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AN ASSESSMENT  
OF THE AGRICULTURAL ECONOMICS PROFESSION

by

Richard E. Just and Gordon C. Rausser

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# An Assessment of the Agricultural Economics Profession

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\*Note that senior authorship is not assigned; both authors shared equally in developing the views expressed in this paper. Richard E. Just is Professor of agricultural and resource economics, University of Maryland, and Gordon C. Rausser is Robert Gordon Sproul Distinguished Professor of agricultural and resource economics, University of California, Berkeley.

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# **An Assessment of the Agricultural Economics Profession**

## **Introduction**

The American Agricultural Economic Association (AAEA) is composed of various groups ranging from industry to government to academia with widely divergent values and interests. This has led to controversy, sometimes healthy and other times destructive, on the appropriate mode for graduate training and methodologies of research. These differences affect the direction and vitality of the profession and imply both benefits and costs in pursuing the solutions to various problems and issues.

Pressures for day-to-day decision making in industry have led to reliance on methodologies that are often characterized as unacceptable for journal publication. Similarly, the timeliness of analyses in governmental policy-making processes sometimes does not lend itself well to publication in professional journals. In contrast, the research sophistication that has emerged in academic circles has reputedly widened the divergences among various groups within the AAEA.

In this setting a number of personalized views have been expressed. Some argue that a major historical strength of agricultural economics has been its tolerance for a range of methodological approaches. Early agricultural economists drew on production agriculture, accounting and business, classical, neoclassical, and institutional economics. Some have even argued that the very parochialism and fragmentation of agricultural economics have been the basis for many of its most important contributions (Ruttan). In a different vein, Bonnen (p. 1078) has argued that "... agricultural economics has been drifting toward an anti-empirical and a disciplinary outlook, away from the great empirical tradition around which the profession was built and upon which its reputation still rests."

While some have identified excessive fragmentation along geographic and subdisciplinary lines as a factor limiting the effectiveness of agricultural economics (Ruttan), others have taken refuge in the glowing account expressed by Leontief in his presidential address to the American Agricultural Economic Association: "An exceptional example of a healthy balance between

theoretical and empirical analysis and of the readiness of professional economists who cooperate with experts in the neighboring disciplines is offered by agricultural economics as it developed in this country over the last fifty years." Few would argue that Leontief's observations which focus on the period of 1920 through 1970 still hold with equal force today.

Does the diversity within agricultural economics enhance or detract from the creation of knowledge? An appropriate degree of diversity creates cross fertilization of ideas and a healthy tension which exposes inferior applications. But has the diversity become excessive? Given the degree of diversity within the AAEA, do the current policies and practices of the association enhance or detract from the creation of useful knowledge? Do the media products of the AAEA promote and encourage new ideas, methods, institutions, theories, data, or articulation of important problems? Do they foster scientific inquiry, dialogue, and debate? What are the research values of our collective organization, the AAEA?

The objective of this paper is to assess the above questions. Professions are clubs whose tribal behavior should be examined from time to time in order to evaluate whether they are on a path to extinction. Accordingly, our purpose here is to make an assessment of our current professional state which reflects not only our views but the collective views of the AAEA membership. In making our assessment and evaluation, the current configuration of the profession is taken as given (e.g., the land grant university system, extension, research, teaching, etc., the design of the AAEA including its various services and products).

The paper begins with a review of some anecdotal evidence in the next section followed by some databased evidence on the current state of the profession. Some selected problems for which little or no empirical evidence is available are highlighted. The argument is made that the value of the profession and role of data in advancing knowledge has led to a number of serious self-imposed limitations. The tendency of the profession toward solution-rich or technique-oriented approaches is examined. These problems have hindered creativity and left the profession unable to take advantage of the opportunities for innovations that have been available. In essence, we shall argue that many missed opportunities are the result of the profession tinkering at the margins rather

than designing, reforming, and promoting more effective institutions (Rausser 1982). These themes largely reflect subjective interpretation of the anecdotal evidence. To support or refute this interpretation, results of a survey of the AAEA membership are presented. This survey was conducted in the spring of 1989 and provides the database for analytically judging the interpretations and perspectives of anecdotal episodes presented herein.

### **Anecdotal Evidence**

A number of major shocks have occurred in both U. S. and world agriculture over the last few decades. None of these shocks or their impacts were anticipated by publications of the profession. For example, the huge commodity price explosion of the early 1970s surprised all interested observers. No ex ante analysis was conducted prior to 1971 that even weakly suggested such a price explosion was a realistic possibility. Many ex post analyses have now been conducted that isolate the Soviet grain deal, the deregulation of the overvalued dollar, trade barriers, and worldwide economic growth as some of the explanations for the events of the early 1970s.

In fact, not until three years after the first devaluation of the dollar and two years after its deregulation did anyone in the profession attempt to evaluate its implications for U. S. agriculture (Schuh). It is important to note that this study was based on personal understanding and experience and involved the heuristic application of basic economic principles. The study did not formally analyze any secondary or primary data. Furthermore, if secondary time series data had been utilized at that time, no significant effect would have been isolated between exchange rates and any performance measures for U. S. agriculture because of limited data availability following devaluation.

In the early 1980s those concerned with U. S. and world agriculture were again surprised. Although there were studies in the late 1970s of the relationship between the macroeconomic environment and U. S. agriculture, few if any serious ex ante analyses were reported in the literature. Perhaps more importantly after the Volcker Federal Reserve Policy Announcement of 1979, no ex ante analysis was reported by the profession on the potential effect of real interest rate

increases on U. S. agriculture. It was not until commodity markets plummeted in 1981 that the potential effects of monetary and fiscal policy on U. S. agriculture were seriously evaluated. Since the macroeconomic environment had been reasonably stable over much of the 1960s and 1970s, ex post historical analysis could not identify a significant relationship between nominal or real interest rates and the U. S. agricultural sector (Rausser 1985).

To address this difficulty, Freebairn, Rausser, and de Gorter developed a simulation model with some empirically estimated and some hypothetical parameters to explain the events of 1981. Similarly, Just demonstrated that an extended capitalization formula calibrated to pre-Volcker events could have predicted the land price decline beginning in 1982 in terms of interest rate and inflation phenomena. But these types of approaches could have been undertaken as early as late 1979 or early 1980. Given the vulnerability of U. S. agriculture in 1980 to optimistic expectations, why did the profession not provide some crisp but qualified warning signals? Conventional wisdom today is that U. S. macroeconomic policy in the early 1980s helped destroy U. S. agricultural export potential while escalating its costs and leaving it in the deepest financial crisis since the great depression. Why was this possible outcome not even remotely entertained in the forums of the profession in the early 1980s? Again, it is important to note that the early studies which began to sort out the role of new phenomena affecting agriculture were based on personal understanding and experience and involved the heuristic application of basic economic principles.

The lesson of these war stories is that when undue weight is placed on ex post data analysis, future events will always present surprises. These same points arise in a number of current topical problems. For example, with respect to the General Agreement on Tariffs and Trade (GATT) negotiations, there have been no serious evaluations of the dynamic path that might result from any proposals that have been tabled by the U. S. Trade Representative.

The profession has imposed a number of limitations on what constitutes acceptable research. The emphasis has been on empirical analysis of historical phenomena. The philosophical base for much of this focus is provided by Popper. Popper emphasizes explanation of observable phenomena and introduces the notion of falsification as the rigorous standard for

scientific procedure. Kuhn, in his study of scientific progress, found no support for Popper's idealization for science—falsifying instances seldom lead to the revocation of theory. Among economists, McCloskey has advanced the view that economic research is basically essays in persuasion.

One of the dominant characteristics of the profession is its insistence on objectivity. Objectivity is much like motherhood and apple pie; if it could be achieved, we would all warmly welcome its presence. The difficulty, however, is that in principle an infinite number of hypotheses are capable of explaining a given finite body of nonexperimental data. Accordingly, the only objectivity that exists emanates from the clash of individual subjectivities. As Keynes argued long ago, "It is astonishing what foolish things one can temporarily believe if one thinks too long alone. . . ." Discussion and debate with colleagues provide a useful defense against one's own foolish subjective beliefs.

In the context of falsification and the explanation of observable phenomenon, a number of solution techniques have been developed from mathematical statistics, econometrics, operations research, etc. This technology has been utilized sometimes wisely and sometimes unwisely. In general, the technology imposes a logic which limits the role of intuition. In contrast, it is interesting to observe how many members of the profession that trade in futures markets do so on the basis of formal econometric models as opposed to intuition and heuristic application of economic principles.

The technology that has been embraced by the profession is largely computer based. In many research applications, this technology has been used as a substitute for creativity and serious thought. In fact, available technology along with its standardized solutions often leads to a "have model will travel" mentality. For some years now, the *AJAE* and *AAEA* meetings have been dominated by solution-oriented or technique approaches. This professional behavior has severely limited originality. Many of our recent graduates spend most of their time wondering about the applications they can make of standardized solution frameworks rather than finding interesting



problems that require the development of customized frameworks. Given the small weight our profession places on case studies and induction, this is not surprising.

Due to self-imposed limitations and the promotion of a solution rich environment, our profession has missed many opportunities for creativity. This is especially in the field of new institutional economics. As Ruttan and Hayami have argued, the largest payoff to the public interest is to the area of institutional innovation. For example, throughout the world there is a serious problem of financing public good and infrastructure investments in agriculture. In the case of the United States, Bonnen argues ". . . that responsibility for coordination of agricultural science policy is shifting from a predominantly public function to more of a shared public and private responsibility, making both policy and its coordination more complex." What institutional frameworks have been advanced by our profession to determine sustainable burden sharing arrangements between the public and private sector to finance various quasi-public goods? Does our profession encourage and reward its members for designing such institutions?

On the methodological front, why has so little effort been undertaken to explain collective organizational behavior. Why have no basic propositions been empirically tested that focus on the distribution of power in collective groups? We always find members with unequal influence being compensated by collective organizations. Why have we not exploited our traditional relationships with rural sociologists and other disciplines to advance the frontiers of knowledge in this area of inquiry?

### **Empirical Questions and Hypotheses**

From the anecdotal evidence outlined above, a number of questions and hypotheses emerge. Some of these hypotheses relate to the linkages among academic, extension, industry, and government components of the profession. Do the applied components of the AAEA find different approaches effective than are emphasized by academic components and the media (*AJAE*, *Choices*, and AAEA meetings)? How does the importance of formal models and econometric analysis vs. heuristic application of economic principles and intuition differ among the various components of the

profession? Are the channels of communication among these various groups within the Association highly integrative and interactive or are they channeled and separate? How well are the problems faced in the applied components of the profession communicated to the academic community and how well do the products of the academic community serve the applied components? In acquiring human capital, what is the best relative emphasis of training on various types of techniques, conceptual frameworks, and case studies, and how does that compare with the training that has been received?

Many other questions naturally arise. What empirical evidence is used in the analyses conducted by members of the Association? Are the frameworks of analysis used by the various components of the profession formal or informal? How helpful are the various products that are offered by the Association to the members in performing their responsibilities? Do the types of analyses conducted, the frameworks utilized, and the usefulness of various Association products change with professional maturity? Can the *AJAE*, *Choices*, and the AAEA professional meetings be changed to serve the membership more effectively? What role does and might each product of the Association play in enhancing effectiveness of the members?

### **The Survey—A Description**

The design of the questionnaire used to address these questions attempts to identify professional needs of the AAEA and how the Association might better serve those needs. The vast majority of questions elicit quantitative rather than qualitative responses (of 24 questions, 19 requested quantitative responses). In terms of an investment and production process for members' activities, the questions attempt to determine the nature and type of graduate training during the human capital investment process, the inputs used (including time spent in the generation of products), and in what forums the products or results are reported. In some instances, the questions attempt to determine how activities change over the course of professional careers. For the services of the AAEA, questions focus on a comparison of what each member desires vs. receives.

After choosing the initial set of questions, the survey was pretested among a nonrandom sample of respondents. Some had difficulties with the initial set of questions which were then revised slightly. As with all surveys, the tradeoff between simplicity and accuracy naturally arose. An attempt was made to remove ambiguities; but, as a result of the questions being short and concise, it was impossible to remove all ambiguities. The questions are not reported here because of limited space.

Once the questionnaire was finalized, it was mailed to the complete population of all domestic, nonstudent, nonfamily members of the AAEA as recorded in the AAEA business office. This population was composed of 2,623 potential respondents. The anonymity of each respondent was assured. Initially, 963 questionnaires were returned; thus, the response rate was 36.7 percent. This initial response rate was quite acceptable, and we wish to thank all those who took the time to respond to the survey.

To correct for possible sample selection biases, a follow-up survey was mailed to 6.5 percent of nonrespondents. Of these, 12 percent responded to the second request. Conventional Chow tests of differences in the followup from the original sample revealed significance at the 5 percent level for only a bit over 5 percent of the questions. Significance for 5 percent of the questions should be expected if there was no statistical difference. Accordingly, all results that are reported here are based on the original 963 returned questionnaires.

## **Quantitative Survey Results**

A number of analyses were conducted for the purpose of drawing implications for research, graduate curricula, professional media, and scientific exchange at AAEA professional meetings. The results of these analyses are reported in tables 1 through 4 and figure 1. Table 1 focuses on members' ideal distribution of the three major forms of professional media sponsored by the AAEA among the following areas of emphasis: applications of an existing model, development of a new model, definition of a problem, discussion and assessment of current events, descriptive analysis of problems, individual viewpoints, and all other categories.

Table 1. Desired Percentage Changes in Emphasis by AAEA Media.

Group	Application of Existing Model	Development of a New Model	Definition of a Problem	Assesment of Current Events	Descriptive Analyses of Problems	Individual Viewpoint
<b>AJAE</b>						
All Respondents	-0.26076	2.287560 **	3.292488 ***	-2.49841 ***	3.486800 ***	-6.40733 ***
Academic Research	-19.3307 ***	3.751881	10.32158	-18.6994 ***	-2.93619	14.47164 **
Extension Research	6.984165	3.58083	-5.74151	-4.88598	7.699361	-20.6081
Other Extension	-6.24406	-2.84384	0.979484	0.012426	6.715529 **	-2.46966
Teaching	11.02554	11.27073	2.949821	-0.54794	4.890241	-16.9076 **
Industry	4.846583	6.75655 ***	5.399166 *	-1.42745	1.644166	-11.1899 ***
Government Research	-3.81566	-2.45072	3.606194	-0.19949	2.126071	-3.75928
Other Government	5.886191	1.097687	0.517711	-0.55058	6.377226 ***	-9.62903 ***
<b>Choices</b>						
All Respondents	27.25504 ***	10.34538 ***	16.93658 ***	13.05410 ***	-5.73745 ***	-20.7950 ***
Academic Research	26.71720 ***	10.96075 ***	17.80912 ***	13.59465 ***	-4.79503 ***	-20.3439 ***
Extension Research	14.64777 **	12.33890 ***	25.90981 ***	21.68755 ***	-8.14368 *	-30.2504 ***
Other Extension	28.65282 ***	8.306771 ***	11.22536 ***	9.710266 ***	-5.16159 **	-17.8751 ***
Teaching	29.27073 ***	11.59401 ***	18.25882 ***	11.36163 ***	-8.52279 ***	-21.7956 ***
Industry	22.67623 ***	7.941644 ***	15.24964 ***	13.77358 ***	-5.14463 ***	-19.8145 ***
Government Research	32.14667 ***	9.548102 ***	16.06899 ***	12.90555 ***	-5.27511 ***	-19.3166 ***
Other Government	24.67089 ***	12.31663 ***	17.78342 ***	13.15755 ***	-4.64586 ***	-22.6127 ***
<b>AAEA Meetings</b>						
All Respondents	4.821778 ***	4.657432 ***	5.223479 ***	0.660005	3.905874 ***	-10.4323 ***
Academic Research	4.07355	6.910629 **	8.928942 **	-5.04947 **	-0.51114	-5.29184 **
Extension Research	4.9625	17.79960 **	4.932843	-6.52704	13.37738	-19.5578 **
Other Extension	2.096918	-3.63651	-0.72155	3.491801	6.604134 *	-4.59818
Teaching	8.347018	1.221737	11.03065 **	6.127761 *	2.993743	-11.5728 ***
Industry	5.022683	10.52294 ***	5.174398	0.300947	2.00747	-14.3659 ***
Government Research	5.838778 **	4.798718 ***	3.035608	0.608510	3.839148 **	-11.9247 ***
Other Government	3.595027	2.276375	4.893532	2.366985	6.610659 ***	-10.4238 ***

\* Significant at 10%

\*\* Significant at 5%

\*\*\* Significant at 1%

The differences in these responses from the perceived present distribution were regressed against the response which identifies the extent to which each member's job responsibilities are academic research, extension research, other extension, teaching, industry, government research, and other government activities. These estimated coefficients (multiplied by 100 to convert to percent) are reported in the rows of table 1 so named. The estimated coefficients give the average desired percentage change among topics for a hypothetical individual whose appointment is 100 percent in the area identified by the various row names in table 1. The other rows of table 1 labeled "All respondents" give the average percentage change from perceived to ideal distributions across the entire sample.

The results for the *AJAE* suggest that all respondents as a group want more problem definition and descriptive analysis published in the *AJAE* but less individual viewpoints and assessment of current events. These results are consistent with the views of the anecdotal evidence section which argues for more focus on problems and case studies. As for the results by type of respondent, academic research is the only group that would prefer more individual viewpoints; teaching, industry, and government prefer less. As expected, academic researchers want fewer applications of existing models published in the *AJAE* while industry would prefer more new model development.

In the case of *Choices*, the results are remarkably uniform across professional groups. Moreover, the results are highly significant relative to the *AJAE* or the AAEA professional meetings. Specifically, all respondents want more application of both new and existing models, more problem definition and assessment of current events, and less individual viewpoint and descriptive analysis. Apparently, members of the Association would prefer *Choices* to move somewhat in the direction of an academic journal, to wit, the desired increase in model applications but at a very readable level. It should be noted, however, that the statistical results that are reported in table 1 must be tempered by the large number of favorable written comments about *Choices* in response to Question 22. The response to this question reveals strong membership support for *Choices*.

For the AAEA professional meetings, all respondents would prefer more application of both existing and new models, more problem definition and descriptive analysis, and less individual viewpoints. It should be emphasized that the desire for less individual viewpoints is uniform and significant across almost all professional groups. These results again support the perspective advanced in the anecdotal evidence section regarding needed emphasis on problem definition and case studies.

For the *AJAE* and the AAEA professional meetings, the results in table 1 are mostly insignificant while those for *Choices* are highly significant. This is expected since the *AJAE* and AAEA meetings are at a mature stage of development whereas *Choices* has been instituted recently. With the more mature forms of media, either the distribution of emphasis tends to converge to membership desires or membership perceptions are swayed by what is observed after a long period of time. Thus, *Choices* can be regarded as a medium that may not have reached an equilibrium between perception and desire. In any event, the most uniform results across all media is the desire for less individual viewpoints and more problem definition. Moreover, there seems to be a fairly consistent desire for more use of models, except for the *AJAE*.

Table 2 reports how the type and basis of analysis as well as the perceived quality of the various types of analyses change with professional maturity. In terms of the basis for analysis, all professional groups migrate away from using published secondary data toward relying on understanding and experience over the course of their professional career. This result is taken to be a reflection of what individuals do over their professional careers, but it could also reflect differences among educational cohorts. The latter explanation could result from recent graduates being more highly trained in econometrics, statistics and data analysis and, as a result, using these methods with greater frequency. Here, again, problem definition and case study approaches appear to receive greater emphasis with professional maturity.

For the types of analyses that are conducted, original formal frameworks tend to receive decreased emphasis with professional maturity. This may be due either to increasing reliance on experience and intuition or to increasing obsolescence of human capital. This trend is the strongest

Table 2. Changing Approaches with Professional Maturity (Effects of Years Since Last Degree on Percentages of Effort and Emphasis).

Dependent Variable	Academic Research	Extension Research	Other Extension	Teaching	Industry	Government Research	Other Government	All Respondents
Basis for Analyses								
Published Data	-2.28298 ***	-0.78561	-1.57272 ***	-1.69022 ***	-1.00688 ***	-0.92307 ***	-0.51690	-1.24272 ***
Collected and Internal Data	0.927337 ***	-0.43735	-0.22459	0.090035	-0.26005 *	0.3521 ***	-0.58004 ***	0.159547 ***
Understanding and Experience	1.355651 ***	1.222971	1.797319 ***	1.600192 ***	1.266944 ***	0.570975 ***	1.096947 ***	1.083182 ***
Type of Analyses								
Formal Original Framework	-1.66614 ***	0.441232	-0.41849	-0.85349 **	-0.51675 **	-0.48079 ***	0.050365	-0.67831 ***
Formal Other Framework	0.020000	0.149620	0.442135	0.397567	0.641632 ***	-0.12594	0.354931	0.147524 **
Heuristic Economic Principle	1.08878 ***	-0.18833	0.206381	0.599555 **	-0.04685	0.206162 *	0.015295	0.351351 ***
Gut Intuition	0.259912	0.166137	-0.51445	-0.72365 **	-0.46175 ***	0.001345	-0.27406	-0.12924 **
Descriptive Problem Definition	0.297454	-0.56865	0.284430	0.58003 **	0.383729 ***	0.399228 ***	-0.14652	0.308686 ***
Sources of Effectiveness								
Formal Original Framework	0.022154	1.352959	-0.09089	-0.32172	-0.16529	-0.24821 *	0.144452	-0.15075 **
Formal Other Framework	0.219140	0.250403	-0.02483	0.028362	-0.13748	-0.11806	0.035581	-0.02138
Heuristic Economic Principle	-0.32775	0.281090	0.607775	-0.08865	0.115534	0.444111 ***	-0.38758 **	0.077722
Gut Intuition	-0.03129	-0.96140	-0.35000	0.251712	0.328025 ***	0.032676	0.010738	0.074131
Descriptive Problem Definition	0.280342	-1.16721	0.317222	-0.13294	-0.16541	-0.06989	-0.03136	0.012270

\* Significant at 10%

\*\* Significant at 5%

\*\*\* Significant at 1%

for academic researchers. Note that industry relies increasingly on formal frameworks developed by others. This change, however, almost balances with a decline in the reliance on original formal frameworks. Heuristic application of principles increases with maturity, particularly for academic researchers and teachers. The use of "gut" intuition declines with maturity, especially for teachers and industry members. Note that the importance of problem definition increases significantly for all respondents, especially teachers, industry, and government research members.

Aside from the increasing importance of heuristic application of basic economic principles in government research work and the use of gut intuition in industry, there is very little significance among the potential sources of effectiveness with professional maturity. One curious outcome with respect to industry, however, is the increased importance with professional maturity of gut intuition as a source of effectiveness but its decreasing role as a type of analysis. In any event the collective results of table 2 show that professional maturity leads to declining formal analysis with secondary data and increasing reliance on problem definition and heuristic application of economic principles. Moreover, with professional maturity, the type of analysis is increasingly based on personal understanding and experience, particularly for applied professional groups such as teaching, industry, and government research. These results strongly support the emphasis on problem definition and case studies of the anecdotal evidence section.

Table 3 presents the ideal course work emphasis in graduate training desired for new recruits. In addition, the differences of these desired levels from respondents' actual course work experience are reported. As the results clearly indicate, all respondents would prefer less economic theory, less econometrics and statistics, less applications, and more case studies. The results are surprisingly uniform across all professional groups. The greatest changes are desired by industry and government followed closely by extension professionals. These results too are consistent with the hypothesis that the major problems we face as a profession require customized rather than standardized or generic solution frameworks.

Determinants of power and influence in both industry and government was evaluated by linking the number of employees supervised or the level of influence in the organization to course



Table 3. Ideal Coursework Emphasis (Percentages).

Professional Group	Economic Theory	Econometrics Statistics	Operations Research, LP	Applications of These	Case Studies
All Respondents	28.32695 ***	19.92774 ***	8.813852 ***	29.41452 ***	8.936546 ***
Academic Research	34.04534 ***	25.88740 ***	10.38813 ***	27.16459 ***	2.80442 *
Extension Research	27.80624 ***	18.17728 ***	6.821612 **	41.43678 ***	5.75526
Other Extension	25.98226 ***	14.09523 ***	10.31236 ***	33.62408 ***	9.573981 ***
Teaching	34.52181 ***	20.29072 ***	8.891519 ***	26.63306 ***	6.210901 ***
Industry	19.82864 ***	15.37559 ***	8.796511 ***	31.11547 ***	15.16903 ***
Government Research	28.28338 ***	21.35175 ***	8.613644 ***	29.18140 ***	9.561663 ***
Other Government	22.80698 ***	16.51211 ***	6.145196 ***	29.63916 ***	14.73929 ***
----- Difference from Coursework Emphasis of Respondents -----					
All Respondents	-2.01336 ***	-1.04647 ***	-0.25231	-1.61276 **	3.875057 ***
Academic Research	-0.27802	1.714007	0.872857	-3.08156	2.003346
Extension Research	-0.34898	-1.55756	-6.06428	6.846887	3.977546
Other Extension	-2.83482	-1.69725	2.618411	-3.00320	3.97285 *
Teaching	5.674437 **	0.814262	2.444183	-8.16353 **	0.993735
Industry	-7.80230 ***	-3.85858 ***	-3.24736 ***	-0.23592	9.121953 ***
Government Research	-2.80929 **	-2.32590 **	-0.63074	0.500279	4.230139 ***
Other Government	-6.91710 ***	-1.59482	-1.62501	1.167235	5.25162 ***

\* Significant at 10%  
 \*\* Significant at 5%  
 \*\*\* Significant at 1%

work, basis for analysis, type of analysis, and years since the last degree. In the results reported in table 4, the intercept includes the effects of econometrics and statistics course work, use of published secondary data, and use of original formal frameworks on the number supervised and the level of influence. For industry, all types of course work are superior to econometrics and statistics and significantly so for the level of influence. Almost the opposite results are obtained for government but without significance. These results support the view that different types of skills get rewarded in government relative to industry. Replacement of economic theory and econometrics and statistics with case studies as suggested by table 3 is also supported by the results for level of influence in both government and industry.

Analysis undertaken with secondary data obtains the least reward in both industry and government. Understanding and experience obtain the highest reward in three of the four cases with greatest significance in all instances. These results also support the hypothesis regarding the importance of customized rather than standardized or generic solution frameworks which, in turn, emphasizes the importance of problem definition and case studies. One surprising result with respect to the determinants of power and influence is the effect of professional maturity. Years since the last degree has only one positive effect; however, none of the measured effects are significant.

For the types of analysis, industry professionals give the highest weight to gut intuition while government professionals are rewarded most for descriptive analysis geared toward problem definition followed by the use of secondary formal frameworks (formal frameworks developed by others). This outcome is consistent with the positive significance of gut intuition as a source of effectiveness with professional maturity for industry professionals. These results can perhaps be best explained by the relative emphasis in government research on ex post deductive evaluation. In contrast, industry professionals are frequently posed with futuristic questions which require ex ante, inductive analysis. In contrast, many government professionals (e.g., in Economic Research Service) spend relatively more time explaining what has happened.

Table 4. Determinants of Power and Influence in Industry and Government.

Independent Variable	Dependent Variable			
	Industry		Government	
	Number Supervised	Level of Influence	Number Supervised	Level of Influence
Percentage of Course Work				
Economic Theory	-0.64367	0.842628 *	-0.56613	0.018731
Econometrics/Statistics	-	-	-	-
Operations Research, LP	3.384585	1.063902 **	-1.03448	-0.11185
Applications of the Above	2.529792	1.066161 ***	-0.11178	-0.14274
Case Studies	0.840095	0.943193 **	-0.36229	0.169375
Other	0.464042	1.001097 **	-0.56150	0.135081
Basis for Analyses				
Published Data	-	-	-	-
Collected and Internal Data	0.493489	0.411522 *	0.102398	0.344654 **
Understanding and Experience	1.732308	0.370165 **	0.331617	0.380127 ***
Type of Analyses				
Formal Original Framework	-	-	-	-
Formal Other Framework	0.197966	-0.06384	0.030528	0.147563
Heuristic Economic Principle	-0.36934	-0.48011 *	-0.12980	0.006747
Gut Intuition	0.205360	0.383707	-0.22376	0.033624
Descriptive Problem Definition	-0.11477	0.011796	-0.02833	0.213224
Years Since Last Degree	-1.19754	0.378992	-0.05182	-0.41897
Intercept	-91.0412	-41.2628	42.15750	24.16777

\* Significant at 10%  
 \*\* Significant at 5%  
 \*\*\* Significant at 1%

## Structure of the Profession

The linkages among various professional groups are reported in table 5 in terms of the sources of conceptual thinking, sources of reports and forecasts, and outlets for completed analyses. The results of this table along with the corresponding empirical structural representation in figure 1 (where line thickness represents magnitudes of numbers in table 5 with magnitudes under 10 percent excluded) show that the profession is not fragmented as is sometimes claimed. To the extent that results reflect reality rather than desire, the degree of interaction is suggestive of a well integrated profession.

For sources of conceptual thinking, professional meetings (AAEA and ASSA) are the primary input media for all professional groups. Although academic researchers rely heavily on basic economic journals, most professional groups make substantial use of them. Academic researchers also rely substantially on lay interchange—almost as much as any other group except extension. Except for academic researchers, *Choices* is the second most important input medium.

The results for the categories of personal experience and discussion with colleagues, especially in comparison to the results reported in tables 2 and 4, suggest that the profession is not making the best use of its resources. There may be too much formalism in the profession as well. The results for sources of reports and forecasts are basically equivalent to those obtained for sources of conceptual thinking with a few minor exceptions, e.g., trade journals become more important for teaching.

With respect to the outlets for completed analysis, the biggest surprises are the importance of trade journals as an outlet for academic research and basic economic journals as an outlet for industry and government. The latter outcome may reflect desire rather than actual experience. The *AJAE* serves as a major outlet for all professional groups except industry. The professional AAEA and ASSA meetings are a major outlet only for academic research. This is in sharp contrast to the extent that most groups rely on professional meetings as an input. In the case of extension, most results are reported to colleagues and lay individuals as expected.

Table 5. Linkages Among Professional Groups Through Professional Media (Percentage of Activity Associated with Each Form of Media).

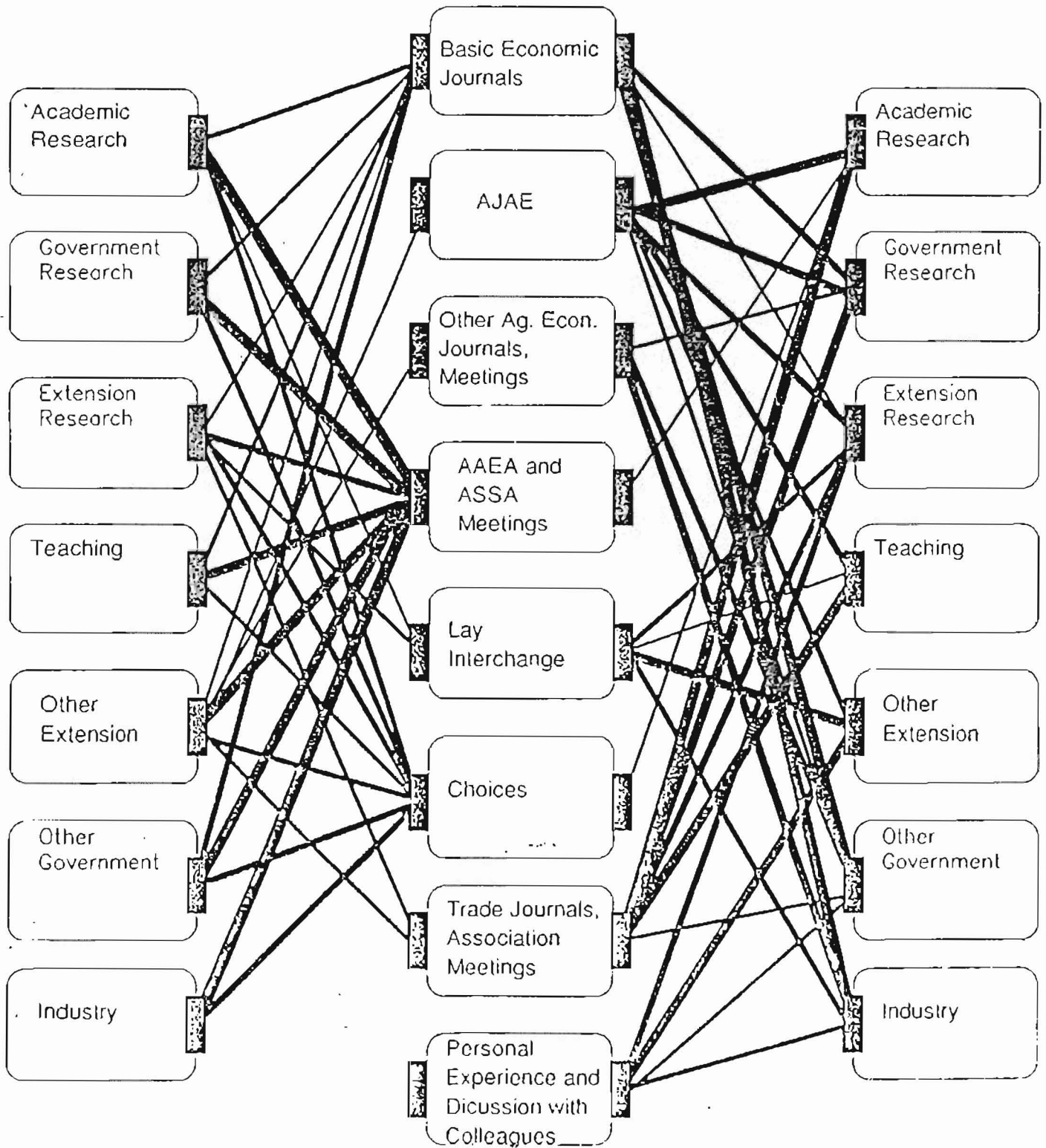
Group	Trade Journals, Association Meetings	Choices	AAEA and ASSA Meetings	AJAE	Basic Economic Journals	Other Ag. Econ. Journals, Meetings	Personal Experience and Discussion with Colleagues	Lay Interchange
Sources of Conceptual Thinking								
Academic Research	7.412457 ***	13.38766 ***	33.21209 ***	3.034851 **	17.60720 ***	8.651466 ***	3.441407 ***	10.31995 ***
Extension Research	11.86025 **	17.18945 ***	21.51560 ***	9.355391 ***	9.911551 *	5.715425 *	3.066789	11.85607 **
Other Extension	11.62489 ***	17.00264 ***	32.47587 ***	10.57364 ***	9.981446 ***	11.54808 ***	2.356165	2.072341
Teaching	7.331362 ***	13.59307 ***	28.91444 ***	7.162022 ***	11.91368 ***	7.773276 ***	8.711906 ***	8.603723 ***
Industry	6.299508 ***	20.15235 ***	35.81677 ***	8.937834 ***	8.952149 ***	7.237496 ***	3.08281 ***	5.63307 ***
Government Research	8.063021 ***	18.55891 ***	30.7313 ***	6.519191 ***	12.79859 ***	6.252779 ***	5.305987 ***	8.170516 ***
Other Government	7.941291 ***	22.01546 ***	37.09052 ***	8.481344 ***	6.888538 ***	6.532144 ***	3.299588 ***	4.969752 ***
Sources of Reports, Forecasts								
Academic Research	14.69740 ***	16.2111 ***	27.68015 ***	4.579252 ***	8.672624 ***	4.096161 ***	7.692405 ***	10.97306 ***
Extension Research	11.40081 ***	23.39196 ***	32.56605 ***	11.67075 ***	10.73686 ***	5.525291 *	3.300616	0.126991
Other Extension	13.39777 ***	18.91348 ***	29.80077 ***	8.821802 ***	9.527604 ***	7.635949 ***	2.529018	4.528164 *
Teaching	27.70691 ***	18.40707 ***	30.04261 ***	6.166229 ***	4.047101 **	6.188954 ***	2.120431	1.796653
Industry	11.90612 ***	16.51683 ***	29.47404 ***	8.946384 ***	8.042083 ***	6.479587 ***	6.364733 ***	7.545717 ***
Government Research	16.68213 ***	20.22800 ***	26.55230 ***	4.297754 ***	5.546791 ***	4.244324 ***	9.580904 ***	9.603217 ***
Other Government	12.34191 ***	21.65717 ***	34.96839 ***	7.022981 ***	6.770882 ***	5.239311 ***	3.613146 **	4.198997 **
Outlets for Completed Analyses								
Academic Research	34.19136 ***	10.47743 ***	10.17935 ***	28.35897 ***	5.95923 **	4.980746 **	2.548509	3.304375 **
Extension Research	20.27349 ***	2.682332	-0.23836	20.83794 ***	10.26181	7.746328	21.70028 ***	16.73615 ***
Other Extension	9.602457 ***	0.276256	-1.24414	16.39000 ***	7.621024 **	9.496389 ***	29.27251 ***	28.58550 ***
Teaching	33.73367 ***	1.438418	7.644558 ***	20.38209 ***	7.760752 **	8.848436 ***	9.86921 ***	10.32285 ***
Industry	6.122805 ***	0.188734	0.628899	8.654393 ***	32.33987 ***	23.13864 ***	14.59426 ***	14.33237 ***
Government Research	27.52452 ***	1.345667 ***	3.049553 ***	23.95208 ***	19.50790 ***	12.49930 ***	6.140298 ***	5.980659 ***
Other Government	13.41988 ***	0.918642	1.155251	12.14649 ***	32.02720 ***	19.43902 ***	11.57821 ***	9.315281 ***

\* Significant at 10%  
 \*\* Significant at 5%  
 \*\*\* Significant at 1%

Linkages Among Professional Groups Through Professional Media : Actual

Sources of Conceptual Thinking

Outlets for Completed Analyses



The results in table 5 for *Choices* reject the view that it is not a medium for academics. Most articles are prepared by academic researchers who are simply altering their communications style for this particular medium. This, of course, suggests that the AAEA can influence the type of research products generated by the profession. For example, if the profession decided that the case study or problem definition approaches need greater emphasis, the experience of *Choices* suggests that this can be achieved by the media policies that the AAEA implements for its products.

Additional results were also developed to examine changes in professional linkages that occur with professional maturity (not reported in tabular form because of space constraints). For sources of conceptual thinking, the most striking results here were that almost all professional groups increase their reliance on trade journals and AAEA and ASSA meetings as they become more mature. On the other hand, almost all professional groups decrease their reliance on basic academic journals and on lay interchange. The latter results are highly significant and a sad indictment of the profession. There is also a tendency to replace reliance on the *AJAE* with reliance on regional agricultural economics journals and activities, especially for extension, industry, and government groups.

For completed analyses outlets, all groups reduce their publication rate in basic economic journals and increase publication in the *AJAE*. With few exceptions, most groups reduce discussion with colleagues and increase their presentations to lay groups. The latter exceptions were, however, mostly insignificant. With professional maturity, the publication rate in trade journals increases for all groups except academic research but remarkably so for teaching. Most of these results are not surprising.

### **Qualitative Survey Results**

In addition to the quantitative survey results, some additional results were also generated for the *AJAE*, *Choices*, and the AAEA meetings. For each of these media, the respondents were asked to list problems they thought should be but are not addressed. In general, the qualitative responses to problems that should be addressed support the view that the profession has become too technique

oriented, too solution rich, and too risk averse in analyzing possible future scenarios. Moreover, there is too little problem solving knowledge generation for which there is value added, and there are a host of specific issues for which problems have not been well articulated.

The common thread that runs through many of these responses is that there are too few conceptual and empirical pieces that address important problems that exist currently or may emerge at some future date. Instead, most of the conceptual and empirical pieces focus on some construct in the literature or are dictated by the standardized solution frameworks that have been previously developed. The call seems to be for more creative, unstructured publications that can be the basis for valuable professional exchange. Many of the responses cover a broad range of concerns that focus on opportunities for innovations in institutional design and collective group policy analysis.

The gap between what is currently published in the *AJAE* and what would best serve the membership is obviously not only due to the policies that are implemented by the editor, the Association or the peer review process. As one thoughtful respondent argued: "After over thirty years of observing the academic process it appears that most scholarly societies have become agents to establish professional credentials for tenure, promotion or a job offer. This is probably as much the fault of the administrators looking for someone else to make their decisions as anything."

Other respondents suggested that the way of dealing with this problem is to revise the academic reward system so as to encourage more problem solving and applied analysis. Positive rewards should be given for well articulated problems and useful results and insights with penalties imposed for just another technical, standardized application. The institutional changes that are required for such a reward and penalty policy structure to naturally emerge is itself a serious area of social science inquiry.

Turning to *Choices*, the qualitative responses are overwhelmingly favorable. Among the vast array of favorable comments, however, there are some constructive suggestions. Since the subject matter and problem solving knowledge of the profession is multidisciplinary, *Choices* should expand its disciplinary base beyond agricultural economics and political science. The



articulation of important problems has been one of the most positive features of *Choices*, but too much space is given to personal opinions without any supporting analysis or empirical justification. *Choices* does not devote sufficient space to the large payoff areas of analysis, namely, the design of new institutions or the reform of existing institutions. More lay articulation of market failures as well as government failures would dramatically improve the societal contributions of the magazine.

For the AAEA meetings, both summer and winter, the same desires that emerge for the *AJAE* and *Choices* appear once again. However, there is less (more) dissatisfaction with the professional meetings than with the *AJAE* (*Choices*). The responses suggest that the membership would prefer more sessions on feedback from users of economic analysis conducted by members of the profession. This could help structure and focus future analysis where the largest payoffs might exist. More visionary sessions requiring ex ante analysis are desired. Specifically, what major problems are likely to emerge down the road that will require fundamental economic analysis?

### Concluding Remarks

The anecdotal evidence as well as both the quantitative and qualitative responses to the survey presented in this paper imply that the product mix of the AAEA does not sufficiently emphasize problem definition, case studies, and heuristic application of economic principles based on understanding and experience. Note that changing the product mix in these directions does not imply lowering the quality standard imposed by the peer review process but instead expanding the scope of such standards. In the existing portfolio, relatively too much emphasis has been placed on ex post analysis of historical secondary data using formal frameworks (*AJAE*) and on expression of individual viewpoints (*Choices*).

Criteria used in the selection of products, which is the collective responsibility of the Board of Directors and both the editors and reviewers of *AJAE* and *Choices*, have imposed limitations on the profession which has reduced its ability to tackle forward-looking problems and foster

institutional innovations. Some of the self-imposed limitations include insistence on historical data analysis and "falsification"; imposition of a false sense of objectivity, limitation of technology for empirical research, the emphasis on linear logic, and the presumption that economic understanding is a convergent process.

Contrary to many claims that extension, teaching, or industry components are not well related to the profession, the results show that the profession is highly interconnected through its various media channels. However, the AAEA has a serious problem of balance between inputs and outputs. All major groups in the profession rely on the AAEA and ASSA meetings as a major input in their thinking (probably because of low transaction costs) but no major groups regard the meetings as an important output for their work (probably because of low professional payoff). The same statement applies to *Choices* as well. In contrast, almost all major professional groups place high emphasis on output in the *AJAE* (which has high incentive given the reward structure facing most groups) but almost no group relies on it as an important input in their thinking (probably because of the high transaction cost of reading journal articles).

The experiment with *Choices* has demonstrated that the AAEA Board plays a strong role in influencing the product mix of the profession. This fact together with the results in this paper suggest that the AAEA Board should take action to encourage more forward-looking problem definition and heuristic application of economic principles to problems for which adequate data have not yet been generated—not in lieu of the types of products now produced but as an enhancement of the product mix. Changes are needed that will balance the inputs and outputs of the profession by placing higher rewards on those outputs that have the largest impact and reducing transaction costs incurred in accessing the best information the profession has to offer. Some possibilities include introducing a submission and refereeing process for invited papers at meetings (which would give them refereed publication status), adding a session on forward-looking problem definition (with similar refereed publication status), and broadening the scope of analysis in the *AJAE* by adding sections for brief, highly readable papers on problem definition and heuristic application of economic principles.

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