

Flexibility at the Core: What Determines Employment of Part-Time Faculty in Academia

Flexibilité au coeur du marché du travail : les déterminants de l'emploi à temps partiel chez les professeurs dans l'enseignement supérieur

Flexibilidad al centro del mercado laboral: los determinantes del empleo a tiempo parcial en la enseñanza superior

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Résumé de l'article

Dans cette étude, nous nous penchons sur les prédicteurs institutionnels de l'emploi à temps partiel dans le secteur de l'enseignement supérieur aux États-Unis. À partir de données individuelles et institutionnelles, nous examinons la variation de l'intensité de l'emploi à temps partiel dans les postes de professeurs d'universités et de collèges parmi un échantillon représentatif d'institutions d'enseignement supérieur. Les données institutionnelles proviennent de l'IPEDS (Integrated Postsecondary Education Data System) tandis que les données individuelles proviennent du NSOPF (*National Study of Postsecondary Faculty*). Ces données nous permettent d'étudier l'effet des facteurs économiques et de l'environnement social sur les pratiques d'emploi des universités et des collèges. Notre analyse s'inscrit dans la littérature émergente sur les arrangements au travail non traditionnels dans les principales fonctions organisationnelles.

Nos résultats suggèrent que l'emploi à temps partiel des professeurs de l'enseignement supérieur est associé de façon significative à un ensemble d'attributs et de caractéristiques, tels le type d'institution, leurs sources de revenu et le nombre d'inscriptions d'étudiants à temps partiel. Les institutions privées affichent des moyennes plus élevées de professeurs à temps partiel que les institutions publiques. La proportion d'étudiants à temps partiel, la part des revenus institutionnels en provenance des frais de scolarité et la présence de syndicats de professeurs sont positivement associées à l'emploi à temps partiel des professeurs. Enfin, les institutions qui disposent de ressources limitées et qui paient des salaires élevés à leurs professeurs à temps plein ont tendance à embaucher une proportion plus élevée de professeurs à temps partiel. Ces résultats appuient l'argument que les institutions d'enseignement supérieur conçoivent et adoptent activement des arrangements de travail précaire pour gérer leurs ressources en fonction de la clientèle et réduire leurs coûts de main-d'oeuvre.

Flexibility at the Core: What Determines Employment of Part-Time Faculty in Academia

Xiangmin Liu and Liang Zhang

This study uses both institutional and individual level data to examine the variation of part-time faculty employment in colleges and universities in the United States. Results support the arguments that higher educational institutions actively adopt contingent work arrangements to manage their resource dependence with constituencies, to save on labour costs, and to maximize academic prestige. Private institutions, on average, have higher levels of part-time faculty than their public counterparts. The proportion of part-time students and the share of institutional revenues derived from tuition and fees are positively associated with part-time faculty employment. Institutions that have limited resource slack and pay high salaries to their full-time faculty members tend to employ a high proportion of part-time faculty.

KEYWORDS: part-time employment, teaching faculty, faculty employment, higher education

Introduction

Traditional employment relationships that elicit mutual expectation of full-time and continuous employment have been an important feature of the national employment systems and public policies in many developed countries. Over the past decades, however, contingent work arrangements such as independent contracting, working for temporary help agencies, on-call work, and part-time jobs have rapidly moved into the forefront of the decisions of many organizations (Kalleberg, 2009). Among these various forms of non-traditional work arrangements, part-time employment is probably the most prominent. In 2009, twenty-seven million or 19.6% of the U.S. labour force were employed part-time (Bureau of Labor Statistics, 2010).

An extensive body of literature has examined why some workers participate in part-time employment. Compared to full-time workers, part-time workers tend to be women who have more family responsibilities, younger workers who need

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more time at school, and older workers who are in transition to retirement (Shaefer, 2009). Moreover, researchers have investigated part-time workers' experiences associated with rewards, job security and stress in the workplace (Eldridge and Nisar, 2011; Zeytinoglu *et al.*, 2004), and explored whether unobserved worker heterogeneity, such as work history, preferred hours, and skills, accounted for divergent outcomes between part-time and full-time employment (Booth and Wood, 2008; Hirsch, 2005). Generally, these studies underscore the importance of distinguishing between workers who are involved in reduced hour positions and those who work regular hours; however, they provide limited explanation for employers' growing reliance on part-time work. Indeed, a growing number of organizations strategically create part-time positions in order to lower labour costs and to enhance numerical flexibility, instead of accommodating to workers' schedule preferences (e.g., Zeytinoglu, 1992; Kalleberg, Reynolds and Marsden, 2003). Therefore, an in-depth understanding of the proliferation of part-time employment requires an investigation of employer-related correlates that explain why organizations use varying levels of part-time employment even in highly similar jobs.

In this study, we examine institutional predictors of part-time faculty employment in the higher education sector in the United States. Although some may view the higher education sector as an unlikely setting for part-time employment because of high skill requirements and the institutionalized practice of tenure systems, part-time instructional faculty represent over forty percent of all faculty members (National Center for Educational Statistics, 2007). This proportion is much higher than the rest of the U.S. workforce. Part-time faculty represent the primary type of contingent workers in academia. Because of the tenure system in higher education, full-time off-track faculty are sometimes considered as contingent workers as well. However, many off-track lecturers and instructors hold multi-year contracts and they are permanent employees *de facto*. In contrast, the vast majority of part-time positions entail a limited duration contract and provide compensation on a per-course or hourly basis. Since job insecurity is viewed as a defining feature of non-standard work by many (e.g., Polivka, 1996), we focus on part-time faculty, but not full-time off-track faculty, in this study. It is noteworthy that the focus on part-time faculty, but not the broader segment of contingent faculty, may under-estimate the extensive use of non-traditional workforce in higher education.

This study seeks to contribute to research on part-time employment in several ways. First, we draw upon institutional-level as well as individual-level data to examine the variation in the intensity of part-time employment in faculty positions among a representative sample of higher education institutions. This multi-level data structure and analytical approach allow us to test key theoretical explanations for why organizations create part-time positions even when academic disciplinary and individual differences are considered. Second, while many studies

emphasize the adoption of non-standard work arrangements as a cost minimization tactic, they overlook an employer's social environment that may constrain the pursuit of economic efficiency. Colleges and universities face both strong institutional pressures for conformity to traditional employment relationships and market competition to lower operational costs. In this study, we extend economic arguments by considering an organization's dependence on external and internal constituencies. Finally, this study adds to the emerging literature on non-standard work arrangements in core organizational functions. Although institutional missions vary (e.g., some institutions may regard research as one of their core functions as well), delivering instructional services is one of the primary activities for all higher education institutions. Our findings indicate that part-time work arrangements help to bring in practical expertise that are not readily developed in traditional university settings; such an incentive is particularly high when a university needs to offer a boarder range of courses and needs to accommodate the diverse interests of part-time students .

Prior Literature and Hypotheses

Because higher education institutions operate in the pursuit of excellence, prestige, and influence rather than profits (Bowen, 1980), they need to externally acquire critical resources and maintain stability in exchange relationships with their constituencies on the one hand, and, on the other, internally allocate these limited resources in an efficient manner. Against this backdrop, we integrate insights from resource dependence and cost efficiency arguments to develop hypotheses for this study. Resource dependence theory posits that an educational institution engages in direct exchange relations with many agents in order to acquire the resources necessary to accomplish its missions (Pfeffer and Salancik, 1978). Agents who control critical resources can impose preferred values and practices by linking compliance with resource allocation. An institution's employment practice is therefore viewed as a compliance or resistance response to the pressures excised by the agents. Meanwhile, shrinking public funding and the popularity of corporate culture are bringing in a cost containment mindset into the operation of higher education institutions. In order to operate at a lower cost than its peers, an institution has to evaluate its cost structure and search for cost reductions. In this view, the employment of part-time faculty allows higher education institutions to refrain from making expensive investments and to keep overheads low. We incorporate these perspectives to derive a set of theory-driven hypotheses. In particular, we use resource dependence arguments to explain how institutions use faculty employment practice to manage their dependence on external and internal constituents (i.e., government, students, and faculty unions). Then, we draw upon cost efficiency arguments to examine whether institutions allocate limited resources among different types of faculty in a cost effective manner.

Resource Dependency Explanations

Institutions are embedded in a web of exchange relationships from which they gain access to resources that are critical to survival prospects (Pfeffer and Salancik, 1978). As a result, an institution actively manages its dependence relationship with agents who may demand certain organizational practices. In the presence of a powerful agent and coercive conforming pressures, the institution incorporates the expected value and adopts employment practices preferred by the agent. When the agent is less powerful and the pressure to conform is weak, the institution is likely to adopt a resistance strategy to seek autonomy and to minimize intervention, rather than passively complying with the preferred practices (Oliver, 1991). These arguments lead us to the following five hypotheses regarding how governments, students, and faculty unions may affect a university's reliance on part-time faculty.

The first hypothesis examines the relationship between an organization's employment practice and the expectations of its primary external resource provider. Because part-time work represents a departure from full-time, long-term employment relationships, its legitimacy is often incompatible with prevailing social norms and regulatory policies established by the government. Organizations that fail to conform to such regulations may lose their legitimacy and support (D'Aunno, Sutton and Price, 1991). The pressure to follow widely accepted employment practices is especially high on public colleges and universities because public funding represents the most important revenue stream for these institutions. Moreover, public institutions are carefully overseen or coordinated by state-wide higher education governing or coordinating boards on such important issues as employment policies and procedures. Terms of part-time employment (e.g., the maximum teaching loads and wage rates) at public institutions are usually regulated by state governing boards. As a matter of fact, faculty members at public institutions in many states are considered as state employees. Consequently, we expect that public institutions are more likely to use full-time employment contracts in order to achieve bureaucratic legitimacy.

HYPOTHESIS 1: Public institutions tend to hire fewer part-time faculty than private institutions do.

As providers of educational services, colleges and universities also adjust and design faculty employment structures to smooth the flow of resource exchange with their students. Accommodating heterogeneous demands of diverse students may require talents and expertise that the organization does not possess in-house. This is particularly true for part-time students, who are a very diverse group studying on a wide range of programs. During the past several decades, the proportion of students who attend colleges and universities on a part-time

basis has increased from about 30% in the 1960s to more than 40% since 2000 (National Center for Educational Statistics, 2007). These students usually have more of a practical orientation than do their full-time peers. Such a need is better satisfied by part-time faculty members who have full-time jobs in the field and bring real-life experience to the classroom (Fulton, 2000). In addition, part-time students are more likely to take evening and weekend classes than full-time students. Colleges and universities can increase the hours worked by full-time faculty or reschedule their working hours to accommodate this need; however, such arrangements often cause job dissatisfaction among full-time faculty. From this perspective, part-time faculty can be viewed as a qualified, but relatively inexpensive, expansion of the labour pool, enabling the institution to offer more classes to attract and serve the growing population of part-time students.

HYPOTHESIS 2: Institutions with a large share of part-time students are more likely to employ a large share of part-time faculty.

A related factor is the rising importance of tuition revenues to institutions' financial well-being. For example, in public institutions, the share of total revenues that come from tuition and fees has increased from about 12% in the early 1980s to 20% in recent years (National Center for Educational Statistics, 2007). Tuition revenues represent alternative resources to state funding, and therefore provide universities more discretion in adopting contested employment practices such as hiring part-time faculty. Moreover, to compete for student enrolment and maintain a robust tuition revenue stream, colleges and universities open more courses that cater to students' diverse needs. Employing part-time faculty makes it possible to bring into the classroom experts from other professions, such as senior corporate executives, policy leaders, and performance artists who are generally available on a part-time basis. In other words, the acquisition of external expertise through the employment of part-time faculty helps universities to attract more students and increase revenue. Therefore, we expect that colleges and universities that rely more on tuition and fees revenues are more likely to earmark a significant share of their hiring resources to part-time faculty.

HYPOTHESIS 3: The employment of part-time faculty is positively related to the share of institutional revenues derived from tuition and fees.

Although collective bargaining in American universities is not as common as other countries such as Canada, labour unions can be powerful agents because they are influential over personnel resources in critical positions (Katchanovski, Rothman and Nevitte, 2011; Doucet, Smith and Durand, 2012). For example, the presence of faculty unions is positively associated with salary premium even when measurement errors and endogeneity between unionization and wages are corrected (Hedrick *et al.*, 2011). In this study, we distinguish the presence of

a full-time faculty union and that of a part-time faculty union, because these two types of union presence often involve independent collective bargaining goals and entail divergent responses from employers.

Existing research has inconsistent views on the effect of full-time faculty unions on the institution's employment of part-time faculty. One view holds that the incentives to hire part-time faculty is low when full-time faculty are unionized. Because the foremost goals of full-time faculty unions are to increase salaries, to protect job security, and to maintain faculty participation in shared governance structure (Rhoades, 1998), they may be opposed to the employment of part-time faculty especially when they believe the latter represents an erosion of employment stability. In addition, some full-time faculty unions reach collective bargain agreements that limit the ratio of full-time and part-time faculty and/or minimum compensation levels for each type of faculty.

The competing view, which has received stronger empirical support, holds that the presence of a full-time faculty union increases an institution's reliance on part-time faculty. Part-time faculty are less empowered and inherently difficult to unionize because of their varied work hours, tenuous employment ties, and relatively high turnover. Hence, hiring part-time faculty weakens the union's power over employment practices and increases the authority of university administrators (Zeytinoglu, 1992). Furthermore, virtually all part-time faculty focus primarily on teaching. Full-time faculty unions would support the use of part-time faculty if this relieves full-time faculty of some responsibilities in teaching and services. Therefore, full-time faculty can spend more time in achieving success in research, which increases the prestige of the institution and is a major factor in the promotion of tenure-track faculty. Under this circumstance, hiring part-time faculty to fulfil instructional demands is consistent with the self-serving interests of a full-time faculty union. Based on these discussions, we expect a positive relationship between the presence of a full-time faculty union and the employment of part-time faculty.

HYPOTHESIS 4: The employment of part-time faculty is positively related to the unionization of full-time faculty.

Part-time faculty typically lack voting rights in faculty governance processes and are more vulnerable to pressures from administrators and students (Rhoades, 1998). In addition, unions for part-time faculty do not have as much bargaining power as unions for full-time faculty. In this situation, a university has low incentives to seek autonomy from its exchange relations with a part-time faculty union. Instead, the university may support part-time faculty unions advocating for the expansion of part-time faculty employment, if it believes this goal is consistent with its own interest. Moreover, although part-time faculty unions do not

substantially improve the working conditions for their members, they are effective in striving for fair treatment in assignment, evaluation, and compensation. In this view, the presence of a part-time faculty union helps the university to attract and recruit more part-time instructors.

HYPOTHESIS 5: The employment of part-time faculty is positively related to the unionization of part-time faculty.

Cost Savings Explanations

Higher education institutions have been increasingly cost conscious as a result of shrinking public funding and the invasion of corporate culture. The share of public institutions' revenues from state appropriations decreased from about 44% in the early 1980s to about 32% in recent years (National Center for Educational Statistics, 2007). To compete and, in many cases, to simply survive in this fiscal environment, colleges and universities have been actively engaged in cost-saving and profit-making activities, such as the entrepreneurial development or sale of research, reorganization of academic programs, innovative approaches to the delivery of education, and extensive use of part-time faculty. The incentives for achieving cost efficiency via the creation of part-time positions are particularly high when an institution encounters financial distress and when the salary difference between part-time and full-time faculty is large.

When organizations have excessive financial capacity or working capital, they prefer to deploy slack toward asset capitalization because such a decision enhances social prominence (Jensen, 1989). Workforce expansion, as an important way of asset capitalization, is often regarded as not just desirable, but as a sign of growth and success. This is particularly true in not-for-profit organizations, such as higher education institutions, where investments in full-time faculty, especially tenured and tenure-track faculty, often symbolize the advancement and prestige of an academic institution. Thus, colleges and universities are motivated to employ more full-time faculty when they have resources to do so. This is also consistent with the "income effect" in consumer theory, which suggests that an increase in institutional revenues would lead to an increase in the employment of regular faculty. The income effect on part-time faculty is ambiguous, depending on whether they are regarded as "normal goods." Inasmuch as colleges and universities are maximizing their institutional prestige that is increasingly defined by research than by teaching, colleges and universities would most likely employ fewer part-time faculty and more professorial faculty (i.e., faculty with professor in their titles) when financial resources permit.

HYPOTHESIS 6: The employment of part-time faculty is negatively related to the level of financial resources at colleges and universities.

Consumer theory also suggests that price matters: the employment level of a particular category of faculty is negatively related to its own price (i.e., salary) and positively related to the salaries of other types of faculty. For example, if salaries paid to professorial faculty rise relative to full-time lecturers and instructors, institutions would employ fewer professorial faculty. Part-time faculty earn less and are less likely to have health insurance and pension benefits than their full-time counterparts. Institutions have been seeking for cost savings and they are more than happy to hire less expensive faculty to fulfil their instructional needs. Although salary levels for part-time faculty are usually not available because, in most cases, they are paid on a per-course basis, anecdotal evidence suggests that cost savings may be substantial. For example, Monks (2004), reported that part-time faculty earned approximately 64% less than full-time tenured or tenure-track faculty on a per-hour basis. Thus, everything else being equal, colleges and universities that offer relatively higher salaries for regular full-time faculty will have a greater incentive to use part-time faculty.

HYPOTHESIS 7: Employment of part-time faculty is positively related to the salary level of full-time faculty.

Data and Methods

Data

We use both institutional and individual data to test our hypotheses. Institutional data are from Integrated Postsecondary Education Data System (IPEDS), which was the core postsecondary education data collection program for the U.S. Department of Education. IPEDS consists of a series of interrelated survey components that are designed to collect information from different aspects of postsecondary educational institutions. These survey components include (a) Institutional Characteristics, (b) Student Enrolments, (c) Finance, (d) Faculty Salaries, (e) Fall Staff, and others. The universe of postsecondary education institutions, which consists of about 7,000 U.S. colleges, universities, and other institutions, is divided into three categories based on the highest degree awarded: (a) baccalaureate or higher degree-granting institutions; (b) two-year-degree-granting institutions; and (c) less-than-two-year institutions.

In this study, we limit our sample to general colleges and universities that grant baccalaureate or higher degrees, a total of 1,401 institutions for the academic year 2005-2006, which is the most recent year with most IPEDS survey components available. We excluded 37 cases because of missing values for the number of faculty, yielding a usable sample of 1,364 institutions. Of these institutions, 503 are state or publicly controlled and the remaining 861 are privately controlled. Among privately controlled institutions, 18 are for-profit institutions.

We included these for-profit institutions in our analysis; however excluding these institutions did not result in noticeable changes in any analysis due to their small number.

This sample of four-year colleges and universities provides an ideal sample for the study of contingent employment in higher education. On the one hand, they have similar core education functions, including teaching and research, which makes comparisons meaningful. On the other hand, they are sufficiently heterogeneous in terms of their institutional missions and educational activities that differences in employment patterns emerge readily. The Carnegie Classification, the most popular classification matrix in higher education, categorizes these institutions into several subgroups based on the level and range of degrees each institution offers. These categories include (a) Doctoral/Research Institutions, (b) Comprehensive/Master's Institutions, and (c) Liberal Arts Colleges. Table 1 presents the distribution of institutions by control and Carnegie Classification. This distribution does not represent the distribution of faculty by control and Carnegie Classifications because institutions differ drastically in size.

TABLE 1

Proportion of Part-time Faculty, by Control and Types of Institutions (unweighted)

Carnegie Classification	Public Institutions		Private Institution	
	Number	Proportion	Number	Proportion
Doctoral/Research Institutions I	102	21.27%	49	26.31%
Doctoral/Research Institutions II	63	29.13%	43	45.73%
Comprehensive Institutions I	242	34.69%	240	51.55%
Comprehensive Institutions II	22	35.60%	85	50.42%
Liberal Arts Colleges I	25	31.81%	195	30.35%
Liberal Arts Colleges II	49	36.36%	249	44.85%
Total	503	31.33%	861	42.97%

Note:

The Carnegie Classification includes all colleges and universities in the United States that are degree-granting and accredited by an agency recognized by the U.S. Secretary of Education.

1. Doctoral/Research Institutions I: These institutions typically offer a wide range of baccalaureate programs, and they are committed to graduate education through the doctorate. They award 50 or more doctoral degrees per year in at least 15 disciplines.
2. Doctoral/Research Institutions II: Similar to doctoral/research I; however, they award at least 10 doctoral degrees per year across three or more disciplines, or at least 20 doctoral degrees per year overall.
3. Comprehensive Institutions I: These institutions typically offer a wide range of baccalaureate programs, and they are committed to graduate education through the master's degree. They award 40 or more master's degrees per year in three or more disciplines.
4. Comprehensive Institutions II: Similar to comprehensive institutions I; however, they award 20 or more master's degrees per year.
5. Liberal Arts Colleges I: These institutions are primarily undergraduate colleges with major emphasis on baccalaureate programs. They award at least half of their baccalaureate degrees in liberal arts fields.
6. Liberal Arts Colleges II: Similar to Liberal Arts Colleges I; however, they award less than half of their baccalaureate degrees in liberal arts fields.

The individual faculty data are from National Study of Postsecondary Faculty, which was designed to provide a national profile of faculty and instructional staff: their background, responsibilities, workloads, salaries, benefits, and attitudes. The most recent cycle was conducted in the academic year 2003-04. The restricted NSOPF: 04 dataset is used to enable the connection between faculty and institutions. Additional information concerning NSOPF and restricted data license is available at the NSOPF web page (<http://nces.ed.gov/surveys/nsopf>). During the academic year 2003-04, a national representative sample of 26,110 faculty members are interviewed from 980 institutions. For the purpose of this study, we limit the sample to only include those who were employed at 4-year colleges and universities, who had faculty status, and who had valid discipline information. These restrictions lead to a final sample of 16,010 faculty members from 550 institutions. One of the trade-offs by using this individual-level analysis is the reduced number of institutions. Still, they are a representative sample of 4-year institutions based on the multi-stage stratified sampling strategy that was used to select these institutions.

Variables

For institutional-level analysis, we construct a list of dependent and independent variables, which are reported in Table 2. Our main variable of interest is the proportion of part-time faculty, which is calculated as the ratio between the number of part-time faculty and the number of all faculty in an institution. From an educational perspective, the proportion of part-time faculty might not precisely capture the proportion of courses (or credit hours) taught by part-time faculty at an institution because number and size of classes taught by part-time faculty could change over time. Nonetheless, the proportion of part-time faculty is used as the main dependent variable because, first, we are interested in the antecedents, but not impact of part-time faculty employment, and, second, detailed information on class size and credit hours is usually only available in administrative data collected by individual institutions.

A dummy variable for private institutions is created by using information on the type of institutional control provided by IPEDS Institutional Characteristics Survey. For each institution, we obtain the number of part-time students and the number of full-time students, which permit us to compute the proportion of part-time student enrolment at each institution to test whether institutions use contingent faculty as a strategy to meet demand from an increasingly diverse student population. Data on institutional revenues and expenditures are available in the IPEDS Finance Survey. For each institution, we draw the total current revenues and the revenue from student tuition and fees. To measure how much an institution relies on student tuition and fees, we constructed the proportion of total revenues from tuition and fees for each institution. This variable is used

TABLE 2
Definitions and Descriptive Statistics of Main Variables

Variables	Mean	Definition
Proportion of part-time faculty	0.387	Part-time faculty divided by total faculty in an institution
Private institutions	0.635	=1 if private institution; =0 if public institution
Proportion of part-time students	0.236	Part-time student enrolment divided by total enrolment in an institution
Proportion of tuition and fees revenue	0.477	Revenue from tuition and fees divided by total institutional revenue in an institution
Log revenue per FTE student	9.888	Log total revenue divided by FTE enrolment
Log average salary of full-time faculty	10.929	Log average salary of full-time faculty
Union, full-time faculty	0.153	=1 if full-time faculty is unionized in an institution; =0 otherwise
Union, part-time faculty	0.112	=1 if part-time faculty is unionized in an institution; =0 otherwise
College located in big city/suburb	0.353	=1 if located in big-city/suburb; =0 otherwise
Log number of FTE students	8.018	Log total FTE enrolment, which is full-time plus 1/3 part-time enrolment
Proportion of Business fields	0.206	Proportion of Business fields in an institution by student enrolment
Proportion of Legal fields	0.013	Proportion of Legal fields in an institution by student enrolment
Proportion of Engineering fields	0.030	Proportion of Engineering fields in an institution by student enrolment
Proportion of Health fields	0.077	Proportion of Health fields in an institution by student enrolment

in our analysis to test whether contingent employment reflects institutional resource dependence on revenues from tuition and fees. To measure relative financial well-being across institutions, we need to consider institutional size as well. Institutional size is measured by full-time equivalent (FTE) student enrolment, which is conventionally calculated by adding one-third of the number of part-time students to the number of full-time students. We use revenue per FTE enrolment to test whether institutions with greater financial constraints are more likely to use contingent employment to reduce labour costs.

For full-time faculty members, a separate IPEDS Faculty Salaries Survey reports data on the number of full-time faculty by rank (i.e., full professor, associate professor, assistant professor, full-time lecturers, and full-time instructors) and by contract length (i.e., 9/10-month and 11/12-month). We extracted the data on the weighted average salary of the equated nine-month contract (e.g., the salary for 11/12 month contract is scaled down by a factor of 0.8182) for all ranks

of full-time faculty. It is noteworthy that the majority of full-time faculty in the United States are employed on 9/10 month contracts, which are probably not common in other countries. Faculty union data were drawn from the Directory of Faculty Contracts and Bargaining Agents in Institutions of Higher Education, compiled by the National Center for the Study of Collective Bargaining in Higher Education and the Professions. The presence of full-time faculty is coded as 1 if full-time faculty are unionized in the institution; otherwise, it is coded as zero. Similarly, the presence of part-time faculty is coded as 1 if part-time faculty are unionized in the institution.

In addition to the above main independent variables, we also consider a host of control variables. For example, organizations in suburban and rural areas may face scarcity of skills; they are thus more likely to satisfy the employee's preference for better work conditions, such as full-time employment. The physical address of each institution identifies its geographic status on an urban continuum ranging from large cities to rural areas. We created a dummy variable to indicate whether an institution is in an "urbanized" area (e.g., in or near a city with a population of 250,000 or more). We control for the number of full-time equivalent students because recruitment and training costs of part-time employees may differ depending on organization size (Montgomery, 1988). Finally, the supply and demand of qualified faculty in different disciplines may lead to differences in part-time faculty employment. If one assumes that the distribution of disciplines is similar across institutions, then aggregating disciplines within each institution is not likely to yield biased estimates for the effect of institution-level factors; however, given cost variations across disciplines, it is likely that the distribution of disciplines also varies across institutions. For example, research and doctoral institutions might have larger science and engineering fields than other institutions do. As such, controlling for disciplinary difference is necessary to obtain unbiased estimates for the relationships among institution-level variables. To that end, we calculate the relative size (i.e., the proportion of degrees awarded) of some professional fields including Business, Law, Engineering, and Health.

In the individual-level analysis, we use institutional, disciplinary, and individual characteristics to predict individual faculty's employment status. Institutional variables based on IPEDS data collected in academic year 2003-04 are created and merged with NSOPF individual data by matching on institution identifications. Disciplinary differences are controlled by inserting a set of discipline dummies based on the 2-digit Classification of Instructional Programs (CIP) code. Finally, a set of individual level variables are created to account for individual differences. These variables include demographic information such as gender, race/ethnicity, citizenship, and age. The square term of age is used

to account for the fact that junior faculty members who have just started their academic career and senior members who are near retirement, or who have retired, are more likely to hold part-time positions. In addition, we also include a dummy variable to indicate whether a faculty member has a doctoral degree. Although faculty productivity measured by the number of classes taught and research productivity including publications, grants, and patents is likely to be correlated with employment status, they are not included in our model to avoid the problem of endogeneity, because these productivity measures are more likely to be determined by employment status than the other way around.

Methods

For institution-level analysis, the simplest way to estimate the impact of various factors on proportion of part-time faculty is to use linear multiple regression. Mathematically, the population model is assumed to be:

$$E(y|x) = x\beta \quad (1)$$

where y is our main dependent variable (i.e., the proportion of part-time faculty) and x includes all independent variables. Although equation (1) is straightforward, the fact that the dependent variable is bounded between 0 and 1 raises an important econometric issue. There is no guarantee that the predicted value lies within bounds, a similar problem as in the linear probability model for binary data. This could be a serious problem when a large proportion of y takes on the values 0 or 1. Although in our data, the value of our dependent variable spread out nicely with no 0's and 1's, it would still be theoretically important to address this issue. In particular, we adopt the strategy of non-linear regression as proposed in Papke and Wooldridge (1996) and estimate the following model:

$$E(y|x) = G(x\beta) \quad (2)$$

where $G(\cdot)$ takes the standard logistic functional form. This basic model is also estimated for institutions of different Carnegie Classifications to test whether the pattern of part-time faculty employment shifts among different types of institutions.

For the individual level analysis, because the dependent variable is binary (i.e., 1 = part-time; 0 = full-time), the standard logistic regression is used. Although the focus is still on the effect of institutional variables on part-time faculty employment, disciplinary and individual variables are added to the model in a stepwise fashion. Due to the multi-stage stratified sampling scheme, all analyses reported in the individual level analysis have been weighted by the non-response adjusted weight normalized on the final sample and clustered by institutions.

Results

Table 1 reports the share of part-time faculty, both overall and broken down by control and type of institutions. Several general observations can be made based on these descriptive statistics. First, the variation of part-time faculty's share across different types of institutions is substantial, ranging from a low of 21.27% at Doctoral/Research Institutions I to a high of 51.55% at Comprehensive Institution I. In general, doctoral/research institutions employ the fewest part-time faculty members, while comprehensive institutions have the largest share of part-timers, especially at private comprehensive institutions. Second, it appears that private institutions tend to employ more part-time faculty than their public counterparts. Overall, part-time faculty make up 42.97% (simple average, not weighted by the number of faculty) of all faculty at private institutions, while the share of part-time faculty is 31.33% at public institutions. The higher proportion of part-time faculty at private institutions not only holds on average, but is also true in general for different Carnegie types of institutions. The only exception is that public Liberal Arts Colleges I have a slightly higher proportion of part-time faculty than their private counterparts. Third, it appears that contingent employment is negatively correlated with institutional quality. It is widely conceived that Doctoral/Research Institutions I and Liberal Arts Colleges I are viewed as institutions that attract students with highest test scores and that pay their faculty the highest salaries among all types of institutions. In fact, the simple correlation between the proportion of part-time faculty and the (log) average salary for full-time faculty is -0.23 . On the other hand, institutions might be more motivated by savings in salaries realized by hiring more part-time faculty when they are already paying high salaries to their full-time faculty. Therefore, it is not immediately clear how the salary for full-time faculty would affect contingent employment once other variables are controlled.

Table 3 presents estimates of the impact of various institutional factors on the proportion of part-time faculty. The first column reports estimates from Ordinary Least Squares regression where the proportion of part-time faculty is the dependent variable. The second column reports estimates from non-linear regression of equation (2). Marginal effects evaluated at the mean of each independent variable reported in the third column are discussed here. Our regression results indicate that external constituencies exert a great influence on part-time faculty employment in higher education institutions. Private institutions tend to hire more part-time faculty than their public counterparts, even after controlling for other factors in the model. Specifically, the share of part-time faculty at private institutions is about 9 percentage points higher than at public institutions, supporting our *Hypothesis 1* that public institutions are more likely to be constrained by state regulations in all aspects of institutional operation. (It will become evident soon

in subsequent analyses that the difference in the employment level of part-time faculty between private and public institutions varies across different Carnegie categories of institutions.)

TABLE 3
Determinants of Part-time Employment at Colleges and Universities

Independent variables	OLS	QMLE	Marginal Effects
Constant	0.352 (0.252)	- 0.122 (1.129)	- 0.029 (0.271)
Main Independent Variables:			
Private institutions	0.076*** (0.019)	0.392*** (0.087)	0.090*** (0.020)
Proportion of part-time students	0.398*** (0.029)	1.781*** (0.131)	0.417*** (0.031)
Proportion of tuition and fees revenue	0.205*** (0.032)	0.841*** (0.145)	0.197*** (0.034)
Log revenue per FTE student	- 0.076*** (0.012)	- 0.445*** (0.062)	- 0.104*** (0.014)
Log average salary of full-time faculty	0.058 (0.030)	0.314* (0.135)	0.074* (0.032)
Union, full-time faculty	0.029 (0.018)	0.212* (0.085)	0.050* (0.021)
Union, part-time faculty	0.068** (0.021)	0.224* (0.097)	0.054* (0.024)
Controls:			
College located in big city/suburb	0.059*** (0.010)	0.265*** (0.044)	0.063*** (0.011)
Log number of FTE students	- 0.017** (0.006)	- 0.084** (0.030)	- 0.020** (0.007)
Proportion of Business fields	0.110** (0.035)	0.437** (0.155)	0.102** (0.036)
Proportion of Legal fields	- 0.074 (0.109)	- 0.253 (0.476)	- 0.059 (0.111)
Proportion of Engineering fields	- 0.095 (0.066)	- 0.591 (0.358)	- 0.138 (0.084)
Proportion of Health fields	- 0.070 (0.045)	- 0.547** (0.212)	- 0.128** (0.050)
Number of observations	1340	1340	1340
R-squared	0.456	0.878	0.878

Dependent variable: The proportion of part-time faculty among all faculty at an institution.

Standard errors in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Our results confirm that part-time faculty employment may reflect the strategic effort of colleges and universities to serve the needs of their students as a means of securing their revenue streams. An increase of 10 percentage points in the share of students who attend colleges and universities part-time is associated with a more than 4 percentage points increase in the share of faculty who teach part-time. This evidence strongly supports *Hypothesis 2*. Furthermore, on average, a 10 percentage points increase in the share of total revenues that come from student tuition and fees is associated with a 2 percentage points increase in the share of part-time faculty whose main responsibility is teaching. This result supports *Hypothesis 3*.

Results on the effect of faculty union on part-time employment suggest that the presence of full-time and part-time faculty bargaining units are positive correlates of the employment of part-time faculty, supporting our *Hypotheses 4 and 5*. Part-time faculty unions support the expansion of part-time academic staff, because this is consistent with their goals to expand membership base and strengthen bargaining power. The positive association between part-time faculty employment and the presence of a full-time faculty union is suggestive of two possibilities. One possibility is that the full-time faculty unions support the use of part-time faculty because allocating basic teaching responsibilities to part-time faculty allows full-time faculty to engage in more value-added activities, such as teaching advanced-level courses and developing new research. Alternatively, this finding may indicate some university administrators invite large cadres of part-time faculty to increase their managerial discretion and weaken the power of full-time faculty unions (Rhoades, 1998).

As for internal resource allocation, regression results indicate that, *ceteris paribus*, the better the financial well-being, the lower the share of part-time faculty (*Hypothesis 6*). On average, a 10 percent increase in current revenues per FTE student at an institution is associated with about a 1 percentage points reduction in the share of part-time faculty at the same institution. This finding is evident of the effect of constraints of financial resources on the employment of part-time faculty. The second factor, the log average salary of full-time faculty, is found to be positively related to the proportion of part-time faculty at an institution. To be more specific, a 10 percent increase in the average salary that an institution pays its full-time faculty is associated with about a 0.7 percentage points increase in the proportion of part-time faculty at that institution, holding all other variables in the model constant. These estimated coefficients are statistically significant at 0.001 level. *Hypothesis 7* is strongly supported.

Finally, the practice of part-time faculty employment is significantly affected by organizational characteristics such as location and size. Institutions located in large cities or suburbs tend to have a higher proportion of part-time faculty.

Specifically, institutions located in cities or suburbs with a population of 250,000 or more tend to employ 6.3 percentage points more part-time faculty than similar institutions located in less urban areas, on average. Our results also show that larger student enrolment is associated with a lower proportion of part-time faculty. It is noteworthy that these independent variables in Table 3 seem to predict the cross-group differences in contingent employment quite accurately. That is, Table 1 displays a significant difference among groups of institutions. To test whether these differences are explained by these variables included in our empirical model, we expanded our basic model by including dummy variables indicating different Carnegie categories of institutions. This expanded model did not detect any significant difference among Carnegie categories after controlling for other variables in the model.

To test whether the pattern of part-time faculty employment shifts among different types of institutions, the non-linear model is estimated for different Carnegie categories of institutions and their marginal effects are presented in Table 4. Most results generated from the pooled regression still hold for individual groups of institutions. For example, the share of part-time faculty is positively related to the average salary of full-time faculty, the location of an institution in large cities or suburbs, the share of students who attend colleges on a part-time basis, and the proportion of total institutional revenues that come from student tuition and fees. Further, the share of part-time faculty in general is negatively related to the average revenue per FTE student and the number of FTE student enrolment. Important differences do emerge from breaking out the analysis by different types of institutions. For example, the level of revenue per FTE student appears to matter more for comprehensive institutions and liberal arts colleges than for doctoral/research institutions. The estimated effect of the (log) average salary of full-time faculty on contingent employment is much higher at doctoral/research and comprehensive institutions than at liberal arts institutions. Interestingly, among doctoral/research institutions, private institutions do not seem to have more part-time faculty than public institutions once other variables are controlled. The largest gap between public and private institutions in terms of the share of part-time faculty occurs at liberal arts institutions. Finally, the mix of students in terms of their attendance status has a very strong relationship with part-time faculty employment for all institutions. And the proportion of tuition and fees revenues seems to affect contingent employment at research and doctoral institutions more than other types of institutions.

The final set of regression models use individual level data to predict one's employment status. Although our focus is on the effect of institution-level variables on part-time employment, we also control for disciplinary and individual differences. Three different model specifications are used and results are

TABLE 4
Determinants of Part-time Employment at Different Types of Colleges and Universities
(Marginal Effects)

Independent variables	Research/Doctoral	Comprehensive	Liberal Arts
Constant	-0.737*** (0.008)	-0.195 (0.482)	0.300*** (0.102)
Main Independent Variables:			
Private institutions	0.061 (0.034)	0.067 (0.040)	0.102*** (0.029)
Proportion of part-time students	0.508*** (0.069)	0.374*** (0.052)	0.480*** (0.055)
Proportion of tuition and fees revenue	0.323*** (0.071)	0.247*** (0.071)	0.160*** (0.044)
Log revenue per FTE student	-0.072** (0.025)	-0.110*** (0.031)	-0.092*** (0.022)
Log average salary of full-time faculty	0.175** (0.060)	0.103 (0.055)	0.008 (0.050)
Union, full-time faculty	0.027 (0.023)	0.020 (0.033)	0.150** (0.047)
Union, part-time faculty	0.004 (0.027)	0.089* (0.037)	-0.018 (0.055)
Controls:			
College located in big city/suburb	0.014 (0.017)	0.060*** (0.018)	0.078*** (0.017)
Log number of FTE students	0.013 (0.014)	-0.032* (0.015)	-0.011 (0.014)
Proportion of Business fields	-0.325** (0.101)	0.096 (0.063)	0.122* (0.052)
Proportion of Legal fields	0.215 (0.154)	-0.137 (0.183)	-0.222 (0.227)
Proportion of Engineering fields	-0.038 (0.074)	-0.181 (0.194)	-0.301 (0.205)
Proportion of Health fields	-0.174 (0.100)	-0.128 (0.080)	-0.148 (0.083)
Number of observations	254	578	508
R-squared	0.900	0.876	0.883

reported in Table 5. The first column, "institution model," uses the same set of institution-level variables as in Table 3 to predict individual faculty's employment status. In the second column, "discipline model," we include discipline fixed effects to the institution model. In the final "individual model," we further include demographic and doctoral degree attainment information. All estimates reported in Table 5 are the marginal effects derived from logistic regression.

TABLE 5
Determinants of Part-time Employment, Individual Level Analysis (Marginal Effects)

Independent variables	Institution	Discipline	Individual
Organizational Characteristics:			
Private institutions	0.145*** (0.023)	0.126*** (0.022)	0.105*** (0.022)
Proportion of part-time students	0.381*** (0.037)	0.354*** (0.037)	0.257*** (0.037)
Proportion of tuition and fees revenue	0.108* (0.045)	0.109* (0.044)	0.071 (0.043)
Log revenue per FTE student	-0.102*** (0.017)	-0.086*** (0.017)	-0.083*** (0.017)
Log average salary of full-time faculty	0.069 (0.046)	0.077 (0.046)	0.138** (0.047)
Union, full-time faculty	-0.014 (0.017)	-0.015 (0.017)	-0.022 (0.017)
Union, part-time faculty	0.115*** (0.021)	0.113*** (0.021)	0.111*** (0.021)
College located in big city/suburb	0.043*** (0.011)	0.044*** (0.011)	0.048*** (0.011)
Log number of FTE students	-0.008 (0.008)	-0.010 (0.008)	-0.006 (0.008)
Individual Characteristics:			
Male			-0.0560*** (0.015)
Non-white			-0.084*** (0.018)
Non U.S. citizen			-0.408*** (0.011)
Doctoral degree			-0.030*** (0.003)
Age			0.032*** (0.003)
Age squared / 100			0.105*** (0.022)
Discipline fixed effects	No	Yes	Yes
Number of observations	16010	16010	16010
Pseudo R-squared	0.075	0.098	0.233

Standard errors in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Main results from this set of regressions are summarized as follows. First, estimates for all institution-level variables are consistent with results in Table 3. The coefficient estimates in Table 5 are either similar to those in Table 3 or their con-

confidence intervals overlap with each other. For example, the “individual model” indicates faculty members at private institutions are about 7 percent more likely to be employed part time, which is similar to the result in Table 3. In addition, faculty members in institutions that have a higher proportion of part-time students and that rely more on tuition revenues are more likely to be in part-time positions. Further, faculty members in wealthy institutions are less likely to be employed part-time; however, they are more likely to be in part-time positions if their institutions pay a high salary to full-time faculty. Second, adding discipline fixed effects does not seem to change the institutional level results significantly. The estimated coefficients for those institution variables are very similar to those in the discipline model where a set of discipline dummies are controlled. Finally, part-time employment is tightly related to individual characteristics. For example, all else being equal, male, minority, and non-citizen faculty are less likely to be in part-time positions. Individuals without doctoral degrees are more likely to be hired in part-time positions. The estimated concave functional form between part-time employment and age suggests that junior faculty members and those who are near retirement, or who have already retired, are more likely to take part-time jobs.

Discussion and Conclusion

The use of part-time faculty in higher education institutions is extensive and has been increasing over last three decades. While hiring part-time faculty might have been initiated as a cost-effective way of meeting instructional needs when budgets were tight, this employment practice has become a more widespread practice of many institutions. Our analysis uses both institutional and individual level data to explain the variation of part-time faculty employment in colleges and universities in the United States. Results of this study are generally consistent with prior theoretical arguments that higher educational institutions actively design and adopt part-time work arrangements to manage their resource dependence with constituencies and to save on labour costs. We find that private institutions, on average, have higher levels of part-time faculty than their public counterparts. Furthermore, the proportion of part-time students and the share of institutional revenues derived from tuition and fees are positively associated with part-time faculty employment. Institutions that have limited resource slack and pay high salaries to their full-time faculty members tend to employ a high proportion of part-time faculty.

Although several years have passed since the data used in this study were collected, the main findings of this study will most likely hold in the current economic situation. Since the early 1980s, higher education institutions in the United States have faced challenges of growing cost and waning public sup-

port. While budgetary challenges might differ over years in degree (rather than in kind), the constant theme has been that colleges and universities have to seek cost savings on the one hand and expand their revenue sources on the other. Using part-time faculty and other types of contingent faculty has been one of the main strategies to achieve these goals. More recent national aggregate data on faculty employment released by the National Center for Educational Statistics (2011) suggest that the proportion of part-time faculty has been on an upward trend since 6-8 years ago. The proportion of part-time faculty has increased from approximately 47.0% in 2004 to 48.6% in 2007 and to 49.2% in 2009. These figures are consistent with our finding that as economic environment declines (e.g., limited resources and further dependence on tuition and fees), colleges and universities would hire more relatively inexpensive part-time faculty.

Further, although this study is based on data from the United States, implications of this study are relevant to other countries. Higher education institutions in many industrialized nations have faced similar financial challenges in recent decades as their counterparts in the United States. Slaughter and colleagues (Slaughter and Leslie, 1997; Slaughter and Rhoades, 2004) examined resource allocation in higher education in Australia, Canada, Great Britain, and the United States and found that increasingly institutions—both public and private—had to restructure and compete for critical resources by engaging in market-like behaviour due to waning public support for higher education. Reducing instructional costs and expanding revenue resources have been the common theme across higher education systems, probably increasingly so against a backdrop of global economic slowdown in recent years. Thus, we contend that what we observe here is more than just a temporary fix in tight financial times; rather, it reflects a new model of faculty employment in higher education, in the United States and elsewhere. That said, a nation's unique cultural, political, and socio-economic characteristics may also affect the size of part-time workforce. For example, Dobbie and Robinson (2008) reported that the employment level of part-time faculty was higher in Canada than in the United States and the share of private higher education institutions was much smaller in Canada. The authors proposed that such a difference might be explained by the two countries' distinct approaches to faculty union and collective bargaining. Further studies on faculty employment in other national settings would be important to understand the extent to which these results hold across higher education systems.

There are limitations in attempting to establish causal relationships among various organizational factors and part-time employment at colleges and universities. These relationships may reflect differences in historical contexts, socio-geographic locations, and institutional goals. For example, selective research institutions (e.g., Ivy League institutions) usually enjoy more financial resources

and have a lower proportion of part-time students; at the same time, they tend to have a lower proportion of part-time faculty. In some cases, part-time employment might be interpreted as the "cause" but not the "consequence." For example, it could be argued that, by using a higher proportion of part-time employees, institutions are able to pay their full-time faculty more. Consequently, it might be more appropriate to view our findings as empirical associations between various factors and part-time faculty employment at colleges and universities.

The contribution of this study to existing research on contingent work is at least two-fold. First, part-time faculty engage in core teaching activities, yet their employment is non-standard. While the traditional literature on temporary work focuses on unskilled, marginal jobs and hence explains employment practices as a result of differences between task such as the core-periphery distinction (e.g., Abraham and Taylor, 1996; Kalleberg and Marsden, 2005; Masters and Miles, 2002), this study supports a strategic view of the use of non-standard employees in key production functions (Gramm and Schnell, 2001; Broschak and Davis-Blake, 2006). Employment of part-time faculty was found to be significantly associated with a set of organizational attributes and characteristics such as institutional type, sources of revenue, and part-time student enrolment. This finding indicates that the use of part-time work represents a permanent feature of the human resources strategies rather than a short-term tactical response.

Second, this study extends the discussions of contingent employment to not-for-profit organizations. Different from business organizations which face fairly consistent pressures to lower costs in order to survive in marketplace competition, not-for-profit organizations have to cope with heterogeneous, and sometimes conflicting, demands arising from both market and regulatory institutions. Therefore, these organizations adopt traditional employment practices that are valued by external constituencies in order to receive rewards and resources; meanwhile, they strategically infuse a cohort of part-time professionals to enhance efficiency and numerical flexibility in personnel deployment. This study has shown that a reconciliation of the resource dependency and cost-effective arguments helps expand our understanding of part-time employment in the not-for-profit sector and contributes to a more complete analysis of part-time work and the changing nature of organizational employment systems.

One question this study has raised is the potential impact of part-time employment on core higher education outcomes such as faculty commitment, professional collegiality, and quality of student learning. From among 3,495 part-time faculty in our final sample of 16,006 faculty members in this study, about a third prefer full-time positions. Therefore, it is interesting to investigate the degree to which employers match employee preferences for full-time or part-time status will affect job outcomes. For example, Holtom, Lee and Tidd (2002) examined

low-skilled workers in the retail industry and found that work status congruence was positively associated with job satisfaction, commitment, and retention. A further extension is to investigate this topic among highly professional academic staff and test whether the match between work status preference and organizational staffing practices leads to favourable job performance.

Moreover, if part-time employees are as competent as full-time employees in core jobs—and are much cheaper than full-time employees—they may pose a real challenge to full-time employees, especially tenured and tenure-track faculty at colleges and universities. There has been some evidence that new faculty members at four-year colleges and universities in the United States are increasingly appointed to off-track positions (Ehrenberg and Zhang, 2005; Zhang and Liu, 2010) and that the real wage for full-time faculty has been stagnant for almost three decades (Ehrenberg, 2004). Prior studies of business organizations suggested that blending use of non-standard and regular employees leads to worsened relations between managers and employees, decreased full-time employees' loyalty, and increased turnover intent (Davis-Blake, Broschak and George, 2003). Among education institutions, there are increasing concerns that the isolation of part-time faculty from opportunities to interact with their full-time colleagues and to participate in university governance, professional development, and scholarly pursuits promotes divisions that undermine the collegial nature of the academic community. Future empirical research is encouraged to explore these attitudinal and behaviour effects of extensive use of part-time appointments on full-time faculty and university administrators.

Finally, a key public policy question is the impact of increasing part-time faculty employment on institutional performance. Most educators agree that interactions with faculty outside the classroom are one of the strongest positive factors contributing to student learning. Unfortunately, it is difficult for part-time faculty to be flexible and responsive to students' interests and needs when they are typically paid by the course and have limited access to institutional resources. Furthermore, the minimal institutional commitment and relatively high turnover that characterize appointments of part-time faculty imply that few of them are available for long-term institutional and curricular planning, for mentoring newer faculty, and for other collegial responsibilities such as involvement in faculty governance. Therefore, we recommend that further studies examine how the utilization of part-time faculty may affect short-term and long-term measures of institutional successes such as student learning outcomes, research productivity, and financial stability.

References

- Abraham, Katharine G., and Susan K. Taylor. 1996. "Firm's Use of Outside Contractors: Theory and Evidence." *Journal of Labor Economics*, 14 (3), 394-424.
- Booth, Alison L., and Margi Woods. 2008. "Back-to-Front Down Under? Part-Time/Full-Time Wage Differentials in Australia." *Industrial Relations*, 47 (1), 114-135.
- Bowen, Howard. 1980. *The Cost of Higher Education: How Much Do Colleges and Universities Spend per Semester and How Much should They Spend?* San Francisco: Jossey-Bass.
- Broschak, Joseph P., and Alison Davis-Blake. 2006. "Mixing Standard Work and Nonstandard Deals: The Consequences of Heterogeneity in Employment Relationships." *Academy of Management Journal*, 49, 371-393.
- Bureau of Labor Statistics. 2010. *Economic News Release*, January 2010; on the Internet at <http://www.bls.gov>.
- D'Aunno, Thomas, Robert I. Sutton, and Richard H. Price. 1991. "Isomorphism and External Support in Conflicting Institutional Environments: A Study of Drug Abuse Treatment Units." *Academy of Management Journal*, 34 (3), 636-661.
- Davis-Blake, Alison, Joseph P. Broschak, and Elizabeth George. 2003. "Happy Together? How Using Nonstandard Workers Affect Exit, Voice, and Loyalty among Standard Employees." *Academy of Management Journal*, 46 (4), 475-485.
- Dobbie, David, and Ian Robinson. 2008. "Reorganizing Higher Education in the United States and Canada. The Erosion of Tenure and the Unionization of Contingent Faculty." *Labor Studies Journal*, 33 (2), 117-140.
- Doucet, Christine, Michael R. Smith, and Claire Durand. 2012. "Pay Structure, Female Representation and the Gender Pay Gap among University Professors." *Relations Industrielles/Industrial Relations*, 67 (1), 51-75.
- Ehrenberg, Ronald G. 2004. "Don't Blame Faculty for High Tuition: The Annual Report on the Economic Status of the Profession, 2003-2004." *Academe*, 90 (2), 20-46.
- Ehrenberg, Ronald G., and Liang Zhang. 2005. "The Changing Nature of Faculty Employment." *Recruitment, Retention, and Retirement in Higher Education: Building and Managing the Faculty of the Future*. Robert Clark and Jennifer Ma, eds. Northampton, MA: Edward Elgar, 32-52.
- Eldridge, Derek, and Tahir M. Nisar. 2011. "Employee and Organizational Impacts of Flexitime Work Arrangements." *Relations Industrielles/Industrial Relations*, 66 (2), 213-234.
- Fulton, Richard D. 2000. "The Plight of Part-Timers in Higher Education: Some Ruminations and Suggestions." *Change*, 32 (3), 38-43.
- Gramm, Cynthia L., and John F. Schnell. 2001. "The Use of Flexible Staffing Arrangements in Core Production Jobs." *Industrial and Labor Relations Review*, 54 (2), 245-258.
- Hedrick, David W, Steve E. Henson, John M. Krieg, and Charles S. Wassell, Jr. 2011. "Is There Really a Faculty Union Salary Premium?" *Industrial and Labor Relations Review*, 64 (3), 558-575.
- Hirsch, Barry T. 2005. "Why do Part-time Workers Earn Less? The Role of Worker and Job Skills." *Industrial and Labor Relations Review*, 58 (4), 525-551.
- Holtom, Brooks C., Thomas W. Lee, and Simon T. Tidd. 2002. "The Relationship between Work Status Congruence and Work-Related Attitudes and Behaviors." *Journal of Applied Psychology*, 87, 903-915.
- Jensen, Michael C. 1989. "Eclipse of the Public Corporation." *Harvard Business Review*, 67 (5), 61-74.

- Kalleberg, Arne L. 2009. "Precarious Work, Insecure Workers: Employment Relations in Transition." *American Sociological Review*, 74, 1-22.
- Kalleberg, Arne L., and Peter V. Marsden. 2005. "Externalizing Organizational Activities: Where and How US Establishments Use Employment Intermediaries." *Socio-Economic Review*, 3 (3), 389-416.
- Kalleberg, Arne L., Jeremy Reynolds, and Peter V. Marsden. 2003. "Externalizing Employment: Flexible Staffing Arrangement in US Organizations." *Social Science Research*, 32, 525-552.
- Katchanovski, Ivan, Stanley Rothman, and Neil Nevitte. 2011. "Attitudes Towards Faculty Unions and Collective Bargaining in American and Canadian Universities." *Relations Industrielles/Industrial Relations*, 66 (3), 349-373.
- Masters, John F., and Grant Miles. 2002. "Predicting the Use of External Labor Arrangements: A Test of the Transaction Costs Perspective." *Academy of Management Journal*, 45 (2), 431-442.
- Monks, James. 2004. *The Relative Earnings of Contingent Faculty in Higher Education*. CHERI Working Paper No. 59. Ithaca, NY: Cornell Higher Education Research Institute.
- Montgomery, Mark. 1988. "On the Determinants of Employer Demand for Part-Time Workers." *Review of Economics and Statistics*, 70 (1), 112-117.
- National Center for Educational Statistics. 2007. *Digest of Education Statistics*. Washington, DC: U.S. Department of Education.
- National Center for Educational Statistics. 2011. *Digest of Education Statistics*. Washington, DC: U.S. Department of Education.
- Oliver, Christine. 1991. "Strategic Responses to Institutional Processes." *Academy of Management Review*, 16, 145-179.
- Papke, Leslie E., and Jeffrey M. Woodridge. 1996. "Econometric Methods for Fractional Response Variables with an Application to 401(K) Plan Participation Rates." *Journal of Applied Econometrics*, 11, 619-632.
- Pfeffer, Jeffrey, and Gerald R. Salancik. 1978. *The External Control of Organizations*. New York: Harper & Row.
- Polivka, Anne E. 1996. "Contingent and Alternative Work Arrangements, Defined." *Monthly Labor Review*, 119 (10), 3-9.
- Rhoades, Gary L. 1998. *Managed Professionals: Unionized Faculty and Restructuring Academic Labor*. Albany, NY: SUNY Press.
- Shaefer, H. Luke. 2009. "Part-time Workers: Some Key Differences between Primary and Secondary Earners." *Monthly Labor Review*, October, 3-15.
- Slaughter, Sheila, and Larry Leslie. 1997. *Academic Capitalism: Politics, Policies and the Entrepreneurial University*. Baltimore: Johns Hopkins University Press.
- Slaughter, Sheila, and Gary Rhoades. 2004. *Academic Capitalism and the New Economy: Markets, State and Higher Education*. Baltimore: Johns Hopkins University Press.
- Zeytinoglu, Isik. 1992. "Reasons for Hiring Part-Time Workers." *Industrial Relations*, 31 (3), 489-499.
- Zeytinoglu, Isik, Waheeda Lillevik, M. Bianca Seaton, and Josefina Moruz. 2004. "Part-time and Casual Work in Retail Trade: Stress and other Factors Affecting the Workplace." *Relations industrielles/Industrial Relations*, 59 (3), 516-544.
- Zhang, Liang, and Xiangmin Liu. 2010. "Faculty Employment at Four-Year Colleges and Universities." *Economics of Education Review*, 29 (4), 543-552.

SUMMARY

Flexibility at the Core: What Determines Employment of Part-Time Faculty in Academia?

In this study, we examine institutional predictors of part-time faculty employment in the higher education sector in the United States. We draw upon institutional and individual-level data to examine the variation in the intensity of part-time employment in faculty positions among a representative sample of higher education institutions. Institutional-level data are from Integrated Postsecondary Education Data System (IPEDS) and individual-level data are from National Study of Postsecondary Faculty (NSOPF). These data allow us to examine the impact of both economic factors and social environment on employment practices of colleges and universities. This analysis adds to the emerging literature on non-standard work arrangements in core organizational functions.

Our results suggest that the employment of part-time faculty is significantly associated with a set of organizational attributes and characteristics such as institutional type, sources of revenue, and part-time student enrolment. Private institutions, on average, have higher levels of part-time faculty than their public counterparts. The proportion of part-time students and the share of institutional revenues derived from tuition and fees are positively associated with part-time faculty employment. Faculty unions are positively related to the employment of part-time faculty. Finally, institutions that have limited resource slack and pay high salaries to their full-time faculty members tend to employ a high proportion of part-time faculty. These results support the arguments that higher educational institutions actively design and adopt contingent work arrangements to manage their resource dependence with constituencies and to reduce labour costs.

KEYWORDS: part-time employment, teaching faculty, faculty employment, higher education

RÉSUMÉ

Flexibilité au cœur du marché du travail : les déterminants de l'emploi à temps partiel chez les professeurs dans l'enseignement supérieur

Dans cette étude, nous nous penchons sur les prédicteurs institutionnels de l'emploi à temps partiel dans le secteur de l'enseignement supérieur aux États-Unis. À partir de données individuelles et institutionnelles, nous examinons la variation de l'intensité de l'emploi à temps partiel dans les postes de professeurs d'universités et de collèges parmi un échantillon représentatif d'institutions d'enseignement supérieur. Les données institutionnelles proviennent de l'IPEDS (Integrated Postsecondary Education Data System) tandis que les données individuelles proviennent du NSOPF (*National Study of Postsecondary Faculty*).

Ces données nous permettent d'étudier l'effet des facteurs économiques et de l'environnement social sur les pratiques d'emploi des universités et des collèges. Notre analyse s'inscrit dans la littérature émergente sur les arrangements au travail non traditionnels dans les principales fonctions organisationnelles.

Nos résultats suggèrent que l'emploi à temps partiel des professeurs de l'enseignement supérieur est associé de façon significative à un ensemble d'attributs et de caractéristiques, tels le type d'institution, leurs sources de revenu et le nombre d'inscriptions d'étudiants à temps partiel. Les institutions privées affichent des moyennes plus élevées de professeurs à temps partiel que les institutions publiques. La proportion d'étudiants à temps partiel, la part des revenus institutionnels en provenance des frais de scolarité et la présence de syndicats de professeurs sont positivement associées à l'emploi à temps partiel des professeurs. Enfin, les institutions qui disposent de ressources limitées et qui paient des salaires élevés à leurs professeurs à temps plein ont tendance à embaucher une proportion plus élevée de professeurs à temps partiel. Ces résultats appuient l'argument que les institutions d'enseignement supérieur conçoivent et adoptent activement des arrangements de travail précaire pour gérer leurs ressources en fonction de la clientèle et réduire leurs coûts de main-d'œuvre.

MOTS-CLÉS : emploi à temps partiel, professeur, enseignement supérieur

RESUMEN

Flexibilidad al centro del mercado laboral: los determinantes del empleo a tiempo parcial en la enseñanza superior

En este estudio, examinamos los predictores institucionales del empleo a tiempo parcial en el sector de la educación superior universitaria en los Estados Unidos. Nos basamos en datos individuales e institucionales para examinar la variación de la intensidad del empleo a tiempo parcial en los cargos docentes con una muestra representativa de las instituciones de educación superior. Los datos institucionales provienen del *Integrated Postsecondary Education Data System* (IPEDS – Sistema de datos integrados de educación postsecundaria) y los datos individuales provienen del *National Study of Postsecondary Faculty* (NSOPF). Estos datos nos permiten examinar el impacto de los factores económicos y del entorno social sobre las prácticas de empleo de los colegios y de las universidades. Este análisis se suma a la literatura emergente sobre las modalidades de trabajo no tradicionales en las principales funciones organizacionales.

Nuestros resultados sugieren que el empleo docente a tiempo parcial esta significativamente asociado con un conjunto de atributos y características organizacionales tales como el tipo de institución, las fuentes de ingreso y la cantidad de inscripciones de estudiantes a tiempo parcial. Las instituciones privadas, en promedio, tienen niveles más altos de docentes trabajando a tiempo parcial que sus contrapartes públicas. La proporción de estudiantes a tiempo parcial y la parte de ingre-

Los institucionales provenientes de las inscripciones y de los pagos aferentes están asociadas positivamente al empleo de profesores a tiempo parcial. Los sindicatos universitarios están positivamente asociados al empleo docente a tiempo parcial. Por último, las instituciones que disponen de recursos limitados y que pagan salarios elevados a sus profesores trabajando a tiempo completo tienden a emplear una proporción elevada de docentes a tiempo parcial. Estos resultados apoyan los argumentos sugiriendo que las instituciones de educación superior diseñan y adoptan activamente acuerdos laborales precarios con el fin de administrar sus recursos en función de la clientela y reducir los costos laborales.

PALABRAS CLAVES: empleo a tiempo parcial; enseñanza universitaria; empleo universitario; educación superior