one group could withhold its labor to gain higher returns and the rest of us could ignore it. Not so now. We need ways to keep production going while people argue over their relative shares.

The classical doctrine of diminishing returns to land has been defeated in the United States. Acres of cropland cropped in agriculture have decreased while output has increased. The major substitutes for space are well known and elaborated in the conference papers. While fertilizer, better seeds, and pesticides make it possible to get more out of the same space it is also true that there have been considerable investments which are closely associated with land as space—namely, drainage, conservation practices, flood protection, and irrigation. However, these latter items have not received much attention.

Perhaps this is due in part to the persuasive work of T. W. Schultz which makes a great deal of the declining relative supply price of land during 1910-14 and 1956. He concludes from this that land improvements are low return investments.

It just happens, of course, that the symmetry of this conclusion is disturbed a bit by the fact that fertilizer has also declined in relative price. This latter, however, is viewed as a great boon and the research, innovations and investments in fertilizer production that kept prices down are applauded and along with things like hybrids are given most of the credit for keeping land prices down. All of this leaves me uncomfortable. At a common sense level I just wonder if Griliches' discovery of a 700% return to hybrid corn research would have been so great if the Dust Bowl conditions of the 30's and soil erosion had been allowed to continue. The space used in agriculture today is not the same as that used in 1900 and the difference is not alone that of fertilizer and hybrids incorporated in it.

Whatever an adequate historical analysis might show, we may well have done the job and further land development investments may have low marginal returns. If this is correct we might take the

4/ Dale Dahl's paper was not available when this was written.
SCS and ACP budgets and use them to help move and retrain farmers no longer needed in agriculture. All recent Presidents whether Republican or Democrat have recommended cuts in the ACP budget. What does our research have to contribute to this decision?

Whether tied to land or not it seems to me that production and marketing researchers have not given enough attention to publicly provided agricultural inputs. We know relatively little about the return to rural electrification, education, health, roads, mails, and extension activities. The production people seem too concerned with private firms and marketing people with the market as such. Schultz has, of course, taken his stand on the side of education. He questions "allocation of more resources to government for housing, urban development, river basin development, land and water conservation, hospital and other health facilities, highways, parks, and other recreational facilities." He asks "where is the evidence to create even a plausible case that the enlargement of the role of the public sector in these directions will increase the rate of economic growth substantially?" And again, he asks "Will these particular public measures, other things remaining the same, increase substantially the rate of economic growth?" His answer was, "There is no evidence at hand, to my knowledge, that would make an affirmative answer plausible." Of course, lack of evidence to the affirmative does not prove the negative. The hard fact is that we know very little about the returns to public investments in agriculture.

I suspect this gap in our knowledge is especially important when public investments might be used as key leverage points in farm adjustments. When we are trying to get a new enterprise started and a production region pointed in a new direction, the problem of coordination and timing of investments may be critical.

Perhaps I can illustrate my point with a proposal often suggested as the answer for the economic doldrums of northern Michigan. The animal husbandry people think the beef cow-calf herd is the salvation of the area. Farm management research indicates that it has promise as a supplementary enterprise combined with off-farm work. Full time enterprises also have some promise but are limited by the problem of putting together large acreages. Public agencies are doing little to facilitate this land market problem. Also, this type of budgeting study takes the existing costs and returns mostly as given. There

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are often external economies which mean that the first producers have high costs, but if scale can be built up, costs can be lowered. When the FHA makes credit available on a cafeteria basis for various enterprises and at the same rate to everyone regardless of purpose, it is difficult to overcome the initial high cost stage of production. The FHA takes great pride in keeping its loss record low. Yet, it might make sense as part of a planned adjustment to make some risky loans initially for a new enterprise whose expansion could really change future costs, rather than scatter a few safe loans which will never have great expansion potential and leave cost and return levels as before. Now, the credit program need not operate in a vacuum. The loan may be safer if tied to pasture improvement aided by ACP and SCS and training programs and marketing cooperatives organized by the Extension Service. Here again these agencies are providing assistance on a cafeteria basis. Cost sharing for conservation practices are scattered and the cost share rates not structured to concentrate on key enterprises.

We need to give much more attention to the macro-economics of agricultural adjustments and the coordination of public programs. It is interesting to make a side observation on an ideological issue that this presents. I have made the point earlier that market coordination may not be sufficient. There is no guarantee that assigning the responsibility to public agencies will do the job as is evidenced by the agricultural programs. There has to be some positive way for the agencies representing the various inputs to relate to each other.

The way the public agencies keep records is of no help. We know how many miles of terraces were constructed, farm plans drawn, loans made and defaulted. But, no place do we relate these programs to a development objective appropriate for an area and consistent with the national context.

Land Substitutes and Demand in an Urban Economy

Great emphasis has been placed by people in this conference on the productivity impact of things like pesticides. Little has been asked about the net benefits. Pesticides create losses for some natural resource users, but not enough attention has been given to the macro-economic impact. 9/

Agriculture is being immersed in the urban economy. The noise of the irrigation motor at a cottage lined lake or the smell of a livestock feeding yard or a mushroom operation in a built up area are troublesome indeed. Land space has served as an insulator for these and while it is probably not limiting on Kansas wheat or Iowa corn farms, land is scarce in certain specialty crop areas and where close-in transport is important. I include this lest we think the land space problem is completely a thing of the past.

The Land Market

I want to examine some additional issues related to the land market itself. The structure and organization of this market is not a popular subject for marketing research. I wonder why? Perhaps it is because it has none of the obvious market faults and tendencies toward concentration. Yet, it is a peculiar sort of market. There are a very limited number of sales per unit of time. It is a local market flavored with personal contact and influenced perhaps more by the particular characteristics of the owner. Yet, we use the data from these few marginal sales to indicate average labor returns in farm management studies and compare these with non-farm incomes and draw policy conclusions.

An important puzzle in the land market now is why buyers insist on bidding most of the gains from support prices into land values. One expects that net income will be capitalized into the fixed factor controlling access to that income and if this did not occur we would certainly need to ask why. Yet, why do buyers over do it. Why do they over-capitalize. Apparently there are still a lot of people with even poorer alternatives. This is an area which needs more research and is rich with policy implications.

Along this line, I wonder how long we will retain our historical legal unconcern about the characteristics of the owners of farm land. In some of the Scandinavian countries you must be a bona-fide practicing farmer and small acreages cannot be sold except to people who can combine them into larger units. Our problems are not as severe in this respect of consolidation but still questions are usefully raised. Recently the Justice Department raised a question about the acquisition of the American Broadcasting Company by I.T.T. In part this is concerned with the usual market power questions, but part of it is the fact that I.T.T. is partly owned by foreign governments. The question of income distribution in agriculture is attracting more attention and the question of who gets the agricultural income will probably generate more interest in the future. We are lately seeing various non-farm corporations buying or expressing an interest in farm land. Some are agriculturally based and some are not. Is this
just an expression of entrepreneurial curiosity or is this a trend based on something they see and we do not?

**Capital**

Redman and Rudd note that credit service for older borrowers must be different from the young. They argue that the older farmers need to gear credit to plans for transfer rather than firm growth. If this is true it creates real costs to society. Maybe this is one of the advantages to large outside corporations. Could avoidance of the slowdown in growth between generations be an important efficiency factor? It seems hard to imagine that industrial firms can find the kind of investment returns in agriculture that they have been used to. Yet, maybe we have not been looking at a long enough time period where maintenance of growth might be an important source of profit that we don't see in our shorter run studies. Redman and Rudd also note that large banks prefer to loan in large chunks thereby reducing service costs per dollar of credit extended. Do some of these things add up to significant advantages of large scale investment by outside corporations in farms? I must leave this as a question and turn to a quite different capital and credit consideration.

Our subject is the input markets for agriculture. I wonder if it would be fair game to raise a question about the markets for inputs into firms which in turn provide inputs for farms or for inputs into food processing firms. With reference to farms, Redman and Rudd speak of the lender's problem of selecting those farmers who can repay their obligation. This is a classical banking problem at all levels but I wonder if its complexion changes a bit when applied to non-farm firm loans. I am impressed by Adolf Berle's emphasis on the role played by retained earnings in the whole economy especially for risk ventures. The data are hard to come by, but his analysis indicates that of the gross capital formation from 1919 to 1947 about 34 percent came from business savings.  

He further cites Department of Commerce figures that from 1947 to 1957, three-fifths of all capital funds used by corporate business had been derived from internal sources. An additional one-fifth came from long-term markets (mostly debt issues) and the remainder from short term debt (including bank debt). The point is that industry is less reliant on outside financing than once was the case. Redman and Rudd state that from the standpoint of efficiency, credit should play a neutral role in the entrepreneur's decisions. This may be true with reference to a given

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goal, but the source of funds has important implications for the firm's policies and use of market power. More and more the successful "borrowers" select themselves. What are the implications of this for performance in the agricultural input industries?

New Marketing Institutions

I have the uneasy feeling that we have become locked in on certain institutions and that we are desperately in need of some new ones. For example, I wonder if we have ridden the price support, input subsidies, acreage restriction and maybe even group bargaining into the ground. Let me illustrate first with an example I stole from Jim Shaffer. He observes the tendency toward overproduction in the Michigan tart cherry industry and notes that total production varies considerably. This is caused in part by the fact that there are marginal lands planted to cherries which only bear when weather is favorable and the normal crop areas also are having bumper yields. In simpler days we could just say that if people located in the wrong place it was their tough luck and others should let them alone. But in this case the over-planting on marginal lands is not merely disastrous for the marginal producers but for the normal producers as well through no particular fault of their own. Shaffer suggests a type of land use zoning as a possible solution. This is widely accepted in the Northern Lake States to prevent isolated agricultural location in forested areas where they would create the need for costly public services. Why not for cherries?

A more homely illustration of the need for institutional innovation is the case of weeds. I have vivid recollection as a child of cutting thistles out of our pasture accompanied by a hopeless pit in my stomach as I looked over the fence and saw our neighbor's weeds going unhindered to seed. I wonder if we have studied opportunities to reduce individual farm costs through group action. Nebraska now has a weed district law, but it doesn't work. Why?

Off in another direction, I wonder if farmers ought to place less reliance on price supports and payments and try for a 27-1/2 percent depletion allowance like the oil business. Supposedly the oil provision is to encourage investment and exploration. Just as good a rationale could be developed for agriculture in the face of rapid technological change that I discussed earlier. Agriculture needs to get its returns some way that do not show up as a Treasury expenditure. However, one of the problems with tax provisions is that they are not generally designed to be selective. Take, for example, investment tax credits for agriculture. Instead of broad tax incentives we should consider stimulus to certain key investments identified
by research appropriate for enterprise reorientation and growth of agriculture by areas.

To conclude, I don't know how one does research where the wanted output is a new institution. Most of these have come in the past through practical men and a process of trial and error. The speed of change in technical knowledge throws men into new social relationships where the luxury of long term incremental experimentation may be costly indeed. If social scientists cannot provide a good share of workable new ideas for future marketing rules we will fall further and further behind our world's potential.