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THE GROWING PRESENCE OF INTERNATIONAL STUDENTS
IN U.S. AGRICULTURAL ECONOMICS PROFESSION

by

C. M. Gempesaw II
G. J. Elterich
R. S. Gajulapalli*

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*The authors are assistant professor, professor and graduate
research assistant, respectively, Department of Food and Resource
Economics, University of Delaware.

Agricultural Economists

Introduction

Several studies have analyzed trends and characteristics of doctoral degrees awarded in agricultural economics (AEC) and the market for agricultural economists (Schrimper, Huffman and Orazem, Huffman and Connor, Schotzko, Helmberger). Other studies have evaluated the relevance of U.S. graduate curricula in AEC for foreign students (Johnson, Brandao, Owen and Cross). However, none of these studies has focused on the importance of foreign students in terms of their impact on the supply of academic agricultural economists. Considering that the percentage of AEC doctoral degrees awarded to international students has grown from an average of 21 percent in the 1960's to as much as 44 percent in the early 1980's (Schrimper, Huffman and Connor), it is reasonable to expect that such change will affect the student and faculty composition of AEC departments.

This paper aims to study the importance of international students in the supply of academic agricultural economists. To accomplish this objective, the following information will be used. First, this study will provide statistics on Ph.D. degrees in AEC awarded in 1986-87 and those expected to be awarded in the 1987-88 and 1988-89 periods for both domestic and foreign students. Second, information on the age distribution of AEC faculty and expected number of retirements will be tabulated in order to obtain some insights on the number of academic job openings due to retirement in the near future. Third, statistics on current and expected job openings along with recent job

positions filled in AEC departments and percentage of foreign job applicants will be reported.

Method

To gather the data needed for this study, survey questionnaires were sent to the Chairmen/Heads of U.S. AEC departments listed in the 1984 AAEA membership directory. Sixty three departments were included in the mail survey. Fifty four of these departments responded, yielding a response rate of 86 percent. This survey yielded a total of 1183 faculty members which is 87 percent of the 1362 agricultural economists identified as working as professor, associate professor, assistant professor or lecturer in U.S. AEC departments by Huffman and Connor. The survey was started in November 1987 and the last responses were received in the middle of June 1988. Based on the standard USDA regional classification¹, the following is the regional breakdown of the respondents: Northeast (8), Southeast (12), Lake States (3), Corn Belt (5), Delta States (3), Northern Plains (3), Southern Plains (5), Mountain (7), and Pacific (8). The responding departments were also classified by size based on the number of faculty. There were 19 respondents that had less than 15 faculty members (small), 18 respondents had between 15 to 30 faculty members (medium), while 17 respondents had more than 30 faculty members (large).

Results

Current Enrollment and Ph.D. Degrees Expected to be Awarded:

As shown in Table 1, the survey results indicate that during the current school year (1987-88), 48 percent of the students enrolled in AEC Ph.D. programs were foreign students.² In terms of department size based on the number of faculty, 52 percent of the enrollment in large departments were foreign students while only 41 percent of the enrollment in medium size departments were foreign students. A proportion similar to the national estimate was found for small departments.

The number of Ph.D. degrees awarded last year (1986-87) and those expected to be awarded in the next two years (1987-88 and 1988-89) are reported in Table 2. During the 1986-87 school year, almost 49 percent of AEC Ph.D. degrees were awarded to foreign students.³ During the next two years, around 46 percent of doctoral degrees in AEC are expected to be given to foreign students. The distribution by department size shows that small departments will award more than half of their doctoral degrees to foreign students during the next two years. On the other hand, medium and large size departments are expected to grant less than half of their doctoral degrees to foreign students.

Age Distribution and Expected Number of Retirements:

Huffman and Connor reported that the average age of U.S. agricultural economists in academia was 46 years old. In this survey, the average age was 45.5 years old (Table 3). On a regional basis, agricultural economists in the Pacific region had

the youngest average age (43.9 years) while the Lake States region had the oldest average age for agricultural economists (48.2 years old).

Table 3 also shows that over 9 percent (109 faculty members) of the faculty in the responding departments are above 60 years of age. Approximately half of the AEC faculty are between 35 and 49 years of age, with those 45 to 49 years of age being the largest group followed by those 35 to 39 years of age. Table 4 gives a clearer picture of the number of faculty job openings due to retirement. At least 47 faculty members are expected to retire next year with an additional 64 faculty members retiring during the next three years for a total of 111 faculty members. This expected number of retirements is consistent with the 9 percent (109 faculty members) of the survey respondents who are above 60 years of age. Assuming a similar proportion of expected retirements for respondents and non-respondents, 129 AEC academic job openings can be anticipated due to retirements during the next three years.

Current and Expected Job Openings:

As part of the survey questionnaire, the department chairs were asked about the number of current job openings in their department and expected job openings for the next three years. At the time of this survey, 63 tenure-track faculty positions were unfilled along with 6 non-tenure-track positions (Table 5). In addition, a total of 104 tenure-track faculty positions and 13

non-tenure-track faculty positions were expected to be available during the next three years.

Based on the 54 departments responding to the survey, each AEC department is expected to have an average of 2.17 faculty positions open during the next three years. This would imply approximately 136 positions for all the 63 institutions surveyed assuming the nonreporting departments are in a situation similar to that of the respondents. In terms of department size, the large departments are expected to have at least 3 faculty positions open while the medium and small departments will have 2 and 1 faculty positions open, respectively, during the next three years.

As discussed earlier, a total of 129 AEC faculty positions will be available due to retirements during the next three years. This estimate is close to the 136 total faculty positions derived from the average of 2.17 open positions for each department in the population. If one considers the current unfilled tenure and non-tenure track faculty positions, the total number of AEC faculty job openings during the next three years will be around 210 to 217.⁴

The survey results show that at least 585 Ph.D. degrees will be granted during the 1987-89 period. Assuming that the sample doctoral recipients during this period comprise 94 percent of the population (see footnote 3), a total of 622 Ph.D. degrees can be expected to be awarded. Of these, 46 percent or 286 degrees

will be earned by foreign students while the remaining 54 percent or 336 degrees will be awarded to domestic students.

Huffman and Connor reported that 60 percent of all agricultural economists were employed by the academic sector. Inasmuch as immigration rules⁵ restrict the application of foreign Ph.D. recipients in the non-academic profession, one can assume that most of the government and private sector vacancies will be filled by domestic Ph.D. recipients. Sixty percent of 336 potential domestic Ph.D. recipients is 201 domestic Ph.D.'s which falls short of the expected academic job openings. This also assumes that foreign Ph.D. recipients are only hired after all the domestic Ph.D.'s are hired which may not always be the case. It could then be argued that some AEC academic job vacancies will be filled by foreign Ph.D. recipients.

These estimates are not necessarily unrealistic. During the last three years, respondents reported that 175 AEC faculty positions were filled.⁶ Of these, 11 percent or 20 positions were filled by foreign Ph.D. recipients. At least 14 percent of the new Ph.D.'s hired in small and medium size departments were foreign citizens. Only 8 percent of the new Ph.D.'s hired in large departments were foreign Ph.D. recipients. Although a large number of foreign students leave the U.S. after obtaining their Ph.D. degree, 24 of the 54 departments responding reported that during their most recent faculty job search, at least 40 percent of their applicants were foreign citizens. These numbers indicate the important role of foreign students not only in terms of

graduate enrollment, but also in terms of applicants and hirings for AEC faculty positions.

Summary and Conclusion

This study was conducted to ascertain the importance of foreign students in the academic market for agricultural economists. A mail survey was conducted involving 63 AEC departments, 54 of which responded. Results suggest that, first, close to half of all Ph.D. degrees in AEC during the 1987-89 period will be earned by foreign students. Second, the number of academic positions available for the same time period is estimated to be around 210 to 217 positions based on present and expected openings, age of current faculty and expected retirements. Third, with the expected large number of foreign Ph.D. recipients, at least 10 percent of these job openings will probably be filled by international students.

The numbers and trends reported in this study have important ramifications for the AEC profession. One can surmise that foreign student enrollments in AEC graduate programs will continue to increase due to various factors. Educational, income and employment opportunities in the U.S. along with socio-economic and political instability in their home countries are some of the factors behind increased indirect professional immigration (Huang). Furthermore, in order to utilize graduate funds and facilities, AEC departments have accepted foreign students who, in most cases, successfully contribute to the completion of faculty-directed research programs. Although

foreign students may not be as familiar with domestic agricultural and economic conditions, this shortcoming is compensated for by their familiarity with international economic conditions. This adds an invaluable dimension towards the much needed internationalization of the U.S. AEC profession. This particular issue was raised by Schuh when he argued the importance of training and educating students on the international economy.

The increasing role of international students will not only affect the structure and philosophy of AEC programs but also influence future faculty hirings in AEC. If the number of foreign doctoral students continue to increase, one may conclude that some of these Ph.D. recipients will apply for and fill AEC academic positions. Thus, it is necessary to analyze the potential role of international students as AEC educators in U.S. universities. Finally, estimates of the supply and demand of agricultural economists need to be updated periodically. While the supply of AEC Ph.D. recipients is not difficult to determine, the demand for agricultural economists, particularly that outside of academia, is much more difficult to assess.

1. Institutions located in the Appalachian region checked either the Southeast or Northeast regions as their regional affiliation.

2. Survey results for 1987 AEC M.S. enrollment show that only 36 percent of the graduate students pursuing masters degrees are foreign students.

3. There were 158 AEC Ph.D. recipients in 1987 as listed in the AJAE, May 1988. The 148 AEC Ph.D. recipients reported in this study represent 94 percent of the total AEC doctoral recipients last year.

4. The total number of current unfilled positions per department (69/54 times 63 departments = 81) was added to the estimated openings (129 to 136) to derive the range of 210 to 217.

5. Immigration rules require that a foreign citizen be the only qualified candidate for a private industry job before he or she can be given a labor clearance. On the other hand, immigration rules only require that a foreign citizen be the best candidate for an academic job. Foreign citizens are not allowed to work with the U.S. government.

6. This represents an average of (175/54 =) 3.2 positions per responding department. Assuming the same characteristic for the nonrespondents, a total of (3.2 times 63 =) 200 AEC faculty positions were filled in the last three years which is close to the estimated 210-217 faculty openings for the 1987-89 period.

References

- AAEA Membership Directory, 1984. American Journal of Agricultural Economics. vol.66, no.2, part 2, May 1984.
- Brandao, A. S. "The U.S. Graduate Training in Agricultural Economics: The Perspective of a Former Foreign Student." American Journal of Agricultural Economics. vol. 65, no. 5, pp. 1149-52, December 1983.
- Helmberger, J. "The Market for Agricultural Economists." American Journal of Agricultural Economics. vol. 55, pp. 725-34, 1973.
- Huang, W. "A Study of Indirect Immigration of Professional Manpower to the U.S." unpublished Ph.D. dissertation, University of California, Santa Barbara, 1984.
- Huffman W. and L. Connor. "A Perspective on the Market for Agricultural Economists: Background, Trends and Issues." North Central Journal of Agricultural Economics. vol. 8, no.2, pp. 189-207, July 1986.
- Huffman W. and P. Orazem. "An Econometric Model of the Market for New Ph.D.'s in Agricultural Economics in the United States." American Journal of Agricultural Economics. vol. 67, pp. 1207-14. 1985.
- Johnson, G. "The Relevance of U.S. Graduate Curricula in Agriculture Economics for the Training of Foreign Students." American Journal of Agricultural Economics. vol. 65, no. 5, pp. 1142-8, December 1983.
- Owen, W. and L. Cross. "Foreign Students in Agricultural Economics from the Perspective of the Economics Institute." American Journal of Agricultural Economics. vol. 65, no. 5, pp. 1136-41, December 1983.
- Schotzko , R. "Projected Replacement Needs for Agricultural Economists." American Journal of Agricultural Economics. vol. 62, pp. 525-9. 1980.
- Schrimper, R. "Trends and Characteristics of Ph.D. Degrees in Agricultural Economics in the United States." American Journal of Agricultural Economics. vol. 67, pp. 1200-6, December 1985.
- Schuh, E. "Revitalizing the Land Grant University." CHOICES. vol. 1, 2nd Quarter, pp. 6-10, 1986.

Table 1. Number of Agricultural Economics Ph.D. Students Enrolled for Fall 1987, By Visa Status and Department Size.

<u>Department Size</u>	<u>Visa Status</u>		<u>Total</u>
	<u>Citizen/P.R.*</u>	<u>Non-Citizen</u>	
Number of faculty less than 15.	35 (.53)**	31 (.47)	66
Number of faculty between 15 and 30.	167 (.59)	116 (.41)	283
Number of faculty over 30.	249 (.48)	267 (.52)	516
All departments.	451 (.52)	414 (.48)	865

*Permanent Resident.

**Numbers in parentheses are row percentages.

Source: Mail survey of 54 Agricultural Economics departments.

Table 2. Agricultural Economics Doctoral Degrees Awarded in 1986-87 and Expected to be Awarded in 1987-88 and 1988-89, By Visa Status and Department Size.

<u>Department Size</u>	<u>Visa Status</u>					
	<u>Citizen/P/R.*</u>			<u>Non-Citizen</u>		
	<u>Y87</u>	<u>Y88</u>	<u>Y89</u>	<u>Y87</u>	<u>Y88</u>	<u>Y89</u>
Number of faculty less than 15.	4	13	17	11	15	21
Number of faculty between 15 and 30.	25	27	47	17	22	21
Number of faculty over 30.	47	62	72	44	52	68
All departments.	76	102	136	72	89	110

*Permanent Resident

Source: Mail survey of 54 Agricultural Economics department.

Table 3. Age Distribution of Agricultural Economics Faculty,
By Region.

<u>Region</u>	<u>Number of Faculty Per Age Group</u>										
	<30	30	35	40	45	50	55	60	>65	ave.	total
	—	<u>34</u>	<u>39</u>	<u>44</u>	<u>49</u>	<u>54</u>	<u>59</u>	<u>65</u>	—	<u>age</u>	<u>faculty</u>
Northeast	2	23	25	17	25	8	26	7	1	44.8	134
Southeast	14	40	65	54	51	39	34	22	12	44.9	331
Lake States	1	8	16	14	20	16	23	9	3	48.2	110
Corn Belt	3	20	25	22	27	15	26	13	5	46.4	156
Delta States	1	4	7	8	7	6	6	1	0	44.9	40
Northern Plains	6	11	11	12	12	6	8	8	2	44.8	76
Southern Plains	2	4	7	10	15	9	10	5	0	47.1	62
Mountain	4	10	20	14	20	15	11	8	3	45.8	105
Pacific	11	29	20	28	30	24	17	8	2	43.9	169
Total Per Age Group	—	—	—	—	—	—	—	—	—	—	—
	44	149	196	179	207	138	161	81	28	45.5	1183

Source: Mail survey of 54 Agricultural Economics Departments.

Table 4. Number of Expected Agricultural Economics Faculty Retirements, By Region.

<u>Region</u>	<u>Number of Retirements</u>			
	<u>Next Year</u>	<u>Next 3 Years</u>	<u>Next 5 Years</u>	<u>Next 10 Years</u>
Northeast	5	3	28	27
Southeast	17	14	20	40
Lake States	5	7	12	23
Corn Belt	2	8	8	24
Delta States	1	2	4	5
Northern Plains	3	9	2	7
Southern Plains	4	4	3	6
Mountain	7	10	9	24
Pacific	3	7	4	14
Total U.S.	47	64	90	170

Source: Mail survey of 54 Agricultural Economics Department.

Table 5. Number of Current Job Openings and Expected Job Openings During the Next Three Years for Academic Agricultural Economists, By Department Size.

Department Size	<u>Current Job Openings</u>		<u>Expected Job Openings Next Three Years</u>	
	TFAC*	NFAC**	TFAC	NFAC
Number of faculty less than 15.	11	1	23	4
Number of faculty between 15 and 30.	18	2	32	3
Number of faculty over 30.	34	3	49	6
	<hr/>	<hr/>	<hr/>	<hr/>
All departments	63	6	104	13

* Faculty (tenure track)

** Faculty (non-tenure track)

Source: Mail survey of 54 Agricultural Economics departments.