2010

Professions, Organizations and Institutions: Tenure Systems in Colleges and Universities

Sangchan Park
National University of Singapore

Wesley D. Sine
Cornell University, wds4@cornell.edu

Pamela S. Tolbert
Cornell University, pst3@cornell.edu

Professions, Organizations and Institutions: Tenure Systems in Colleges and Universities

Abstract

A common strategy used by professions to support claims of workplace jurisdiction involves the institutionalization of professionally-endorsed formal structures, yet both theory and research suggest that ensuring the implementation of institutionalized structures after formal adoption can be problematic. This study investigates the influence of organizational characteristics on the implementation of one professionally-created institution in higher education organizations, tenure systems for faculty employment. Our results suggest that implementation of tenure systems is negatively affected by internal resource pressures, but positively affected by countervailing pressures from professionally-linked constituents. The results also suggest self-limiting aspects of the use of tenure systems.

Keywords

tenure systems, institutions, implementation, professions, colleges and universities

Disciplines

Education | Educational Methods

Comments

Professions, Organizations and Institutions:
Tenure Systems in Colleges and Universities

Sangchan Park
Department of Management and Organisation
National University of Singapore
119245 Singapore
bizsp@nus.edu.sg
Fax: +65-6775-5571

Wesley D. Sine
Johnson Graduate School of Management
Cornell University
Ithaca, NY 14853
wds4@cornell.edu
Fax: 607-254-4590

Pamela S. Tolbert
Department of Organizational Behavior
School of Industrial and Labor Relations
Cornell University
Ithaca, NY 14853
Fax: 607-255-2261

Forthcoming: Work and Occupations

Acknowledgments: We thank Guest Editors Elizabeth Gorman and Rebecca Sandefur and the two anonymous reviewers for their helpful feedback throughout the review process. For comments and suggestions on various incarnations of this paper, we would like to thank Penny Becker, Robert David, Ronald Ehrenberg, Shin-Kap Han, Linda Johanson, Mike Lounsbury, Tim Schmidle, Marc-David Seidel, John Tucker, Marty Wells, Mayer Zald, seminar participants at MIT and UCLA, and the 2006 ASAC meetings. Because this was a fully collaborative effort, the order of authorship is simply alphabetical.

Professions, Organizations and Institutions:
Tenure Systems in Colleges and Universities

Abstract

A common strategy used by professions to support claims of workplace jurisdiction involves the institutionalization of professionally-endorsed formal structures, yet both theory and research suggest that ensuring the implementation of institutionalized structures after formal adoption can be problematic. This study investigates the influence of organizational characteristics on the implementation of one professionally-created institution in higher education organizations, tenure systems for faculty employment. Our results suggest that implementation of tenure systems is negatively affected by internal resource pressures, but positively affected by countervailing pressures from professionally-linked constituents. The results also suggest self-limiting aspects of the use of tenure systems.

Keywords: tenure systems, institutions, implementation, professions, colleges and universities

Professions, Organizations and Institutions:
Tenure Systems in Colleges and Universities

Sociological theories of professions have long recognized the potential conflict between bureaucracy and profession as systems for accomplishing work activities (Abbott, 1988; Barley, 2004; Freidson, 2001; Hall, 1967; Scott, 1965; Tolbert, 1996; Tolbert and Stern, 1991; Wallace, 1995). Freidson (1994) cast this in terms of two competing bases of authority, denoted as occupational and administrative principles. The former rests on the belief that those who possess specialized, occupationally-based knowledge required for the execution of central tasks in an organization – i.e., members of a profession – should have control over key organizational decisions, such as defining appropriate work processes and conditions, setting required qualifications for employment, and evaluating work outcomes and individual performance. The administrative principle, on the other hand, is predicated on the belief that authority should be tied to hierarchical position, which presumably reflects a different kind of specialized knowledge, one involving a general understanding of the requirements for ongoing organizational functioning and the integration of activities across different subunits. This implies that decisions about work procedures, hiring, performance evaluation and dismissal or retention, among others, should be left in the hands of those who are focused primarily on the efficient running of an organization and its survival. Because both principles embody rational-legal authority and thus have legitimacy in contemporary society, when those possessing occupational authority disagree with those possessing administrative authority, it is often unclear which principle should dominate.

A common response by professions to such potential conflicts involves constructing and promulgating organizational institutions – prescribed practices and formal structures that maintain

or enhance professional power and are to be adopted and followed by organizations that employ members of the profession (Greenwood, Suddaby, & Hinings, 2002; Leicht & Fennell, 1997). Such structures typically support members' input into organizational decision-making involving control of work, and are often an inherent part of professionalization projects—i.e., efforts by occupations to claim certain areas of economic production as the exclusive domain of their members (Berlant, 1975; Larson, 1977). When possible, professions rely on the coercive power of the state to support these efforts (Abbott, 1988), and occasionally on that of labor unions (Rabban, 1991), but more often, they rely on the responsiveness of work organizations to moral suasion and public pressure to demonstrate legitimacy by following professional prescriptions (Scott, 2008). Organizations that fail to conform to professionally-endorsed organizational arrangements may be subject to greater external scrutiny and a loss of reputation, while those that comply are presumed to receive a variety of benefits, such as enhanced recruiting and retention of professional employees (Morris & Pinnington, 1998), higher status within the profession and, consequently, among non-professional constituents (Whitley, 1984; Abbott, 1991; Freidson, 2001), and generally, greater access to environmental resources required for survival (Scott, Ruef, Mendel, & Caronna, 2000). Thus, professions are a key source of isomorphism, or the widespread adoption of formal structures across a set of organizations (Meyer & Rowan, 1977; DiMaggio & Powell, 1983).

Tenure systems in higher education organizations provide a good example of a professionally-based institution. The origins of this institution lie directly in the self-conscious efforts by members of an occupation, once a subset of the clergy, to establish themselves as a distinct professional community in the U.S., and particularly, to assert control over organizational

decisions about faculty employment. Contemporary tenure systems also reflect a common issue for professions, ensuring that endorsed arrangements are regularly used after adoption.

Meyer and Rowan's (1977) early discussion of decoupling highlighted the distinction between adoption and implementation of institutionalized structures; they suggested that organizations commonly decouple (fail to implement) such structures after their formal adoption. In their words (1977: 357), "...decoupling enables organizations to maintain standardized, legitimating, formal structures while their activities vary in response to practical considerations. The organizations in an industry tend to be similar in formal structure – reflecting their common institutional origins – but may show much diversity in actual practice."[1]

Questions of the extent to which organizations are apt to engage in decoupling, and under what conditions this is most likely to occur, have been explored in only a handful of studies. Most of these have focused on relatively new institutional arrangements, such as total quality management programs (e.g., Easton & Jarrell, 1998; Westphal, Gulati, & Shortell, 1997) or stock re-purchase programs (Westphal & Zajac, 1994, 2001). None have investigated the determinants of decoupling involving institutions that are well-established in a field, nor specifically considered the effects of ongoing pressures by professions and allied organizations to enforce implementation.

In this study we address these issues by examining the effects of organizational characteristics, including those indexing resource constraints and relations to professionally-linked resource providers, on the use of tenure systems by colleges and universities. Our central aim is to illuminate general conditions that affect the ability of professions to shape organizations (Rhoades, 1996). Since an increasing share of professional practice takes place today within the context of large-scale organizations, this issue is important to research on professional

occupations as well as to studies of organizations. In addition, our specific focus on the use of different types of faculty employment arrangements provides a unique chance to examine a contemporary workplace trend that is affecting many occupations, the growing use of contingent workers. In most occupations, this trend challenges largely unarticulated, albeit taken-for-granted assumptions that organizational employment is normally long-term and entails a full-time commitment (Weber, 1946; Pfeffer & Baron, 1988). In academia, however, these assumptions have been made explicit in a professional institution, the tenure system. Thus, our study offers a useful comparative case for examining whether organizational characteristics that have been linked to use of contingent employees in non-professional settings are also influential in this context.

We begin by sketching the history of the tenure system in the U.S. to show how organized representatives of academic professionals effected its institutionalization among higher education organizations, and how, despite the continuing presence of tenure systems in most colleges and universities, the implementation of this structure for faculty employment has gradually declined over time. We then discuss key organizational characteristics and relations that are likely to influence decoupling in general, leading to our empirical analysis of the determinants of the implementation of tenure systems by colleges and universities. In concluding, we discuss some of the avenues for further research that are suggested by our analysis.

TENURE AS AN ORGANIZATIONAL INSTITUTION

Institutionalizing Tenure Systems

The establishment of tenure systems in higher education can be traced to the medieval universities of Europe, which drew upon emerging models of guild organizations to set up governance structures that afforded university members protection from unwelcome attempts by

monarchs and non-faculty ecclesiastical authorities to influence higher education.[2] The contemporary form of tenure systems in the United States, however, is most directly rooted in a series of public pronouncements offered by the first national professional association of higher education faculty, the American Association of University Professors (AAUP), organized in the early 20th century. Inspired by a number of widely-publicized faculty dismissals from various institutions around the country, which were viewed by many as motivated by political or personal conflicts rather than impartial assessment of teaching and research performance, a group of professors at Johns Hopkins University issued a call in 1913 for the formation of an association for university faculty members. The proposal to form this association underscored two key tasks, both aimed at enhancing professional control of work: development of a set of principles and policies that colleges and universities should follow in terminating faculty employment, and development of procedures that would enable the association to undertake impartial investigations into alleged violations of academic freedom. The principles that were ultimately hammered out provided academic professionals with a key role in organizational employment decisions, and an avenue for normatively sanctioning organizations that failed to adhere to them.

The development of tenure systems was pursued in a number of position papers published by the AAUP in 1915, 1925, and 1940. The classic articulation of the key elements of tenure systems, the 1940 Statement of Principles on Academic Freedom and Tenure, defined tenure as an "arrangement under which faculty appointments…are continuous until retirement…subject to dismissal for adequate cause or unavoidable termination on account of financial exigency or change of institutional program," and presented it as a means of attracting talented individuals to the profession as well as protecting professional freedom of speech (Commission on Academic

Tenure, 1973: 2). (See Carmichael [1988] for a rather different economic rationale for tenure systems.)

Notably absent from the Statement were any overt references, or even reasonably clear indirect allusions, to non-tenure-track, limited-term appointments. The first official recognition of such appointments appeared in the Association's Recommended Institutional Regulations on Academic Freedom and Tenure, issued in 1956, known as Regulation 1b:

> With the exception of *special appointments* clearly limited to a brief association with the institution, and reappointment of retired faculty members on special conditions, all full-time appointments to the rank of instructor or higher are of two kinds: (1) probationary appointments; and (2) appointments with continuous tenure (AAUP, 1978, p. 270, italics added).

Although clearly intended to discourage non-tenure-track appointments, this regulation points out an inherent ambiguity in the institution of tenure as proposed by the AAUP – what proportion of the faculty of an institution could legitimately hold such "special appointments."

However, the general economic affluence in the nation in the post-World War II years, combined with unprecedented government efforts to increase access to college education through student subsidies and a growing market for higher education created by the post-War baby boom, created a resource-rich environment in which universities had little reason to deviate from the professionally-prescribed practice of tenure-track employment. This context also undoubtedly enhanced the effectiveness of the AAUP's efforts to ensure adherence through public investigation and censure of institutions charged with not following these principles (AAUP, 1965).

In the decades following 1940, tenure became firmly institutionalized among higher education organizations, as evinced by several characteristics of contemporary tenure systems (Sine, 2000): taken-for-grantedness (Berger & Luckmann, 1966), symbolic value (Selznick, 1957), and prevalence (Meyer & Rowan, 1977). A key indicator of its taken-for-granted status is the notable absence of publicly accepted alternative systems for faculty employment. Although a few proposals for new employment arrangements for faculty have been offered (e.g., Chait & Ford, 1982), these have received little attention or support either within or outside the academic profession. Moreover, tenure systems have, from the beginning, symbolized commitment to an important professional value, academic freedom. They have become defined as being not merely one way of protecting academic freedom but as *the* way, and rejection of tenure systems is interpreted by many as a rejection of academic freedom itself (Finkin, 1996). Finally, the prevalence of tenure systems among colleges and universities also indicates a high degree of institutionalization. National surveys conducted by the National Center for Education Statistics in the early 1990s indicated that virtually all four-year institutions had such a tenure system in place (National Center for Education Statistics [NCES], 1996).[3] This prevalence is, in some respects, self-sustaining. As Chait and Ford (1982) note, "Put most simply, as long as most colleges and universities offer tenure, most colleges and universities will offer tenure. With respect to faculty recruitment and institutional reputation, the *perceived* risks of deviating from accepted practices are greater than most institutions are prepared to assume" (1982, p.10, italics in original).

Thus, today tenure systems are considered a standard, defining element of higher education (Cotter, 1996; Iffland, 1998), essential for maintaining the quality of a "first rate university" (Brewster, 1972). As Mallon observes (2001, p. 6), "Because tenure is the preferred

system of faculty employment and a hallmark characteristic of higher education . . . a college shifting from tenure to contracts moves away from the professional norms of higher education."

Declining Implementation of Tenure Systems

Despite the highly institutionalized status of tenure systems, their implementation began to decline noticeably in the mid-1970s, in tandem with shifts in the environment of higher education organizations. During this period, both the number of college-age students and government funds for higher education began to shrink (Frances, 1983; Froomkin, 1990), prompting many colleges and universities to search for ways to reduce costs. As in many private, for-profit organizations during this time period, personnel costs often became the focus of such searches. In this environment, the ambiguities surrounding the implementation of tenure systems (i.e., what is an acceptable level of "special appointments") became salient to many college and university administrators, and the proportion of faculty employed in full-time, tenure-track positions crept slowly downward throughout the 1970s, leveled off in the 1980s, then began to inch down once again in the mid-1990s.

During this time, the AAUP continued to advocate strongly for the use of tenure systems for new faculty appointments and attacked the legitimacy of non-tenure-track appointments in a series of reports issued throughout the 1980s and 1990s (AAUP, 1986, 1992; see also Kasper, 1986). For example, a conference report issued in the late 1990s (AAUP, 1998: 57) offered an ominous catalog of negative consequences for both teaching and research associated with the use of non-tenure-track faculty, concluding: "...reliance on part-time and adjunct, non-tenure-track faculty degrades the environment in which both full- and part-time faculty work, diminishes faculty professional development, and denies many students adequate access to quality instruction."

Despite these efforts, the implementation of tenure systems – indicated by the average proportion of faculty employed through them – has declined markedly in the last four decades. The proportion of faculty in non-standard positions was 22% in 1970; by 2007, this had risen to nearly half of all faculty appointments (NCES, 2007). Thus, though tenure systems are still considered a standard, core element of higher education, universities and colleges have increasingly used fixed-term and often part-time arrangements in staffing faculty positions. These appointments are typically made and terminated with only limited faculty input (Tolbert, 1998). Although clearly noticeable in the long run, the glacial rate at which this change occurred (on average, the decline was about one percent a year) made it much less visible on an annual basis. The very slow pace is consistent with the structure's highly institutionalized status; in the absence of significant exogenous shocks, such structures are likely to be relatively inertial (Zucker, 1977). Moreover, the decline has been far from uniform: colleges and universities evince striking variation in the use of tenure systems. This variation is clearly reflected in our sample of four-year colleges and universities, described below. For example, in 1995, the proportion of faculty in tenured or tenure-track positions ranged from 2 percent to 100 percent across organizations.

This historical sketch of tenure systems indicates that while these structures are still institutionalized today, i.e., are normatively accepted as a standard component of higher education organizations, their regular use for faculty employment varies considerably across organizations, and overall, is declining. How to explain such variations and trends in implementation? Below we consider recent work that is relevant to answering these questions, and in this context, propose a number of hypotheses concerning predictors of implementation.

INSTITUTIONAL AMBIGUITY AND DECOUPLING

Recent analyses provide insights into how decisions concerning the adoption and implementation of institutionalized structures might be differentially related to organizational characteristics (Edelman, 1990; Sutton & Dobbin, 1996; Goodrick & Salancik, 1996). A key premise of this work is that, even when a structure is highly institutionalized and organizations face strong pressures to adopt it, there is often ambiguity concerning exactly how and/or when it should be implemented. Such ambiguities often necessitate making independent, local decisions about implementation, often on a case-by-case basis. For example, companies may adopt parental leave policies because such arrangements have become defined as an important element of family-friendly corporations. But the conditions governing the use of such policies are rarely elaborated; hence, supervisors must decide whether the policy applies to a given employee, under a given set of circumstances, or not (see Powell & Mainiero, 1999). Thus, while decisions to adopt institutionalized structures are usually made at a single point in time, decisions about implementing these structures are often made repeatedly over time (Meyer, Gaba, & Colwell, 2005); in a context of ambiguity, this is apt to result in variations in the level of implementation both across organizations at a single time point, and within a given organization across multiple time points.

A number of recent studies have begun to investigate factors that influence the implementation of institutionalized structures (Westphal & Zajac, 1994, 2001; Westphal, Gulati & Shortell, 1997), but none have examined institutions that are strongly endorsed by professional associations or ones that have become "sedimented" – long-established and well-accepted among a set of organizations (Tolbert & Zucker, 1996). We argue that under these conditions, *ceteris paribus*, institutionalized structures are likely to be implemented completely (or nearly so) because they are, by definition, accepted as legitimate (Zucker, 1977, 1991). However, when

there are noticeable costs associated with implementation, ambiguities about whether and to what extent to implement formal structures are apt to become more salient to decision-makers, and as resource scarcity increases, they are likely to become more conservative in making such decisions (Goodrick & Salancik, 1996).

On the other hand, insofar as the institution continues to be actively promoted by some set of agents, the failure to implement formal structures may entail costs for the organization as well, in particular, the potential loss of legitimacy and withdrawal of support (Fiss & Zajac, 2004; Greenwood et al., 2002; Kennedy & Fiss, 2009; Oliver, 1997). Professional associations and allied constituents not only pressure organizations to formally adopt institutionalized structures, but may pressure them to put such structures into practice after adoption (Sauder & Espeland, 2009; Scott et al., 2000); thus, ties to supporters of professionally-endorsed institutions may act as countervailing pressures to those created by resource constraints (Pfeffer & Salancik, 1978).

In addition to these forces, there may be endogenous limits to implementation of professional institutions. As normative rules, institutions restrict choices and thus may limit organizations' ability to adapt to both internally- and externally-generated changes. Like resource constraints, institutional arrangements that significantly curtail organizational flexibility and adaptability are likely to make ambiguities concerning "reasonable" implementation salient to decision-makers, particularly under conditions of organizational and environmental uncertainty. Under these circumstances, we expect that organizations with high levels of implementation will be apt to engage in decoupling to avoid further reductions in flexibility. Below, we elaborate on the impact of these three forces – resource constraints, the influence of allied constituents, and endogenous limitations – on the use of tenure systems.

Resource Constraints

Although specific estimates of the relative costs of implementing tenure systems are hard to find, there is general agreement that employing faculty through a tenure system entails greater costs than employing non-tenure-track faculty (Baldwin & Chronister, 2001; Clotfelter, 2002; Gappa & Leslie, 1993). The latter are often employed on contracts that extend only for a single academic term (versus a typical three-year contract for untenured faculty, or the indefinite contract of tenured faculty). Moreover, many non-tenure-track faculty receive few or no benefits, and they are often compensated at half or less of the per-course rate of tenure-track faculty (AAUP, 1998: 55).[4] The more constrained and less secure the financial resources of an organization are, the more conscious decision-makers are likely to be of these relative costs, and the more weight they are apt to be given in deciding whether to make a faculty appointment tenure-track. (See Gorman, 1999 and Sherer & Lee, 2002, for a similar argument about the use of non-partner, permanent employees in law firms.)

We examine a number of characteristics of colleges and universities as indicators of the level of resource constraints they face, including total revenues, prestige, endowment size, and tuition dependence. Higher average levels of revenues serve as a general indicator of slack resources in the present, while prestige has been shown generally to have a positive effect on organizations' ability to attract resources (Podolny, 1993; Sandefur, 2001). Likewise, a larger endowment provides a buffer against long-term variability in resource flows.[5] Also in this context, we examine percent of revenues derived from student tuition. We treat this as an indicator of resource constraints because students and parents represent a constituency that usually cares a great deal about tuition costs, one that is likely to place more value on relatively lower costs than on small increments in legitimacy or status that may be gained by adhering to professional standards. Moreover, the link between the implementation of tenure systems and the

status of the institution may be particularly opaque to this group. Thus, the greater the share of revenues derived from this constituency, the greater the pressure organizations face to minimize operational costs (Leslie et al., 1982). Using the proportion of faculty employed on tenure-track lines as a measure of the degree to which a university has implemented its tenure system, then, we expect that:

Hypothesis 1 (H1): The higher the per-student revenues in a college or university, the higher the level of implementation of its tenure system.

Hypothesis 2 (H2): The greater the prestige of a college or university, the higher the level of implementation of its tenure system.

Hypothesis 3 (H3): The larger the endowment of a college or university, the higher the level of implementation of its tenure system.

Hypothesis 4 (H4): The lower the dependence on tuition by a college or university, the higher the level of implementation of its tenure system.

Allied Constituents

Accounts of the history of specific professions draw attention to the importance of alliances with related groups and organizations – schools, accrediting agencies, producers of related products, and so forth – for professionalization projects. Such alliances often offer mutual benefits. Thus, schools work with professions in order to offer new programs for students (Larson, 1977), publishers interact with professionals to gain new markets for textbooks and other publications (David, 2011), and accreditation and consumer protection organizations draw on professions in formulating and legitimating their tasks (Rao, 1998). Professional allies not only accept but often even work to promote the institutions that a profession creates, and offer the threat of sanctions against organizations that fail to conform. In this context, we consider the

influence of a number of constituents that are expected to support the implementation of tenure systems: research-granting agencies, accreditation agencies, and faculty unions.

Generally, agencies that provide funding for research care not only about the quality of the faculty applying for the grant but also about the reputation of the institution. The latter depends, in part, on the institution's conformity to professional norms (Greenwood et al., 2002). Most research agencies require a principal investigator to be a tenure-track faculty member in order to receive funding. As one administrator from the office of research and sponsored programs for a private medical school said, "most research oriented grants from NIH require that the principal investigator be a senior investigator and most senior investigators tend to be tenured faculty members" (personal interview, May, 2004). In addition, high-status members of the professoriate often serve as evaluators of grant applications, and these individuals are likely to be closely attuned to the professional standing of different universities. Moreover, faculty who are successful in acquiring grants are also apt to be conscious of the professional standing of an organization and less likely to accept employment in ones that deviate noticeably from these norms. The link between use of tenure systems, professional standing, and research funding is evidenced by the substantial drop in research funding experienced by schools that have sought to reduce the use of tenure systems (see Miller, 1999). Thus, institutions that are more research-oriented are more likely to make use of tenure systems for faculty employment.[6]

Accrediting agencies represent another constituency that may affect the use of tenure systems. Many agencies include conditions of faculty employment as part of their standards for certification (see Ruef & Scott, 1998) and promote the appointment of full-time, research-oriented faculty. For example, until recently, the Association to Advance Collegiate Schools of Business (AACSB) required that at least 75 percent of the faculty be "full time" (AACSB, 2001).

Although most accreditation standards do not explicitly make reference to "tenure track faculty" nor set specific employment targets (the AASCB was the only agency we found that specified a numerical target), the phrasing of these standards at least implicitly promotes the use of tenure-track faculty. Therefore, we expect that the more accreditations an organization has successfully sought, the more likely it is to face pressure to implement its tenure system.

Faculty unions also may influence decisions regarding the implementation of tenure systems. The classic distinction between unions and professional associations, revolving around engagement in collective bargaining, has broken down in the last few decades, as a growing number of associations, including the National Educational Association, the American Nursing Association and even the American Medical Association, have formed units to engage in formal negotiations for their members in organized workplaces. Consequently, the assumption of an antithetical relation between unionization and professionalization has also lost its tenability (Rabban, 1991). However, unions of professionals are not always directly affiliated with a professional association, and they do not always support associations' stances on particular issues. Although faculty unions have exhibited some ambivalence about their relation to non-tenure-track faculty (since these are a logical target group for unionization), they have generally chosen to advocate for greater implementation of tenure systems (Leslie et al., 1982). Thus, we contend that the presence of a faculty union, which has the ability to monitor hiring practices easily and to exercise power within the organization, will also increase the extent to which tenure systems are implemented.

Hypothesis 5 (H5): The stronger the research orientation of a college or university, the higher the level of implementation of its tenure system.

Hypothesis 6 (H6): The greater the number of accreditations held by a college or university, the higher the level of implementation of its tenure system.

Hypothesis 7 (H7): A college or university with a faculty union will have a higher level of implementation of its tenure system than one that does not.

Endogenous Limits

Although ensuring control of faculty employment by members of the profession was of paramount concern to the creators of the institution of tenure, the wording of the AAUP's 1940 Statement on Academic Freedom and Tenure, accepting "dismissal for adequate cause or unavoidable termination on account of financial exigency or change of institutional program," suggests recognition of possible problems that its limits on flexibility could create (Commission on Academic Tenure in Higher Education, 1973: 2). In the context of overall growth in higher education organizations and official age limits on employment, this potential inflexibility seemed relatively unproblematic for most organizations. However, the general contraction of resources in higher education in the late 1970s, in conjunction with the passage of the Age Discrimination Act in the mid-1980s, effectively eliminating age-based retirement rules, threw this inflexibility into sharp relief (Ashenfelter & Card, 2002). Although the AAUP's prescribed policies imposed no explicit restrictions on the continued collegial review of faculty members' performance after tenure – a potential professionally-directed basis for dismissal – it was not until the 1990s that serious discussion of post-tenure review began (Edwards, 1997; Tierney, 1997).

In consequence, in recent decades higher education organizations have increasingly faced problems of re-allocating personnel resources between declining and growing enrollment areas. Facing similar problems in the 1980s, private sector organizations made "flexibility" a watchword in employment relations, one that was usually synonymous with the increased use of non-standard

workers – those employed on a part-time and/or on an explicit, limited-term basis (Kalleberg, 2009). Although the evidence is mixed, some work suggests that the use of non-standard employees was particularly likely to occur in organizations with unions, another employment institution explicitly aimed at limiting the facile dismissal of employees (Uzzi & Barsness, 1998). Extrapolating from this, it seems plausible that limiting implementation of tenure systems by employing more non-tenure-track faculty could be a likely response to inflexibility associated with having a relatively high proportion of tenure-track faculty that have been awarded indefinite tenure. Insofar as this resulted in new or vacated positions being filled by non-tenured-track faculty, over time, this would result in a smaller proportion of the total faculty being employed through the tenure track. Thus, we propose:

> *Hypothesis 8 (H8)*: The fewer tenure-track faculty who have been awarded indefinite tenure in a college or university, the higher the level of implementation of its tenure system.

DATA AND ANALYTIC PROCEDURES

The analyses presented here are based on five panels of data, collected through the Integrated Post-secondary Education Data Surveys (IPEDS), conducted bi-annually by the National Center for Education Statistics. We used data covering a ten-year span, 1989 through 1997, for a randomly chosen sample of higher education organizations that grant baccalaureate and higher-level degrees. The time period of the study was dictated by the availability of comparable data on staffing and finances. Our initial sample consisted of 611 organizations, but we eliminated those for which data were unavailable for two or more years of our study, reducing our sample to 587. To ensure that all institutions in our study had a formal tenure system,

additional 54 cases were dropped from the analysis because they reported no tenure-track faculty in any year of this study.[7] The sample includes a variety of types of colleges and universities: dates of institutional founding range from 1636 to 1986, and sizes vary considerably, from a small private college offering a bachelor's degree to its 64 students to a large public institution with 61,500 students offering a full range of educational degrees.

It should be noted that our analyses are predicated on the assumption that even when decisions about tenure-track or non-tenure-track appointments are formally made at the subunit level (e.g., by deans of individual colleges within an institution), they are heavily shaped by the levels of resource scarcity, inter-organizational relations, and other conditions that characterize the larger organization of which the subunit is part. Based on interviews with college deans and administrators in three institutions, we conclude that central administrations of colleges and universities shape faculty hiring in several ways. First, the allocation of faculty appointments is sometimes directly under control of the university administration. For example, a dean in a business school at a small private college indicated that authorization for filling both tenure-and non-tenure-track positions was up to the president and provost, an arrangement that appears to be common in smaller institutions. Second, central administrations often determine subunits' budget allocations, and this strongly influences hiring decisions, even when the number of tenure-track and non-tenure-track faculty positions is not set directly. A dean of a small college within a large private university observed that budgetary uncertainties occasionally made him "hold" vacant tenure-track lines; under these conditions, he often approved non-tenure track faculty hires to cover teaching loads. He also noted that these appointments were sometimes extended even when resource constraints eased. Third, even in subunits that are relatively economically independent, unit heads are influenced by central administration. The dean of a business school at

a large public institution reported that historically, all tenure-track faculty hires had been authorized by the administration. Although they had recently been given control over all faculty appointments, they were aware that the administration continued to monitor both tenure- and non-tenure-track hires. In line with this, a high level administrator at a large private university reported that college deans were conscious of the "need" not to make "too many" non-tenure-track appointments. Thus, even when faculty appointments are technically left to the discretion of subunit administrators, these decisions are clearly influenced by the overall context of the universities within which the subunits operate. In this context, it's also worth noting that our organization-level focus is similar to that of the National Center for Education Statistics and the AAUP, both of which monitor employment practices at the university level; moreover, when the AAUP sanctions an entity, it is at the organizational level (AAUP, 2006).

Measures

Dependent variable

We measured implementation of tenure systems as the proportion of faculty in a university that hold tenure-track positions, that is, faculty either tenured or who are on track to be considered for tenure (see Westphal & Zajac, 2001, for a similar approach). Information on the number of faculty on or off the tenure track in each university was available from the IPEDS Fall Staff data file.[8] Institutions vary considerably in the proportion of tenure-track faculty who actually receive tenure, and it could be argued that this represents a form of limited implementation of tenure systems. However, decisions not to grant particular faculty tenure are not inconsistent with the use of tenure systems as currently defined by the AAUP. Thus, we focus on the number of faculty employed on tenure-track lines rather than the number of faculty that actually receive tenure. Although we dropped all institutions out of our initial sample that reported no tenure-track faculty

during the entire study period to ensure that all institutions in our study had a formal tenure system, our dependent variable can have a minimum value of "0" (see Table 1) because some institutions reported no tenure-track faculty in a particular year within the time period of our study.

Primary independent variables

Resource constraints. Financial data were taken from the IPEDS Finance data file, based on surveys sent to each institution, requesting information on both revenues and expenditures. Information on revenues includes not only total revenues, but the amount of revenue derived from various sources, including state and federal government support, tuition and fees, independent operations, and so forth. We used the selectivity ratings of colleges and universities from Barron's Profiles of American Colleges as an indicator of prestige, collecting data from each year published, 1988 through 1996. Because our sample contained a wide range of colleges and universities, many were not included in some of the common ranking systems of colleges and universities (e.g., Gourman Reports), while other rankings, such as those by the National Research Council, are published only once a decade. Barron's classifies higher education organizations into one of nine ordinal categories, ranging from most competitive to non-competitive; we coded the former as 9 and the latter as 1. Although this source covers a wide array of organizations, it is less likely to include very small schools that offer degrees in a limited number of areas. In these cases, we assigned a rating of "0."

To obtain an overall measure of resource levels, we used total revenues from all sources, divided by overall enrollment to produce a standardized, per-student measure. The size of an organization's endowment was measured as the market value of endowment assets at the beginning of the instructional year. Because the impact of this on decision-makers' perceptions of

financial security is apt to depend on the scale of an organization's budget, we standardized this by dividing it by the total revenues of the organization. Dependence on student tuition was measured as the percentage of total revenue derived from tuition and fees.

Allied constituents. The research orientation of an organization was measured by the proportion of total annual expenditures devoted to "activities specifically organized to produce research outcomes," according to instructions provided to IPEDS respondents. We did not measure research orientation by research-grant revenue because IPEDS lumps all types of grants (e.g., grants for training programs, community service projects, etc.) together in a single measure. Thus, we believe the expenditure-based measure is the best indicator of research orientation. The influence of accrediting agencies was measured by the total number of accreditations reported in the IPEDS Institutional Characteristics data file: like revenues, this was standardized by dividing it by the total number of students. We used a dichotomous measure of faculty unionization, coded "1" if an organization had a collective bargaining contract covering faculty.

Endogenous limits. To measure progressive inflexibility in staffing created by tenure systems, we took the number of faculty who had been awarded tenure and divided this by the total number of tenure-track faculty (both tenured and untenured).[9]

Control variables

In addition, we included a number of control variables in our model. Organizational size, growth, and complexity have been shown to have pervasive effects on organizational structure. Thus, we included measures of size, operationalized as the total student enrollment, and of growth, measured as change in enrollment over a one-year period. Complexity was measured as the number of degree-granting programs (i.e., a set of specialized courses required for a specific

degree) in an institution. We employed the natural log of these variables to correct for skew in their distributions. Data on these variables were taken from IPEDS Fall Enrollment Surveys.

Professionally-oriented fields often offer courses taught by practitioners who are typically not employed on tenure-track lines. Therefore, organizations whose curriculum or enrollments are more concentrated in those fields are likely to have a larger proportion of such faculty. To control for the effect of such variation in disciplinary composition, we included a measure of the proportion of all degrees awarded annually in fields designated as "first-professional." These include degrees in health sciences, law, business, and graduate theology. Medical schools are especially likely to employ practitioners on a part-time basis to teach (Leslie et al., 1982); hence, we used a dummy variable to indicate the presence of an affiliated medical school.

Because public sector organizations have been shown to be more responsive to institutional pressure (Casile & Davis-Blake, 2002; Edelman, 1990), we created a dummy variable for sector, with public institutions being assigned the value "1." Similarly, since research indicates that older organizations are more inertial (Haveman, 1992), older universities might be expected to maintain adherence to institutional prescriptions to use their tenure systems; therefore, we included a measure of age, the number of years since founding (so that older schools have higher values).

To control for the potential influences of regional variations in economic conditions, legislation, density of higher education institutions and so forth, we included a dummy variable for each state, excluding Alaska. Finally, to control for general temporal changes in the use of non-tenure track faculty during this time period, we used a linear time trend variable representing the number of years since our study period began (where 1989=1).

Analysis

We employed a cross-sectional time-series tobit model with random effects (Woolridge, 2000). Tobit models are appropriate when the dependent variable is a percentage measure because the distribution is bounded on the lower end by 0 and on the upper end by 1 (Long & Freeze, 1997). We do not use fixed effects models because, as far as we can tell, there is no consistent estimator for fixed effects in tobit models, which makes it impossible to use the within transformation to remove unobserved effects (Greene, 2002; Baltagi, 1988). In addition, most fixed effects models do not allow for the inclusion of measures that are time-invariant, and some of our key predictor and control variables (e.g., presence of a faculty union, public control) are of this type.

All independent and control variables are lagged by one year in the analysis to enhance causal explanation. Moreover, in order to assuage concerns of reverse causality we conducted two additional analyses. First, we increased the lag time between the dependent and independent variables substantially; we predicted the proportion of faculty employed in tenure track positions in 1997 using the independent variables measured in 1988. Insofar as the independent variables serve as significant predictors of the dependent variable at this much later time point, this provides evidence in support of the causal direction we posit. The results of this analysis were substantively the same as those reported in Table 2. Second, we ran a model that included a lagged measure of the dependent variable along with the other predictor variables. By controlling for the value of the dependent variable in the prior panel, the model becomes one that essentially predicts changes in the dependent variable from the independent variables. Moreover, the lagged dependent variable serves as a good proxy for all omitted variables and thus provides a strong test of the effects of the independent variables (Wooldridge, 2000). Despite the collinearity

introduced in such a model (and resulting large standard errors, which increase the hurdle for reaching statistical significance), our results from this analysis were largely consistent with those shown in Table 2.[10]

RESULTS

Descriptive statistics are shown in Table 1. Several variables, such as our measures of size and public control, have high correlations with other variables in the model. In these cases, we tested for multicollinearity by calculating variance inflation factors for each independent variable. All variance inflation factors were less than 5 and most were less than 3, indicating an acceptable level of multicollinearity (Chatterjee & Price, 1991; STATA, 1999, p. 203).

-Insert Table 1 about here-

Table 2 presents the results of our main analysis. Five models are shown: the first includes only control variables, the second adds measures of resource constraints (H1, H2, H3, H4), the third adds indicators of the influence of allied constituents (H5, H6, H7), the fourth adds our measure of endogenous limits (H8), and the fifth includes all independent variables. We focus our discussion primarily on the results of Model 5.

-Insert Table 2 about here-

The impact of the control variables is generally consistent across each of the models. As expected, organizations that award a relatively large proportion of degrees in fields that are professionally oriented are less apt to use tenure systems for faculty appointments; this also is true of those that have an affiliated medical school. Independent of these effects, our measures of public control and age show significant positive effects on the proportion of faculty employed through tenure systems. More complex organizations (those offering a wider array of degree programs) are also significantly more likely to have a relatively large proportion of faculty in

tenure-track positions in four of the five models; the measure loses significance, however, when all independent variables are included in the equation (Model 5). The coefficient for the size measure is negative in most models, though it is significant in only three. In general, it appears that larger schools are likely to have a smaller proportion of faculty employed on tenure-track lines. The negative effect of the time trend measure indicates that the use of tenure systems for faculty employment significantly declined across the organizations in our sample during the observation period, in line with our earlier description of the history of tenure systems.

Consistent with Hypotheses 1 and 2, the significant, positive effects of overall revenues and prestige indicate that, when resource constraints are lower, colleges and universities are more inclined to comply with professional prescriptions, using their tenure systems to a greater extent than those with more constrained resources. Endowment has a significant, positive effect, as posited in Hypothesis 3, but this effect disappears when other predictor variables are included in the model. Although the coefficients of the measure of tuition dependence are negative across all models, they do not attain significance; thus, we find no support for Hypothesis 4.

Turning to the effects of ties to constituents who are likely to press for greater implementation of tenure systems, we see that neither research orientation nor the presence of a faculty union have a significant impact on the use of such systems. In results not shown, we found that the presence of a union had a significant positive impact on organizations' use of their tenure system when the public sector measure was omitted from the equation. In the wake of the 1980 Supreme Court decision on unionization at Yeshiva University, almost all faculty unions have been in public sector organizations, making it difficult to disentangle union and sector effects. We tried including an interaction term for union and sector to tease out separate union effects; the coefficient for the variable was positive but non-significant. Thus, our results do not support

Hypotheses 5 or 7. However, the number of professional accreditations is positive and significant, providing support for Hypothesis 6.

Finally, our results provide strong support for Hypothesis 8. Colleges and universities with a high proportion of faculty who are "tenured-in" are much more likely to make use of non-standard faculty work arrangements than those with lower proportions. Based on t-statistics, this variable and the time trend measure are the strongest (negative) predictors of the proportion of faculty employed on tenure-track lines.

We also examined potential interaction and mediating relationships in a number of other models (not shown; please write first author for tables). For example, we considered a possible interaction effect between research orientation and the presence of a medical school (with the idea that the impact of a medical school on the increased use of non-tenure-track faculty might be lessened by a strong research focus); the coefficient for the interaction term was non-significant, however. To explore whether an organization's prestige might mediate the effects of other variables (e.g., possible indirect effects of resource constraints operating partly through prestige), we ran models that excluded prestige. The measure of model fit dropped significantly when we excluded prestige, and none of the coefficients of other predictor variables changed noticeably, with the exception of endowments, which became stronger. Thus, we concluded that the direct effects of the predictor variables were robust. Finally, since many of our variables are ratio measures, we ran additional analyses with non-ratio measures and obtained the same substantive results as those reported in Table 2.

DISCUSSION

Our analysis suggests that, when making decisions that involve implementation of tenure systems, colleges and universities respond to both resource constraints and concerns about

reactions of constituents allied with the professional association. The findings that universities with higher levels of revenues, greater prestige and relatively large endowments are more likely to use tenure systems for faculty employment than those with limited resources support our theoretical arguments that ambiguities about the "appropriate" level of implementation of institutionalized structures are more salient when pressures to contain costs are higher. Because tenure systems are still strongly institutionalized, perhaps it is not surprising that in the absence of such pressures organizations are apt to conform to the professional association's prescriptions for faculty employment.

Even in the presence of resource constraints, pressures from supporters of institutionalized structures, particularly constituents that control other kinds of valued resources, can also exert an independent and potentially countervailing influence on organizational decision-making. But in our analysis, only our indicator of ties to accrediting agencies showed significant effects; measures of ties to other constituents expected to support use of tenure systems showed negligible influence: neither research orientation nor the presence of a faculty union was significant. This is in striking contrast to other research that has found strong effects of constituent ties on the implementation of newly-adopted policies and practices (Fiss & Zajac, 2004; Westphal & Zajac, 2001). It may be that once a structure is firmly institutionalized, advocates are less attentive to implementation issues, particularly when changes in implementation occur very slowly, as has been typical for tenure systems. We suspect that ties to these constituents might have a stronger impact on decisions to eliminate tenure systems altogether, or to reduce implementation very markedly at a given point in time than on small changes resulting from day-to-day decisions concerning implementation.

Net of the effects of both resource constraints and relations with allied constituencies, our results suggest that having a larger proportion of faculty with tenure is associated with decreasing implementation of tenure systems. Insofar as faculty who have been awarded tenure do not leave (either through moves to other organizations or through retirement), tenure systems can limit organizations' ability to adapt to environmental changes and current organizational needs. Like resource constraints, the lack of flexibility is apt to heighten awareness of the ambiguities of professionally-prescribed practice. In ironic consequence, organizations respond to this lack of flexibility by relying less on tenure systems for additional faculty employment. The "tenuring-in" effect thus suggests a counterintuitive consequence of the institutionalization of tenure systems: although designed to protect the professional status of academics, over time, they may be contributing to increasing differentiation and stratification within the profession.

It is important to emphasize that our arguments do not necessarily imply that organizational decision-makers limit implementation of tenure systems as a self-consciously deceptive practice, nor that decisions to make non-tenure-track appointments signal decision-makers' rejection of the legitimacy of tenure systems. Ambiguity surrounding the conditions under which tenure systems should be employed for faculty hires makes it possible to view non-tenure-track appointments as still part of a good-faith effort to comply with professionally-prescribed tenure practices. The influence of the professional association's ambiguous stance regarding the use of non-tenure-track faculty on administrators' decisions is suggested by a study conducted by an AAUP committee in the late 1970s which found that many higher education institutions formally limited the number of times that a non-tenure-track faculty member's contract could be renewed. As the committee noted, this state of affairs is consistent with the

letter, if not the spirit, of Regulation 1b, which recommended that non-tenure-track appointments be limited to a "brief association" (AAUP, 1986, 1992).

Overall, a variety of organizational characteristics appeared to exert a strong influence on implementation, including sector location and organizational age, along with the economic and constituent relation measures just discussed. Thus, although characteristics of organizations may become less important in determining *adoption* as structures become progressively institutionalized, as previous work has suggested (e.g., Tolbert & Zucker, 1983), it appears that they continue to exert an influence on *implementation* decisions.

CONCLUSIONS

Our study contributes to existing theory and research in a number of ways. First, it provides important insights into the conditions that make organizations likely to comply with the efforts of professional associations to define "appropriate" work arrangements and conditions for their individual members. As noted at the outset, while professions sometimes rely on law or other coercive means to obtain such compliance, more often than not, they rely on the force of normative influence. Thus, for example, one of the products of the 2009 American Medical Association meetings was a Delegates Memo outlining "principles for a sustainable and successful hospitalist program." "Hospitalist" refers to a relatively new area of medical specialization, one that involves employment of on-staff physicians by hospitals for a contractually-specified length of time. The Delegates Memo offered a series of employment recommendations to hospitals on proper employment arrangements, ranging from the creation of a "hospitalist advisory committee" of the medical staff, to the management of proper compensation systems, to the purchasing of software products to help with billing, communication, etc.[11] Such recommendations are, as institutional theorists have acknowledged, a potentially important force in shaping organizational

structure. But to date, relatively little work has considered either the environmental or internal organizational conditions that affect organizations' receptivity to such pressure from professional groups. Thus, our research on the implementation of tenure systems begins to identify some of these key conditions.

In addition, this research sheds light on conditions affecting the employment of nonstandard workers in professional work settings. While past work on nonstandard workers in other contexts has linked the use of such employees to pressures for organizational efficiency (Larson & Ong, 1994; Uzzi & Barsness, 1998), much less attention has been given to how institutional factors may shape their use (though see Gorman, 1999; Sherer & Lee, 2002). Because professions are, by definition, occupationally-based work groups that are capable of exerting directed, active influence on workplace institutions, the role of interest and agency in maintaining and altering existing workplace institutions is often more visible when professional groups are involved (see also Kraatz & Zajac, 1996). It is for this reason that professional occupations provide a particularly interesting context for studying contemporary workplace changes such as the increased use of temporary and contingent employees (Kalleberg et al., 2009; Segal, 1996).

In part, our findings are consistent with other studies conducted in non-professional contexts, suggesting that economic constraints have a strong effect on organizations' use of nonstandard work arrangements (Uzzi & Barsness, 1998). Despite strong, articulated objections by organized representatives of the profession, economic pressures lead to the increased use of non-tenure-track faculty. However, our results suggest that closer ties to professional allies may counter this. It is possible that similar processes could operate in non-professional settings (e.g., the employment practices of organizations that receive awards from human resource management

associations might be similarly affected), though this has not yet been explored, to the best of our knowledge. In addition, research on nonstandard workers suggests some possibilities for research on the way in which the use of nonstandard employees affects professionals. For example, since tenure systems provide job security for some faculty (those who have received tenure) but not for others (untenured, tenure-track faculty), it would be of interest to explore whether the presence of non-standard workers affects the professional commitment and attitudes of faculty in ways that have been found in studies of standard, non-professional employees (Banerjee, Tolbert, & DiCiccio, 2010; Davis-Blake, Broschak, & George, 2003).

Finally, this study contributes to work on organizational institutions. Because tenure systems represent a mature institution, one that has been widely adopted and taken for granted for several decades, our research on the implementation of such systems contributes to the understanding of institutions' lifecycle patterns. While early studies of institutional processes focused largely on the adoption and diffusion of formal structures (Mizruchi & Fein, 1999), more recent work has begun to give greater attention to the genesis of institutionalized structures, and to the other end of the process, their abandonment (Dacin et al., 2002). However, both earlier and more recent research streams have generally overlooked intermediate stages of institutional processes, the maintenance and/or decline of institutions. One way to explore this is to examine the implementation of structures. In a review of analyses drawing on institutional theory, Scott (2001: 173) emphasized the importance of questioning the assumption that institutionalized structures are always decoupled and suggested the need for empirical research examining "when and under what conditions do organizations adopt requisite structures but then fail to carry out the associated activities?" This question is addressed in our research.

Extant work examining implementation (e.g., Fiss & Zajac, 2004; Westphal & Zajac, 2001) has focused largely on structures at a relatively early stage of institutionalization. Comparing the findings of our research with these studies illuminates how the effects of organizational characteristics may vary at different stages of an institution's lifecycle. In particular, our findings indicate that implementation is much less influenced by institutional advocates once it has become well-established, compared with newly-adopted structures. On the other hand, our findings, in combination with work on relatively young institutions (e.g., Westphal & Zajac, 2001), suggest that economic concerns continue to play a role in implementation decisions throughout an institution's lifecycle.

Our focus on implementation also provides a bridge between the literatures on institutional diffusion and organizational change. Early work in institutional theory, suggesting that institutionalized structures are normally decoupled from actual practice, implied that institutionalization processes produce little real change in organizations, apart from altering formal structure. In contrast, our theoretical framework suggests that the extent of decoupling is highly variable across organizations and is shaped by a variety of factors. Hence, whether the adoption of institutionalized structures is likely to be implemented and result in real, substantive changes in organizations depends on a combination of factors: institutional definitions (the degree of ambiguity surrounding "appropriate" implementation), organizational characteristics (variations in resource constraints, prestige, social sector), and institutional characteristics (lifecycle stage).

In this context, it is tempting to speculate on the future of tenure as an institution. Despite the efforts of the AAUP to secure adherence by colleges and universities to the norm of using tenure systems for faculty employment, the use of such systems is slowly, but clearly, declining (Baldwin & Chronister, 2001; Levine, 1997). As noted previously, this decline is part of an

increasing differentiation and stratification within the profession, processes that are also visible in other contemporary professions, including the central ones of medicine and law (D'Aunno, Alexander, & Laughlin, 1996; Freidson, 1994; Gorman, 1999; Sherer & Lee, 2002). The impact of such changes on the collective identity of occupational members, and the ability of professional associations to maintain a public face as a representative of shared occupational interests remains to be seen.

At present, employment arrangements for non-tenure-track faculty are far from standardized, although there are an increasing number of proposals concerning the development of standards and practices for employing such faculty (e.g., AAUP, 1998; Gappa & Leslie, 1993). Thus, we may be witnessing the emergence of an alternative institution for faculty employment, producing a two-tiered system within academic organizations. While this could be viewed as a strategy for preserving the institution of tenure by limiting its application, it is not a strategy that has been explicitly supported by the professional association. Moreover, the survival of such a dual-system will require much greater formalization of conditions of the appropriate use of one or the other employment systems, as well as clearer specification of the division of labor between the two types of faculty. Whether two separate systems can co-exist in the long run, or whether this would further increase the use of non-tenure-track employment at the expense of tenure-track, thus ultimately resulting in the elimination of the current institution of tenure, is open to question (see DiMaggio, 1988; Leblebici et al., 1991; Zucker, 1987, 1988). More generally, whether and under what conditions two-tiered employment institutions will be stable or competitive are issues that merit further research.

REFERENCES

Abbott, A. (1988). *The system of professions: An essay on the division of expert labor*. Chicago: University of Chicago Press.

Abbott, A. (1991). Status and strain in the professions. *American Journal of Sociology,* 86, 819-833.

American Association of University Professors. (2006). *Academic Freedom and Tenure Published Cases December 1915 to June 2006*. Washington, DC: American Association of University Proressors.

American Association of University Professors. (1965). Report of the self-survey committee of the AAUP. *AAUP Bulletin, 51*(2), 103-110.

American Association of University Professors. (1978). On full-time non-tenure-track appointments. *AAUP Bulletin, 64*(3), 267-273.

American Association of University Professors. (1986). 1986 report on full-time non-tenure-track appointments. *Academe, 72*(4), 65-82.

American Association of University Professors. (1992). Report on the status of non-tenure-track faculty. *Academe, 78*(6), 39-48.

American Association of University Professors. (1998). Statement from the conference on the growing use of part-time and adjunct faculty. *Academe, 84*(1), 54-60.

Ashenfelter, O., & Card, D. (2002). Did the elimination of mandatory retirement affect faculty retirement? *American Economic Review, 92*(4), 957-980.

Association to Advance Collegiate Schools of Business. (2001). *Standards for business accreditation*. Tampa, Fl: The Association to Advance Collegiate Schools of Business Accreditation Department.

Baldwin, R. G., & Chronister, J. L. (2001). *Teaching without tenure*. Baltimore, MD: Johns Hopkins University.

Baltagi, B. (1998). *Econometrics*. New York: Springer.

Banerjee, M. B., Tolbert, P. S., & DiCiccio, T. J. (2010). *Friend or foe? The reactions of standard employees to non-standard employees*. Working paper, ILR, Cornell University.

Barley, S. R. (2004). What we know (and mostly don't know) about technical work. In S. Ackroyd, R. Batt, P. Thompson and P. Tolbert, *Oxford Handbook of Work and Organization* (pp. 376-403). London: Oxford University Press

Berlant, J. L. (1975). *Professions and monopoly*. Berkeley, CA: University of California Press.

Berger, P., & Luckmann, T. (1966). *The Social Construction of Reality*. Doubleday, New York.

Brewster, K., Jr. (1972). On tenure. *AAUP Bulletin*, *58*(4), 381-383.

Brubacher, J. S., & Rudy, W. (1997). *Higher education in transition: A history of American colleges and universities.* New Brunswick, NJ: Transaction Publishers.

Carmichael, H. L. (1988). Incentives in academics: Why is there tenure? *Journal of Political Economy, 96*(3), 453-472.

Casile, M., & Davis-Blake, A. (2002). When accreditation standards change: Factors affecting differential responsiveness of public and private organizations. *Academy of Management Journal, 45*(1), 180-195.

Chait, R. P., & Ford, A. T. (1982). *Beyond traditional tenure: A guide to sound policies and practices.* San Francisco, CA: Jossey-Bass.

Chatterjee, S., & Price, B. (1991). *Regression analysis by example.* New York: John Wiley and Sons.

Clotfelter, C. T. (2002). Can faculty be inducd to relinquish tenure? In R.P. Chait (Ed.), *The Question of Tenure* (pp. 221-245). Cambridge, MA: Harvard University Press.

Commission on Academic Tenure in Higher Education. (1973). *Faculty tenure.* San Francisco: Jossey-Bass.

Cotter, W. R. (1996). Why tenure works. *Academe*, *82*(1), 26-29.

Dacin, T., Goodrich, J., & Scott, W. R. (2002). Institutional theory and institutional change: Introduction to the special research forum. *Academy of Management Journal, 45*(1), 45-56.

David, R. J. (2011). Institutional change and the growth of strategy consulting in the United States. In T. Clark and M. Kipping (Eds.), *The Oxford Handbook of Management Consulting*. Oxford University Press (Forthcoming).

Davis-Blake, A., Broschak, J., & George, E. (2003). Happy together? How using nonstandard workers affects exit, voice, and loyalty among standard employees. *Academy of Management Journal, 46*(4), 475-485.

D'Aunno, T., Alexander, J. A., & Laughlin, C. (1996). Business as usual? Changes in health care's workforce and organization of work. *Hospital and Health Services Administration 41*(1): 3-18.

DiMaggio, P. J. (1988). Interest and agency in institutional theory. In L. Zucker (Eds.), *Institutional Patterns and Organization* (pp. 3-21). Cambridge, MA: Ballinger.

DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review, 48*(2), 147-160.

Easton, G. S., & Jarrell, S. L. (1998). The effects of total quality management on corporate performance: An empirical investigation. *Journal of Business. 71*(2), 253-307

Edelman, L. B. (1990). Legal environments and organizational governance: The expansion of due process in the American workplace. *American Journal of Sociology, 95*(6), 1401-1440.

Edwards, R. (1997). Can post-tenure review help us save the tenure system? *Academe, 83*(3), 26-31.

Finkin, M. W. (1996). *A case for tenure*. Ithaca, New York: ILR Press.

Fiss, P. C., & Zajac, E. J. (2004). The diffusion of ideas over contested terrain: The (non)adoption of a shareholder value orientation among German firms. *Administrative Science Quarterly, 49*(4), 501-549.

Frances, C. (1983). 1984: An outlook for higher education. *AAHE Bulletin, 36*(4), 3-6.

Freidson, E. (1994). *Professionalism reborn: Theory, prophecy and policy*. Chicago: University of Chicago.

Freidson, E. (2001). *Professionalism: The third logic*. Chicago: University of Chicago.

Froomkin, J. (1990). The impact of changing levels of financial resources on the structures of colleges and universities. In S. E. Hoenack & E. L. Collins (Eds.), *The Economics of American Universities* (pp. 189-214). Albany, NY: State University of New York Press.

Gappa J. M., & Leslie, D. W. (1993). *The invisible faculty: Improving the status of part-timers in higher education*. San Francisco, CA: Jossey-Bass.

Goodrick, E., & Salancik, G. (1996). Organizational discretion in responding to institutional practices: Hospitals and cesarean births. *Administrative Science Quarterly, 41*(1), 1-28.

Gorman, E. H. (1999). Moving away from 'up or out' determinants of permanent employment in law firms. *Law and Society Review, 33*, 647-666.

Greene, W. (2002). *Econometric analysis*. NJ: Prentice Hall: Upper Saddle River.

Greenwood, R., Suddaby, R., & Hinings, C. R. (2002). Theorizing change: The role of professional assocations in the transformation of institutionalized fields. *Academy of Management Journal, 45*(1), 58-80.

Halaby, C. N. (2004). Panel models in sociological research: Theory into practice. *Annual Review of Sociology, 30*, 507-544.

Hall, R. H. (1967). Some organizational considerations in professional-organization relationship. *Administrative Science Quarterly, 12*, 461-478.

Haveman, H. A. (1992). Between a rock and a hard place: Organizational change and performance under conditions of fundamental environmental transformation. *Administrative Science Quarterly,*37, 48-75.

Iffland, J. (1998). Tenure essential to a diverse university. *Boston Globe*. (April 12).

Kalleberg, A. L. (2009). Precarious work, insecure workers: Employment relations in transition. *American Sociological Review, 74* (1), 1-22.

Kennedy, M. T., & Fiss, P. C. (2009). Institutionalization, framing and diffusion: The logic of TQM adoption and implementation decisions among U.S. hospitals." *Academy of Management Journal, 32* (5), 897-918.

Kraatz, M., & Zajac, E. (1996). Exploring the limits of the new institutionalism: The causes and consequences of illegitimate organizational change. *American Sociological Review, 61*(5), 812-836.

Larson, M. S. (1977). *The rise of professionalism*. Berkeley, CA: University of California Press.

Larson T., & Ong, P. M. (1994). Imbalance in part-time employment. *Journal of Economic Issues, 28*(1), 187-196.

Leblebici, H., Salancik, G., Copay, A., & King, T. (1991). Institutional change and the transformation of interorganizational fields: An organizational history of the U.S. radio broadcasting industry. *Administrative Science Quarterly, 35*(3), 431-457.

Leicht, K. T. & Fennell, M. L. (1997). The changing organizational context of professional work. *Annual Review of Sociology, 23*, 215-231.

Leslie, D., Kellams, S. E., & Gunne, G. M. (1982). *Part-time faculty in American higher education*. New York: Praeger.

Levine, A. (1997). How the academic profession is changing. *Daedalus, 126*(4), 1-20.

Long, J., & Freese, J. (2001). *Regression models for categorical dependent variables using Stata*. College Station, TX: Stata Press.

Mallon, W. T. (2001). *Tenure on trial: case studies of change in faculty employment policies*. New York: RoutledgeFalmer.

Metzger, W. (1973). Academic tenure in America: A historical essay. In Commission on Academic Tenure in Higher Education, *Faculty Tenure: A Report and Recommendation by*

the Commission on Academic Tenure in Higher Education (pp. 93-159). San Francisco, CA: Jossey-Bass.

Meyer, A. D., Gaba, V., & Colwell, K. A. (2005). Organizing far from equilibrium: Nonlinear change in organizational fields. *Organization Science, 16*(5), 456-473.

Meyer, J. W., & Rowan, B. (1977). Institutionalized organizations: Formal structure as myth and ceremony. *American Journal of Sociology, 83*(2), 340-363.

Miller, R. F. (1999). How not to reform a medical school: University of Minnesota. *Academe, 85* (6), 47-49.

Mizruchi, M., & Fein, L. (1999). The social construction of organizational knowledge: A study of the uses of coercive, mimetic, and normative isomorphism. *Administrative Science Quarterly, 44*(4), 653-683.

Morris, T., & Pinnington, A. (1998). Promotion to partner in professional service firms. *Human Relations, 51*(1), 3-23.

National Center for Education Statistics. (1996). *Institutional policies and practices regarding faculty in higher education.* Washington, DC: US Department of Education.

National Center for Education Statistics. (2007). *Employees in postsecondary institutions.* Washington, DC: US Department of Education.

National Center for the Study of Collective Bargaining in Higher Education and the Professions. (1988). *Directory of faculty contracts and bargaining agents in institutions of higher education*. Baruch College, New York.

National Center for the Study of Collective Bargaining in Higher Education and the Professions. (1990). *Directory of faculty contracts and bargaining agents in institutions of higher education*. Baruch College, New York.

National Center for the Study of Collective Bargaining in Higher Education and the Professions. (1992). *Directory of faculty contracts and bargaining agents in institutions of higher education*. Baruch College, New York.

National Center for the Study of Collective Bargaining in Higher Education and the Professions. (1994). *Directory of faculty contracts and bargaining agents in institutions of higher education*. Baruch College, New York.

Oliver, C. M. (1997). Sustainable competitive advantage: Combining institutional and resource-based views. *Strategic Management Journal*, *18*(9), 697-713.

Pfeffer, J., & Baron, J. (1988). Taking the workers back out: Recent trends in the structure of employment. *Research in Organizational Behavior*, *10*, 257-303.

Pfeffer, J., & Salancik, G. R. (1978). *The external control of organizations*. New York: Harper and Row.

Phillips, D. J., & Zuckerman, E. W. (2001). Middle-status conformity: Theoretical restatement and empirical demonstration in two markets. *American Journal Sociology, 107*, 379-429.

Podolny, J. (1993). A status-based model of market competition. *American Journal Sociology, 98*, 829-872.

Powell, G. N., & Mainiero, L. A. (1999). Managerial decision-making regarding alternative work arrangements. *Journal of Occupational and Organizational Psychology, 72*(1), 41-56.

Rabban, D. M. (1991). Is unionization compatible with professionalism? *Industrial and Labor Relations Review, 45*, 97-112.

Rao, H. (1998). Caveat emptor: The construction of nonprofit consumer watchdog organizations. *American Journal of Sociology, 103*(4), 912-61.

Rhoades, G. (1996). Reorganizing the faculty workforce for flexibility: Part-time professional labor. *Journal of Higher Education, 67*(6), 626-640.

Ruef, M., & Scott, W. R. (1998). A multidimensional model of organizational legitimacy: Hospital survival in changing institutional environments. *Administrative Science Quarterly, 43*(4), 877-904.

Sandefur, R. L. (2001). Work and honor in the law: Prestige and the division of lawyers' labor. *American Sociological Review, 66*, 382-402.

Sauder, M., & Espeland, W. N. (2009). The discipline of rankings: Tight coupling and organizational change. *American Sociological Review, 74*, 63-82.

Scott, W. R. (1965). Reactions to supervision in a heteronomous professional organization. *Administrative Science Quarterly, 10*, 65-81.

Scott, W. R. (2001). *Institutions and Organizations,* 2nd ed. Thousand Oaks, CA: Sage.

Scott, W. R. (2008). Lords of the dance: Professionals as institutional agents. *Organizational Studies, 29*, 219-238.

Scott, W. R., Ruef, M., Mendel, P. J., & Caronna, C. A. (2000). *Institutional change and healthcare organizations: From professional dominance to managed care*. Chicago, IL: University of Chicago.

Segal, L. (1996). Flexible employment: Composition and trends. *Journal of Labor Research, 17*(4), 525-541.

Selznick, P. (1957). *Leadership in America*. New York: Harper and Row.

Sherer, P. D., & Lee, K. (2002). Institutional change in large law firms: A resource dependence and institutional perspective. *Academy of Management Journal, 45*, 102-119.

Sine, W. D. (2000). Paths to deinstitutionalization: Forms, processes, and outcomes. Paper presented at the annual meetings of the *American Sociological Meetings*. Chicago, IL.

Stata Statistical Software. (1999). *Statistic Data Management, 3*. College Station, TX: STATA Corporation.

Sutton, J. R., & Dobbin, F. R. (1996). The two faces of governance: Responses to legal uncertainty in U.S. firms, 1955 to 1985. *American Journal of Sociology, 61*(5), 794-814.

Tierney, W. G. (1997). Academic community and post-tenure review. *Academe, 83*(3): 23-25.

Tolbert, P. S. (1998). Two-tiered faculty systems and organizational outcomes. *New Directions for Higher Education, 104* (Winter), 71-80.

Tolbert, P. S. (1996). Occupations, organizations and boundaryless careers. In M. Arthur and D. Rousseau (Eds.), *Boundaryless Careers* (pp. 91-107), NY: Oxford University Press.

Tolbert, P. S., & Stern, R.N. (1991). Organizations of professionals: Governance structures in large law firms. *Research in the Sociology of Organizations, 8*, 97-117. Greenwich, CT: JAI Press.

Tolbert, P. S., & Zucker, L. G. (1983). Institutional sources of change in the formal structure of organizations: The diffusion of civil service reform, 1880-1935. *Administrative Science Quarterly, 28*(1), 22-39.

Tolbert, P. S., & Zucker, L. G. (1996). The institutionalization of institutional theory. In S. Clegg, C. Hardy, & W. Nord (Eds.), *Handbook of Organization Studies* (pp. 175-190). Thousand Oaks, CA: Sage.

Uzzi B., & Barsness, Z. I. (1998). Contingent employment in British establishments: Organizational determinants of the use of fixed term hires and part-time workers. *Social Forces, 76*(3), 967-1007.

Wallace, J. E. (1995). Organizational and professional commitment in professional and non-professional organizations. *Administrative Science Quarterly, 40*, 228-255.

Weber, M. (1946). *From Max Weber: Essays in sociology*. In H.H. Gerth, C. W. Mills (Eds.). New York: Oxford University Press.

Westphal, J. D., & Zajac, E. J. (1994). Substance and symbolism in CEOs' long-term incentive plans. *Administrative Science Quarterly, 39*(3), 367-390.

Westphal, J. D., & Zajac, E. J. (2001). Decoupling policy from practice: The case of the stock repurchase programs. *Administrative Science Quarterly, 46*(2), 202-228.

Westphal, J., Gulati, R., & Shortell, S. (1997). Customization or conformity? An institutional and network perspective on the content and consequences of TQM adoption. *Administrative Science Quarterly, 42*, 366-394.

Whitley, R. (1984). *Intellectual and social organization of the sciences*. New York: Oxford University Press.

Wooldridge, J. (2000). *Introductory econometrics: A modern approach*. Cincinnati, OH: South-Western College.

Zucker, L. G. (1977). The role of institutionalization in cultural persistence. *American Sociological Review, 42*(5), 726-743.

Zucker, L. G. (1987). Institutional theories of organizations. *Annual Review of Sociology, 13,* 443-464.

Zucker, L. G. (1988). Where do institutional patterns come from? Organizations as actors in social systems. In L. Zucker (Eds.), *Institutional Patterns in Organizations* (pp. 23-52). Cambridge, MA: Ballinger.

Zucker, L. G. (1991). Post-script: Microfoundations of institutional thought. In W. Powell & P. DiMaggio (Eds.), *The New Institutionalism in Organizational Analysis* (pp. 103-108). Chicago, IL: University of Chicago.

Bios

Sangchan Park is an assistant professor in the Department of Management and Organisation at the National University of Singapore. He received his Ph.D. from Cornell University. His research interests include institutional and organizational change, with a focus on the legitimation of non-legitimate ideas and work practices.

Wesley Sine is the J. Thomas Clark Professor of Entrepreneurship and Personal Enterprise and Associate Professor of Management and Organizations in the Johnson Graduate School of Management, Cornell University. His research explores issues related to institutional change, industry and technology evolution, technology entrepreneurship, and new venture structure and strategy.

Pamela Tolbert is the Lois Gray Professor of Industrial Relations and Social Sciences, and Organizational Behavior Department Chair in the ILR School, Cornell University. Her research includes work on processes of institutional and organizational change, the role of organizations in social stratification, and interrelationships between occupations and organizations.

Table 1 Correlations and summary statistics

1	Percent of tenure-track faculty	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
2	No. full time students	0.16																
3	Student growth	-0.01	0.12															
4	Complexity	0.20	0.76	0.08														
5	Professional-oriented degree	-0.13	0.20	0.01	0.10													
6	Medical school	0.00	0.36	0.08	0.30	0.33												
7	Public institution	0.20	0.57	0.11	0.32	-0.13	0.16											
8	Time trend	-0.09	0.02	-0.17	0.00	0.03	0.00	0.00										
9	Age	0.12	0.03	-0.04	0.11	0.04	0.13	-0.13	0.06									
10	Revenue per student	0.09	-0.10	-0.07	0.03	0.19	0.40	-0.29	0.23	0.24								
11	Prestige	0.14	0.19	0.00	0.30	0.03	0.06	-0.13	0.02	0.27	0.34							
12	Total endowment income/revenue	0.06	-0.27	-0.07	-0.12	-0.05	-0.12	-0.39	-0.02	0.29	0.32	0.28						
13	Tuition dependency	-0.24	-0.35	-0.13	-0.26	0.02	-0.39	-0.65	0.03	0.06	-0.25	0.09	0.07					
14	Research orientation	0.08	0.45	0.06	0.32	0.16	0.50	0.29	0.02	0.09	0.38	0.23	-0.08	-0.44				
15	Professional accreditations per student	-0.10	-0.53	-0.06	-0.42	-0.05	-0.06	-0.23	0.23	-0.02	0.17	-0.22	0.10	0.05	-0.15			
16	Faculty union	0.10	0.29	-0.01	0.18	-0.09	-0.01	0.38	0.01	-0.09	-0.16	-0.01	-0.18	-0.20	0.07	-0.16		
17	Percent of tenured-in faculty	-0.14	0.25	-0.01	0.13	0.05	0.09	0.19	0.10	0.01	0.10	0.10	0.10	-0.14	0.15	-0.11	0.20	
	Mean	0.59	8.02	0.12	4.63	0.06	0.08	0.40	5.00	103.52	9.38	4.23	0.04	-1.04	0.03	0.00	0.15	0.68
	Standard Deviation	0.24	1.16	0.78	0.73	0.10	0.27	0.49	2.83	47.15	0.65	1.85	0.05	0.65	0.06	0.00	0.36	0.16
	Minimum	0	3.91	-8.95	0	0	0	0	1	4	7.31	0	0	-4.62	0	0	0	0
	Maximum	1	11.03	8.98	6.40	0.70	1	1	9	362	13.44	9	0.36	-0.09	0.46	0.07	1	1

Table 2 Predictors of Proportion of Faculty in Tenure-Track Positions

Variables/Models	1	2	3	4	5
Control Variables					
No. full time students	-0.04**	-0.01	-0.03*	-0.03*	0.01
	(0.01)	(0.02)	(0.01)	(0.01)	(0.02)
Student growth	-0.00	-0.00	-0.00	-0.00	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Complexity	0.11***	0.07**	0.11***	0.09***	0.03
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Professional-oriented degree	-0.13+	-0.17*	-0.13+	-0.17*	-0.20*
	(0.08)	(0.08)	(0.08)	(0.07)	(0.08)
Medical school	-0.08*	-0.16***	-0.10**	-0.08*	-0.17***
	(0.03)	(0.05)	(0.04)	(0.03)	(0.04)
Public institution	0.11***	0.10**	0.10***	0.11***	0.11***
	(0.02)	(0.03)	(0.02)	(0.02)	(0.03)
Time trend	-0.01***	-0.01***	-0.01***	-0.01***	-0.01***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Age	0.00***	0.00*	0.00***	0.00***	0.00**
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Resource constraints					
Revenue per student		0.06**			0.06***
		(0.02)			(0.02)
Prestige		0.01**			0.02***
		(0.00)			(0.00)
Total endowment income/revenue		0.45*			0.27
		(0.18)			(0.17)
Tuition dependency		-0.01			-0.01
		(0.02)			(0.02)
Allied constituents					
Research orientation			0.16		-0.06
			(0.14)		(0.16)
Professional accreditations			6.11***		6.00**
			(1.37)		(1.97)
Faculty union			0.02		0.03
			(0.03)		(0.03)
Endogenous limits					
Percent of tenured-in faculty				-0.21***	-0.27***
				(0.03)	(0.03)
Constant	0.16	-0.43	0.08	0.37*	-0.28
	(0.19)	(0.27)	(0.20)	(0.18)	(0.26)
Chi Squared Statistic	222.4	204.8	246.6	273.4	281.7
Log likelihood	850.7	729.9	861.0	994.6	839.2

Standard errors in parentheses
State dummies are not shown
*** p<0.001, ** p<0.01, * p<0.05, $^{+}$ p<0.1

END NOTES

[1] Although Meyer and Rowan discuss decoupling, they do not explicitly define what they mean by this term. However, recent work has used it to refer to limited implementation of a formally adopted structure – e.g., a written policy or set of rules (Westphal & Zajac, 1994, 2001; Scott, 2001; Fiss & Zajac, 2004). Following this line of research, we define adoption of a structure as *official, formal recognition of a policy or practice by an organization*, i.e., having it "on the books." By implementation, on the other hand, we refer to *the extent to which the structure is used as part of everyday operations*. In contrast to adoption, which we conceptualize as a dichotomous variable, we view implementation as a continuous variable: the more often and more widely a formally-adopted policy or procedure is used by an organization, the greater its level of implementation.

[2] The following historical description draws heavily on the analysis offered by Metzger (1973).

[3] We searched extensively for systematic data on dates of adoption of tenure systems by colleges and universities, but were not able to locate this information.

[4]Although it is possible, at least in theory, for universities to avoid some of the costs of tenure systems by never awarding tenure to tenure-track faculty, since untenured tenure-track faculty often command higher salaries and more benefits than non-tenure-track faculty, they are relatively more costly. Moreover, non-tenure-track appointments are usually shorter and do not normally convey any implicit long-term employment. Whether the awarding of tenure is becoming less common, along with increased use of non-tenure-track lines, is unclear.

[5] Final college and university budgets are designed to make revenues equate to expenditures; thus we cannot use the ratio of revenues to expenditures as an index. In this context, we argue that having higher average revenues provides a reasonable index of the level of expenditures an organization can afford.

[6] We recognize that the current relationship between hiring faculty on tenure-track lines and obtaining research funding is likely to be characterized by reciprocal causality: while schools with a stronger research orientation are more likely to conform to professional norms by hiring faculty into tenure-track positions, it is also the case that schools with a greater proportion of tenure-track faculty are likely to have higher levels of research activities. We argue, however, that it is unlikely that organizations typically committed to hiring faculty in tenure-track lines first and then developed an organizational identity as a research institution; the reverse ordering seems more plausible and is consistent with many historical accounts of the development of research universities (e.g., Brubacher & Rudy, 1997).

[7] The majority of schools that reported no tenure track faculty in any panel of our study were affiliated with conservative religious groups, and it is likely that most of these do not have formal tenure systems. As one respondent at such an institution explained, "(ours is an institution) strongly committed to humility and egalitarianism and thus has no rank or tenure" (personal communication, October 30, 2010). A number of others were specialized professional institutions, such as Otis College of Art and Design; these sorts of institutions also often do not have tenure systems.

[8] According to IPEDS instructions to respondents, tenure-track is defined as "positions that lead to consideration for tenure" and tenure as "status of a personnel position, or a person occupying a position…with respect to the permanence of the position."

[9] This variable was assigned a value of "0" when the denominator (the total number of tenure-track faculty) is zero.

[10] While including a lagged dependent variable controls for endogeneity due to omitted variable bias, this practice creates its own set of problems (Wooldridge, 2000) and may result in estimator bias (Halaby, 2004). For this reason, we provide this additional analysis simply as a robustness test of our original results. Please contact first author for tables.

[11] www.ama-assn.org/ama1/pub/upload/mm/21/a09delegatesmemo.pdf