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Twelve-month and Nine-month Agricultural Economics Faculty Salaries

Lynn W. Robbins and Michael R. Reed

Ever more agricultural economics departments are offering appointments for nine rather than twelve months but little if any analysis of the impact of this change has been done. Our research shows that converting to nine-month contracts is an effective way to raise salaries without an initial outlay of new funds and thus meets the retention criterion. Lower ranks do not suffer significantly lower salaries (without supplements) and professors earn more. Because the nine-month alternative costs more, justification for converting all twelve-month faculty members must rest on other factors, such as enhanced grants or comparability.

Key Words: budget management, converting faculty appointments, enhancing grants, faculty salaries, hiring, retention, salaries, twelve-month and nine-month appointments

Universities and colleges of agriculture are struggling to deal with reduced funding from federal and state sources. Costs at universities are escalating while hard-money funds are diminishing. Hence, departments are looking at ways to save money in virtually all aspects of university operations. Departments that do not keep pace with cost savings or income enhancements could lose productive faculty members to departments that find ways to save money and pay their professors higher salaries.

A potentially affordable and feasible approach to faculty retention is to convert the faculty from twelve-month to nine-month appointments. Many agricultural economics departments[1] around the country have already taken this step. University of Illinois, for example, had switched entirely to nine-month appointments by at least 2005, and by 2011, 90 percent of faculty positions in Arizona, Maryland, and Wisconsin were for nine months. This analysis investigates how hard-money compensation for faculty members on nine-month salaries compares with that of faculty members on twelve-month salaries using data collected from thirteen Ph.D.-granting agricultural economics departments (see Table 1) over a seven-year span. We note that these thirteen departments' experiences with nine-month appointments may not be representative of all agricultural economics departments.

[1] Here, we are referring to departments that offer degrees in agricultural economics, business, and management; the specific names of the departments vary.

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Table 1. Responding Agricultural Economics Departments

	Survey Year Responded			
Department	**2005**	**2007**	**2009**	**2011**
North Carolina State University		•	•	•
Ohio State University	•	•	•	•
Pennsylvania State University	•	•	•	•
Purdue University	•	•	•	•
Texas A&M University	•	•	•	•
University of Arizona			•	•
University of Florida	•	•	•	•
University of Georgia	•	•	•	•
University of Illinois	•		•	•
University of Kentucky	•	•	•	•
University of Maryland		•	•	•
University of Minnesota	•	•	•	•
University of Wisconsin			•	•

Administrators must consider numerous issues when contemplating converting faculty members from twelve- to nine-month appointments. Among them are needs to increase incentives for generating extramural funding, identify a mechanism for rewarding productive faculty members, and save money for the department. We look specifically at whether the move to nine-month appointments will save departments money in the short-term and/or long-term and whether conversion should be offered to everyone or be used only for retention.

We analyze salary and qualitative data collected from a group of agricultural economics departments as well as related literature to provide insight for the academic decision-making community. In particular, we are interested in what can be said about incentives for faculty members to convert to nine-month appointments, risks related to supplementing nine-month appointments, and administrative motivations for offering faculty the opportunity to convert as interpreted by the chairs of the departments included in our study. Clearly, deans and university administrators play key roles in offering nine-month appointments and in setting related policies, conditions, and guidelines. They make the basic decision as to whether nine-month appointments exist at a given institution. But department chairs understand the reasons behind instituting nine-month appointments. Thus, we capture their perspectives. They were on the front lines of the conversion, could see the direct impact of offering a nine-month alternative, and can provide some hint as to how and why the nine-month alternative was instituted.

Previous Research

Research on nine-month faculty appointments began in the early 1990s after University of Illinois' agricultural economics department began moving that direction. Taylor (1993) pointed out that "University of Illinois started offering

irrevocable conversions from twelve-month to nine-month appointments in 1983 and that in ten years all but two agricultural economics faculty had converted" (p. 52). He went on to list two types of risk faced by nine-month faculty members: "The first and most obvious risk is the prospect of not getting sufficient grant funds to cover summer salary. The second type of risk is that hard money summer support for teaching or research support promised by the administration (to get twelve-month faculty to covert to nine-month appointments) will be withdrawn at some future date because of insufficient funds, petty retribution for perceived sins, or lack of productivity" (p. 53).

Trapp (1993) wondered whether "holding a twelve-month appointment carries with it an additional security/utility since two additional months of income are guaranteed. The initial answer would appear to be yes" (p. 31–32). Golden et al. (2005) found that nine-month faculty members were paid more on a monthly basis: "The discount associated with being on a twelve-month contract rather than a nine-month contract is an estimated $27,026 and statistically significant" (p. 14). In their study, they adjusted salaries for faculty members on nine-month appointments upward to achieve a twelve-month basis. They suggested not that nine-month appointments were paid more but that they had the opportunity to make their own salary adjustments.

Taylor (1993) does a good job of summing up the motivation behind offering the nine-month alternative: "(1) a way of coping with declining agricultural and extension funds, (2) a one-shot opportunity to increase agricultural faculty compensation relative to other disciplines, (3) a means of increasing incentives for faculty to obtain outside support, and (4) a way to put on equal footing the "comparisons" of salaries in agriculture economics with salaries in other colleges" (p. 53).

Data and Methods

We conducted a survey of chairs of thirteen land grant agricultural economics departments every other spring between 2005 and 2011.[2] Eight departments responded to all four inquiries and all thirteen responded in 2009 and 2011. Individuals who chaired a department in 2011 also shared their views about how and why the nine-month alternative was instituted, why some faculty members remained on twelve-month appointments, and the pros and cons of their departments' nine-month arrangements.

The thirteen departments over four years generated 226 observations.[3] The data were analyzed descriptively and graphically, and we used a regression

[2] One of the universities included in our study used benchmark institutions to assess its standing in areas such as student mix, degree mix, and research expenditures to inform its decision-makers and promote program change and enhancement. That university used a list of benchmark institutions compiled by the state Council on Postsecondary Education (Kentucky Council on Postsecondary Education 2005). The thirteen departments we use were among the nineteen benchmark institutions that had agricultural economics (or similarly named) departments. Thus, the departments we selected may not be representative of all agricultural economics departments but are likely to be viewed as being upper echelon and desirable for emulation. The departments ranked highly elsewhere as well. Ten of the thirteen were listed by IDEAS in the top 25 percent of agricultural economics departments by research papers in July 2013 (*http://ideas.repec.org/top/top.agecon.html*) and eleven were in Gregory M. Perry's 2004 ranking of the top 25 Ph.D. programs (*http://arec.oregonstate.edu/sites/default/files/faculty/perry/Ranking2004.pdf*).

[3] Each respondent was asked to provide the average salary, the number of full-time equivalent appointments by rank, and starting salaries without supplement for each of the four years.

analysis to explain average annual salaries by faculty rank for the departments. No adjustment was made for length of appointment. We requested budgeted salaries rather than salaries plus supplements received from grants for various other functions such as administrative duties. Dummy variables for the year of the survey, the institution, the rank of the faculty member (new assistant, assistant, associate, and full professor), and the appointment term (nine- versus twelve-month) were used to explain average annual salaries. The analysis also allowed the effects of nine-month appointments to vary by rank. There was no attempt to measure performance. We assumed that institutional procedures were in place that allowed department chairs, with faculty input, to accurately assess performance and thus that rank and appointment were correlated with performance.

Table 2 provides average salaries by rank, year, and appointment. Generally, the averages follow the expected pattern—larger salaries are associated with higher ranks and later years. That pattern does not always hold, however, because different numbers of institutions reported in various years, which could disrupt a smooth pattern of salary increases, and because individual faculty members moved through the ranks during the study period, which also could cause fluctuations in salaries per rank by year. Salaries for new hires also sometimes exceeded average salaries of assistant professors.

Results

Department chairs reported that their colleges began offering a nine-month option to (i) be competitive in the job market, (ii) ease budget pressures, and (iii) increase grant activities by faculty members. Emphasis on the nine-month appointment has narrowed recently to new faculty hires only because once favorable arrangements (such as keeping one's full salary but giving up two or three years of raises or converting at 10/11th of the twelve-month salary) are no longer offered. Thus, conversion is no longer attractive to those who had remained on twelve-month appointments (probably because they did not believe they could supplement their salaries through grants). New hires typically receive two to three years of summer supplement and/or starting

Table 2. Average Annual Salaries by Appointment, Rank, and Year

	2005	2007	2009	2011
Nine-month Appointments				
New assistant	$66,633	$73,000	$82,698	$85,071
Assistant	$87,522	$87,262	$82,375	$85,024
Associate	$80,316	$83,850	$93,849	$97,196
Full	$105,862	$117,407	$129,736	$123,647
Twelve-month Appointments				
New assistant	$68,400	$73,606	$77,571	$82,675
Assistant	$73,264	$76,123	$78,301	$77,583
Associate	$79,079	$84,442	$93,705	$98,633
Full	$94,776	$107,566	$119,128	$123,340

salaries that are equivalent to twelve-month offers. Conversions back to twelve-month appointments are essentially nonexistent.

In 1993, Taylor reported that "many colleges of agriculture have looked into nine-month contracts, but currently less than one-fourth offer it as an option. At some schools, the nine-month contract is strongly encouraged by the administration, while some schools reluctantly offer the option, while yet others adamantly refuse to let faculty convert" (p. 52).

By 2005 (our first year of observations), University of Illinois' department of agricultural economics, which responded in every year the survey was conducted, had already completely converted its faculty to nine-month appointments and reported no twelve-month appointments in subsequent years.

All thirteen departments responded to the survey in 2009 and 2011. In 2011, two departments still had twelve-month appointments only and the other ten had both nine- and twelve-month appointments. In 2011, six departments had converted more than 75 percent of their faculties to nine-month appointments. Combining this group with University of Illinois brought the share of faculty at those institutions with nine-month appointments to 88 percent. More than 70 percent of the few faculty members still on twelve-month appointments were full professors.

Eight departments responded to all four surveys. Of those, two departments never converted any faculty appointments to nine months. The remaining six averaged a nearly 20 percentage point increase in nine-month appointments over the six-year period. One went from none prior to 2005 to more than 15 percent in 2011, and another went from 52 percent in 2005 to more than 86 percent in 2011.

Figure 1 compares data for the eight institutions that responded to all four surveys. Nine-month appointments increased dramatically during those six years. In 2005, assistant professors as a group had the largest percentage, but by 2011, 40 percent or more of members of all ranks had nine-month

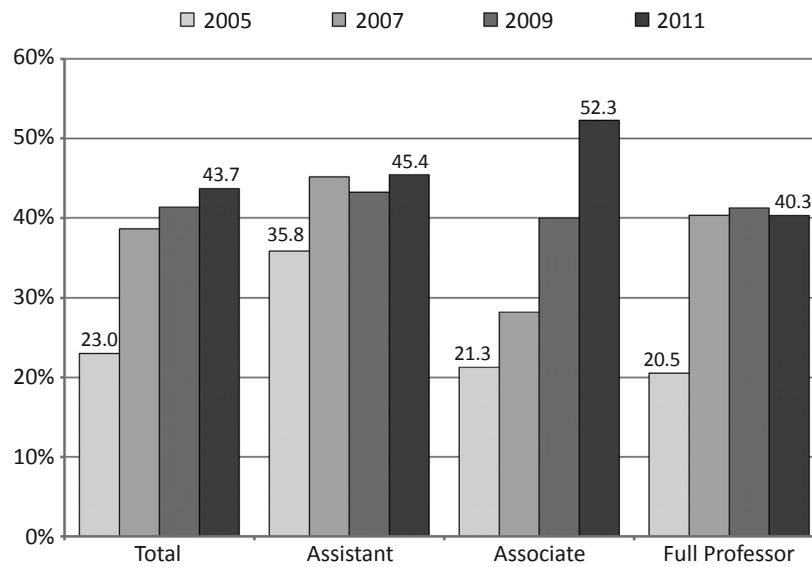

Figure 1. Percentage of Faculty on Nine-month Appointments from Eight Responding Departments for 2005 through 2011

appointments with associate professors having the largest share (52.3 percent). As individuals moved through the promotion process, the percent of nine-month appointments increased and then stabilized. It appears that faculty members who remained in twelve-month appointments did so because their departments either offered only twelve-month appointments or had reached the desired mix of twelve and nine-month appointments. The nature of our data prevents us from testing this hypothesis.

Figure 2 shows that the percentage of nine-month appointments grows rapidly when the number of respondents increases to thirteen; 75 percent or more of the faculty appointments in the five additional departments were for nine months. In addition, by 2011 nearly 66 percent of the total number of faculty members in those institutions had nine-month appointments: 74 percent of assistant professors, 70 percent of associate professors, and 62 percent of full professors. Starting salaries reported in 2009 and 2011 (see Table 2) were higher for nine-month appointments than for twelve-month appointments. Figure 3 shows the relationship between a department's average faculty salary and percentage of nine-month faculty appointments and demonstrates descriptively that salaries rose as the percentage of nine-month appointments increased even with no summer supplements.

The results of our regression analysis with faculty salary as the dependent variable are shown in Table 3. The first column of coefficients shows results when the effect of nine-month appointments on salary was not allowed to vary by faculty member rank and the second column provides the results of the regression when faculty rank was a variable. We focus on the second set of results.

The base year in the analysis was 2011, so the coefficients on salaries for 2005 and 2007 were significantly different from zero (we used a 10 percent level of significance throughout) and negative (–$15,310 for 2005 and –$11,175 for 2007). The coefficient for 2009 is negative (–$1,102) but not significantly different from zero. There were significant differences in salaries

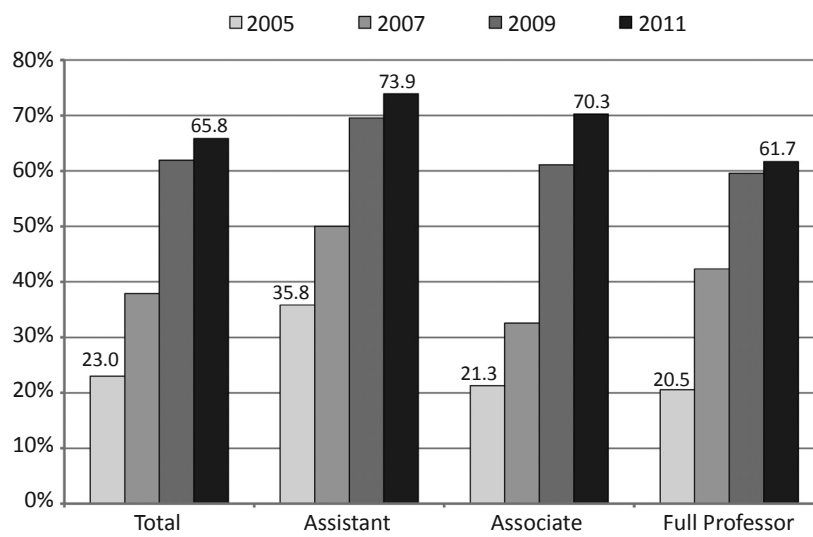

Figure 2. Percentage of Faculty on Nine-month Appointments from All Responding Departments for 2005, 2007, 2009, and 2011

among departments (determined from the school dummy variable). Salaries in three departments were significantly higher than the base level; none were significantly lower. The results by department, though interesting, are not important to our study and thus are not presented in detail.

Table 3. Results of the Regression Analysis with Faculty Salary as the Dependent Variable

Variable	Coefficient No Variance by Rank (Standard Error)	Coefficient Variance by Rank (Standard Error)
Year 2005	–15,088 (2,313)	–15,310 (2,290)
Year 2007	–11,056 (2,225)	–11,175 (2,202)
Year 2009	–930 (2,055)	–1,102 (2,036)
Assistant	482 (2,606)	1,226 (3,925)
Associate	10,799 (2,582)	10,102 (3,770)
Full	37,984 (2,553)	33,320 (3,770)
Nine-month	–38 (1,860)	–2,965 (4,479)
Nine-month assistant	—	–1,308 (5,201)
Nine-month associate	—	744 (5,091)
Nine-month full	—	8,836 (5,071)
Adjusted R-square	0.72	0.73

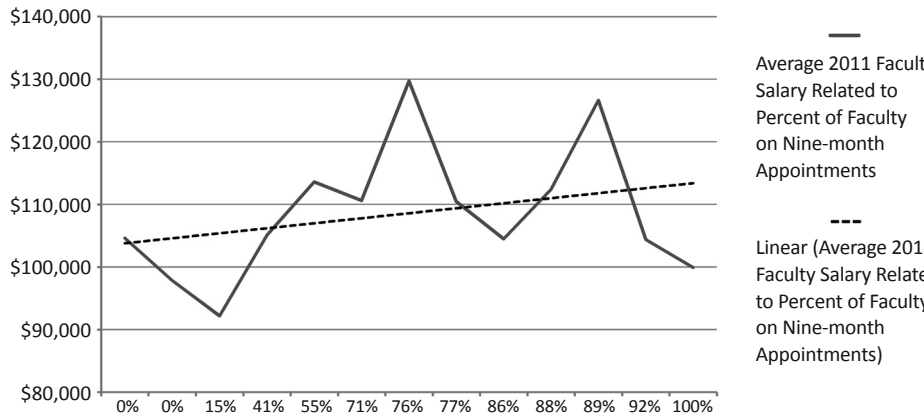

Figure 3. Average 2011 Faculty Salary related to Percent of Faculty on Nine-month Appointments

Starting salary was used as the base salary in the regression analysis. As shown in Table 3, assistant professors received a $1,226 premium (not significantly different from zero), associate professors received a $10,102 premium (significantly different from zero), and professors received a $33,320 premium (significantly different from zero). There was no significant difference in salary for nine-month and twelve-month appointments when the effect was not allowed to vary by rank (coefficient of –$38). When the effect of nine-month appointments was allowed to vary by rank, there were significant differences in salaries. Under nine-month appointments, starting assistant professor salaries were $2,965 less, assistant professor salaries were $1,308 less, and associate professor salaries were $744 more (none of the coefficients were significantly different from zero). Full professors, on the other hand, earned $8,836 more under a nine-month appointment and that coefficient was significantly different from zero.

Relatively few full professors had nine-month appointments but the ones who did made significantly more than those with twelve-month appointments. It seems reasonable to conclude that the quality of the performance of individual faculty members becomes clearer the longer those faculty members are employed, and nine-month appointments provide an opportunity to reward performance (we cannot test this theory because of data limitations). Thus, it is logical to conclude that, among full professors, those with nine-month appointments are likely to be high-performing individuals (specifically, individuals with records of grant-writing success) and those with twelve-month appointments are likely to be lower-performing individuals or ones whose specialties have fewer opportunities for grant support.

Conclusions

It is no surprise to find that nine-month appointments are increasing and that they are increasing rapidly. It is surprising to find that salaries for nine-month appointments have significantly exceeded those of twelve-month appointments for full professors even when excluding supplements. Furthermore, there is no indication that the trend toward adoption of nine-month contracts will slow especially in the face of strong demand for faculty members. Based on these results, what can be said about effective incentives to encourage adoption of nine-month appointments, risks related to supplementing such appointments, and administrative motivations for offering department faculty the opportunity to convert?

Chairs of departments that included nine-month appointments reported having no difficulty covering obligations in the summer. Most faculty members were receiving salary supplements for some or all of the summer and went the extra mile to meet summer research, extension, service, and administrative obligations. The largest concern expressed by department chairs was a belief that the nine-month option had eroded some support for assistantships. Faculty members appeared to have first acted to seek support for their summer salaries unless strong policies were in place to prevent that from happening. In addition, department chairs wondered if grant activity had increased only enough to cover summer salaries, meaning that faculty members were not bringing in additional money to support the department and its graduate students.

Golden et al. (2005) had posited a discount associated with twelve-month appointments. Our results indicate that the effect is more correctly described as an incentive associated with nine-month appointments. The passage of time and

this study have shown that faculty members under nine-month appointments make more in absolute terms than their twelve-month peers. Which suggests that the incentive that is innate to a nine-month appointment is important to highly productive individuals who can further enhance their salaries through supplements. The incentive is also important to administrators who wish to retain such individuals on the faculty. Thus, it is a retention strategy rather than a money-saving strategy.

Taylor (1993) reported that only two University of Illinois faculty members had chosen not to convert to nine-month appointments in the first ten years in which Illinois offered the irrevocable alternative. By 2005, no twelve-month appointments remained in Illinois' agricultural economics department and none were reported through 2011. The larger absolute value of salaries for nine-month faculty members strongly suggests that, on average, the risks suggested by Taylor of not obtaining sufficient grant funds to cover summer salaries and the risk of losing hard-money summer support for teaching or research are at worst minimal and may not exist at all.

Our regression analysis confirms our suspicions from the descriptive analysis. Lower-ranking faculty members do not suffer from significantly reduced annual salaries under nine-month appointments even if they do not have grants or teaching assignments that supplement their salaries, and full professors earn more with nine-month contracts. Because salaries under nine-month appointments are either the same or higher (at the full professor level) than under twelve-month appointments regardless of summer supplements, the administrative goal of saving money is at best a patch in the short term and fails in the long term. The conversion increases the agricultural economics faculty's compensation and may increase the faculty's incentive to obtain outside support (an important topic but one that lies outside the scope of this study other than in the qualitative assessments of the chairs). By default, the conversion puts faculties of agricultural colleges on equal footing for "comparisons" of salaries with faculties in other disciplines.

A conversion to nine-month contracts is an effective way to raise salaries without having to make an initial outlay of new funds, so it clearly enhances retention. But because the nine-month alternative costs more over the long term, justifications for converting all faculty members to nine-month appointments likely will have to rest on "increasing grants" and "comparisons" rather than on cost savings.

Future research is required to determine how various types of appointments (e.g., number of months, revocability, and policies on supplements) would affect faculty candidates' decisions about where to interview and which positions to accept. Further research also is needed to see if more grant funds gravitate toward departments offering nine-month contracts and away from ones with traditional twelve-month contracts. Another interesting question is whether there is a competitive advantage in attracting grants for some disciplines or for some appointments within a discipline independent of appointment type.

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