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GRADUATE TRAINING NEEDS FOR AGRICULTURAL ECONOMISTS IN THE BUSINESS WORLD—AS VIEWED BY A PRIVATE CONSULTANT

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The private agricultural economist-consultant or the corporate economist is a strange character indeed. Businessmen, governmental administrators and others who he must serve, often tend to view him as theoretically and academically-oriented and the academic community often thinks of him as a sort of "economic mechanic" who uses his economic tools to assist management in the "fine tuning of corporate carburetors." Actually, both viewpoints are correct. There are opportunities in private business for both the economic theoretician and the practitioner, and for all combinations between these two extremes.

A popular misconception is that the business economist somehow loses his objectivity and serves as a sort of alter ego to corporate management, providing positive substantiation for all decisions made by management. This accusation is most frequently leveled at management consultants. Two things, at least, tend to destroy this image. First, in most instances the work of the consultant or corporate economist usually precedes the decision point and second, there are usually devious and mysterious accounting procedures which can measure the impact of such decisions on the corporate profit and loss or financial statement. In such situations, it is very easy to make the economist the "whipping boy" and denouce "the theoretical egghead whose recommendations got us into this mess." There is no tenure nor civil service status in private business, so you'd better be right or you're out. Of course, no one is always right and most economists are generally right, but when the business economist concludes that a situation is rotten, he can't afford to compromise himself or his research so must expose the situation for what it is. The challenge at this point may be the way in which such an exposé is accomplished. As much can be gained from a negative decision as by a positive decision—if you're sure you're right.

So much for the introduction. I would now like to try to establish some general principles and make some specific points regarding graduate training for agricultural economists who may be employed in private business.

1. There are opportunities for both functional and general training, but flexibility is necessary to meet a wide variety of problems.

Except in very large firms, the economist in business is expected to apply his economic training to a wide variety of situations. This does not mean that he must be the country doctor, general practitioner type who makes a subjective diagnosis and a general prescription which nine times out of ten pulls the patient through. As a matter of fact, the management consultant who can do this sort of evaluation is the real rarity, and commands high fees. Most of us have to go the route of organized research to arrive at the same answer—we hope.

Common types of projects which will come up will surely include:

1. Pre-investment feasibility analysis and repayment capacity.
2. Investment priority analysis.
3. Financial planning for investment projects.
4. Resource allocation and development problems.
5. Development potentials, for products, industries, areas.
6. Industry organization and structure studies.
7. Market potential, market demand, market share studies.
8. Marketing or purchasing systems, strategies, services and facilities.
9. Buyer attitudes, motivations, acceptance.

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10. Management systems for farms and industries.
11. Transportation and location analyses.
12. Development of analytical systems.

Since very few firms can afford a staff which would include specialists in all these fields of work, the economist in business must have a functional specialization (e.g. econometrics-simulation modeling) which he can apply to a wide variety of problems, or he must have a fundamentally sound, general economic background which enables him to work with functional specialists and specialists from other disciplines as a part of a multi-discipline team.

2. **A good grounding in economic theory provides** a necessary, technical background for a wide variety of projects. Marginal analysis, distribution theory, trade and transportation theory, plus other related subjects help orient the thinking which distinguishes the economist from the engineer or natural scientist.

3. **An adequate preparation in quantitative methods is highly desirable.** Formal training in statistical methods, emphasizing probability concepts, sampling, trend analysis and correlation is very useful. However, the substantial amount of time given to statistical tests of significance has less value to the business economist than it may to his academic counterpart.

4. **Computer applications represents an area of increasing importance** in the training of graduate students for employment as economists in private business. He should be familiar with the preparation of data for computer processing, have a general knowledge of programming procedures, an acquaintance with general types of "standard" programs and the ability to read computer outputs.

5. **The general area described as "systems analysis" demands increasing** emphasis, combining elements of statistics, econometrics, economic theory, organization and structure and logic toward the solution of complex economic problems. Although the term "systems analysis" is loosely used, the general concept of a combination of economic models and the interrelated impacts on economic adjustments in the firm or in a region finds increasing use in types of problems confronting the business economist.

Originating, developing and managing research is also important to the economic consultant or to the corporate economist. The ability to identify problems and to conceptualize the problems in terms of the types of analyses and procedures to be applied is necessary. These ideas must then be translated into proposals which are understandable to management, costs for personnel, travel, data processing, report preparation, etc. must be estimated and a budget developed. Types of personnel required must be indicated and a schedule of staff utilization—together with some sort of critical path plan must be prepared and time limits must be imposed. Time limits are often tight and demand that the project move on schedule. Management of the research to keep it within limits of time and budget then becomes critical.

Close supervision and direction of the graduate thesis or dissertation is important, but the responsibility for developing and conducting the research must remain with the student. He won't get much help once he's on the job, so he must have the imagination, initiative and ability to move the project on his own. Regular progress reports may be desirable and a time schedule established. The "professional student" who spends years polishing his thesis or dissertation will find the adjustment to business time pressures difficult. Adequate review of literature and elaboration of theoretical concepts are necessary elements of graduate research in that they give the student a background and appreciation of the applications of the theories and procedures involved in his research. However, emphasis should be placed on the results and on the presentation of the results.

Oral and written presentation of technical procedures and results should be emphasized. There is a tendency among some economists to phrase their results and conclusions in economic and mathematical jargon, which is convenient as a sort of economic shorthand and is expected in professional papers written for their fellow economists. However, this proves very confusing to most business executives and may at times reduce the effectiveness of good research in that it creates a gap between the economist and the manager that becomes difficult to bridge. In many instances, two reports are required, a technical report and an executive digest. The executive digest may be the more important of the two. It's not aimed at a low-level audience—actually, the reverse is true. However, it must be

straightforward in its language, concise and to the point in presenting results and recommendations and must carry a high enough level of credability to be convincing. It is more than an abstract and in fact could provide the basis for a worthwhile experiment station publication. I think that such a digest would be a useful addition to the graduate training for students whose interest is in research for business.

For the same reason, the student should be capable of presenting his results orally in an understandable and convincing manner. This he will have to do—as a consultant or as a corporate economist. He will also have to participate in staff meetings relative to his research. He should be able to develop convincing and interest-stimulating visuals to illustrate his oral presentation and use these effectively. If possible, the graduate student should be encouraged to present his research before a seminar group.

Whenever possible, graduate training for business-oriented economists should be supported by grants or research contracts with private business. This brings the graduate student as close as possible to the type of environment in which he will be working if he follows a career as an economist in private industry.

We are really talking about two levels of graduate training, M.S. and Ph.D. In general, M.S. graduates probably have a better opportunity in private industry than they would have in university research, instruction or extension or possibly in government employment. The Ph.D. has more opportunities with such institutions or agencies, but can be equally valuable as a member of the research staff of a private firm.

EXAMPLES OF ECONOMIC RESEARCH FOR PRIVATE FIRMS

To furnish a general idea of the types of economic research required by private businesses, I would like to cite some of the projects we have done for such firms in the last few years.

1. Development of computerized programs for crop-fertilizer planning and herbicide selection—for International Minerals and Chemical Corp.
2. Feasibility of a 20,000 head cattle feedlot at a specified location—for Morrell & Co.
3. Projected demand for nitrogen fertilizer in the Western Great Plains—for Anadarko Production Corporation.
4. Farmers' preferences for the location of operating controls on farm tractors—for Deere & Company.
5. Formula feed services, preferences and use—for Ralston Purina.
6. Farm Service Centers as a marketing tool—for American Oil Co.
7. Analysis of market areas and trading centers for farm supplies—for American Oil Co.
8. Feasibility of soybean processing in Iran—for Foremost Dairies.
9. Feasibility of cattle feeding and slaughtering on Okinawa for the Japanese market—for Kaiser Gypsum.
10. Development and operation of the AGRI-LIDO system—a computerized, cash-flow feasibility systems approach to evaluating, planning and managing large scale irrigation development—for Litton Industries in Greece.
11. Master plan for distribution of fertilizer in Western Canada—for National Grain and Associates.
12. Farmers' attitudes toward use of herbicides—projects for ELANCO and Geigy Chemical.
13. Evaluation and implementation planning for a 25,000-acre irrigated land development project in Iran—for Transworld Development Corporation.

14. Market potential for specified feed materials—several projects—for Dow, Ralston Purina, Air Products and Chemical, IMC and others.

15. Basic research on personal and environmental characteristics influencing farmer purchase behavior—for American Oil Company.

16. Feasibility of large scale egg production for a major egg breaker—Seymour Foods.

17. Opportunities in agricultural development for the Ismaili Community in East Africa—for the Aga Khan.

These are just a few of the types of projects in which we have been engaged. Of course, the economist working for a firm such as a chemical company or feed manufacturer, would work with a somewhat narrower range of topics but there still would exist a demand for work on a variety of subjects.

EXPERIENCE IN HIRING GRADUATES

Our experience in hiring young men with M.S. or Ph.D. degrees has been good. We may have been lucky, but the men we have gotten from the Land Grant Universities, seem to have the basic training required. They work hard and pick up new ideas fast. Their greatest problems revolve around bringing jobs to completion within limits of time and budgets and in effective communication of results to client management. Perhaps some of the suggestions made in this paper will assist in making these men even more useful to private business.