A CONFUSION OF AGRICULTURAL ECONOMISTS?- A PROFESSIONAL INTEREST SURVEY AND ESSAY

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One doesn't have to attend many AAEA meetings before it is apparent that there is considerable diversity of opinion regarding some fundamental propositions. This diversity applies to normative, positive, micro and macro economic propositions. Probably even more striking is the diversity of opinions on methods or items that might be labeled professional interest. Frequently, we label a person as a Marxist, an institutionalist, a programmer, an empiricist, and so on. Such labels may lead to efficient communication but run the danger of conveying in a simplistic way the complexity of beliefs which afflict agricultural economists. Further, there seems to be no documented evidence that any of these labels adequately describe agricultural economists, collectively, or as subspecies.

It is also clear that where one attends school might induce labels, such as the Chicago label (Reder). That is, economists trained at Chicago might forever after see both positive and normative economics from a more market oriented perspective than those from say Harvard. On the other hand, it may seem that most perceptions of economic issues are rooted deeply in general ideology. Party affiliation studies by political scientists suggest that parents' party affiliation is very important in explaining children's affiliation (Campbell et al., pp. 146-48). This may imply that ideologies or beliefs about economic issues are developed long before graduate training or employment. Barring that we self-select graduate training or employment based upon beliefs, the "schools of thought hypothesis" may be tenuous.

Indeed, the perception of the public seems to be that if there are schools of thought, then there must be a great many schools because diversity of opinions on issues and even basic economic facts seems to be the rule. After documenting these perceptions, a popular article several years ago in the American Economic Review reported results of a survey of U.S. economists (Kearl, Pope, Whiting, and Wimmer) hereafter called the KPWW study. The thrust of the paper was to argue that there was a considerable consensus among economists, especially for micro and positive economic propositions. Further, there was little evidence that the institution where employed affected perception of microeconomic questions.[1] Subsequently, European economists have conducted similar surveys of their colleagues with similar findings except that basic ideology of countries mattered some (Frey, Pomerehne, Schneider, and Gilbert). Thus, based upon these data, one should expect much consensus among agricultural economists and no systematic patterns of response due to a person's place of employment.

However, these studies did not examine the effects of background on philosophy. Might not school of graduate training be a significant factor in determining general economic philosophy? Further, might not other factors be systematically correlated with economic philosophy? Within agricultural economics, there may inherently be factors which lead to great diversity. For example, land grant institutions have a sectoral state service mission and many undergraduate programs have emphasized the micro-business component of agricultural ecomomics. Might not these managerial interests lead to a strong consensus for or against interventionist policies for those employed at or graduated from these institutions?[2] Are there significant differences among those employed in academic, extension, industry, and other government jobs? How do fields of concentration affect these philosophies? Do those graduated from or employed at universities that are highly ranked differ from others in these views?

The purpose of this paper is to report the results of a survey of U.S. agricultural economists drawn from the 1982 AAEA Directory. The goal is to provide descriptive summary statistics and explore the hypotheses suggested above. In all cases, simple cross-tabulations will be the primary form of analysis in order to keep the discussion less cluttered by technical detail. Since a great many comparisons are involved, only the briefest summary can be presented.[3]

II. THE SURVEY--A DESCRIPTION

The project began with lengthy discussions regarding the appropriate questions to ask as linked to specific hypotheses. The set of questions employed by KPWW were not used because some of the questions were outdated or judged to be less informative for our purposes.[4] Several of the questions used in our survey are similar to those in KPWW and can be used for comparison.

The earlier studies requested a response to very briefly stated and general propositions such as "tariffs and import quotas reduce general economic welfare." As such, the respondents are taking a sort of Rorschach (ink blot) test which seeks an initial or basic reaction to a complicated issue.

The set of questions were classified (sometimes with difficulty) into: (1) normative, (2) positive, and (3) method oriented or professional interest categories. In all cases, the questions surely reflect our own histories and biases. If one identified an overall theme, it is: "How well do agricultural markets work? What if any impediments exist to achieving market efficiency? How should the government become involved in these markets?"

After choosing a set of questions, the survey was pretested among a non-random sample of 30 prominent agricultural economists.[5] Some resented the questions which were broad and lacking detail and felt that the ambiguities diminished the worth of the study. This input improved many questions but it seems that relatively short questions required by such a survey unavoidably contain ambiguities. Inevitably questions of greater detail lead to greater confusion and incidence of "don't knows."

At the end of the pretest, respondents were asked for their perception of the worth of the study leaving hypotheses and methods of analyses largely up to their imagination. Though some felt the social value of such a study was negative, others gave encouragement. After much soul searching and knowing full well that professional opinion studies (e.g., those on journal or departmental quality) are often held in low esteem, but widely read, enjoyed and quoted (like the "National Enquirer"), we carried on.

A stratified proportional sample was drawn from the 1982 Directory of the AAEA.[6] The stratification ensures that the sample roughly resembles the population in terms of employment.[7] In all, 509 questionnaires were mailed and 245 usable returns were received (about 40 of the 509 were returned due to death or moving and 10 were not in usable form). This seems to be an unusually good response rate and we wish to thank all of those who assisted in the study.

The survey questions are found in Table 1 and biographical data was obtained as indicated in Appendix A. Some 72 questions were asked with 5 possible responses listed, one of which was to be circled: strongly agree(SA), agree(A), disagree(D), strongly disagree(SD), and don't know(DK).[8]

An examination of the questions shows that many areas of concern were examined. For example, #19 is clearly a normative question: "larger farms should receive proportionately lower subsidies than smaller farms," while #69 is positive: "agricultural land values are determined primarily by agricultural use." A method question (though positive) is #16: "Economic predictions of mathematical programming models are generally superior to those of econometric methods." Following this taxonomy, our judgment gave the classifications in the first three lines of Table 2. There are 35 normative, 23 positive, and 14 professional interest questions.

Factor analysis was used to attempt to delineate latent structures but no clear pattern emerged conforming either to the three groups in Table 2 or any other grouping of the questions.[9] This is in marked contrast to the KPWW study which was quite successful in isolating at least 2 broad philosophical variables. However, it seemed useful to isolate, a priori, additional aggregations. Three such possible groupings are listed in the last three lines of Table 2. A

TABLE 1

QUESTIONS AND FREQUENCY DISTRIBUTION OF RESPONSES

Question	SA	A	D	SD	DK
1. Characterizing farms as small businesses, the markets they face are more concentrated than those faced by other small businesses.	7.8	42.0	29.4	10.2	10.6*
2. Marketing orders which facilitate price bargaining improve social welfare.	5.3	39.6	31.8	11.4	11.8
3. Social welfare would be improved if all marketing orders were abandoned.	6.9	26.1	34.3	17.1	15.5
4. Disaster and crop insurance programs, which are funded (partially or completely) by the government, raise social welfare as compared to a laissez-faire policy.	9.0	61.6	14.3	4.1	11.0
5. The primary justification for government intervention in agriculture is to _____.**	11.8	18.4	4.1	54.7	11.0
6. Marketing orders, which facilitate assembly, grading, and packaging, lead through standardization to a net welfare gain to society through improved operational efficiency and consumer information.	12.7	52.7	22.0	2.9	9.8
7. Agricultural economics should be primarily a social, rather than a managerial, science.	9.4	26.1	35.9	24.5	4.1
8. The representation of the real world in agricultural economics research (as indicated by the journals) by emphasizing technical elegance is not very useful for understanding agricultural economic behavior.	21.6	42.9	25.3	7.8	2.4
9. Generally, externalities associated with agricultural production do not lead to distortions which are of sufficient magnitude to warrant government intervention.	1.6	30.2	41.2	20.8	6.1
10. Time series analysis (ARIMA) is generally more accurate than econometric analysis when predicting economic variables.	2.4	20.0	31.0	10.2	36.3

TABLE 1 (continued)

Question	SA	A	D	SD	DK
11. Special public policies regarding the financing of agricultural investment are necessary because wholly private financial markets are imperfect.	4.5	33.9	38.4	11.8	11.4
12. Price supports have led to more stability in agricultural income as compared to a laissez-faire policy.	17.6	61.2	11.4	3.3	6.5
13. Current government policies, which are aimed at a particular distribution of income, are implemented at least cost.	0.0	1.6	49.8	35.1	13.5
14. Elimination of the farmer-owned reserve program would increase income variability.	5.7	59.2	12.2	12.0	20.8
15. Given current information, the futures market is not a good indicator of expected supply and demand conditions.	4.1	19.6	49.0	15.5	11.8
16. Economic predictions of mathematical programming models are generally superior to those of econometric methods.	0.8	9.4	38.0	11.8	40.0
17. Current public policy regarding tobacco production is socially preferred to a laissez-faire policy.	1.6	12.2	31.8	40.0	14.3
18. Governmental policies should not attempt to redistribute income and wealth from other sectors of the economy to factors of production in agriculture.	7.3	43.3	35.9	6.5	6.9
19. Larger farms should receive proportionately lower subsidies than small farms.	10.2	42.9	29.8	4.5	12.7
20. Price instability at the producer level is caused mainly by randomness of production rather than market power or random demand.	8.2	48.6	25.7	10.2	7.3
21. Marketing, more than production skills, increases net farm income.	9.8	41.2	32.2	4.5	12.2

TABLE 1 (continued)

Question	SA	A	D	SD	DK
22. Barriers to entry and exit in agricultural industries are sufficiently low that the markets can be characterized by what some economists have called contestable (approaching a competitive allocation of resources).	3.7	43.7	34.7	9.0	9.0
23. Research problems and results that do not have immediate or direct policy implications are of little value.	1.2	9.0	51.4	38.0	0.4
24. Government data collection and analysis leads to an increase in market efficiency.	29.0	61.6	4.9	1.2	3.3
25. Models of agricultural economic response based upon risk averse behavior are useful in positive economic analysis.	9.8	69.4	5.7	0.4	14.7
26. Acreage reduction programs are effective in reducing aggregate production.	4.9	56.7	27.8	4.1	6.5
27. Because of market failure in the provision of information, agricultural economic extension efforts are socially productive (i.e., social costs are less than social benefits) and should be funded.	22.4	58.0	9.8	2.0	7.8
28. Agricultural policy for third-world countries should stress food self-sufficiency rather than free trade.	8.6	28.2	36.3	14.7	12.2
29. Greater resources should be devoted to deriving and analyzing data obtained by experimental methods.	10.6	44.1	18.0	1.6	25.7
30. Flexible international exchange rates are superior to pegged or fixed rates.	15.9	58.8	6.1	0.8	18.4
31. Supply controls are socially preferred to price supports.	2.4	40.4	30.6	4.5	22.0
32. Market incentives do not lead to efficient conservation (use) of agricultural resources.	6.9	37.6	36.7	11.4	7.3
33. Social welfare is improved through the provision and enforcement of anti-trust laws.	15.9	67.8	9.4	1.6	5.3

TABLE 1 (continued)

	Question	SA	A	D	SD	DK
34.	Government-supported activities such as the Extension Service should be more fully directed towards smaller scale agriculture.	7.3	36.3	43.7	6.1	6.5
35.	Changes in the prices of agricultural outputs lead input price changes.	2.0	35.9	33.1	8.2	20.8
36.	Agricultural economics is primarily a social, rather than a managerial, science.	4.9	37.6	40.0	11.0	6.5
37.	Mean square prediction (forecast) error is a more important diagnostic aid in evaluating econometric models than is the precision, sign, and size of the estimated coefficients.	1.6	17.6	40.8	7.3	32.7
38.	Funding for demand expansion programs, such as the Food Stamp and P.L. 480 programs, should be increased.	3.3	28.2	51.8	8.6	8.2
39.	Farm management issues and skills are central to agricultural economic analysis.	10.2	50.6	32.2	4.1	2.9
40.	More extension resources should be devoted to the convincing of farmers that use of the futures market will improve farmers' welfare.	3.3	29.0	38.0	10.2	19.6
41.	Government programs which intend to promote greater stability in price or output (such as the farmer-owned reserve or price support programs) have generally also increased average aggregate farm income.	2.9	56.3	20.8	2.0	18.0
42.	The government should pursue policies aimed at equalizing the distribution of income and wealth within the agricultural sector.	1.2	21.2	53.5	20.0	4.1
43.	Free trade policies should be pursued by the federal government.	19.2	66.5	9.8	0.4	4.1
44.	Government expenditures on information generation, such as the Crop Reporting Board, should increase.	19.2	55.1	11.0	1.6	13.1
45.	Credit rationing by private lenders has reduced farm investment from the social optimum.	1.6	15.1	49.0	10.6	23.7

TABLE 1 (continued)

	Question	SA	A	D	SD	DK
46.	In commodity models, the benefits from attempting to "endogenize" or predict government behavior exceed the costs of doing so.	2.4	30.2	26.5	3.3	37.6
47.	Farm management issues and skills should be central to agricultural economic analysis.	6.5	43.7	38.4	6.9	4.5
48.	Economic research supported by the experiment station is socially productive (i.e., social costs are less than social benefits) and should be publicly funded.	31.0	60.0	2.9	0.8	5.3
49.	Marketing orders have succeeded in stabilizing and/or raising prices such that producers are better off.	7.8	67.3	11.0	0.4	13.5
50.	The deterioration in the terms of the trade is a significant factor in the impoverishment of the third-world population.	4.9	42.0	26.9	4.5	21.6
51.	Laissez faire is preferred to government intervention in agriculture.	6.9	26.5	49.4	9.0	8.2
52.	Dynamic optimization tools are primarily useful in normative, rather than positive, economic analysis.	2.4	33.1	27.8	4.9	31.8
53.	Because information is readily available and transmitted, market arbitrage opportunities over space and time dissipate rapidly.	4.1	50.6	25.3	0.8	19.2
54.	Because of market manipulation, the futures market does not yield prices which are reflective of expected supply and demand conditions.	0.8	11.8	55.5	18.8	13.1
55.	Recent export embargoes enacted for political reasons have had little or no economic effect on the world market or the importing countries.	7.8	35.1	35.1	16.7	5.3
56.	Agricultural decision makers process information in a simple way such that adaptive or static expectations, rather than rational expectations, best describe behavior.	2.9	29.4	33.1	4.9	29.8

TABLE 1 (continued)

Question	SA	A	D	SD	DK
57. All agricultural policies should be evaluated only in terms of their ultimate effects on aggregate consumer welfare.	2.4	8.6	64.5	23.3	1.2
58. Society should not discourage farm growth.	10.2	66.5	14.3	2.4	6.5
59. Considering the trade-offs between generality and costs, most agricultural problems can be adequately studied using static, rather than more complicated, dynamic models.	1.6	26.9	52.2	5.7	13.5
60. Agricultural market prices are close to a competitive market equilibrium.	2.4	51.8	31.8	2.4	11.4
61. Greater resources should be devoted to primary as opposed to secondary data collection and analysis.	6.5	52.7	15.1	0.4	25.3
62. As opposed to income transfers or stability, the primary justification for government intervention is that society desires a "cheap food" policy.	4.1	24.5	53.1	13.5	4.9
63. A laissez-faire policy regarding milk production is socially preferred to the current policy.	9.8	40.4	31.0	8.6	10.2
64. Because information changes with time, the price generated by the futures market is a poor predictor of the future cash price.	5.3	33.1	39.6	8.2	13.9
65. The profession does not rank highly research which attempts to test or "confirm" economic theories of behavior or models.	3.7	22.9	51.0	6.1	16.3
66. Resource adjustments in agriculture are "sticky" compared to other sectors of the economy due to asset fixity.	9.4	55.1	27.3	2.9	5.3
67. Voluntary organizations, such as cooperatives, raise net farm incomes.	4.5	57.6	16.3	0.8	20.8
68. Current public policy regarding grain and cotton production is socially preferred to a laissez-faire policy.	2.4	40.0	36.7	5.7	15.1
69. Agricultural land values are determined primarily by agricultural use.	3.7	31.0	45.7	15.1	4.5

TABLE 1 (continued)

Question	SA	A	D	SD	DK
70. If public-sponsored mechanization research displaces labor, government adjustment assistance to those displaced should be provided.	5.7	50.6	32.7	3.3	7.8
71. Fixed rule policies, such as a fixed formula price support, are preferred to policies where the discretion resides with the Secretary of Agriculture.	3.3	24.9	51.4	8.2	12.2
72. Commodity market promotion significantly raises demand such that net farm income from commodity sales increases.	0.8	34.7	35.9	9.0	19.6

*These numbers are the percentage of respondents who answered in each of the categories. The raw frequencies can be obtained by multiplying the proportions times 245. For example, .078 x 245 shows that 19 persons answered question 1 in the "strongly agree" category. The percentages may not add to 100 due to rounding error.

**Question 5 asks the respondent to check one of five specific answers. The following correspondence is required: (1) SA-market failure, (2) A-income transfer, (3) D-that society values the family farm, (4) SD-to reduce instability, and (5) DK-don't know.

TABLE 2

CLASSIFICATIONS OF QUESTIONS INTO NORMATIVE, POSITIVE, AND PROFESSIONAL INTEREST

Category	Questions Falling into Category
Normative	2, 3, 4, 5, 6, 9, 11, 17, 18, 19, 23, 24, 27, 28, 29, 30, 31, 32, 33, 34, 38, 40, 42, 43, 44, 45, 48, 51, 57, 58, 61, 63, 68, 70, 71.
Positive	1, 10, 12, 13, 14, 15, 20, 22, 26, 35, 41, 49, 50, 53, 54, 55, 60, 62, 64, 66, 67, 69, 72.
Professional Interest	7, 8, 16, 21, 25, 36, 37, 39, 46, 47, 52, 56, 59, 65.
Pro-Intervention (PI)	2, 3[a], 4, 6, 11, 17, 27, 30, 33, 43, 51, 63, 68, 70.
Market Characteristics	1, 9, 11, 15, 22, 27, 32, 53, 54, 60, 66.
Pro Income Redistribution (ID)	18, 19, 34, 38, 42, 58, 70.

[a]The underlining implies that the sense of SA, A, D, and SD must be reversed in order to conform to the label and aggregation.

pro-intervention variable is labeled PI. Market characteristics (such as concentration) which might suggest intervention are labeled MC. Finally, ID is an income distribution variable. Generally, it reflects a willingness to redistribute income to agriculture and to the economically disadvantaged. Since factor analysis gives no basis for these or any other groups, we will continue probing in order to understand the relationship, if any, between the questions listed in Table 1, the groupings in Table 2 and various socioeconomic variables indicated in Appendix A.

III. PATTERNS OF CONSENSUS IN THE SAMPLE AT LARGE

An examination of Table 1 shows that questions 4, 12, 24, 25, 33, 43, 48, 49, 57, and 58 each have entries with at least 60 percent in a single response category. On this basis, crop insurance, price supports, government data collection, anti-trust, free trade, experiment station research, and marketing orders are seen as beneficial by a good share of the profession. A large number also feel that risk response models are useful. Further, 88 percent of the respondents did not feel that agricultural policy should be evaluated only in terms of aggregate consumer welfare. In general, there appears to be support for the hypothesis that government intervention is desirable. Indeed, most of these questions are normative propositions about the desirability of current interventionist policies (see Table 2, normative and PI).

Questions with the greatest diversity of response include 2, 18, 22, 32, 35, 47, 52, 56, and 68. There seems to be no clear pattern of response as with the high consensus questions discussed above.

The heuristic measures above suggest much consensus on some questions and diversity on others. A common quantitative measure of consensus is based upon relative entropy

$$(1) \quad C = 1 - [(\Sigma_i p_i \ln p_i)/\ln(1/N)]$$

where p_i is relative frequency or proportion in the ith response category, ln is the natural logarithm, and N is the number of categories. A value of C near 1 represents consensus as entropy ($\Sigma_i p_i \ln p_i$) approaches its maximum $-\ln(1/N)$.

Values of C were calculated for both the five category case listed in Table 1 and for the case where A and SA are aggregated and D and SD are aggregated with DK's omitted. Due to space limitations these will not be presented. Suffice it to say in the five category case, C was lowest for question 3 (C = .07) and largest for question 25 (C = .41). In the two category case, C was smallest for questions 2, 18, 32, 35, 46, 47, 53, 56, and 68 where C was essentially zero. It was highest for question 48 (C = .76). These results indicate very little

consensus among respondents. Further, the lack of consensus is not caused by a large incidence of "don't knows." The profession just appears to be opinionated but divided on many of the issues.

Assuming normality of C (which is not likely), a t-test was conducted for pairwise equality of consensus among the groups listed in Table 2. In no case did t values exceed 1.7. Hence, for example, there is no evidence that the profession has more consensus on positive than normative economic issues using conventional alpha levels.

Though one could assume that C is normally distributed and test statistically the hypothesis that consensus holds for each question, a more straightforward approach is to test consensus using a chi-square "goodness of fit" type test.[10] For the five category case, the lowest chi-square statistic was for question 25 with chi-square = 108 which implies rejection of consensus for all questions. For the two category case, all chi-squares exceeded 15 except two: question 13 had a chi-square of 3.9 while #48 had a chi-square of 9.4. Since at the alpha = .01 level, the tabled values for 4 and 1 degrees of freedom are 13.28 and 6.63 respectively, there is overwhelming statistical evidence against consensus.

Although there is little consensus, are there any patterns which emerge from the data in Table 1 and the associated quantitative tests and calculations which we performed? There is greatest tendency for agreement for questions 12, 13, 16, 17, 23, 24, 25, 27, 30, 43, 44, 48, 49, 54, and 57 (these yield C values over .3 in both the five and two category cases). Respondents seem to support general government intervention in agriculture but are more divided about specific policies. Government sponsored research is strongly supported as indicated by the responses to questions 24, 27, 44, and 48 (data collection extension, crop reports, and experiment station research). Respondents also feel that longer term research without immediate returns is of value (#23), and that price supports (#12) and marketing orders have benefited agricultural producers (#49). Questions examining specific policies show much less support for government intervention. There is strong feeling against current tobacco policy (#19), and a general lack of support for current milk (#63), and cotton and grain policies (#68). In short, a majority of respondents seemed to prefer government intervention to a laissez-faire policy in agriculture but are divided about the desirability of specific policies. This pattern of response is in sharp contrast to the response when asked about interventionist policies in general. For example, there is relatively strong consensus on the advantages of free trade and flexible exchange rates (#30, #43). Further, there is consensus that policies should not be evaluated in terms of aggregate consumer welfare (#57).

A rough characterization of the above results might be as follows: agricultural economists favor intervention in agriculture, particularly as it supports funding for research. They support laissez-faire policies in other sectors of the economy. Further, most specific interventionist policies may not contribute to improved social welfare but must not be evaluated solely in terms of aggregate consumer welfare.

Contrasts and Similarities with the KPWW Results

It is interesting that consensus was resoundingly rejected in both the five and two category cases for nearly every question. In contrast, KPWW found consensus supported for over two-thirds of their questions. Opinions seem to be much more diverse among agricultural economists. This seems to hold even when the questions are similar to those in KPWW.

For example, over 10 percent of the respondents did not feel that free trade policies were desirable (#43). This is much higher than the 3 percent found in the KPWW survey. A similar question and result concerns the desirability of flexible exchange rates (#30). Apparently, there is more concern by agricultural economists about the desirability of free markets in these respects than economists in general. Another point of interest is that when the KPWW survey asked whether the "FED" should pursue a fixed rate of money increase, 39 percent agreed (in some form) with a fixed rule policy. In contrast, in our sample, only 28 percent agreed that fixed rule agricultural policies were superior to discretionary policies (#71). In the KPWW study, about 71 percent agreed that the distribution of income in the United States should be more equal and 81 percent felt that government policy was a legitimate means to achieve a redistribution of income. Only 22 percent in our sample felt that the government should pursue policies aimed at equalizing the distribution of income and wealth with the agricultural sector (#42).[11] Indeed, one of the questions which generated the most apparent consensus was #58: over 76 percent of the respondents felt that society should not discourage farm growth. Since much of the growth issue seems to center on the disparity of income between family and corporate or commercial farms, we conclude that most agricultural economists are fairly content to let the market allocate income and wealth within the sector.

It is also interesting (and perhaps embarrassing) that while over 73 percent of those surveyed felt that the government should not seek a more equitable distribution of income within the agricultural sector, over 40 percent felt that income should be redistributed to the agricultural sector.

A broad sweeping generalization of these results might be that agricultural economists are almost as supportive of market-oriented policies as other

economists. Yet, for a variety of reasons, they support interventionist agricultural policies which benefit the sector.

One is left to speculate whether these interventionist policies are objectively seen as beneficial to society at large or are merely an expression of self-interest in the sense that these policies enhance the personal income and wealth of the respondents. For example, would those connected in some way with the dairy (tobacco) interest be more supportive of current dairy (tobacco) policy than other agricultural economists? Might those in non-land-grant institutions be more critical of interventionist policies? If there were such tendencies in the data, one could not distinguish between self-interest, self-selection, and an empathetic response due to continued contact with those farmers affected by the policy, or a pro-interventionist view due to enhanced knowledge of an economic problem. Yet, it seems worthwhile to investigate further and see whether this self-interest type correlation exists. In order to explore these issues, it will be necessary to look at cross-tabulations based upon socioeconomic variables that may have some link to agricultural self-interest.

IV. AGRICULTURAL INTERESTS, REGIONS, AND FIELDS OF STUDY

The scheme of this section is to discuss some pairwise comparisons of answers to questions and selected biographical data. Appendix A contains the survey questions which yield this data. Due to the enormity of the data received and the fact that sampling was not stratified on each biographical response we can only report selected results of cross-tabulations. In all cases, the analysis reported here is for the three category case: agree, disagree, and don't know. Partially, this is justified because of the common rule of thumb in the literature that the expected frequency in each cell should exceed five (Reynolds, p. 9). When five categories are used, this rule is broken with greater frequency. Further, it seems that "don't knows" are useful information and should not be eliminated. In any event, the qualitative results from the two, three, and five category cases are overwhelmingly similar.

Agricultural Interests

Question 5 in Appendix A asks the respondent to identify whether they or their immediate family have financial interests in agriculture: 101 answered in the affirmative leaving 144 individuals without such interests. Since the agricultural interest variable is binary, there are two degrees of freedom and the tabled chi-square value for alpha = .1 is 4.60. For alpha = .01, it is 9.2. To reduce the listing of data, only questions such that the hypotheses of

independence or homogeneity is rejected at the alpha = .1 level are presented.[12] The results are summarized from Appendix B in Table 3.

The working hypothesis is that those with agricultural interests might be more interventionist than others in the sample. Referring to PI and MC at the bottom of Appendix B, this indeed appears to be the case. For example, for the questions labeled PI, 729.3 was the expected frequency and 770 is the actual frequency. Further, note that there are fewer numbers of "don't knows" than expected for those with agricultural interests for both PI and MC. The aggregate variable ID refers to the desirability of seeking equality of income distributions within and without agriculture. The evidence indicates that those with agricultural interests agree less (disagree more) than expected and "don't know" more than expected. Though we had no firm a priori expectation, this result is not surprising.

As to individual questions, the evidence is that those with agricultural interests tend to feel that: the farmer-owned reserve reduces variability of income (#14), so-called basic research is of little value (#23), flexible exchange rates are desirable (#30), futures participation should not be "pushed" by extension (#40), government stabilization programs have not succeeded in raising average income (#41), more public resources should be used for data collection (#44), supply controls are preferred to price supports (#31), funding for demand expansion programs should increase (#38), credit rationing has reduced welfare (#11), marketing orders have raised producer welfare (#49), society prefers a "cheap food" policy (#62), resource adjustments are relatively "sticky" (#66), futures prices are poor predictors of cash prices (#64), and commodity promotions have not raised demands significantly (#72.)[13]

No doubt, the fixed exchange rates prior to the Nixon era hurt agricultural exports and since then flexible rates are seen on <u>average</u> (but maybe not recently) as beneficial (Schuh). Further, we feel that many farmers are reluctant to support any program which results in a check from Uncle Sam. Hence, the fact that those with agricultural interests support quantity controls over price supports is not surprising (#31). The response to question 62 is also in this vein: government intervenes in order to keep food prices low to consumers. Policies which raise prices and reduce supply are preferred by those with agricultural interests. There is also general support for marketing orders and other programs which enhance income (e.g., #'s 49, 38, 44, 55).

There is a continuing theme throughout the survey that those who are most closely tied to agriculture financially are very skeptical of the value of future market participation (#'s 40, 64). This seems consistent with many farmers' views of the futures market (Live Cattle Futures Market). This group feels that

TABLE 3

AGRICULTURAL INTERESTS AND CONSENSUS[a]

Significant Question Number (chi-squares) Deviation from Expectation

14(5.81)DK+ 23(5.59)A 30(7.28)DK-, D 31(5.37)DK-, A
38(4.52)DK-, A 40(10.52)DK-, D 41(10.73)DK-, D 44(7.13)DK-, A
45(5.31)DK-, A, D 49(4.75)DK-, A 52(4.65)DK+, D
55(6.49)DK-, D 62(5.53)A 64(6.68)DK-, A 66(6.18)DK-, A
72(7.41)DK-, D PI(11.68)DK-, A MC(5.63)DK-, A ID(5.32)DK+, D

[a]Only questions with chi-square values exceeding approximately 4.5 are listed. This corresponds to an $\alpha = .1$ significance level. The dichotomous variable agricultural interest is defined as an affirmative answer to question 5 of Appendix A. DK, A, D represent respectively don't know, agree, and disagree responses to each question. Each triplet lists the question number, the overall chi-square value, and finally the sense in which those with agricultural interests differed from those without such interests. A DK(+) means that they substantially "don't know" more (less) than expected. An A(D) means the group agreed (disagreed) more than expected.

intervention is justified because of market characteristics which make agriculture different (see MC in the Table). There are credit restraints (#45), and resource adjustments are "sticky" (#66).

Finally, note that the highest chi-squared question is #41. Those with agricultural interests have a highly statistically different perception that the so-called stabilization policies have not increased farm income.

We feel that a fair generalization of the above results is that those with agricultural interest seem to view the world much like the stereotypical farmer: the government's efforts to enhance agricultural incomes are to be applauded--even if they have not been particularly successful on average. Thus, it appears that a significant cause for the lower consensus in our survey as compared to KPWW is the vested interest or more sympathetic response of a large group in the profession who have agricultural interests as defined by question 5 of Appendix A.

There are some views which are not supported by the data. One does not see evidence that the "agricultural interest" groups support particular policies such as dairy, tobacco, grain or cotton any more than the remainder of the sample. Apparently, this is so because of the heterogeneities of agricultural interests in the sample. For this reason, in the next section, the effects of commodity interests are studied.

Commodity Specialization

An examination of Table 4 reveals a few results consistent with our a priori expectations. Those emphasizing dairy see marketing orders as beneficial (#2) and 11 of 14 disagreed with the suggestion that a laissez-faire dairy policy is preferred to the current policy (#63) while only 86 of 245 non-dairy specialists disagreed. Dairy specialists resoundly rejected laissez faire as a desirable agricultural policy (#51).

Feed and food grain specialists are proportionately more in favor of demand expansion programs (#72) but do not seem to favor marketing orders (#6). However, there is no evidence that they disproportionately favor the current cotton and grain policy (#68). Likewise, one expects that those emphasizing fruits and vegetables disproportionately favor marketing orders. There is some support for this conclusion but it is not overwhelming (#3).

What does seem clear is that dairy specialists are unusually pro-interventionist and both dairy and livestock specialists tend to view agricultural markets as unusual with characteristics suggesting intervention. There is no statistical support that feed and food grain specialists have these same views or that any of the groups favor an equitable income distribution.

TABLE 4

COMMODITY SPECIALTIES AND CONSENSUS[a]

Fruits and Vegetables	3(4.62)D	8(5.15)A	34(9.42)D	50(9.42)D	
	61(6.13)D, DK-	72(4.66)A, DK-			N = 9
Livestock	7(8.33)D, DK+	10(4.97)A, DK-	49(5.68)A	64(10.22)A, DK-	
	72(4.66)A, DK-	MC(5.53)A, DK-			N = 16
Dairy	2(4.83)A	9(7.13)D, A-, DK+	51(7.55)D	54(7.91)DK+	63(9.65)D
	68(5.11)A, DK-	PI(17.98)A	MC(5.53)A, DK-		N = 14
Food Grains	16(4.92)D	19(6.70)A	57(7.10)D, DK+	59(4.61)D	61(4.60)DK+
	69(5.27)DK+	72(7.79)A			N = 11
Feed Grains	6(4.60)D, DK+	8(6.98)D-, DK+	14(5.42)A, DK-	15(7.09)D, DK-	
	39(5.94)A, DK+	49(4.81)D, DK-	54(6.32)D	59(7.60)DK+	N = 17

[a]This table is a summary of results like those from Table 3. Only commodities with nine or more specialists are included. The first number in each group of numbers or letters is the question number. In parentheses is the chi-square value followed by a description of cell values. A D (A) means that the specialists disagreed (agreed) more than expected; a DK+ (DK-) means that there were more (fewer) DK's than expected. Generally, DK+ or DK- is included whether the cell chi-square was large or not in order to allow the reader to know the direction of the DK deviations. When omitted, the expected and actual frequencies were nearly identical. N represents the sample size of the specialists. Occasionally + and - are associated with A or D with a similar interpretation.

What is more surprising to us is what is not in Table 4. One might have expected livestock specialists to be very pro-interventionist and feed and food grain specialists to be significantly more in favor of cotton and grain policy. Some of these missing items emerge as "significant" when pairwise comparisons are made (such as livestock against grains) yet only 34 "significant" entries in Table 4 is surprising. Since many of the questions relate to philosophical disposition and not obviously to commodity self-interest, we turn in the next section to fields of study. Might not marketing people favor marketing orders more than others, and so on? If this were the case, it would suggest that empathy or increased knowledge would be a plausible explanation but one can't rule out self-interest.

Fields of Study

Table 5 contains summary results for fields where there are 12 or more respondents. Questions for which homogeneity is rejected are listed followed by the chi-square statistic and reasons for rejection of the null hypothesis.

Most of the results are anticipated. Marketing people are relatively supportive of market intervention (e.g., #'s 3, 7) and tend to see enhanced marketing skills as the key to successful farming (#21). Farm management specialists feel that programming models are superior predictors of economic behavior when compared to econometric models (#16). They do not extol the "small is beautiful" philosophy (#19), are not supportive of basic research (#23), and feel that agricultural economics is not primarily a social science (#36). Further, they see their area as (and should be) central to agricultural economic analysis (#'s 39, 47).

Community development specialists are less free trade oriented (#28) and are concerned that extension efforts be more fully directed to small scale agriculture (#34). Finally, this group tends to favor equalizing the distribution of agricultural income (#42).

Though many other characterizations could be mentioned, we close with two. Those who emphasize methods have an unusually high incidence of DK's for non-method-oriented questions. Those in resources have an unusually large number of questions where they differ from others (19 in all). For this latter group, the general tone is epitomized by agreeing with questions 32 and 36 but disagreeing with question 68. That is, markets do not lead to efficient natural resource use, agricultural economics should be a social science, and commodity market intervention is not preferred to laissez faire.

A number of other examples could be given to illustrate how these fields affect consensus. The overall tone is that either by self-selection or other

TABLE 5

FIELDS AND CONSENSUS[a]

Farm Management 16(5.08)A 19(4.93)D, DK- 23(5.16)A 35(6.28)D, DK- 36(5.23)D 39(9.65)A 43(5.51)A, DK- 45(5.77)D,DK- 47(15.28)A 62(8.52)A 63(4.75)D, DK- 72(4.71)D, DK- PI(5.29)A MC(6.92)A,DK- ID(8.98)A, DK-

N = 40

Production 2(5.16)D, DK+ 3(6.13)A, DK+ 25(8.41)D, DK- 45(10.49)A, DK- 47(8.04)A, DK+ 52(8.93)A, DK- 69(8.36)A

N = 38

Marketing 3(4.71)D, DK- 7(5.62)D 14(7.51)A, DK- 15(5.30)A, DK- 21(5.36)A, DK- 27(4.83)A, DK+ 34(4.86)D, DK- 36(6.78)D 40(9.79)D, DK- 44(4.89)A, DK- 49(9.82)A, DK- 52(6.63)A-, DK+ 64(4.66)A, DK- 68(4.95)A, DK- 69(5.24)D PI(7.42)A MC(8.22)A, DK-

N = 60

Policy 6(7.65)D, DK- 7(5.66)A, DK- 10(5.58)D 12(8.52)D, DK- 18(7.12)A, DK+ 27(9.53)D, DK+ 44(4.87)D, DK+ 71(6.45)D N = 48

Agricultural Business Management 3(5.56)D, DK- 21(5.42)A, DK- 34(7.11)D, DK+ 37(6.95)A 46(5.19)A, DK- 47(5.24)A 60(5.87)D, DK- 63(14.16)D, DK- 64(8.77)A, DK- PI(5.31)A, DK- MC(7.34)A, DK- ID(7.61)D

N = 17

Price Analysis 3(5.61)A, DK+ 4(5.35)D 8(10.07)DK+ 10(5.68)D, DK- 16(9.35)D, DK- 28(5.69)D, DK- 33(6.02)DK+ 35(5.91)A, DK+ 42(5.55)DK+ 50(4.89)D 52(6.30)A, DK- 67(5.08)D, DK+ PI(10.87)D, DK+ MC(10.81)D, DK-

N = 26

Trade 9(6.82)DK+ 14(7.08)DK+ 18(10.50)D,DK+ 31(6.32)DK+ 34(4.97)A 42(8.81)A 44(5.54)D 65(5.46)DK+ 66(5.42)D N = 21

Finance 14(5.51)A, DK- 21(6.52)A-, DK+ 23(4.75)DK+ 36(9.39)D 53(5.49)D,DK- 69(7.37)A 71(6.19)D, DK- PI(5.13)A, DK- MC(19.18)D, DK-

N = 13

TABLE 5 (continued)

Resources	11(5.04)D, DK+ 14(9.60)D, DK+ 15(12.92)DK+ 17(6.88)D, DK- 32(5.42)A, DK- 33(5.82)D, DK- 35(9.84)D, DK+ 36(5.47)A, DK+ 40(7.75)DK+ 47(5.09)D 49(6.99)DK+ 52(4.73)A, DK- 53(5.85)A, DK+ 54(5.27)A, DK+ 55(4.15)A, DK+ 60(6.79)A, DK+ 68(6.59)D, DK+ PI(7.19)D, DK+ MC(19.58)DK+	N = 43
Community Development	8(4.66)A 28(13.85)A 34(10.01)A, DK+ 41(4.63)A, DK+ 42(13.19)A 54(8.75)A 55(7.38)A 57(5.11)DK+ ID(16.71)A, DK-	N = 13
Quantitative Methods	7(5.40)A, DK+ 9(4.74)A,DK+ 10(9.90)A, DK- 15(7.40)A-, DK+ 30(5.36)D 38(9.04)A-, DK+ 39(4.61)D 41(13.72)DK+ 42(5.34)D, DK+ 45(18.81)DK+ 48(8.33)D, DK- 54(7.47)D, DK+ 62(7.78)A, DK+ MC(16.14)D, DK+ ID(5.84)D, DK+	N = 21
General Economics	1(5.55)D 3(6.44)A 9(7.26)A 15(5.60)DK+ 28(5.51)D, DK- 37(17.44)A, DK+ 43(5.11)DK+ 61(6.99)D 64(5.00)D, DK- 66(6.61)D, DK+ MC(6.35)D, DK+	N = 12

[a]In each case respondents are placed into dichotomous groups based upon field. The entries are only for questions where homogeneity is rejected at the $\alpha = .1$ level ($\chi^2 \cong 4.60$). The explanation for each numerical or lettered group is: the question number (χ^2 statistic) the sense in which the named group differs from all others. Further explanation is found in Table 4.

Those in trade and general economics had significantly different responses to question 5. Those in trade tended to not know and mark market failure and reduce instability less than expected. Those in general economics tended to mark income transfer more and reduce instability less than expected.

mechanisms, one finds sympathy for programs and problems in one's chosen area of study.

Regions

In addition to areas of study, there might be sympathetic responses based on geographic location. Perhaps those in the mid-Atlantic states would be more empathetic to tobacco policy. The preservation of the family farm might be more important to those in the Midwest. In addition, we expected some regional differences in method-oriented questions. For example, the early influence of regional projects, and Earl Heady in particular, might suggest that those in the Midwest would choose programming as the primary tool of analysis. To test these hypotheses, cross-tabulations for regions were calculated for those associated with universities.[14] The regions are defined in Redmond.

In general, Table 6 reveals few significant differences on the methods questions but there is some evidence of differences on normative perspectives. The Midwest is proportionately more in favor of current grain and cotton policy when compared to laissez faire (#68). The mid-Atlantic states disproportionately favor current tobacco policy when compared to laissez faire (#17). No differences on milk policy emerge (#63) but this is expected since none of the regional variables correspond to the large milk producing states.

One also notes some philosophical differences in the Pacific region compared to all others. They tend to feel that farm management issues and skills are not central to agricultural economics and are more supportive of the social science component of agricultural economics (#36, #47).

Perhaps the most striking difference in the Table is the pro-interventionist philosophy of the Midwest (see PI). Not only do they favor intervention in general but also disproportionately favor policies which tend toward an "equitable" redistribution of income. This is in sharp contrast to Mountain states which seem to be more laissez faire in their orientation. The Midwest response is even more striking when compared only to the Pacific region (all others excluded). This data is not shown but revealed a "significant" disproportionate agreement by Midwest employees for questions 3, 7, 35, 36, 57, 63, 67 and disagreement on questions 17, 33, 34, 43, 47, and 68.

An examination of Table 6 reveals little evidence of regional differences on methods questions. For example, there was no significant difference for the Midwest for question 16 on programming methods. Indeed, there is a paucity of "significant" questions listed under professional interest in Table 2.

TABLE 6

REGIONS AND CONSENSUS[a]

Pacific 7(9.63)A, DK+ 15(5.16)DK+ 17(5.55)D, DK- 21(7.22)DK+
26(8.33)A, DK+ 35(5.55)A, DK+ 36(11.44)A, DK+ 39(5.00)D
43(5.19)D, DK+ 46(7.40)D, DK+ 47(7.59)D, DK+ 54(6.64)DK+ 55(4.65)DK+
57(14.74)DK+ 63(7.29)A, DK+ 67(9.60)D N = 17

Mountain 11(6.67)D, DK- 29(7.64)D, DK- 40(7.64)D, DK- 57(8.99)A
60(5.44)A, DK- PI(7.82)D N = 10

Plains 17(6.22)DK+ 45(5.90)D, DK- 55(5.48)D, DK- ID(9.70)D N = 18

Midwest 6(9.98)D-, DK+ 9(8.41)D 18(4.77)D, DK- 19(6.46)A, DK+
29(4.75)D-, DK+ 32(4.95)A, DK+ 33(5.13)A, DK- 34(7.09)A 51(5.32)D,
DK- 54(6.03)D 57(5.76)D 58(6.81)D, DK- 65(6.35)D, DK- 66(5.78)D,
DK- 68(5.17)A 70(10.82)A, DK- PI(17.15)A ID(27.52)A N = 48

North Atlantic 6(4.75)D- DK+ 14(5.19)DK+ 17(5.64)A-, DK+ 43(6.98)D, DK+
44(17.52)DK+ 49(6.29)DK+ 50(4.86)D-, DK+ 72(4.95)DK+ PI(5.32)A, DK+
N = 11

Mid-Atlantic 10(7.08)D 17(5.95)A, DK- 32(7.31)A 37(5.28)D, DK-
40(5.68)A 52(5.48)D, DK- 60(11.67)D, DK- PI(7.82)A, DK-
MC(10.48)A, DK- N = 11

[a]There were no significant differences for question 5. Only questions for which homogeneity was rejected at the .1 alpha level are listed. The triplets listed are so described in previous tables with the first being the question number; the second is the chi-square statistic; and the third indicates whether those from the region tend to agree or disagree more (+) or less(-) than expected. DK+ and DK- indicate deviations from expectations for DK. N is the sample size (see [a], Table 4). Question 5 had significant differences for Pacific and North Atlantic regions. Noting the correspondence found in Table 1 (see the footnote) the cross-tab yields: Pacific 5(15.74)SA+, A+, SD-; North Atlantic 5(8.05)SA-, A-, D+.

V. EMPLOYMENT AND SCHOOLS OF THOUGHT

Section IV found substantial evidence that self-interested or empathetic type behavior illuminates much of the diversity of responses which occur. Yet, there was a great deal unexplained and there was a lurking suspicion that variables representing general economic philosophy might also be important--especially for normative questions. In this section, the effects of employment categories and schools of graduation are explored.

Employment

As noted in Appendix A, questions 1 and 3 ask the respondent to list general work experience as a professional economist. Due to their daily proximity to agricultural problems, we might expect industry and extension to be more interventionist and less social science oriented when compared to those employed in government or academics. The sample contained 47 persons employed by government agencies, 20 in industry, 130 in academics, 17 in extension, 11 in academic-extension splits, and 20 in other types of employment.[15]

In Table 7, a 3x6 two-way contingency table is presented. Only questions which have significantly different responses at the alpha = .1 level are listed. Since the degrees of freedom are 10, homogeneity is rejected at the alpha = .1 (.01) level when the chi-square statistic exceeds 15.98 (23.20).

Among the most significantly different responses occur for questions 7 and 36 dealing with whether agricultural economics is or should be a social science. Industry tends to proportionately agree less and disagree more with the pro-social science position. For extension and academic extension, and the "other" category, there is a slight tendency against the pro-social science position. For government, there is a tendency to disproportionately agree with the pro-social position. Finally, there is a strong tendency for academics to agree more than expected with the pro-social science position.

Secondly, questions 15, 54, and 64 reveal some important insights. Throughout, academics are more supportive of futures markets than those employed elsewhere. This likely occurs because academics become philosophically aligned with the virtue of markets in general as a result of teaching economic theory.

Another unique difference is that academics are more supportive of "basic" research (#23) in comparison to others. As well, question 48 indicates that academics are disproportionately more supportive of experiment station funding. Both of these responses are consistent with a self-interested or empathetic explanation of behavior. It is further interesting that those in government, the caretakers of experiment station funding, disagree more than expected with the notion that the experiment station funding is beneficial.[16]

TABLE 7

CURRENT EMPLOYMENT AND CONSENSUS

Question #	G	I	A	E	O	A+E[a]	χ^2
7	A	D	A	D	D	D	23.41
14	DK+	A	A	A	D	A	23.59
15	A	D	D	D	A	D	21.12
21	DK+	A	D	A	D	D	18.25
23	D	A	D	D	-	A	21.46
25	D	DK+	DK-	A	A	A	21.40
29	DK+	D	A	DK-	D	DK+	18.74
36	A	D	A	D	D	D	22.61
39	D	A	D	D	A	A	18.38
41	A	D	-	-	D	A	19.11
44	D	A	A	D	D	A	22.35
48	D	A	A	A	DK+	-	21.41
51	A	A	D	DK+	-	DK+	16.22
52	DK+	D-	D	D	DK+	-	26.51
54	A	A	D	D	D	A	25.45
55	DK+	A	A	D	-	D	17.38
58	DK+	A	DK-	D	A	-	16.37
64	DK+	A	D	A	A	A	29.14
65	A	A	D	DK+	A	A	29.25
PI	D	D	A	A	DK-	A	20.21
MC	DK+	A	D	A	A	A	44.08
ID	D	D	A	A	A	D	18.89

[a]G denotes government employment; I, industry; A, academic; E, extension; O, other; and A+E, academic plus extension employment. The questions listed are those where the hypothesis of homogeneity is rejected at the $\alpha = .1$ level. Sample sizes are G-47, I-20, A-130, E-17, O-20, and A+E-11. Due to the number of categories, we attempt to summarize the nature but not the magnitude of deviations from expectations with a single notation for each category in the contingency table. For example, DK+ indicates rather uniform reductions in A and D but increases in "don't knows." A dash indicates nc substantive deviations from expectations.

In several other areas, academics stand out. They are relatively more inclined to support the acquisition and analysis of experimental data (#29). Further, the responses to questions 21 and 39 are interesting. Those employed in industry and extension feel that marketing is "where the action is" whereas academics support such a view less than expected (#21). Also, academics do not proportionately believe that farm management issues and skills are central to agricultural economic analysis when compared to others (#39).

There are several questions not mentioned above where those in government were surprisingly laissez faire. For example, this group is relatively more supportive of the idea that commodity programs have raised agricultural incomes and in any case are more indecisive (#41). Note also that those in government and industry tend to be relatively stronger supporters of a laissez-faire agricultural policy (#51, MC, and PI). In contrast, academics tend to be more interventionist.[17]

Another clear pattern is that those in extension favor a more equitable distribution of income and wealth (e.g., ID and #58). Perhaps many in extension work with smaller farms or as a matter of self-interest view large farms as a threat to their livelihood.

The above qualitative results change little if each employment type is contrasted with all others in a binary comparison. However, there are some comparisons worthy of mention. Much could be simplified if those with academic-extension appointments could be aggregated into either academic or extension categories. For extension and those with two-way appointments, significant differences occur for questions 14, 29, and 65. For comparisons between academics and those with two-way appointments, significant differences occur for questions 7, 23, 29, 54, and 64. Hence, there is evidence that one cannot aggregate for all questions without losing information.[18]

The general implication from the above analysis is that current employment says much about how one will respond to the questions. There were more significant differences here than using the agricultural interest variable. However, the response pattern was qualitatively different on normative, positive, and methods oriented questions. In particular, relatively higher chi-square statistics were obtained on the three aggregates PI, MC, and ID (which are generally normative except for MC). These statistics portray all but government employees as quite interventionist. All but academics and government employees view market characteristics as conducive to intervention. Also, all but government and industry employees see a proper role of government to redistribute income in an "equitable" manner.

These results establish that employment matters. This is in marked contrast to the KPWW results. We have yet to zero in on the effects of education directly. In the next subsection this is examined. The analysis considers land-grant versus non-land-grant institutions, rankings of schools, and individual institutions.

Land-Grant vs. Non-Land-Grant Institutions

Based upon current employment, cross-tabs revealed only weak evidence of six questions where responses were significantly different between land-grant and non-land-grant academic institutions. Hence, along with other hypotheses we proceed to consider the hypothesis that those who graduate from non-land-grant schools are more market and social science oriented. This hypothesis seems reasonable in light of differences in funding and usually perceived differences in mandates.

Table 8, first group, contains cross-tabs for questions where homogeneity is rejected at the alpha = .1 level. Eighteen questions are listed. For lack of a descriptive and sensitive term, we will use the abbreviation GECON for those graduating from non-land-grant schools. The samples sizes are 29 for GECON and 216 for NON-GECON.

Questions 7 and 36 demonstrate that those in GECON clearly have a more pro-social science view than others. This also accounts for the view that farm management skills should not be central to agricultural economics (#47). Further, there is a rather clear pro-market philosophy by the non-land-grant group. Marketing orders are not desirable (#'s 2, 3), agricultural markets are not concentrated (#1), barriers to entry are low (#22), self-sufficiency is not desired (#28); flexible exchange rates are desired (#30); farm growth is not inhibited (#58). Also, this group disagrees proportionately more with the pro-intervention and market characteristics suggesting intervention (PI and MC) than land-grant school graduates. This evidence seems conclusive: non-land-grant school graduates regardless of their history are more free market or laissez faire than their land-grant counterparts.

A few other differences are apparent from the table. The GECON group are relatively more supportive of current journal orientation (#8). Further, they disagree with the desirability of supply controls over price supports (#31). We offer no reason for these results but recall that those closest to agriculture seem to prefer supply controls (see Table 3) over price supports. In a conventional welfare analysis, the normative results depend upon the actual programs and supply and demand elasticities (see e.g., Wallace). We also have no decisive explanation for why this group views commodity market promotion as

TABLE 8

GRADUATION FROM NON LAND-GRANT UNIVERSITIES, RANKINGS AND CONSENSUS

GECON[a] 1(9.27)D, DK- 2(11.57)D, DK- 3(10.75)A, DK- 7(12.81)A, DK+ 8(5.57)D 22(5.88)A, DK- 28(9.43)D, DK- 30(5.43)D 31(6.97)D, DK+ 32(4.72)D, DK+ 36(10.11)A 47(6.21)D, DK+ 50(14.40)D, DK- 58(5.10)A 62(5.88)D 72(4.65)A PI(12.93)D, DK- MC(27.98)D, DK- N = 29

EOJ[b] 15(7.49)D 33(9.26)D 37(8.40)D 39(5.30)D 56(11.43)D, DK- 65(5.78)D, DK- N = 29

GEOJ 11(4.50)DK+ 17(4.55)D 18(5.81)DK+ 24(14.49)DK+ 42(7.61)D, DK+ 44(4.65)A, DK+ 61(5.62)D, DK+ 62(5.93)D, DK+ 67(5.11)D, DK+ 72(5.42)D, DK+ MC(9.58)D, DK+ N = 37

OJ[c] 2(5.29)D 10(6.28)D 12D, DK- 15(5.12)D 21(4.87)D 22(8.84)A, DK+ 31(5.12)A 36(4.66)DK+ 46(7.32)D, DK+ 52(5.15)A 54(10.57)DK+ 55(5.48)A 57(22.03)A, DK+ 60(7.09)DK+ 64(9.63)D 68(5.20)D, DK- PI(7.08)D, DK- MC(17.55)D, DK+ N = 29

GOJ 4(4.82)D 10(5.24)DK+ 19(6.56)A, DK- 35(5.38)A, DK+ 57(10.25)DK+ 61(11.08)DK+ 71(6.88)DK+ 72(5.28)D, DK+ N = 56

TT 2(4.95)D 3(8.12)A 7(13.26)A, DK+ 8(5.15)D 18(4.62)A 21(8.83)DK+ 28(5.07)D 36(10.35)A, DK+ 37(7.68)D 47(4.88)D, DK+ 51(5.28)A 55(5.94)A, DK+ 56(6.15)D, DK- 57(5.11)A, DK+ 63(6.85)A 67(4.92)D PI(19.08)D, DK- MC(10.41)D ID(7.25)D N = 13

GTT 1(5.25)D 2(8.04)D, DK+ 3(7.40)A 4(4.47)D 8(11.86)D 11(5.29)D, DK+ 12(5.91)D, DK+ 14(5.09)A, DK+ 17(4.95)D 28(5.12)D 31(4.94)D, DK+ 32(5.07)D, DK+ 33(20.57)D, DK+ 35(5.69)A, DK+ 37(4.84)D 44(4.83)A, DK+ 48(8.72)D, DK+ 50(5.76)D, DK+ 51(6.60)A, DK+ 56(5.42)D, DK- 63(7.51)A 64(4.71)D 66(5.16)D, DK+ 67(9.77)D, DK+ PI(35.23)D, DK+ MC(18.38)D, DK+ N = 32

[a]GECON respondents are those who graduated from a non land-grant institution as economists. Only questions for which homogeneity is rejected at the .1 alpha level are listed. The sample size is N. The question number is listed followed by the chi-square statistic. Then D or A is listed to denote whether those who

TABLE 8 (continued)

graduated from a non land-grant institution disagreed or agreed more than expected. A DK+ (DK-) means that the group marked DK more (less) than expected.

[b]Schools in various highly ranked groups are:

OJ University of California, Berkeley; Oregon State University; University of Wisconsin; University of California, Davis; North Carolina State University.

EOJ University of California, Berkeley; University of Minnesota; University of California, Davis, University of Florida; Oklahoma State University.

TT University of Chicago; Massachusetts Institute of Technology; University of California, Berkeley; University of California, Davis; University of Rhode Island.

Note: The above variables refer to employment at a school in the elite group. A G prefix refers to graduation from a school in the group. Thus, GTT implies graduation from one of the schools in the TT group.

[c]Question 5 had significant differences for OJ: OJ 5(9.35)SA-, A+, SD-.

effectively increasing demand (#72). In many respects, due to the presumed rationality of economic agents, it is surprising that so many agricultural economists disagreed with the statement.

Self-interest would no doubt be a likely candidate for explaining much of the dichotomous philosophies of the two groups. However, it also may be that non-land-grant degreed agricultural economists are more extensively trained in theory and more removed from the management aspect of the profession. If this is so, then perhaps schools with stronger research (or perceived so) programs might emphasize theory and would appear different from those with weaker research programs. To examine this issue, we used several rankings based upon research publications.

Elite Schools

An important component of the KPWW study was the comparison of respondents who were employed at schools which are highly ranked, so- called elite schools, with those employed at less prestigious schools or other occupations. Such a comparison here requires a definition of elite. Unlike prestigious universities in general economics, there seems to be greater diversity of ranking in agricultural economics. Even the phrase elite no doubt annoys many when used in this context. We have chosen to use this label realizing that universities produce multiple outputs and that there are substantial substitution possibilities.[19]

We have chosen three groupings as listed in Table 8. The source of the published rankings are from Opaluch and Just, and Tauer and Tauer. Though these publications contain many rankings, we have chosen publications per teaching/research faculty and graduate. Opaluch and Just contain rankings for research published in the AJAE and also rankings for publications in other economic journals. These are included as OJ and EOJ respectively. The rankings used from Tauer and Tauer are based upon the number of pages published per graduate and is labeled as TT. For each of the above variables, a G prefix implies graduation from the elite group.[20]

Using these variables, we calculated cross-tabulations which are summarized in the Table. Again only questions such that homogeneity is rejected at the alpha = .1 level are included.

As expected, there are some differences among all of the elite classifications. In total, the elite measures had the following quantities of significant questions: EOJ-8; GEOJ-11; OJ-18; GOJ-10; TT-19; GTT-26. Based upon these results, it appears that graduation from an elite school based on the Tauer and Tauer rankings is the best delineator of non-homogeneity. The GTT grouping

contains two elite economics (non-land-grant) departments and three agricultural economics (land-grant) departments. Hence, one might expect responses somewhat similar to the ECON variable used earlier.

In many cases, questions when significant have a similar response pattern. It is surprising that for every one of the measures, the "elites" are proportionately more free market than the rest of the sample (PI). Though not significant by every measure, the aggregate variable MC indicates a pro-market stance by the "elite" group.

Particular questions which illustrate their support of laissez faire are #s 1, 2, 3, 4, 11, 12, 17, 28, 32, 33, 50, 51, 63, 66, and 67. Other areas which distinguish this group are an unusual support of the current Journal format (#8); the gathering of information (#44); the inefficiency of supply controls vis-á-vis price supports (#31); output prices lead input prices (#35); and futures prices are good predictors of future cash prices (#64). Further, there is an unusual lack of support for experiment station funding (#48).

There are also a few differences in the area of methods. For example, this group is more supportive of rational expectations models than others (#56). They are more prone to evaluate econometric models in terms of the precision sign and size of estimated coefficients (#37).

Another compelling difference between these "elites" and others is the number of times "don't knows" contributed to the differences. In a vast majority of cases, this category is higher for "elites." This suggests that they are more indecisive than "non-elites." Another clear conclusion that comes from the Table is that all differences seem to occur proportionately more for normative rather than positive or professional interest questions. A possible conclusion is that those from "elite" schools are less influenced by agricultural interest groups or empathy.

We turn next to an examination of individual schools of graduation. We expected Chicago graduates and indeed all of those in the GTT category to be at the free market end of the philosophical spectrum.

Schools

Table 9 lists the results of binary tests for homogeneity of responses based upon place where the respondent received their last degree. Only those questions where the chi-square is significantly different from zero at the alpha = .1 level are included. Further, only schools which had 7 or more graduates were segregated for the tests. Clearly, a sample design to increase the number from each school would have been preferred so that the efficiency of the tests would be greater. Yet, there are some striking contrasts and these are given credence

by the chi-square statistics. We are only able to comment on selected results here but the reader is referred to the summary in Table 9 for further results which may be of personal interest.

Chicago

From the usual perceptions of Chicago, we would expect Chicago graduates to be more pro-free market than others. Examination of Table 9 indicates that indeed this appears to be the case: marketing orders are not seen as socially desirable (#'s 2, 3), price supports have not led to more income stability (#12), supply controls are not preferred to price supports (#31), market incentives lead to efficient resource use (#32), funding for demand expansion should not increase (#38), and fixed rule policies are preferred to discretionary ones (#61).

In addition, Chicago graduates have significantly different perceptions than all others regarding agricultural economic journals and the science of agricultural economics. They disagree with the notion that journals are not helpful in understanding economic behavior (#8), and feel relatively comfortable with the statement that agricultural economics is and should be a social science (#'s 7, 36). Further, on other disciplinary matters, these graduates stand out: they are supportive of so-called basic research (#23) and are more indecisive on the value of dynamic tools for normative rather positive economic analysis (#52). Yet, they are, as expected, very supportive of rational expectations as a descriptor of behavior (#56). They may be responding to the question or to their allegiance to the university which founded and currently promotes this view of the world.

Wisconsin

A priori, we were not sure what to expect from this group. Wisconsin seems to be generally viewed as a strong state university with strong programs in agricultural economics and related disciplines. Yet, in many circles, they are seen as having a strong institutional or market failure flavor not particularly consistent with neoclassical economics. Thus, Wisconsin graduates may be at the other end of the spectrum from Chicago.

Indeed, Table 9 indicates more support for marketing orders (#'s 2, 6), a perception that externalities are a significant market distortion (#9), greater support for interventionist financial policies (#11), the advantages of self-sufficiency (#28), and government intervention (PI and ID).

TABLE 9

HOMOGENEITY AND SCHOOL OF GRADUATION[a]

Chicago 2(5.36)D 3(5.06)A, DK- 7(7.95)A 8(14.59)D 12(4.79)D 31(5.50)D, DK+ 32(6.02)D, DK+ 33(17.62)D 36(5.55)A 38(4.72)D 50(15.72)D, DK- 52(5.21)DK+ 56(7.24)D, DK- 61(5.30)D, DK- 71(6.84)A PI(23.23)D, DK- MC(16.83)D, DK- N = 7

Berkeley 2(6.69)D, DK+ 6(4.78)A, DK+ 11(10.45)DK+ 17(7.16)D, DK- 18(14.36)DK+ 21(5.29)DK+ 24(5.39)D, DK+ 28(5.32)D, DK+ 32(4.87)D, DK+ 33(11.13)D 40(6.67)D, DK+ 42(10.49)D, DK+ 48(6.07)DK 49(4.91)D, DK+ PI(18.08)D, DK+ MC(5.39)D, DK+ N = 17

Wisconsin 2(10.45)A, DK- 3(4.90)D 6(6.12)A, DK- 9(11.37)D, DK+ 10(6.70)DK+ 11(5.89)A 12(4.92)A, DK- 16(7.57)A, DK+ 22(4.89)DK+ 28(12.44)A, DK- 40(6.38)A, DK- 42(6.72)A 54(6.08)DK+ 61(6.37)DK+ 65(9.90)DK+ PI(21.26)A, ID(8.35)A N = 17

Iowa State 1(6.03)DK+ 2(6.52)D, DK+ 3(9.97)A, DK+ 6(13.45)D, DK+ 10(7.48)D, DK- 11(5.95)A 14(6.33)D, DK- 18(4.60)D, DK+ 25(16.75)A, DK- 46(8.07)A, DK- 49(15.28)D, DK+ 52(5.74)A, DK- 55(5.16)D, DK+ 64(5.80)A, DK+ 65(5.27)D, DK- 66(6.90)D, DK+ 69(6.16)A, DK+ MC(7.55)A-, D-, DK+ N = 24

Cornell 2(6.12)A, DK+ 13(7.76)D, DK+ 35(4.67)A, DK+ 44(8.21)D, DK+ 46(7.26)DK+ 52(5.35)DK+ 58(5.44)D N = 9

Pennsylvania State 22(5.83)DK+ 23(5.83)DK+ 27(7.22)DK+ 36(9.42)DK+ 39(11.51)D, DK+ 47(6.48)D, DK+ 50(5.50)DK+ 55(5.65)D, DK+ 66(15.18)A, DK+ N = 10

North Carolina State 6(5.89)D, DK- 17(4.89)A 18(4.61)A 38(7.55)D 57(6.65)A 68(4.85)D, DK- 70(6.14)D, DK+ ID(7.61)D N = 11

Minnesota 15(5.74)D, DK- 24(9.71)DK+ 47(6.13)DK+ 62(8.62)A, DK+ PI(4.99)A, DK- MC(11.98)D, DK- N = 10

Illinois 23(26.37)DK+ 31(4.91)D, DK- 40(5.69)A, DK- 63(5.85)D 66(5.15)A PI(10.90)A, DK-

TABLE 9 (continued)

Michigan State	19(5.39)DK+	21(6.56)DK+	42(4.85)A	52(5.72)A, DK-
	58(5.98)D, DK-			N = 16
Purdue	2(5.93)A, DK+	31(6.51)D, DK+	51(5.45)DK+	66(4.64)D, DK+
	PI(9.81)A-, D-, DK+			N = 12

[a]Only questions for which homogeneity was rejected at the .1 alpha level are listed. Schools listed have seven or more respondents. The entries include the question number followed by the chi-square statistic in parentheses. This is followed by an A or D to indicate whether there were more that agreed or disagreed than expected. When the proportion of DK's is not essentially the expected value, then DK+ (more than expected) or DK- indicate the sign of the deviation. Occasionally a minus or plus follows an A or D with a similar interpretation.

Iowa State

A school which stands out in the chi-square tests is Iowa State having 16 questions with chi-square statistics indicating significant differences. Questions 2, 3, and 6 represent a rather pessimistic view of the social worth of marketing orders. Time series methods are not generally more accurate predictors than econometric methods (#10). They are in favor of redistribution from other sectors of the economy to agriculture (#18). They are more enthusiastic about models where individuals are risk averse (#25). Endogenizing government behavior is seen as valuable (#46). Marketing orders have succeeded in raising farm income (#49). Dynamic optimization tools are seen more valuable for normative analysis (#52). Simple expectational methods are preferred (#56) and export embargoes have hurt agriculture (#55). Futures prices are poor predictors of spot prices (#64). Resource adjustments are not "sticky" and the profession does rank highly efforts to test theories (#'s 66, 65). Finally, agricultural land values are primarily determined by agricultural use (#69).

The picture that emerges is one of a rather negative stance towards marketing, support for redistribution, and an unusual perception that embargoes (e.g., grain) have influenced agricultural markets. In addition, they are different than the remainder of the sample on a number of methods or professional interest issues. We expected that they would perhaps stand out on issues related to production and farm management but few such differences were detected.

Cornell

Another school which we expected to behave differently was Cornell. As we understand it, it has a strong marketing emphasis with much weight given to institutional constraints. An examination of the Table reveals a large number of "don't knows." These occur with large frequency in disciplinary-oriented questions (e.g., #'s 46, 52). An interesting question is 58. An unusually large number of Cornell graduates feel that society should discourage farm growth. In contrast to Chicago, both Wisconsin and Cornell seem to be supportive of marketing orders (e.g. #2). Also, note that Cornell graduates are not as supportive of an expansion of data-gathering activities by the government as others (#44).

North Carolina State

A priori, we would have expected NC State graduates to be rather laissez faire given the rather strong Chicago influence (at least rumor has it so). Yet, the data from the Table seems mixed. They support grading, etc. (#6). As one might expect, they are unusually supportive of the tobacco program (#17).

Government should not attempt to redistribute income to the agricultural sector (#18). Funding for demand expansion programs should not increase (#38). They agree that all agricultural policies should be evaluated in terms of ultimate consumer welfare (#57). They tend to feel that laissez faire is preferred to current grain and cotton policy (#68) and that government should provide adjustment assistance to publicly displaced workers (#70).

Thus, there is a hint of a more laissez-faire sentiment but it is by no means conclusive. Perhaps, the most interesting aspect here is that much of the tobacco support comes from graduates of this institution.

Berkeley

For other schools, like Berkeley, for instance, there were many questions which made its graduates stand out but the pattern was less clear. Berkeley graduates are characterized by a large number of DK's and as expected are rather supportive of marketing orders (#'s 2, 6). This is due no doubt to the configuration of citrus, vegetable, dairy and such other agricultural activities in the state. Interestingly, they disproportionately disapprove of the current tobacco program (#17). Further, they are not laissez faire in other respects (#'s 32, PI, and MC).

Others

We are sure that the beauty and significance of Table 9 is in the eye of the beholder As expected, for many schools, very few significant differences appear. No doubt reduced sampling error with an increased sample size would be helpful. Yet, there are nine significant questions for Penn. St., six for Minnesota, six for Illinois, seven for Michigan St., and five for Purdue. For many of these schools, the aggregate variable PI indicates systematic tendencies to support intervention.

Comparisons Between Schools

It is noted above that Chicago is clearly at one end of the interventionist spectrum. It is, therefore, interesting to make binary comparisons school by school with Chicago, again based upon school of graduation. For Berkeley vs. Chicago, and Iowa State vs. Chicago, there were 10 such questions. For Cornell, there were 14 questions. For Wisconsin, there were 26 questions with significant differences. In these cases, the pattern of responses are as one would expect: Chicagoans are less interventionist and more social science oriented. As the above statistics suggest, Cornell and Wisconsin graduates also stand out as philosophically different from the remainder of the profession. Yet, the two responses are not

similar in many respects (10 of the "significant" questions were different). Wisconsin is less micro-marketing and farm management oriented and seems to see agricultural prices as near the competitive equilibrium and is in favor of more data collection by the government. Another interesting difference in this comparison is the large quantity of DK's for Cornell's respondents.

VI. AGE AND EDUCATIONAL ATTAINMENT

Heretofore, there has been a few related themes about how training, employment, and self-interest or empathy affect responses. Totally without a priori expectation (and nearly interest) cross-tabs for a dichotomous variable based upon the year when the last degree was awarded were calculated. A dichotomous variable which is zero for all years prior to 1970 and one for 1970 or later degrees was formed. The year of the split was determined by our own personal interest but the qualitative nature of the results are very robust to this choice.

These results are listed in Table 10 and age or perhaps more appropriately vintage is seen to be a highly significant correlate with responses. Like GECON and "elite" dichotomies, younger agricultural economists are more free-market oriented and have more "don't know" answers (see PI and ID). This shows up repeatedly in individual questions. The younger see markets as less concentrated (#1), and marketing orders as less desirable (#'s 2, 3, and 6). They see laissez faire as preferred to current tobacco, milk, grain and cotton programs (#'s 17, 63, and 68). Fewer than expected disagreed with the notion that society should not discourage farm growth (#58).

In a few ways, this younger group is a bit more interventionist than their older counterparts. They disagree less and "don't know" more about the desirability of anti-trust laws (#33) and assistance for displaced labor (#70). Note also that they disagree more and "don't know" more about the social desirability of experiment-station-funded research (#48).

There are also a number of positive economic and method-oriented questions where the young also stand out. They disagree more than expected with the proposition that math programming predictions are more accurate than econometric forecasts (#16). They are not sympathetic to the notion that forecast error is a more important diagnostic than precision, sign and size of estimated coefficients of econometric models (#37). They are less decisive and almost evenly divided on the desirability of dynamic models for positive economic analysis (#52). They agree more than expected with the notion that deterioration of terms of trade have been an important determinant of the impoverishment of third world countries (#50) and that commodity promotion has raised farm incomes (#72). The younger

TABLE 10

VINTAGE EFFECTS, DEGREES, AND CONSENSUS

AGE (younger)[a] 1(7.75)D, DK+ 2(14.15)D, DK+ 3(13.47)A, DK+ 4(5.71)A-, DK+ 6(13.10)D, DK+ 12(7.96)D, DK+ 16(11.41)D, DK- 17(6.06)D, DK+ 22(7.70)D, DK- 33(5.61)D, DK+ 35(6.38)A, DK+ 37(13.88)D, DK- 41(5.54)D, DK+ 45(4.63)A, DK+ 48(7.05)D, DK+ 49(7.34)D, DK+ 50(8.71)A, DK+ 52(5.07)D, DK- 57(11.21)A, DK+ 58(6.87)A, DK+ 63(9.17)A, DK+ 67(7.99)D-, DK+ 68(7.58)D, DK+ 70(5.04)A-, D-, DK+ 72(9.52)A, DK+ PI(54.08)D, DK+ ID(13.42)D, DK+

Ph.D.'s 1(7.71)D, DK+ 4(6.32)D-, DK+ 7(11.20)A 9(7.93)D 19(5.34)D-, DK+ 21(10.71)D, DK+ 25(6.10)D, DK- 36(5.35)A, DK+ 37(14.52)D, DK- 39(6.01)D, DK- 46(11.78)D 61(8.93)D, DK- 59(14.29)D, DK- 65(7.94)D, DK- 72(9.25)D PI(7.21)A, DK+ ID(6.15)A, DK+

[a]This variable was defined as 1 for those receiving their last degree after 1970 and 0 otherwise. Hence, the younger delineation. Only questions for which homogeneity was rejected at the .1 alpha level are listed. The entries include the question number followed by the chi-square statistic in parentheses. This is followed by an A or D to indicate whether there were more that agreed or disagreed than expected. When the proportion of DK's is not essentially the expected value, then DK+ (more than expected) or DK- indicates the sign of the deviation. Occasionally a minus or plus follows an A or D with a similar interpretation.

also disagree more with the statement that stabilization programs have increased average aggregate income (#41).

One of the most curious results in the survey is the low level of agreement with the welfare criteria stated in question 57, improvement of aggregate consumer welfare. Indeed every orthodox treatment in welfare economics starts with this premise. We have earlier seen that those coming from non-land-grant schools proportionately agree with this criterion. Though very low in absolute terms (20), more of the younger than expected also agree with this criterion (#57). This may suggest that the older have different training or are more unorthodox in dealing with social welfare. In any case, 215 out of 245 disagreed with the statement. Perhaps most thought that this statement gave no concern to producers (who are also consumers).

The results above indicate quite clearly that there are vintage effects. The younger are less interventionist in general and more critical of current commodity programs. They see many facts and methods in a different light. Very often they "don't know" more but in a large number of cases, the opposite holds.

Ph.D.

There were 18 questions for which homogeneity is rejected at the alpha = .1 level for the dichotomous variable defining Ph.D.'s and others. The results are summarized in Table 10. In general, Ph.D.'s are more interventionist and seek a more equitable income distribution than others. Non-Ph.D.'s are more supportive of marketing skills and the management component of agricultural economics. Neither of these are surprising given that non-Ph.D.'s are predominantly employed in industry. Thus, most of the qualitative aspects of this comparison can be found in the employment section. It should be noted that though non-Ph.D.'s are less interventionist, there is seldom any significant differences on specific policies such as tobacco, milk, and grain and cotton.

VII. CONCLUDING REMARKS

The survey results reported above find evidence of patterns of response according to: (a) whether or not one is closely associated with ownership of agricultural interests, (b) where one went to school, (c) field of study, (d) employment type, (e) educational attainment, and the (f) vintage of the respondent. We will not attempt to summarize these numerous results but will give a flavor of some of our inferences.

Those who hold agricultural interests (as defined in Appendix A) tend to be relatively more interventionist in philosophy. Further, the sample contained evidence that the Universities of Chicago, Wisconsin, California (Berkeley),

Cornell, and Iowa State seem to have left an unusually distinctive mark on their students' economic philosophy (or vice versa). Those graduating from non-land-grant institutions and/or highly ranked schools tend to be less interventionist than others. Further, there are regional differences based upon current academic employment such as the Midwest being more interventionist than other regions. Fields of study seem to be highly correlated with responses. The most striking is natural resource economists who seem to have little use for commodity policies. There was also much evidence that academics respond differently from extension or other government or industry employees. Academics appear to be quite interventionist on many issues with government employees being the least interventionist. Extension and academics seem to worry more about income distribution issues than others. Also, Ph.D.'s are a bit less interventionist than those with less formal education but there is a collinearity problem since most non-Ph.D.'s are also employed in industry. Finally, among the most surprising differences is that younger agricultural economists see the economic world much differently than their elders. The younger are less interventionist on many issues. In addition, they view econometric and mathematic programming methods differently than the older group.

The differences in values and judgments about facts among AAEA members are real and abundant. The KPWW study found little evidence to support the collective "a confusion of economists." For agricultural economists, this phrase seems very appropriate. On both positive and normative questions, consensus is rejected in nearly every case. Further, there are basic differences in perceptions of the facts such as the virtue of the futures market in forecasting future spot price.

What is the significance of the results reported here? First, we have raised and found evidence either for or against interventionist and self-interest hypotheses. Perhaps future studies can sharpen or refute this evidence. Secondly, perhaps healthy communication, sensitivity, or skepticism can come from an understanding of the proportionate central tendencies of others in the profession. Knowing that younger agricultural economists are less interventionist may help an administrator guide or assign research projects. Also, it is small wonder that many agricultural economists feel alienated within their departments. Perhaps, one should expect less cohesion from among pluralistic departments with a natural resource economist, a University of Chicago agricultural policy analyst, and a Midwest graduate with a farm management speciality or with agricultural interests. Yet, knowing a little about the backgrounds and tendencies should foster communication and perhaps lead to a better-informed profession about how various researchers tend to see the

proper role and raison d'etre of agricultural policy. Thirdly, we hope that the profession will increase its search for positive economic truths and appreciate the possible role that heritage, empathy, or self-interest plays in perception. Instead of the collective attribution "a confusion of agricultural economists" or more earthy "a range of agricultural economists," a perhaps more descriptive phrase is "an interest of agricultural economists." Only future research can determine which of the many possible interpretations best describe the profession.

ENDNOTES

[1]Respondents were dichotomized into those employed at "elite" and "non-elite" schools and chi-square tests were performed.

[2]It is difficult to find a sufficient number of agricultural economists employed in academics at non-land-grant institutions in order to compare differences based on current employment.

[3]Multinomial logit regressions were run on all questions. The results are very consistent with the cross-tabulations and are available upon request.

[4]We take for granted that most agricultural economists are not informed about many macro issues.

[5]A non-random sample was chosen partially so that we could gauge the extent to which we were committing professional suicide by doing the survey. Further, we wished feedback from prominent people as to interesting facts and issues.

[6]It might be argued that there is a substantial selectivity bias when the AAEA Directory is used for the sampling frame and that those who mail questionnaires self-select as well. We acknowledge this possibility but have not pursued tests here for the direction and existence of such bias.

[7]No attempt was made to stratify according to the specific university where employed for academics nor the university where one received the last degree. In most cases, the former can either not be accomplished due to a small potential sample (e.g., Chicago) or would require us to have a complicated stratification since there are a large number of schools represented in the AAEA. Though not designed by stratification, we have a large number of graduates from many schools.

[8]It should be noted that question 5 does not contain the scale. Further, there are a number of other possible scales which could have been used. One places indifference between agree and disagree. The scale used by KPWW utilized generally agree, agree with provisions, and generally disagree. Conversations with KPWW and others lead to our choice.

[9]Noncategorical factor analysis was used due to a lack of access to categorical software. We suspect that this omission doesn't change the results.

[10]This test gave essentially equivalent answers to a t-test that $C = 1$. In the chi-square tests, consensus is defined as unanimity (see KPWW).

[11]It may be that the word equalizing connotes a stronger objective than merely distributing from rich to poor.

[12]The hypotheses of independence and homogeneity in a multinomial population are formally equivalent. The usual test statistic for a dichotomous variable and three categorical responses is

$$Q = \sum_i \sum_j \frac{N_{ij} - n_i p_j}{n_i p_j}$$

where N_{ij} is the response frequency for the jth category and ith variable, n_i is the total number of responses in category i and $p_j = (N_{1j} + N_{2j})/(n_1 + n_2)$ (Mood, Graybill and Boes, p. 449). For our case here, i is binary denoting agricultural interests and j ranges over agree, disagree, and don't know categorical responses.

[13]Several other anomalies are also noted. One such is that this group (Ag. Int.) seems to feel that dynamic models are more useful in positive analysis than the remainder of the sample (#52).

[14]These calculations would be more difficult for nonacademics since there is no address listed on the questionnaire for nonacademics.

[15]Many in the "other" group were self-employed consultants or traders and chose not to mark industry. Since this group did appear to be significantly different than others on some questions, they were not lumped with any other group.

[16]Most experiment station funding comes from states. Yet, we suspect that most of our government employees are federal employees.

[17]It is worthy of note that academics relatively tend to believe that embargoes have been of little consequence (#55).

[18]Given the data collected using Appendix A (question 3), one could examine the impact of employment histories on responses. These cross-tabs revealed few insights not in Table 6 and hence are not presented.

[19]As an aside, it seems useful to attempt to measure research, extension and other outputs and test departmental efficiency using for example Farrell efficiency methods.

[20]In addition, we have pooled these rankings and added our own subjective pooling. In all cases, the Tauer and Tauer rankings were a more discriminating measure.

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APPENDIX A

Biographical Data

1. Current employment (list institution and department):
   Government_____ Industry_____
   Academic_____ Extension_____
   Other_____.

2. List higher education degrees:

	Year	Institution
B.S. or B.A.		
M.S. or M.A.		
Ph.D.		

3. Have you ever been employed as a professional economist in (check all that apply):
   Government_____, Industry_____, Academic_____, Extension_____,
   Other (list)_____.

4. Would you identify your interests as emphasizing a particular commodity or commodities? If yes, please list._____
   _____

5. Do you or members of your immediate family own agricultural interests?
   Yes_____
   No_____.

6. You would list as your primary field: Farm Management_____, Production_____, Marketing_____, Policy_____, Agribusiness Management_____, Price Analysis_____, Trade and Development_____, Finance_____, Resources_____, Community Development_____, Labor_____, Consumer Analysis_____, General Economics_____, Research Methods, Econometrics_____, A Particular Commodity (which might include all of the above areas)_____, Other (list)_____
   _____.

APPENDIX B

AGRICULTURAL INTERESTS AND CONSENSUS[a]

		Non-Ag. Int.	Ag. Int[b]	Chi-square
14	DK	14 (21.0)	37[c] (30.0)	
	A	69 (65.5)	90 (93.5)	
	D	18 (14.4)	17 (20.6)	5.81
23	DK	0 (0.6)	1 (0.4)	
	A	10 (14.7)	15 (10.3)	
	D	134 (128.7)	85 (90.3)	5.59
30	DK	28 (26.4)	17 (18.6)	
	A	101 (107.6)	82 (75.4)	
	D	15 (10.0)	2 (7.0)	7.28
31	DK	34 (31.7)	20 (22.3)	
	A	53 (61.7)	52 (43.3)	
	D	57 (50.5)	29 (35.5)	5.37
38	DK	15 (11.8)	5 (8.2)	
	A	39 (45.3)	38 (31.7)	
	D	90 (87.0)	58 (61.0)	4.52
40	DK	37 (28.2)	11 (19.8)	
	A	48 (46.4)	31 (32.6)	
	D	59 (69.4)	59 (48.6)	10.52
41	DK	33 (25.9)	11 (18.1)	
	A	87 (85.2)	58 (59.8)	
	D	24 (32.9)	32 (23.1)	10.73
44	DK	23 (18.8)	9 (13.2)	
	A	98 (107.0)	84 (75.0)	
	D	23 (18.2)	8 (12.8)	7.13

APPENDIX B (continued)

		Non-Ag. Int.	Ag. Int[b]	Chi-square
45	DK	41	17	
		(34.1)	(23.9)	
	A	20	21	
		(24.1)	(16.9)	
	D	83	63	5.31
		(85.8)	(60.2)	
49	DK	24	9	
		(19.4)	(13.6)	
	A	101	83	
		(108.1)	(75.9)	
	D	19	9	4.75
		(16.5)	(11.5)	
52	DK	41	37	
		(45.8)	(32.2)	
	A	59	28	
		(51.1)	(35.9)	
	D	44	36	4.65
		(47.0)	(33.0)	
55	DK	12	1	
		(7.6)	(5.4)	
	A	61	44	
		(61.7)	(43.3)	
	D	71	56	6.49
		(74.6)	(52.4)	
62	DK	8	4	
		(7.1)	(4.9)	
	A	33	37	
		(41.1)	(28.9)	
	D	103	60	5.53
		(95.8)	(67.2)	
64	DK	24	10	
		(20.0)	(14.0)	
	A	46	48	
		(55.2)	(38.8)	
	D	74	43	6.68
		(68.8)	(48.2)	
66	DK	10	3	
		(7.6)	(5.4)	
	A	84	74	
		(92.9)	(65.1)	
	D	50	24	6.18
		(43.5)	(30.5)	
72	DK	36	12	
		(28.2)	(19.8)	
	A	51	36	
		(51.1)	(35.9)	
	D	57	53	7.41
		(64.7)	(45.3)	
PI	DK	261	138	
		(234.5)	(164.5)	
	A	999	770	
		(1039.7)	(729.3)	
	D	900	607	11.68
		(885.7)	(621.3)	

		Non-Ag. Int.	Ag. Int[b]	Chi-square
Mc	DK	177	100	
		(162.8)	(114.2)	
	A	666	510	
		(691.2)	(484.8)	
	D	742	501	5.63
		(730.0)	(512.0)	
ID	DK	42	87	
		(53.2)	(75.8)	
	A	283	369	
		(268.8)	(383.2)	
	D	382	552	5.32
		(385.0)	(549.0)	

[a]Only questions with chi-square values exceeding approximately 4.5 are listed. The sample size for those with agricultural interests is 101.

[b]Ag. Int. represents those who answered affirmatively on question 5 of Appendix A; Non-Ag. Int. represents those who answered negatively. DK, A, D represent agree, disagree and don't know respectively.

[c]The top numbers represent actual frequencies; those in parentheses are the corresponding values under the null hypothesis of independence or homogeneity.