

A Sectoral Comparison of Wage Levels and Wage Inequality in Human Services Industries


Nonprofit and Voluntary Sector Quarterly
40(4) 608–633

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DOI: 10.1177/0899764010365012

<http://nvsq.sagepub.com>

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Abstract

The authors explore differences among for-profit, nonprofit, and local government organizations in wage levels and inequality. Based on the intrinsic-motivation perspective and agency theory, the authors hypothesize that compared to for-profit organizations, nonprofit and local government organizations (a) are less likely to provide financial incentives, (b) pay lower or higher compensation to their employees, depending on a host of factors, and (c) have less wage inequality. The authors use wage data for five narrowly defined industries in a single state (Minnesota) where all types of organization produce the same service, employ employees with similar job titles, compete in the same labor markets, and face similar regulations. They also employ detailed data from a survey administered in two of these industries. The empirical analyses lend support for the theoretical hypotheses. However, the differences across sectors are small in magnitude.

Keywords

wages, wage inequality, nonprofit and for-profit comparison, local government, human services

Two principal questions regarding the ownership-related comparison of wages have drawn researchers' attention. Are employees in for-profit firms paid better than employees in nonprofit and local government organizations? Is the wage distribution

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more compressed in nonprofit and government organizations? The literature provides conflicting answers to both questions. Regarding wage differences across sectors, some researchers suggested that for-profit employees are better paid than their nonprofit counterparts because nonprofit employees donate part of their labor (Preston, 1989, cross-industries study), intrinsically motivated employees sort themselves into the nonprofit sector (Handy & Katz, 1998, theoretical analysis; Steinberg, 1990, review of literature), and for-profit workers receive compensating differentials for working in environments that conflict with their values or have poor working conditions (Frank, 1996, cross-occupations; Weisbrod, 1983, study of lawyers). In contrast, other researchers suggest that nonprofit organizations may pay higher wages than for-profit firms for reasons of philanthropic or charitable tendencies toward their employees (Feldstein, 1971, the hospital industry), attenuated property rights (Borjas, Frech, & Ginsburg, 1983, nursing homes; Noguchi & Shimizutani, 2007, Japanese home care; Preston, 1988, the day care industry), and the use of efficiency wages to attract better applicants and elicit employee effort to enhance quality (Davis & Gabris, 2008, local government organizations; Holtmann & Idson, 1993, nursing homes).

Some authors argue that observed pay differentials across sectors may be attributed to a variety of observable and unobservable differences in organizational characteristics, workers, and jobs rather than systematic differences between sectors (Leete, 2006, review of the literature), and some cross-industry empirical studies suggest that no economy-wide wage differential between nonprofit and for-profit organizations, or between public and private jobs, exists after heterogeneity of occupation, industry, and location is controlled (DeVaro & Brookshire, 2007; Leete, 2001; Moulton, 1990). Others have suggested that nonprofit organizations offer fringe or nonpecuniary benefits in lieu of higher wages (Mocan & Tekin, 2003, child care centers; Mosca, Musella, & Pastore, 2007, social services) or that the mix of fixed versus performance-contingent compensation differs across industries (Erus & Weisbrod, 2003). Emanuele (1997, cross-industries) finds that total compensation is lower in nonprofit organizations than in government and for-profit organizations. With few exceptions, including Mosca et al. (2007) and Emanuele (1997), the literature compares wages across two sectors only.

There are few studies comparing organization-level wage dispersion or inequality across sectors (with the exception of Leete, 2000, who examines the wage dispersion issue between nonprofit and for-profit sectors). Wage dispersion is important for understanding income inequality as well as the well-being of different groups of employees, particularly that of high-skill versus low-skill employees. For instance, Grimshaw (2000) found that in Britain the private sector had less condensed wages than the public sector and concluded that the increase in wage inequality in 1980s would have been greater than it was had more firms been private.

The literature on cross-sectoral wage dispersion suggests that nonprofit organizations maintain more wage equality than for-profit firms because nonprofit employees are less extrinsically motivated (Leete, 2000), and cross-industry data support this view (Katz & Krueger, 1991; Leete, 2000; Preston, 1989). However, cross-industry findings may reflect the concentration of nonprofit and government organizations in

industries where pay dispersion is lower for reasons not connected with the type of organization, such as the distribution of skills.¹ Studies in a single industry (hospitals, e.g.) found that managerial and highly skilled nonprofit employees earned less than their for-profit counterparts (Ballou & Weisbrod, 2003; Preyra & Pink, 2001; Roomkin & Weisbrod, 1999). If low-skill employees earn the same in the two sectors, then one can infer lesser income dispersion in nonprofit organizations. However, these studies do not investigate the wages of low-skill employees, limiting inferences regarding inequality.

The literature thus provides an inconsistent and incomplete picture of comparative wage levels and wage dispersion across the for-profit, nonprofit, and local government sectors. We compare wage differentials and wage dispersion in organizations in five narrowly defined human services industries: nursing homes, child care, group homes, vocational rehabilitation, and housing services in Minnesota. In these industries, the three sectors produce the same specific service, employ key employees with similar job titles, compete in the same labor markets, and face a similar regulatory environment. We analyze state administrative data that include establishment-level mean, median, and 20th and 80th quintile wages for all establishments for 1998-2004. We supplement this analysis with survey data from the nursing home and child care industries that contain wages and benefit provision for core employees.

We approach the analysis of wages across sectors from a theoretical perspective that integrates considerations grounded in possible differences in the motivation of employees in different types of organizations and in possible differences in the agency problems that the three types of organization face. Our key argument is that the two perspectives generally regarded as competing, are in fact complementary. We develop hypotheses that incorporate the perspectives, and find empirically that, broadly, we are better able to explain differences in wage levels and wage dispersion across organizations in the three sectors if we rely on both perspectives rather than on just one, at the exclusion of the other.

Theory and Hypotheses²

The literature comparing wages across sectors has been dominated by two alternative theories. One has emphasized differences in the motivation and objectives of employees in different sectors; for convenience (if not quite accurately), we refer to this as the *intrinsic motivation* perspective. The other has concentrated on implications of differences in ownership across sectors; this is the *agency theory* perspective. In this section, we develop the implications of each perspective for understanding differences in wage levels and wage dispersion across sectors. Although these perspectives are often considered as alternative explanations, they may in fact complement each other. It is true that some managers and employees are motivated by agreement with and active support for the objectives of the organization in which they work. However, this does not preclude the possibility that different ownership arrangements create different agency problems and that some managers and employees will take advantage of opportunities that accompany more severe agency problems.

The Intrinsic Motivation Perspective

Intrinsic motivation to carry out a particular task is said to exist when an individual acts because he or she is interested in the task itself and/or cares about its outcomes, not because of external drivers, such as financial incentives and other rewards, that are provided to stimulate the execution of the task (Deci, Koestner, & Ryan, 1999). Intrinsic motivation drives people to hobbies and to carry out certain activities in the workplace. Employers like to have employees who are intrinsically motivated to carry out the jobs assigned to them because they can be trusted to do so without monitoring or the provision of complex and expensive incentives. However, intrinsically motivated employees may command a premium on wages for their goals coinciding with what the organization seeks to achieve.

There are three broad issues that concern the elicitation of intrinsic motivation. First, the goals of intrinsically motivated employees may not overlap sufficiently with the goals of the organization for it to completely eschew reliance on extrinsic motivators. Second, if intrinsically motivated employees are paid better than other employees, then employees who are not so motivated will have incentives to present themselves as intrinsically motivated. An organization will be generally unable to distinguish the two types both at the time of hiring and afterwards, if there is a considerable component of work that is unobservable. Third, employees who are intrinsically motivated to engage in a certain activity may be concerned about the contribution of that activity to broader goals they care about. These three issues generate different methods of recruiting, motivating, and compensating employees in for-profit, nonprofit, and local government organizations as well as induce intrinsically motivated employees to behave differently when employed in these organizations.

A central theory of nonprofit organizations suggests that, when there is substantial asymmetric information between an organization and its customers, an organization's nonprofit status may serve as a signal of trustworthiness to customers that their well-being will not be compromised by the organization's pursuit of profit (Arrow, 1963; Hansmann, 1980). Similar asymmetric information may arise between employer and employee: An employer knows better how employees' diverse efforts are combined into the services of the organization, and employees know better than the employer what kind of effort they engage in. Like some customers, employees with high levels of intrinsic motivation may use nonprofit and local government ownership as a signal of trustworthiness of the organization, assuring them that they can engage their high effort in confidence that the organization will not exploit it for proprietary gain (Rose-Ackerman, 1996). Similarly, if an organization wants to pursue objectives such as caring and loving treatment of vulnerable customers (e.g., residents in a nursing home or young children in child care), an aspect of treatment that is not observable by others and cannot be reported reliably by customers,³ it will prefer, *ceteris paribus*, to engage intrinsically motivated employees who care about these vulnerable customers.

Intrinsically motivated employees will therefore prefer to work in nonprofit and local government organizations where they can engage in activities that they and the

organization value and where they are less likely to be required to pursue activities that are profit oriented while sacrificing activities they support. Nonprofit and local government employees may be willing to work for lower wages than those prevailing in their industry because they receive intrinsic rewards from the work they do and the advancement of a mission they support. In addition, they may also be willing to actively donate part of their income to support the organization's mission by accepting lower wages (Leete, 2006; Preston, 1989). Both factors imply that intrinsically motivated employees will be more likely to work in nonprofit and local government organizations than in for-profit firms (Leete, 2000, and Mirvis & Hackett, 1983, support this claim empirically). Should intrinsically motivated employees work in for-profit firms where the mix of duties is not what they prefer (e.g., provide less care than they believe optimal to vulnerable adults or children), then they may need to be paid compensating differentials in form of higher wages because of the disutility caused by the divergence of values between them and the organization (Frank, 1996). However, nonprofit organizations may offer lower wages than the wages paid by for-profit firms to sort out intrinsically motivated employees (Handy & Katz, 1998; Hansmann, 1980; Steinberg, 1990). Hence the argument thus far implies that for-profit firms will pay their employees more than their nonprofit and local government counterparts.

Intrinsic motivation may be stronger among professional and highly skilled employees than among other employees because they have invested more human capital into their choice of occupation, a choice driven in part by the desire to impact the delivery of services and the populations they care about. Hence, if the wages of these employees in nonprofit and local government organizations are lower than the wages of their counterparts in for-profit firms, but the wages of lower-skilled employees vary less across different types of organization, then the wage gap (inequality) between higher and lower paid employees will be narrower in nonprofit and local government organizations than in for-profit firms. Furthermore, if substantial wage inequality is perceived as unjust, then it may diminish the work motivation of intrinsically motivated employees (Cowherd & Levine, 1992; Frey, 1993), and because nonprofit and local government organizations rely on such employees more than their for-profit counterparts, this will be an added reason for them to moderate the wage inequality in the organization. Intrinsically motivated employees may also be more likely than other employees to view compressed wages as fair (Leete, 2000). In conclusion, the arguments connected to intrinsic motivation lead to the expectation of a more compressed wage structure in nonprofit and local government organizations than in for-profit firms.

The Agency Theory Perspective

An agency relationship exists between a person or a group—principal—who has the right to set the terms of the relationship and another person or group—agent—employed to carry out the principal's wishes. A typical agency relationship exists between employer, the principal, and employees, the agents. The agency relationship is characterized by agency problems: Agents do not carry out automatically and

perfectly the wishes of their principals, even when they agreed to do so because the objectives of principals and agents are not identical and because agents know things about their work and can act without the principal fully knowing those things or fully observing agents' actions (this is referred to as *asymmetric information* between the principal and agents). Principals institute organizational practices aimed at reducing the severity of agency problems; an important practice consists of meting out various forms of extrinsic incentives aimed at aligning the objectives of agents with those of the principal.

The ultimate legal decision makers (the principals) in most nonprofit organizations are a board of directors (often composed of volunteers); in local government-owned organizations they are city or county officials (who act on behalf of the citizenry in their jurisdiction), whereas in for-profit firms they are the owners. Unlike for-profit boards, nonprofit boards are not rewarded financially for the achievements of the organizations they control, which could reduce their incentive to monitor the organization's operation. Local government boards are usually appointed by a higher level government authority who may hold the board or management accountable, although this authority suffers from the same problem, one level removed; the citizenry has no ability to hold boards accountable, except through the threat of not voting for elected officials, which in a small locale with few government agencies may be an effective tool.

Given the differences in the locus of ultimate control, nonprofit and local government organizations are likely to suffer from more difficult agency problems than for-profit firms for two major reasons (Ben-Ner, 2006; Steinberg, 2008). First, because exercise of control over these organizations is not linked to claims on profits or equity, principals may be less motivated in monitoring and demanding performance, unless their dedication to the mission of the organization compensates for their lack of financial incentives. Second, nonprofit and local government objectives are multifaceted, complex, difficult to articulate, and hard to quantify, as well as partly unobservable, as compared to the profit goal.⁴ Accountability for the attainment of multiple, less measurable and partly unobservable goals is hard to establish. This leaves room for management and key employees in these organizations to attain greater control over their organizations and run them according to their own interests (Glaeser, 2003; Pauly & Redisch, 1973), which could include increasing their own wages (Hansmann, 1980).

Due to agency problems, compensation in nonprofit and local government organizations is predicted to be higher than in for-profit firms, assuming some nonprofit and local government managers take advantage of their enhanced discretion. However, the provision of incentives shifts some risk to employees, and if they are risk averse, they will need to be compensated for the portion of the risk they cannot control, suggesting that on this consideration, *ceteris paribus*, for-profit firms will pay higher wages than their nonprofit and government counterparts. However, this is not likely to be an important factor because individual incentive pay is aimed to control employee behavior in situations where employees have better information than their supervisors, so the risk is not external to employees (Prendergast, 2002).

The absence of well-defined organizational goals prevents the development of incentives that link employee behavior and outcomes to these goals in nonprofit and local government organizations (Erus & Weisbrod, 2003; Weisbrod, 1988), unlike the profit-linked incentives in for-profit firms, starting with top management and cascading throughout the rest of the organization. For-profit firms are therefore better able to derive measurable employee goals and reward financially their attainment. Financial incentives, such as pay for performance, merit pay, piece rates, and tournaments, result in wage inequality because they imply that similar employees are paid differently. An organization's use of piece rates or merit-based pay will therefore increase within-occupation (horizontal) wage inequality. However, tournaments, where higher level positions are paid more in an effort to motivate lower level employees to compete for them (Lazear & Rosen, 1981), will result in across-occupation (vertical) wage inequality. Nonprofit and local government organizations will rely less on financial incentives linked to performance. To maintain the loyalty of employees and to motivate them, they will need to provide other forms of incentives, such as above-market compensation used in exchange for employees' increased work effort (Akerlof, 1980; Shapiro & Stiglitz, 1984; Weiss, 1991). These incentives, called *efficiency wages*, are usually proportional to wages so that they do not affect wage inequality. Thus, the prediction based on agency theory is that wage inequality, both horizontal and vertical, will be greater in for-profit firms than in nonprofit and local government organizations.

Most of the theoretical and empirical literature contrasts nonprofit with for-profit organizations. We added local government into the analysis and argued that, with minor exceptions, nonprofit and local government organizations will be quite similar with respect to the issues examined in this article. In small locales, local government organizations are formed for reasons similar to the formation of nonprofit organizations in other, perhaps more heterogeneous, communities. Compared to their typical nonprofit counterparts, local government organizations operating in small communities may have slightly lesser agency problems due to the election process, which may hold politicians accountable for the activities of agencies they oversee. Similarly, nonprofit organizations where donors and customers are active on the board of directors or exercise pressure on it may enjoy less severe agency problems than typical local government organizations. Local government organizations are bound more by bureaucratic rules, civil service laws, and equality than nonprofit organizations, hence their compensation practices may be leading to less wage dispersion.

Comparative Wage Levels and Inequality: Hypotheses

Table 1 summarizes the separate predictions of the two perspectives. We now develop a series of hypotheses integrating the two perspectives. Our objective is not to test the validity of one perspective against the other, as in our view the two perspectives are complementary rather than competing. We start with a hypothesis concerning the use of financial incentives across sectors, followed by a hypothesis regarding

Table 1. Comparison of Wage Levels and Inequality in For-Profit (FP), Nonprofit (NP), and Local Government (LG) Organizations: Implications of the Intrinsic Motivation Perspective and Agency Theory

Theory	Dimension of theory	Wages of NP and LG workers relative to FP counterparts (explanation in parentheses)	Within-firm, across-occupation wage inequality in NP and LG organizations relative to FP counterparts (explanation in parentheses)
Intrinsic motivation perspective	NP and LG workers are more intrinsically motivated	– (NP and LG employees donate labor)	– (Higher level employees are more likely to donate labor)
	FP employees are more likely to be asked to perform work that conflicts with their values	– (FP employees are paid a compensating differential)	– (Higher level employees are more likely to need a compensating differential)
	NP and LG employees are more inequality averse	? (Higher skilled NP and LG employees will be paid less than FP employees, but the reverse is true for lower skilled employees)	– (Intrinsically motivated workers in NP and LG see compressed wages as more fair)
	Concern for customer well-being leads to the careful selection of intrinsically motivated workers	+ (NP and LG offer higher salaries to have greater choice among applicants)	+ (The selection of managerial and professional staff is relatively more important for quality of care than the selection of lower level staff)
	Less reliance on incentives in NP and LG because they crowd out intrinsic motivation	– (FP have to pay higher wages to compensate risk-averse employees for greater use of variable pay)	– (NP and LG use fewer tournament wage schemes)
	NP and LG managers care more about employee well-being than do FP managers	+ (NP and LG will pay higher compensation)	– (NP and LG believe it is more ethical to raise wages of workers close to the poverty line than the wages of better-off employees)

(continued)

Table 1. (continued)

Theory	Dimension of theory	Wages of NP and LG workers relative to FP counterparts (explanation in parentheses)	Within-firm, across-occupation wage inequality in NP and LG organizations relative to FP counterparts (explanation in parentheses)
Agency theory	Principals are less motivated to monitor performance in NP and LG than in FP	+ (NP and LG managers have more decision-making latitude that can be used to enhance their own compensation and that of their subordinates)	+ (the NP and LG staff with the most decision-making influence are at the higher levels of the organization and may increase their own compensation more than the compensation of lower level employees)
	Objectives in NP and LG are more complex and harder to quantify than objectives in FP	+ (The performance of NP and LG is more difficult to monitor, so efficiency wages may be used)	? (Depends on how much above-market wages each employee group is paid)
	Less reliance on incentives in NP and LG due to less measurable goals	- (FP have to pay higher wages to compensate risk averse agents for greater use of variable pay)	- (NP and LG use fewer tournament wage schemes)
	FP emphasize observable quality, forcing employees to allocate time and energy in a way they may not prefer	- (FP employees are paid a compensating differential)	- (Higher level FP employees are more likely to need a compensating differential)

Note: “-” and “+” indicate lower and higher levels, respectively, in NP and LG organizations as compared to FP firms; ? denotes indeterminate comparison.

Source: Adapted from Ben-Ner, Ren, and Paulson (2009).

comparative compensation levels, and conclude with a hypothesis comparing vertical wage inequality.

Financial incentives are used to alleviate agency problems, but to be effective, measurable goals that are linked to incentives must be available, and employees must respond to them. We noted above that nonprofit and government organizations are

less able to rely on performance-based incentives because of their complex goals. Furthermore, some nonprofit and government employees may be motivated partly by intrinsic motivation, so they will be less responsive to extrinsic rewards. Such rewards could even be counterproductive because incentive schemes can reduce individuals' intrinsic motivation based on dispositional states, such as self-perceptions of value, good will, trust, and reciprocity (Frey, 1998; Prendergast, 1999). Indeed, Roomkin and Weisbrod (1999) and Erus and Weisbrod (2003) found that for-profit hospitals use bonuses and performance-contingent pay for executives to a greater extent than nonprofit hospitals, and cross-industry studies have shown that for-profit firms use more performance incentives than their nonprofit counterparts (DeVaro & Brookshire, 2007; Kalleberg, Marsden, Reynolds, & Knoke, 2006). Weisbrod and colleagues argued that sectoral differences in the use of bonuses will be apparent only at the executive level; however, we suggest that differences by sector in incentive use extends to other employees as well.

Hypothesis 1: For-profit firms are more likely to provide financial incentives to their employees than their nonprofit and local government counterparts.

We have seen earlier that the predictions of the intrinsic motivation perspective and agency theory are conflicting with respect to wage levels. However, a broader consideration of the types of employees nonprofit and local government organizations need to hire may generate consistent predictions from both perspectives. For reasons grounded in their basic mission, nonprofit and local government organizations often pursue a strategy of higher quality service delivery, given budgetary constraints and competing goals such as increased access for vulnerable populations, than for-profit firms in the same industries, who focus more on cost containment and profit maximization. These strategic differences are most apparent where customers are vulnerable individuals and they and their sponsors or guardians are informationally weak compared to providers (Ben-Ner & Ren, 2009). If nonprofit and local government organizations offered low wages in the expectation that they will attract intrinsically motivated employees, they may attract instead low-quality employees who cannot contribute appropriately toward organizational goals and may miss intrinsically motivated employees with high budgetary constraints. Highly prized intrinsically motivated employees (especially, but not only, those who are also highly competent) may command higher compensation than that what is needed to attract suitable employees in for-profit firms. To mitigate adverse selection in the search for intrinsically motivated employees, nonprofit and local government organizations need to rely on special recruiting measures; indeed, Ben-Ner and Ren (2009) find that nonprofit organizations recruit new employees more than for-profit firms through current employees' social networks, presumably because screening for motivation is done more reliably in that way than through standard employment tests (the tendency to hire through social networks is weaker in local government organizations than in nonprofit ones, probably because of more formal hiring rules practiced by government). However, social

networks are an imperfect screen for motivation, and intrinsic motivation may be more important than competence to nonprofit and local government organizations as compared to their for-profit counterparts and thus may offer a lower wage.

The more severe the agency problem, the greater the extent of asymmetric information between the principal and agents in the organization. Asymmetric information is especially prevalent in caregiving industries, which produce relational goods, where frontline employees have specific and direct knowledge of the conditions and care of their customers and where customers are limited in their information and ability to demand care and complain about inadequate care.⁵ In these circumstances, the importance of selecting intrinsically motivated employees who will not abuse their informational advantage is especially great, particularly in situations where unobservable dimensions of service are deemed important by the organization. Because nonprofit and local government organizations have a stronger need than their for-profit counterparts to recruit intrinsically motivated and highly competent employees, and they need to motivate them by relying less on performance-related incentives, we suggest that they will employ efficiency wages.

Because compensation is determined primarily on competitive labor markets, sectoral differentials should be generally small or nonexistent (Ruhm & Borkoski, 2003). Given the multitude of factors that have conflicting effects on compensation levels (as the mixed signs in the third column of Table 1 suggest), we propose a theoretically indeterminate hypothesis.

Hypothesis 2: Nonprofit and local government organizations may offer lower or higher total compensation to their employees than their for-profit counterparts. The direction of the difference depends on the effectiveness of screening for intrinsic motivation, the value of intrinsic motivation relative to other employee characteristics in different types of organization, the severity of agency problems in different types of organization, and other unobservable factors.

With regard to wage inequality, both agency and intrinsic motivation considerations suggest that for-profit firms are more likely to use financial incentives than their nonprofit or local government counterparts; such incentives generate inequality. However, as noted earlier, agency considerations also suggest that nonprofit and local government managers have more decision-making power, which they can use to increase their own compensation relative to that of lower level employees unless they are dedicated to their organizations' goals and choose not to exploit this power, wish to create a culture of fairness so as not to interfere with the intrinsic motivation of lower level staff, or increase the compensation of lower level staff out of concern for their well-being. Because existing evidence suggests that nonprofit executives tend to be intrinsically motivated (e.g., Handy et al., 2007; Mirvis & Hackett, 1983) and paid less than their for-profit counterparts in some industries (e.g., Ballou & Weisbrod, 2003; Preyra & Pink, 2001; Roomkin & Weisbrod, 1999), we are leaning toward the

view that the majority of nonprofit managers are not using their discretion to raise their own compensation relative to that of lower level employees. Local government executives may not raise their compensation relative to that of their staff for reasons similar to those in nonprofit organizations and also because of concern about public disapproval of high compensation for government executives.

Hypothesis 3: Within-organization, across-occupation wage inequality in nonprofit and local government organizations is lower than that in their for-profit counterparts.

Data and Variables

Data

We use data on thousands of nonprofit, local government and for-profit establishments that operate side by side providing narrowly defined services in Minnesota to compare pay levels and inequality and to test the hypotheses outlined above. We employ two datasets. The first dataset is from the Minnesota Department of Employment and Economic Development (DEED) unemployment insurance files and contains quarterly employment and wage data, from 1998 to 2004, for five human services industries: nursing homes, child care centers, group homes for individuals with disabilities, vocational rehabilitation facilities, and housing services. In these industries, organizations from the three sectors produce similar services and sell them on the same markets, thus competing with each other for the same customers. Housing services are an exception because eligibility criteria are generally applied for access to nonprofit and local government establishments. Ownership status is identified as for-profit, nonprofit, federal government, state government, or local government; we exclude the small number of federal and state government organizations, as they may differ systematically from local government institutions.⁶ We concentrate on establishments with more than 10 employees.⁷ For the period 1998-2004, we have 9,556 quarterly observations for nursing homes, 9,174 for child care centers, 9,442 for group homes, 4,776 for vocational rehabilitation facilities, and 9,784 for housing service agencies.⁸

The second dataset is drawn from surveys we conducted in nursing homes and child care centers.⁹ The surveys addressed a wide range of organizational issues; the respondents were the top executives or top human resources managers. In the present study, we use information about incentive pay schemes and the mean wages and provision of fringe benefits for core employees. The nursing home survey was mailed to the 409 nursing homes identified in the federal regulatory of the Online Survey, Certification and Reporting database in late 2005, with follow-up surveys mailed to nonrespondents twice in the spring of 2006. We received 121 responses (some 5% of the 409 homes were not in business by the time of our survey). The child care center survey was administered in the spring of 2006 to 1967 centers with one follow-up mailing. We received 504 responses. The response rates are about 30% and 26%, respectively. The response rates compare favorably to similar organizational surveys

(e.g., Freeman & Kleiner, 2000; Sesil, 2006), and statistical tests we performed suggest that selection on observables is not a problem.¹⁰

Variables

The key variables from the DEED dataset include (a) the mean wage for 1998-2004 in each establishment (computed by dividing the total quarterly wages by the total number of hours worked during the quarter by all employees in the establishment), as a measure of the mean wage level (including incentive pay such as commission and fringe benefits such as sick and vacation pay but excluding nontaxable fringe benefits such as health care premia and pension plan contributions paid by the employer); (b) the median, the 80th percentile and the 20th percentile wages in each establishment as a measure of wages of different types of employees; (c) the ratio of wages at the 80th to 20th percentile as a measure of the within-organization vertical wage inequality; and (d) a variable identifying whether an establishment is operated independently or is part of a chain. The quarterly county mean weekly wage and unemployment rate (from DEED) and a quarterly time trend are also available. All the wage variables are in 2006 dollars (using an annual consumption price index from the U.S. Bureau of Labor Statistics). The dataset does not include information about occupational characteristics or the level of human capital in each establishment. Recognizing the importance of this issue (Moulton, 1990), we control for the county average wage that captures the general human capital level in the county where the establishment is located and supplement our analysis with survey data that contain wages by specific job titles.

The key variables derived from the survey were obtained separately for each core employee group (described below). In nursing homes, the core employees are registered nurses, licensed practical nurses, and certified nursing assistants, and in child care centers the core employees are teachers, assistant teachers, and aides. The variables concern the adoption of a merit-based pay scheme as a proxy for incentive pay, the number of fringe benefits provided to each core employee group as a proxy of their monetary value, the hourly wage for each core employee group, and the ratio of wages between the higher paid and lower paid groups.

When employees' tasks are interdependent, pay for performance can undermine cooperation because of difficulties in assessing who is responsible for the performance (Alchian & Demsetz, 1972; Shaw, Gupta, & Delery, 2002). Because the tasks of many human services employees are interdependent, for-profit social service organizations may not use it either (none of the respondents to our surveys use bonus payments). Instead of direct pay-for-performance incentive schemes, broader measures that link pay to performance, such as merit-based pay raises, are likely to be used as the form of incentives and may be more common in for-profit firms; however, nonprofit organizations may also use merit pay as a reward for performance broadly viewed. The merit-based pay measure was derived from a survey question asking to list three key elements that determine the pay raise for employees; if merit is indicated as one of the top two determinants, the variable is coded 1, otherwise 0.

An important difference in compensation may arise from differences in the generosity of health care and pension fringe benefits afforded to employees. The DEED wage variable does not include the value of these (nontaxable) fringe benefits, which may be regarded as a key component of an efficiency wage compensation strategy (Ito & Domian, 1987). We do not have information about the monetary value of fringe benefits, but from the survey we have a count of the key benefits (pension plan, health insurance, paid vacation leave, and paid sick leave) that are provided to each core employee group, which we believe correlate with their monetary value. Therefore, we use this variable as the proxy for fringe benefits (ranging from 0 to 4). We also use a count variable of only the health care and pension benefits.

Within-organization, across-occupation wage inequality is measured by the ratios of mean wages of three core employee groups in nursing homes and in child care centers.

Results

Table 2 compares mean, median, 20th and 80th percentile wages, and the ratio of 80th to 20th percentile wages across the three sectors; the results of the comparisons of means of nonprofit versus for-profit and local government versus for-profit based on *t* tests are indicated by asterisks in the nonprofit and local government columns.¹¹ The first row compares mean hourly wages. Nonprofit organizations pay more than for-profit firms in nursing homes and child care centers and less in group homes; in vocational rehabilitation and housing services, although nonprofits pay less, the difference is not statistically significant. Local government establishments pay less than for-profit ones in nursing homes but more in child care and group homes; there is no significant difference in vocational rehabilitation and housing services. Importantly, the comparisons of median wage, 80th percentile wage, and 20th percentile wage exhibit similar patterns. Where nonprofit employees earn more than for-profit employees (nursing homes and child care), the wages of the highly paid nonprofit employees exceed the wages of their highly paid for-profit counterparts by a higher percentage than the wages of low-paid nonprofit employees exceed the wages of low-paid for-profit employees. The opposite occurs in the industries where nonprofit employees earn less than for-profit employees. The ratio of the 80th to 20th percentile wages suggests that wage inequality is higher in nonprofit organizations than for-profit firms in nursing homes (small difference and not statistically significant) and child care centers but is substantially lower in nonprofit organizations than in their for-profit counterparts in group homes, vocational rehabilitation centers, and housing services. Local government homes show the least wage inequality in all but the child care industry.

Table 2 does not take into consideration the differences in wages that might be associated with local labor market conditions, such as average county wage, county unemployment rate, and an establishment's association with a chain. In Table 3, we estimate the determinants of mean wages, median wages, and the ratio of 80th to 20th percentile wages using random-effects GLS regressions in all five industries because

Table 2. Comparison of Real Hourly Wage (in 2006 Dollars) and Wage Inequality Across Sectors: Five Human Services Industries, Quarterly Data, 1998-2004 (Minnesota Unemployment Insurance Files)

	Nursing homes			Child care centers			Group homes			Vocational rehabilitation centers			Housing services		
	NP	LG	FP	NP	LG	FP	NP	LG	FP	NP	LG	FP	NP	LG	FP
Mean hourly wage	20.65*** (42.39)	15.06*** (8.14)	18.16 (29.61)	16.40** (32.76)	20.87*** (8.25)	14.37 (30.35)	14.17*** (11.51)	36.98* (84.80)	19.01 (46.92)	19.89 (48.66)	22.43 (4.57)	22.13 (25.11)	21.77 (35.06)	27.43 (59.16)	23.69 (48.51)
Median hourly wage	17.57*** (35.97)	12.61*** (7.56)	15.39 (26.55)	14.36* (26.82)	19.64*** (8.12)	12.76 (26.14)	12.43*** (10.59)	32.70* (74.87)	16.04 (37.80)	18.30 (49.59)	20.79* (4.59)	18.80 (22.10)	17.16** (28.77)	26.09* (58.23)	20.10 (47.51)
Hourly wage at 20th percentile	12.54*** (15.78)	10.69* (5.75)	11.32 (11.40)	10.86*** (15.00)	11.92*** (3.37)	9.58 (13.60)	10.45*** (3.59)	21.43** (36.04)	11.91 (17.87)	13.02 (26.86)	16.90*** (3.54)	13.89 (10.27)	12.21 (10.23)	19.60*** (39.24)	12.73 (24.15)
Hourly wage at 80th percentile	29.01*** (67.24)	17.44*** (11.40)	23.93 (47.44)	20.31* (49.75)	26.89*** (11.71)	17.42 (45.00)	16.68*** (18.55)	45.04 (113.17)	23.97 (63.88)	26.80 (80.68)	25.94 (6.33)	29.01 (45.02)	34.50*** (77.08)	32.50*** (70.26)	46.62 (121.91)
Ratio of 80th to 20th percentile wage	2.06 (2.78)	1.63*** (0.42)	2.02 (2.46)	1.70** (2.16)	2.22*** (0.67)	1.58 (0.73)	1.57*** (1.10)	1.47*** (0.46)	1.70 (1.51)	1.90* (2.52)	1.54*** (0.20)	2.06 (1.78)	2.60*** (4.86)	1.63*** (0.72)	3.51 (6.85)
Number of observations	4,381	759	2,156	1,284	118	4,749	2,176	68	3,298	2,794	54	516	848	299	5049

Note: Standard deviations are in parentheses. *, **, and *** attached to the NP and LG measures indicate significance of the t test at the two-tailed .10, .05, and .01 levels, respectively, for the comparison between nonprofit (NP) and for-profit (FP), and local government (LG) and for-profit organizations.

Table 3. Determination of Real Hourly Wage (2006 Dollars) and Wage Inequality: Random-Effects GLS Estimation—Five Human Services Industries, Quarterly Data, 1998-2004 (Minnesota Unemployment Insurance Files)

	Log of real mean hourly wage	Log of real median hourly wage	Ratio of 80th to 20th percentile wage
Nonprofit dummy	-0.014 (0.022)	-0.001 (0.022)	-0.255** (0.119)
Local government dummy	0.067 (0.045)	0.097** (0.045)	-0.492* (0.255)
Chain dummy	-0.107*** (0.022)	-0.056*** (0.021)	0.044 (0.111)
Time trend (quarter)	-0.003** (0.001)	-0.003** (0.001)	-0.022** (0.009)
Time trend squared (quarter)	0.00009** (0.00004)	0.00009** (0.00004)	0.0006* (0.0003)
Log of county unemployment rate (quarter)	-0.059 (0.036)	-0.057 (0.035)	-0.037 (0.190)
Log of county mean weekly wage (quarter)	0.287*** (0.030)	0.291*** (0.030)	0.242 (0.158)
Group home dummy	-0.128*** (0.028)	-0.072*** (0.027)	-1.086*** (0.150)
Nursing home dummy	-0.029 (0.030)	0.003 (0.029)	-0.797*** (0.162)
Child care center dummy	-0.374*** (0.028)	-0.277*** (0.027)	-1.243*** (0.146)
Vocational rehabilitation dummy	-0.006 (0.039)	0.055 (0.038)	-0.905*** (0.206)
Constant	1.015*** (0.226)	0.762*** (0.220)	1.513 (1.178)
Number of observations	19,884	19,884	19,884
Wald χ^2	373.14	296.40	124.11
Probability > χ^2	.000	.000	.000
Overall R^2	.12	.09	.04

Note: Standard errors are in parentheses. For-profit is the excluded ownership type; housing services is the excluded industry reference group. *, **, and *** indicate significance at the two-tailed .10, .05, and .01 levels, respectively.

we are interested in one important fixed effect: organization ownership. We also control for two other fixed effects, chain status and industry, and include a time trend, the county quarterly unemployment rate and county quarterly mean weekly wages. The results show no difference in mean or median hourly wages between nonprofit and for-profit organizations. Local government organizations pay higher mean and median wages than for-profit firms (but only the latter difference is significant). Wage inequality, as measured by the ratio of 80th to 20th percentile wages, is lower in both nonprofit and local government organizations than for-profit firms ($p < .05$ and $p < .10$, respectively). The estimates on the control variables are probably not

surprising: Chains pay less than independently operated establishments, real wages have declined over time, wages in the industries included in this study move in the same direction as the average wage in the county in which they operate (and are negatively correlated with the unemployment rate, although not significantly), and there are differences in the wage levels across the industries.

The analyses reported above were based on DEED data for all establishments with more than 10 employees in the five industries. It is important to note that these data do not contain human capital information, which could result in a spurious null effect if nonprofit or local government employees are being paid similarly to their for-profit counterparts despite higher human capital (or vice versa). However, Paulson (2009) controls for observable human capital (education, tenure, and experience) in an employee-level analysis of wages in nursing homes and finds a null result as well.

In Table 4, we turn to our survey data for nursing homes and child care centers, where our results control in part for human capital by comparing employees within a job category. The table compares the use of merit pay plans, the number of fringe benefits, and mean wages for each of the three core employee groups in the three types of organization. First, merit-based pay is used more broadly in the for-profit sector than in the other two sectors across all job titles in both industries (with the exception of certified nursing assistants in local government nursing homes, not a statistically significant difference). The differences are statistically significant in the child care centers but not in nursing homes. Second, nonprofit and local government organizations offer significantly more fringe benefits than for-profit firms in nursing homes, but the differences in child care are not consistent and insignificant. Similar differences hold if we focus only on health care and pension fringe benefits (not reported in the table). Third, there are no economically or statistically significant differences in wages within job titles between nonprofit and for-profit organizations. Local government employees in child care earn more than their nonprofit and for-profit counterparts. Assuming that the monetary value of fringe benefits increases in their number, we conclude that nonprofit and local government employees receive higher compensation than their for-profit counterparts in each of the three core employee groups.

Table 5 compares wage inequality across the three types of organization using the survey data. In nursing homes, the ratios of the wages of the two higher paid nursing staff groups (the registered nurses and the licensed practical nurses) to the wages of the lowest paid nursing staff group (the certified nursing assistants) are slightly smaller in nonprofit and local government homes than in for-profit homes. Differences in these ratios in child care centers are very small, not exhibiting a clear pattern, and statistically insignificant. The third comparison is between the two higher paid groups in the two industries, which are statistically insignificant.

Discussion and Conclusions

Our key findings are as follows: (a) Differences in mean wage levels across for-profit firms, nonprofit organizations, and local government organizations are not significant when labor market and organizational characteristics are controlled (Table 3);

Table 4. Comparison of Merit-Based Pay, Fringe Benefits and Hourly Wages across Sectors: Nursing Homes and Child Care Centers, 2005-2006 (Minnesota Survey Data)

	Registered nurses			Licensed practical nurses			Nursing assistants		
	NP	LG	FP	NP	LG	FP	NP	LG	FP
Nursing homes									
Percentage of organizations using merit-based pay	24.32% n = 74	30% n = 20	37.04% n = 27	20.27% n = 74	25.00% n = 20	29.63% n = 27	24.32% n = 74	35.00% n = 20	33.33% n = 27
Number of fringe benefits (0-4)	3.73*** (0.58) n = 74	3.95*** (0.22) n = 20	2.64 (1.32) n = 25	3.68*** (0.66) n = 74	3.95*** (0.22) n = 20	2.76 (1.27) n = 25	3.66*** (0.67) n = 74	3.95*** (0.23) n = 19	2.72 (1.21) n = 25
Hourly wages	22.11 (3.26) n = 69	24.07 (4.32) n = 19	22.20 (3.88) n = 23	16.08 (2.04) n = 70	16.27 (1.95) n = 19	16.34 (2.34) n = 24	11.11 (1.46) n = 70	11.60* (1.48) n = 19	10.75 (1.49) n = 25
	Teachers			Assistant teachers			Aides		
Child care centers									
Percentage of organizations using merit-based pay	30.39%* n = 204	13.64%*** n = 22	38.85% n = 278	21.57%* n = 204	4.55%*** n = 22	29.14% n = 278	27.94%*** n = 204	4.55%*** n = 22	42.45% n = 278
Number of fringe benefits (0-4)	1.71 (1.61) n = 204	1.86 (1.91) n = 22	1.60 (1.60) n = 278	1.07 (1.47) n = 204	1.09 (1.82) n = 22	1.18 (1.52) n = 278	0.81 (1.33) n = 204	0.45 (1.10) n = 22	0.95 (1.43) n = 278
Hourly wages	12.85 (3.56) n = 184	13.76 (3.51) n = 16	12.52 (3.75) n = 254	9.71 (2.17) n = 129	11.30*** (1.68) n = 12	9.88 (2.28) n = 195	8.40 (1.72) n = 133	9.41*** (1.37) n = 10	8.14 (1.84) n = 206

Note: Standard deviations are in parentheses. *, **, and *** attached to the NP and LG measures indicate significance of the t test at the two-tailed .10, .05, and .01 levels, respectively, for the comparison between nonprofit (NP) and for-profit (FP), and local government (LG) and for-profit organizations.

Table 5. Comparison of the Mean of Within-Organization, Across-Occupation Wage Inequality: Nursing Homes and Child Care Centers, 2005-2006 (Minnesota Survey Data)

	Nursing homes			Child care centers		
	Registered nurses over certified nursing assistants	Licensed practical nurses over certified nursing assistants	Registered nurses over licensed practical nurses	Teachers over aides	Assistant teachers over aides	Teachers over assistant teachers
NP	2.00 (0.26) <i>n</i> = 69	1.45* (0.14) <i>n</i> = 70	1.38 (0.16) <i>n</i> = 69	1.53 (0.37) <i>n</i> = 129	1.18 (0.17) <i>n</i> = 94	1.32*** (0.24) <i>n</i> = 126
LG	2.07 (0.27) <i>n</i> = 19	1.41** (0.13) <i>n</i> = 19	1.48 (0.16) <i>n</i> = 19	1.41 (0.19) <i>n</i> = 9	1.22 (0.08) <i>n</i> = 6	1.35 (0.24) <i>n</i> = 9
FP	2.09 (0.57) <i>n</i> = 23	1.52 (0.15) <i>n</i> = 24	1.37 (0.25) <i>n</i> = 23	1.51 (0.36) <i>n</i> = 202	1.21 (0.14) <i>n</i> = 160	1.26 (0.23) <i>n</i> = 191

Note: Standard deviations are in parentheses. *, **, and *** attached to the NP and LG measures indicate significance of the *t* test at the two-tailed .10, .05, and .01 levels, respectively, for the comparison between nonprofit (NP) and for-profit (FP), and local government (LG) and for-profit organizations.

(b) differences in wage levels across for-profit firms, nonprofit organizations, and local government organizations are usually not significant in individual occupational groups that represent core employees (Table 4); (c) merit-based pay was somewhat more likely to be implemented in the for-profit sector (Table 4); (d) more fringe benefits are provided in nonprofit and local government organizations than in for-profit firms in some industries (in nursing homes but not child care centers; Table 4); and (e) wage inequality is smaller in nonprofit and local government organizations than in for-profit firms (Table 3), but the wage inequality between the main job titles (nursing staff in nursing homes and teaching staff in child care centers) within organizations does not vary substantially across sectors (Table 5). Findings (b) and (d) together imply higher compensation in nonprofit and local government organizations than in for-profit firms in some industries but essentially equal compensation in other industries. Generally speaking, we found that, as expected, the behavior of local government organizations is closer to nonprofit organizations than to for-profit firms.

These findings provide qualified support for our hypotheses: (a) For-profit organizations are more likely to provide financial incentives to their employees than their nonprofit and local government counterparts; (b) nonprofit and for-profit organizations pay similar wages, and local government pays slightly higher wages, with total compensation being slightly higher in nonprofit and local government organizations than in for-profit organizations; and (c) wage inequality in nonprofit and local government organizations is lower than that in their for-profit counterparts. Although individual findings may be explained with reference to any number of alternative possibilities—difference in the nature of services and associated differences in the type

of employees, specific circumstances of each of the industries studied here, and so on—the fact that we find support for the combination of our hypotheses lends support for the theory from which they were derived.

The hypotheses were derived from an integration of considerations of agency theory and the intrinsic motivation perspective, in conjunction with a comparison of the goals and structure of the three types of organization examined in this article. An understanding of the operation of diverse organizations that employ diverse types of employees, where employees make decisions about where to work and organizations select the employees that work for them, requires a more complex depiction of human motivation and behavior as well as organizational decisions than a single theory can provide. We sought to incorporate considerations from what are often regarded as conflicting perspectives, one emphasizing self-interest (agency theory) and the other concern for others and for organizational mission (intrinsic motivation). Individuals usually harbor multiple motives, caring for themselves while caring for coworkers and customers, liking their jobs but wanting more income, and so on. Furthermore, there are differences in the preferences of individuals, both within and across occupations. Finally, considerations of employee motivation must be linked to a comparative theory of organizations.

Thus, one contribution of this article is to build on the integration of two theoretical perspectives that are shown to contribute to the understanding of the comparative determination of compensation in different types of organization. Our second contribution is to enrich the understanding of wage inequality by using establishment data for organizations that operate in narrowly defined industries and with employees working in narrowly defined job titles. We contribute to a thin literature that has mostly a single industry focus, hospitals. Our findings are consistent, both theoretically and empirically, with Leete's (2000) cross-occupational study, which also finds less wage inequality in the nonprofit than the for-profit sector. Our third contribution is to carry out a three-sector comparison. We argued that local government organizations are likely to be similar to nonprofit organizations operating in the same industry, and our findings support this idea.

The differences we found are small, as one would expect in a situation in which organizations of all three types compete directly to market their services and to hire and retain employees in the same labor market. As our literature review has shown, there are conflicting findings based on different samples and different methods of analysis; hence, it would be very useful to replicate our analyses to establish if these results are peculiar to the industries we have chosen or to the state from which the data come. Moreover, a larger sample of local government establishments would help determine whether our findings are affected by some unobservable characteristics of the small number of such establishments in our datasets. We have detected compensation differences but had no empirical information about the potential sources from which organizations fund the premium they pay. We also had to use a proxy variable for certain fringe benefits, used only merit pay in the analysis of financial incentives, and were unable to completely control for human capital. We hope that future research will address these concerns.

Acknowledgment

The authors thank Burt Weisbrod for very helpful suggestions on this project from its inception. They are grateful to the anonymous reviewers for exceptionally helpful comments.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interests with respect to the authorship and/or publication of this article.

Financial Disclosure/Funding

The author(s) disclosed receipt of the following financial support for the research and/or authorship of this article: This study was supported by the Aspen Institute Grant NSRF 2005-1, "A Comparative Study of Organizational Structure, Behavior and Performance."

Notes

1. Preston (1989) used industry as a proxy for nonprofit status.
2. An earlier development of this theoretical framework is presented in Ben-Ner, Ren, and Paulson (2009).
3. We develop this argument in the next subsection, when we discuss agency theory.
4. In a book about his experiences working in a for-profit nursing home, Gass (2004) writes about these issues as follows:

Aides do not gain points for doing these tasks [the regulations]; they only lose points for not doing them. We have a schedule to maintain—prescribed routines to follow and tasks to perform and record. All the other stuff, what I would consider our real purpose, is officially just by-product. All the affection, all the consoling, all the filling of emotional holes and the tidying up of frayed feelings are invisible to the owners, to the administration, and to the regulators. (Gass, 2004, p. 114)

See also Luksetich, Edwards, and Carroll (2000) on differences in the objectives of nonprofit and for-profit nursing homes.

5. In group homes and nursing homes, the customers are often vulnerable adults (developmentally disabled or mentally ill in group homes and elderly with severe health problems in nursing homes), unable to accurately assess or communicate about the quality of their care in many instances to the family members who make major decisions on their behalf. In child care, children may not understand or be able to communicate about their care to parents. In these industries, moving is difficult for the customers because vulnerable adults or children may suffer adjustment problems. In the vocational rehabilitation industry, adults are physically or mentally disabled but are considered to be functioning at a high enough level to attain employment in the community. Asymmetric information is not as pronounced in housing services because the customers are generally functioning adults who can make accurate decisions; however, the customer does not know all aspects of the property before signing a lease, and the costs of exit (moving) are particularly high.

6. The distribution of organizations by ownership and industry in 2004 is as follows (NH stands for nursing homes, CC for child care centers, GH for group homes, HS for housing services, and VR for vocational rehabilitation):

	NH	CC	GH	HS	VR	Total
NP	213	150	328	105	185	981
LG	36	12	3	43	4	98
FP	146	727	1,014	1,863	100	3,850
Total	395	889	1,345	2,011	289	4,929

For-profit firms dominate all but the nursing home and vocational rehabilitation industries, where nonprofit organizations are the largest group. Local government representation is small in all industries.

7. We ran sensitivity analyses by including only establishments with more than 20 employees (with 848 organizations) and with more than 30 employees (with 618 organizations), with similar results to those reported in the text. Information for establishments with fewer than 10 employees is not available, so robustness checks for inclusion of smaller establishments are not possible. It is possible that the findings on wage compression would be amplified in industries where establishments are much larger than those in human services.
8. The wage and hours data include some extreme values, which are likely to be the result of reporting and data-entry errors. After consultation with Department of Employment and Economic Development staff, we applied several filters to exclude potential errors. We included in the analysis only observations that meet the following criteria: the 20th percentile wage is greater than the US\$5.15 federal minimum wage that was in effect during the period, the mean hourly wage is greater than the 20th percentile wage and lower than the 80th percentile wage, and the 20th percentile wage is lower than the 80th percentile wage. The application of these filters resulted in the exclusion of 33% of the observations. Sensitivity analyses without using filters did not result in significantly different findings.
9. The nursing home survey is available at <https://netfiles.umn.edu/users/benne001/www/papers/work-surv/Nursing-homes-survey.pdf>. The child care center survey is nearly identical; the main difference concerns job titles.
10. For the nursing home survey responses, we conducted nonparametric Mann-Whitney tests between the respondents and nonrespondents in several key home characteristics variables, including total number of residents, chain status, hospital affiliation, proportion of Medicare residents, and resident case mix, by using a publicly available database, the Online Survey, Certification and Reporting data of nursing facilities used by Nursing Home Compare (<http://www.medicare.gov/NHCompare>) and found no statistically significant difference. For child care centers, we do not have such a comparable dataset to conduct the same test.
11. We also conducted nonparametric Mann-Whitney tests for the comparison of median and percentile hourly wages as well as the wage ratios. The results are consistent with those based on *t* tests and are available on request.

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