EMPLOYMENT, PRIVATIZATION, AND MANAGERIAL CHOICE:
DOES CONTRACTING OUT REDUCE PUBLIC SECTOR EMPLOYMENT?

Sergio Fernandez
Indiana University
School of Public & Environmental Affairs

Craig R. Smith
University of Georgia
School of Public & International Affairs

Jeffrey B. Wenger
University of Georgia
School of Public & International Affairs

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Abstract

We examine the effects of private sector contracting on public employment using panel data from the Census of Governments and International City/County Management Association surveys conducted in 1997 and 2002. We model decisions about contracting and the size of the public workforce as jointly-dependent decisions affecting both full-time and part-time employment. Our results from a seemingly unrelated regression indicate that full-time employment is reduced when additional contracts are awarded to private for-profit providers, while part-time employment increases. An increase in contracting with private non-profit providers appears to have no impact on full and part-time employment.
Introduction

Throughout the 1980s and 1990s, the topic of privatization sparked considerable controversy. During those decades, economists and politicians in the United States, the United Kingdom, and elsewhere championed privatization as a means for reducing the size of the public sector, curbing the power of the state, and making public bureaucracy more productive and competitive (Savas, 1987, 2000; Kettl, 1993; Sclar, 2000; Donahue, 1989). Over the last few years, evidence has begun to suggest that privatization has become less controversial and more commonplace (Brudney, et al., 2005). As one observer of state level contracting for services explains, “Although the earliest years of the decade found state administrators buffeted by ideologically driven debates casting privatization as the panacea for all governmental ills on the one hand, and as anathema to sound government on the other, the decade’s close finds state privatization discussions have shifted onto a decidedly more pragmatic plane” (Auger, 1999, p. 435; see also Raffel, Auger, and Denhardt, 1999).

Even though privatization appears to have become widespread and firmly entrenched in our system of governance (Kettl, 2002; Donahue, 2002; Kelman, 2002; Martin, 1999), the impact of privatization on the public workforce remains a highly contentious issue in the United States, where public employees and their unions continue to actively oppose privatization initiatives in order to protect public sector jobs (Fernandez, Lowman, and Rainey, 2005; American Federation of State, County and Municipal Employees, 2004; Greene, 2002; Savas, 2000; Lavery, 1999). The prevailing view among public employees and unions is that privatization results in significant numbers of public employees losing their jobs (AFSCME, 2004; Fernandez, Lowman, and Rainey, 2005; see also Light, 1999). Interestingly, few studies have rigorously examined the effect of contracting out on job security in the public sector. Although the evidence to date is rather limited, it tends to refute the claim that contracting out results in layoffs of large
numbers of public employees (National Commission for Employment Policy, 1988; Donahue, 2002; Greene, 2002).

In this paper, we set out to model the relationship between the extent of contracting out and the size of the public workforce in local government in the United States in order to test the hypothesis that privatization has a negative impact on public employment. We begin by discussing several prominent rationales for privatization and their implications for public employment and the size of the public workforce. Second, we review the literature on the relationship between privatization and public employment and on public employee and union opposition to privatization. In the third and fourth sections, we present our model and discuss the data and methods used to test it. We then present the results of our analysis. The paper concludes by offering some suggestions for future research in this area.

### Rationales for Privatizing Service Delivery

Several rationales have been put forth by experts to justify the privatization of public service delivery, each one having direct implications for public employment and the size of the public workforce. First, public choice theorists and other economists have advocated for privatization on the grounds that it leads to improvements in efficiency and economy. Second, from the perspective of liberal political philosophy, the coercive power of the state poses a danger to the personal freedom of citizens, and privatization keeps this power in check by making government smaller and less intrusive. Finally, one finds in the literature a more practical case for privatization based on the idea that privatization offers public managers greater flexibility in the management of human resources and the delivery of public services. Let us discuss these three rationales in turn.

Economists generally assert that in the absence of competition and profit incentive, public agencies are unlikely to produce public goods or services at minimal cost (Pack, 1987; see...
According to Averch (1990), the quantity of output of a good or service produced by a budget maximizing public bureaucracy is “technically and allocatively inefficient,” so that the public bureau will produce a level of output greater than the socially efficient level and for a higher than minimal cost (p. 60). Government can overcome this obstacle by allowing profit-seeking businesses to bid competitively for the production of public goods and services. Pack (1987) argued that “competitive bidding by profit-maximizing firms for a well specified output guarantees that the product will be produced at the lowest cost (p. 527).” Similarly, Greene maintains that “government is not an economically driven institution where efficiency is necessary for survival; it is a political institution designed to govern. Moreover, government is a monopoly and monopolies are inherently inefficient due to a lack of competition” (p. 14).

It is important to note that while some experts have concluded that the evidence points to privatized service delivery being more efficient than direct public service delivery (e.g., Savas, 1987, 2000; Greene, 2002; Dilger, Moffett, and Struyk, 1997), others maintain that the evidence in more mixed and inconclusive (Hodge, 2000; Sclar, 2000; Brudney, et al., 2005). Hodge (2000) found 6 to 12 percent savings through outsourcing but no general difference between cost savings through contracting with private providers and contracting with other public agencies. Sclar (2000) asserts, “although there are clear situations in which contracting works well, there are at least as many, if not more, in which the existence of direct public service is a rational economic strategy” (p. 68). Even Greene (2002, pp. 49-50), who concludes that the evidence about efficiency is favorable toward privatizing municipal services, admonishes that cost savings may often be less than reported, and that greater efficiency is generally a result of competition rather than private service delivery.

1 For a more elaborate explanation of the standard market model underpinning the economic case for privatization, see Sclar, 2000, pp. 6-9.
The work of public choice theorists offers additional justification for privatization (Downs, 1967; Niskanen, 1971). Public choice theory assumes that individuals, including bureaucrats, act to maximize their utility or economic self interest. Because they operate in a public bureaucratic setting that shields them from the competitive forces of the market, public managers rationally engage in utility-maximizing behavior such as budget maximization and oversupply of public services. Privatization, then, becomes a way of breaking the monopolistic power of public bureaus and improving public sector performance, particular in terms of efficiency and economy (Hodge, 2000; Porter and Dewey, 1998). As Boyne (1998) notes, public choice theorists maintain that private service delivery together with competition leads to gains in efficiency and economy, unlike the case made in the property rights literature, which maintains that private service delivery (i.e., private ownership, with its profit-maximizing incentive structure) alone results in better performance.

The efficiency and economy argument for privatization made by public choice theorists and other economists has clear implications for public employment and the size of the public workforce. One of the early experts on contracting out observed that since labor consumes anywhere from 70 to 80 percent of a local government’s budget, the cost of hiring local government employees is the major cost that is eliminated when local officials opt to contract out (Rehfuss, 1989). Donahue (1989) maintained that “delegating functions to private firms usually saves dollars, and much of these savings comes at the expense of public employees,” as private providers take over the task of service delivery (p. 145). Similarly, Greene (2002) sees reduced personnel costs and the ability to forego the need to maintain large in-house service delivery capacity as a major way in which local government reduce outlays through privatization (see also Cooper, 2003). Where exactly do the savings from contracting lie? According to Rehfuss, private

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Implicit in some of the public choice literature is the idea that breaking the monopolistic power of public bureaucracy also can result in greater responsiveness, although the idea is not well-developed (see Lowery, 1998).
contractors are able to lower their labor costs by offering lower wages and fringe benefits, by hiring employees for fewer hours, and by hiring younger employees. Kettl, as he observed patterns in state and local government contracting during the 1980s and 1990s, concluded that contractors were able to reduce costs through more flexible use of the workforce, lower wages, and lower fringe benefits. “With so much of state and local spending concentrated on personnel costs, any argument to reduce that spending inevitably is an argument to reduce the number of employees as well” (1993, pp. 161-162).

Another rationale for privatization is essentially ideological and political in nature. From the perspective of classical liberal philosophy, the coercive power of the state poses a danger to the personal freedoms of its citizens. Savas (2000) explains, “as more people’s earnings are taken by government, as decisions about the disposition of these moneys are made by increasingly distant and unresponsive organs of government, and as government’s presence pervades more areas of human activity, freedom and liberty are lost” (p. 10). Privatization, therefore, becomes a means for countering the power of the encroaching state and protecting individual rights. Other advocates of privatization have suggested that by abdicating excessive responsibility and discretion to government, citizens in the United States and other industrialized countries have become unnecessarily dependent on public sector solutions, with innovation and human enterprise suffering as a result (Fitzgerald, 1988; see also Savas, 2000). Privatization allows people to re-empower themselves and civil society. “When people actually begin to see the benefits of privatization in practice, they may glimpse not only strategies and tools with which to harness the private sector for public good; they may recognize as well, within themselves and in others, an entire spectrum of possibilities for the release of their own human potential” (Fitzgerald, 1988, p. 22). Such reasoning in favor of privatization poses an evident threat to
public employment: a smaller government, with fewer bureaucrats, is needed to safeguard and reinvigorate individuals and private institutions in a democratic society.

Finally, some experts have made a more practical case for privatization as an approach that offers public managers greater flexibility in the management of human resources and the delivery of public services. Public union strength and activism have been identified as factors that contribute to higher wages and benefits and more personnel restrictions that rob public managers of flexibility (Rehfuss, 1989; Greene, 2002; Savas, 2000). For instance, Greene (2002) asserts that it is more difficult to hire, discipline, and fire public employees than private contract workers because of a variety of civil service rules and constraints. In addition, privatization creates opportunities for hiring more temporary workers, especially those with specialized knowledge and skills, without enlarging the public workforce (Donahue, 1989, Greene, 2002; Kettl, 1986). Hiring more temporary workers also allows managers to dedicate more time to planning and strategic management activities. In short, this perspective views public employment as a constraint on public managers that can be overcome by hiring fewer full-time public employees and more private contractor and temporary workers.

The burgeoning privatization movement has elicited a strong response from experts who challenge the view of privatization as a panacea for government’s ills. Since the 1980s, a new stream of literature has emerged, addressing the challenges of how best to manage privatization and avoid its shortcomings (Sclar, 2000; Cooper, 2003; Donahue, 1989; Kettl, 1993; Moe, 1987, 1996; Rehfuss, 1989; Kelman, 2002). These experts have identified critical contingencies that must be addressed for privatization to succeed, including competition and adequate contract management capacity to ensure accountability and reduce the incidence of adverse selection and shirking (see Sclar, 2000). Recent evidence indicates that local governments are frequently engaging in “reverse contracting” or “contracting back in,” terminating contractual arrangements
with external service providers and reverting to in house service delivery. The inability to adequately monitor performance, and the agency problems that arise from this condition, have been found to be determining factors in the decision to contract back in (Hefetz and Warner, 2004). The results of our analysis should offer some clues about the effects of contracting back in on the size of the public workforce.

Privatization, the Public Workforce, and Public Sector Unions

As the previous discussion indicates, there are sound theoretical reasons for believing that contracting out will result in fewer public sector jobs. The evidence, however, is neither extensive nor conclusive. In general, it tends to refute the claim that contracting out results in layoffs of significant numbers of public employees. Early research conducted by the National Commission for Employment Policy (NCEP, 1988), based on previous investigations by the Department of Defense, General Accounting Office, and Office of Management and Budget, concluded that federal employee job displacement from contracting out was very low, with only about one in twenty federal workers becoming unemployed as a result of contracting out. The NCEP also conducted its own multiple case study of seventeen city and county governments and found that few municipal workers were laid off because of contracting out. In all but two of the seventeen cases, workers who were terminated were given opportunities for other jobs within government, and most of the cities established a "no lay-off" policy as a condition to awarding contracts. Former public employees subsequently hired by contractors, however, tended to work for them for a brief period of time, often for less than two years.

More recently, Donahue (2002) examined trends in the size of the public workforce and the extent of government outsourcing, and concluded that the effect of outsourcing on the number of employees working for government has been quite small. As he explains, “a greater readiness to rely on private delivery almost surely has had a smaller influence on the size of the
public workforce than have shifts in the size and composition of government’s mission, productivity growth, and simple austerity. Far from cutting to the heart of public employment, privatization seems to have been (at least so far) nibbling around its edges” (p. 275). Greene (2002) claims to have observed a similar pattern among local governments. Finally, Light (1999) has argued that there is circumstantial evidence of a link between the decline in the size of the federal workforce and the surge in the size of the shadow workforce, but he admits that further research is needed to determine if government employees are truly being replaced by contract workers (p. 25). Given the significance of this issue, he maintains, further research is needed, particularly panel studies and other longitudinal studies to assess the long-term impact of privatization on public employees.

The same multiple case study by the National Commission for Employment Policy (1988) found, as did Becker, Chaykin, and Silverstein (1995), that private contractors generally offered higher wages than cities and counties. However, other studies have shown that wages paid by private contractors were generally lower than those paid by cities and counties, sometimes by as much as half (NCEP, 1988). Many advocates of privatization contend that public sector employees are significantly overcompensated. Sclar (2000) notes, however, that when one controls for education, skill level, and job tenure, public sector employees actually make 4 to 5 percent less than their private counterparts. “Hence, as the nature of public-service work subjected to privatization becomes more skill- and education-intensive, the utility of private sector wage differentials as a source of savings diminishes rapidly” (Sclar, 2000, p. 61).

Whether real or merely perceived, the threat posed by contracting out has prompted public employees and their unions to become ardent opponents of privatization, and studies have shown that union opposition can present a real obstacle to the adoption of privatization (Fernandez, Lowman, and Rainey, 2005). Ferris and Graddy (1986) found that the extent of
public employee unionization has a significant negative effect on the likelihood that a city will contract out a service. A study based on data from a large survey of sanitation collection services in U.S. cities revealed that unionized cities were less likely to consider contracting out than non-unionized ones (Chandler and Feuille, 1991). Boyne (1998), after a careful review of the literature, concluded that the balance of the evidence points toward a negative relationship between public employee strength and the incidence of privatization (see also Becker, Silverstein, and Chaykin, 1995). A recent study from Georgia, a right-to-work state, found that an individual’s employment in the public sector is negatively correlated with support for privatization, suggesting that opposition to privatization transcends organized union efforts to include rank and file employee opposition (Fernandez and Smith, 2005 forthcoming).

Interestingly, however, some research has found that labor and union opposition has little or no effect on the decision to privatize (O’Brien, 1994; Warner and Hebdon, 2001; Brudney, et al., 2005).

Attempts to oppose the adoption of privatization have reached the courtroom. The courts have awarded monetary damages and back pay to displaced employees when they have found that the government acted illegally or improperly when contracting out a service (Elam, 1997; Kearney, 2001; AFSCME, 2004). Opposition has moved beyond the courtroom as well to include public relations campaigns, media blitzes, and more direct attempts to influence the political process through election campaigning and voting (AFSCME, 2004). At the local level, where a few hundred votes can influence the outcomes of an election, elected officials and political appointees might be reluctant to antagonize public employees and their unions by proposing privatization (NCEP, 1988; Fernandez, Lowman, and Rainey, 2005; Fesler and Kettl, 1996). In light of these union strategies, one might be less sanguine about Auger’s (1999) claim that the privatization debate is now being conducted on a more pragmatic plane.
Having reviewed the literature, we now set out to model the relationship between contracting out and the size of the public workforce. Our objective is to test the hypothesis that contracting out has a negative impact on public employment at the local level.

Data

The data for this study are drawn from the International City/County Management Association’s Alternative Services Delivery Survey (ICMA) conducted in 1997 and 2002; and from the 1997 and 2002 U.S. Census of Governments’ finance and employment/payroll surveys. We merge data from these sources to form a two-period panel data set consisting of 485 local governments.

The ICMA surveys are a stratified sample of city and county governments with residential populations of at least 10,000 and 25,000, respectively. The sampling frame also includes one in eight cities with a population between 2,500 to 9,999 and one in eight counties with a population between 2,500 and 24,999\(^3\). These surveys collect information on the specific services provided and the method of service delivery, including services provided by public employees entirely; public employees in part; other governmental authority; private for-profit provider; private non-profit provider; franchises/concessions; subsidies; and volunteers. The respondents provided information on how their government evaluated and monitored the feasibility and effectiveness of private service delivery as well as the presence of any perceived obstacles hindering implementation of privatization.

The Census of Governments data are collected by the U.S. Census Bureau every five years and include information on finances and employment/payroll at the federal, state, and local levels. We use the number of full-time and part-time public sector employees as our dependent variables, and create these measures by aggregating employment codes in local governments (see Appendix). Included in this census are data on local government payrolls and revenues, and we

\(^3\) The response rates for the 1997 and 2002 surveys were roughly 31% and 24%, respectively.
use these measures in our regression analysis to control for wage effects and for the fiscal situation of each local government. Finally, we use population counts from the 1990 and 2000 decennial censuses to control for the size of the locality.

The cities and counties in our panel range in size of population from 2,565 to 3,694,820. Our panel is skewed toward small to medium sized localities. The median population is 30,179 in 1997 and 35,058 in 2002. Only seven localities in the panel have populations over one million and only about one in five localities have populations over 100,000. The panel is also under-represented by cities and counties in the Northeast and over-represented by cities and counties from the South (13% and 34%, respectively). We eliminate 43 local governments that failed to report providing any services in either 1997 or 2002.

Model

Civil service employment systems are managed by a variety of actors who exert influence over personnel decisions, including the legislative branch, budget agencies, central personnel agencies, and civil service commissions (Fesler and Kettl, 1996). Despite the influence of these multiple principals and the obstacles they erect (e.g., budget outlays and hiring ceilings), public managers still retain substantial discretion in planning for human resources needs and making employment decisions (Wilson, 1989; Levine, Peters, and Thompson, 1990; Shafritz, et al., 2001). At the local level, Desai and Hamman (1994) found that city managers and department heads exercised discretion in making decisions about hiring as well as dismissing employees, although the magnitude of discretion was greater in the council-manager form of government compared to a mayor-council form. This discretion in personnel decisions should allow public

4 The vast majority (40 out of 43) of the local governments that reported providing no services did so only in 2002. As a result, these local governments exhibited large declines in the amount of contracting and overall service provision between 1997 and 2002. Removing them from the panel was done to mitigate the effects of measurement error since it seemed unlikely that the governments stopped providing services all together. A more reasonable explanation is that the respondent provided ICMA with information regarding the general characteristics of the government, but declined to reveal any specific service delivery information.
managers to choose the optimal mix of part-time and full-time employees, given a series of budget and operating constraints. In modeling the impact of contracting for services on the size of the public workforce, therefore, we assume that top management’s decisions to hire and lay off full-time and part-time workers are done jointly. That is, changes in the number of part-time workers are done with full knowledge of its impact on full-time employment and vice-versa. To capture the joint nature of these decisions, we estimate changes in employment using a seemingly unrelated regression (Zellner, 1964).

Seemingly unrelated regression (SUR) is an estimation technique that allows analysts to simultaneously estimate a system of equations. In our case, we estimate the effect of contracting out on full-time and part-time employment. Initially, analysts may think that these are separate and unrelated decisions; yet it is unlikely that the equations are independent. This lack of independence would be true even if the estimation equations shared no common variables, since all the values of the dependent variables are collected on the same set of observations. To account for the lack of independence, we assume that the errors (residuals) are correlated. We estimate the following two equations simultaneously (where $\Delta$ is the difference operator) and we allow the residuals to correlate:

$$\Delta full \text{– time employment} = \beta_0 + \beta_1 (\Delta contracting) + \beta_2 (government type) + \beta_3 Z + \epsilon_1$$

$$\Delta part \text{– time employment} = \gamma_0 + \gamma_1 (\Delta contracting) + \gamma_2 (government type) + \gamma_3 Z + \epsilon_2$$

where $Z$ is a vector of control variables (including the average full-time and part-time wage) and $\text{cov}(\epsilon_1, \epsilon_2) \neq 0$. Zellner (1964) showed that the parameter estimates for separately estimating
two seemingly unrelated equations are unbiased but inefficient. To correct for this inefficiency
SUR adjusts the variance/covariance matrix of $\beta$ by estimates of the $\text{cov}(\varepsilon_1, \varepsilon_2)$.

Our dependent variables, $\Delta$ full-time employment and $\Delta$ part-time employment, exclude education-related employees, since the measures we use for the extent of contracting out also exclude public education as a service or function provided by the local government\(^5\). The data source for these measures is the 1997 and 2002 Census of Governments employment/payroll surveys. Descriptive statistics for the employment levels in each year and the change over time are presented in Table 1.

-- Insert Table 1 about here --

Our primary independent variable, $\Delta$ for-profit contracting, represents the change in the total number of services that a local government contracted out to private for-profit firms from 1997 to 2002, as measured using the 1997 and 2002 ICMA surveys. Since we are using data from two time periods separated by five years, we are only able to determine the net change in for-profit contracting. The contracting process for individual services is not always unidirectional (Hefetz and Warner, 2004). A contract for a service may be terminated, the service may be delivered in house again, or the service may be re-contracted out several times during any five year period. Consequently, we are limited in our ability to measure the fluidity and multidirectional nature of the contracting process for individual services over time. We are also unable to determine the scale of individual contracts since the ICMA surveys do not provide information on the scope or monetary amount of the contracts awarded to private service providers.

As Table 1 illustrates, the mean change in for-profit contracting from 1997 to 2002 is small and positive. A closer look at the data provides evidence that contracting with for-profit

\(^5\) In many municipalities and counties, a separate school district has been formed, further complicating the use of education employees in this study.
firms is not nearly as static as this statistic suggests. Only 10 percent of the local governments reported no net change in contracting with for-profit firms from 1997 to 2002. Slightly more than 43 percent reported a net decline in for-profit contracting; compared to 47 percent reporting a net increase. Moreover, over half the sample (52 percent) reported a net change of ±4 or more suggesting that contracting with for-profit firms is a dynamic and potentially a multi-directional process as suggested by Hefetz and Warner (2004).

We include a second independent variable of particular importance, \( \Delta \) non-profit contracting. This variable is measured as the change in the total number of services that a local government contracted out to private non-profit providers from 1997 to 2002 and is derived from the same two ICMA surveys. According to the efficiency and economy rationale for privatization, contracting for services should lead to cost savings, largely through a reduction in the number of public workers a local government needs to employ in order to deliver its services. Thus, we expect that an increase in the number of services contracted out to for-profit and non-profit providers will result in a decline in both full-time employment and part-time employment. The flexibility rationale for privatization, however, suggests a different set of relationships. From this perspective, we still should expect to find a negative relationship between the two types of contracting (for-profit and non-profit) and full-time employment, since managers experience more constraints in their ability to hire, discipline, and fire full-time employees than part-time ones. On the other hand, if the decision to hire full-time and part-time employees is made jointly, then we might reasonably expect flexibility aspirations to increase the number of part-time employees while reducing the number of full-time employees. Therefore, a positive relationship between the change in both types of contracting and the change in part-time employment would not be entirely unexpected.
The alignment of organizational goals between the public and non-profit sectors may result in a reduction in the (perceived or real) need for monitoring and stringent contract enforcement on behalf of the public agency (Cooper, 2003; Brown and Potoski, 2003). This implies that a service contracted out to a non-profit firm may require fewer public sector employees for monitoring and contract enforcement than one contracted out to a for-profit firm. Under these conditions, a net increase in non-profit contracting may lead to larger reductions in both full-time and part-time employment as compared to those expected from a net increase in for-profit contracting. However, it also may be true that the scope of services contracted out to non-profit agencies is typically smaller than the scope of services contracted to for-profit firms. If this is the case, and non-profit contracts are systematically smaller than for-profit contracts, we would anticipate a smaller overall employment decline for increases in non-profit contracting.

The remaining independent variables in the model serve as controls. To control for the scale of local government activities, we include the variable $\Delta \text{services provided}$ which represents the change in the total number of publicly financed services available to residents (regardless of public or private provision) from 1997 to 2002, as measured by the ICMA surveys. The change in the total number of services provided by a local government to its residents should be positively correlated with both part-time and full-time employment.

The model includes the variable $\Delta \text{other alternative service delivery arrangements}$, which represents the change in the total number of services provided by a local government through alternative service delivery arrangements other than for-profit and non-profit providers (a local government or authority, franchise/concessions, subsidy, or volunteers). Like the use of contracting for services, use of these other alternative service delivery arrangements is likely to be negatively correlated with full-time and part-time employment.
We include dichotomous indicators to control for the following forms of local government: council-manager; commission; town meeting; representative town meeting; county commission; council-administrator; and council-elected executive. Managers guided by the norms of good administration—including efficiency, political responsiveness, equity, and ethics—may be more likely to exercise discretion effectively. Svara (1990) suggests that the council-manager form of local government facilitates increased cooperation between elected officials and administrators, resulting in a more receptive environment to managerial reform and innovation. In particular, Moon and deLeon (2001) found that council-manager governments were more amenable to implementing reinventing government and new public management style reforms, including an increased willingness to contract out services and treat citizens as customers. As we noted above, Desai and Hammon (1994) found that the amount of discretion in hiring decisions exercised by managers in council-manager governments was greater than that exercised by managers in mayor-council governments. Managers from council-manager governments, therefore, are more likely to take on an entrepreneurial role and look for points of leverage to improve efficiency. Thus, we expect the dichotomous variable council-manager to have a greater negative impact on full-time and part-time employment than the variables for other forms of local government.

Our model includes control variables for the change in property tax revenue (Δ property tax) and the change in transfer revenues (Δ state revenues) from the state from 1997 to 2002\(^6\). Local governments that collect higher levels of revenue have increased service demands, and should be able to hire more full-time and part-time employees (Berry and Lowery, 1987). Conversely, local governments experiencing fiscal stress are likely to cut back on spending.

\(^6\) Data on property tax were missing in 26 percent of cases (0.4 percent in 1997 and 57 percent in 2002). Data on state revenues were missing in 35 percent of cases (12 percent in 1997 and 62 percent in 2002). We impute these missing values using a regression based imputation technique. Imputation results are available from the authors upon request.
particularly in the area of human resources. Therefore, we expect these variables to have a positive impact on both of our dependent variables.

Research indicates that a variety of political and legal factors can impede efforts to adopt privatization. Opposition from public employees and their unions has at times deterred decision-makers from opting to privatize service delivery (Rehfuss, 1989; Savas, 1987, 2000; Sclar, 2000; Fernandez, Lowman and Rainey, 2005); political opposition from citizens has also been found to be negatively correlated with the extent of contracting for services at the local level (see Boyne, 1998). Collective bargaining agreements and other legal restrictions also act as obstacles to the use of contracting for services (Rehfuss, 1989; Savas, 1987, 2000; ICMA 1989, 1992; Greene, 2002). The variable $\Delta \text{obstacles}$ represents the change in an index of six types of obstacles as captured in the 1997 and 2002 ICMA surveys: opposition from line employees; opposition from citizens; opposition from elected officials; opposition from department heads; presence of restrictive labor contracts; and presence of legal constraints. Insofar as these factors act as constraints on the adoption of privatization and as safeguards against laying off public employees, we expect an increase in the number of obstacles to privatization to be positively correlated with both full-time and part-time employment.

We also include changes in the average hourly wage paid by local governments to full-time and part-time employees from 1997 to 2002. These measures do not include the cost of benefits (e.g. health insurance and pensions) which are likely to be much larger for full-time workers. All dollar amounts are adjusted for inflation using the consumer price index (CPI-RS). The sources of data are the 1997 and 2002 US Census of Governments employment/payroll surveys. Given that higher full-time and part-time wages lead to reductions in demand for labor, we expect increases in $\Delta \text{full-time hourly pay}$ and $\Delta \text{part-time hourly pay}$ to have a negative impact on full-time and part-time employment.
Finally, we include a dichotomous control variable for the change in the presence of programs to minimize privatization’s effects on employees from 1997 to 2002. Such programs can result in the transfer or hiring of affected public employees to other positions within a local government. The variable Δ placement services may be positively correlated with our two measures of public sector employment.

We test for the presence of heteroskedasticity in the estimated parameter variances and reject the null hypothesis of constant variance of the estimates. We adopt a generalized least-squares approach using local population measures as weights to correct for the heteroskedastic variance.

**Results**

Our results (see Table 2) indicate that for each additional service contracted out to a for-profit firm, full-time employment declined by approximately 13 employees (p < .01). However, each additional service contracted out to a for-profit firm increased part-time employment by about 9 employees (p < .01). The net effect of more contracting with for-profit firms is to reduce total employment, although much of the effect on full-time employment is offset by the effect on part-time employment. This does not mean that direct labor costs are offsetting. Using the average hourly wage and assuming that part-time employees work on average 30 hours per week for a full year, our results imply that each additional service contracted out to a for-profit firm results in a reduction in full-time direct labor costs of $698,000 and an increase in part-time direct labor costs of $171,000. The net effect on direct labor costs, therefore, is $527,000 for each additional service contracted out to a for-profit firm. We note that this is likely to be an underestimate since the cost of fringe benefits is not included.
The data and results reveal another interesting pattern. As we noted previously, the mean change in for-profit contracting from 1997 to 2002 was very small in our sample of local governments. There were nearly as many local governments reporting a decline in for-profit contracting as those reporting an increase in for-profit contracting. The coefficients for $\Delta \text{for-profit contracting}$ indicate that for each additional service a local government no longer contracted out to a for-profit provider, full-time employment increased by about 13 employees, while part-time employment declined by approximately 9 part-time employees. Contracting back in, therefore, appears to increase direct labor costs as local governments hire additional full-time employees to replace a for-profit contractor’s workforce. This aspect of contracting back in warrants more attention from researchers and practitioners.

The offsetting full-time/part-time employment result may partly explain why other research finds contracting out to have a small or nonexistent effect on public employment (NCEP, 1988; Donahue, 2002). The shift away from full-time employment to part-time employment will likely lead to cost savings, since part-time workers typically receive lower pay and fewer non-wage benefits than full-time workers. Moreover, the apparent joint decision to hire fewer full-time and more part-time employees as a result of privatization is suggestive of public managers’ belief that privatization also offers the promise of greater flexibility in the use of human resources; however there is no direct test of this hypothesis in the analysis.

The change in contracting with non-profits appears to have little or no effect on full-time and part-time workers. The coefficient for $\Delta \text{non-profit contracting}$ fails to achieve statistical significance in both the full-time and part-time equation. This finding may reflect the fact that the types of services contracted out to non-profit providers tend to be smaller in scale, and consequently have smaller effects on public sector employment. We are unable to measure
contract size/scope since the ICMA surveys do not provide information on the size of the contracts awarded to for-profit and non-profit providers.

Overall, the model fit is good with an $R^2$ for the full-time equation of .29 and .22 for the part-time equation. We also note that the residuals from each equation are strongly correlated at .25; we reject the null hypothesis ($p < .001$) that these equations are independent. This would seem to justify our use of a seemingly unrelated regression (SUR) technique in that there is a joint decision in hiring both part-time and full-time workers. We believe our strategy of using seemingly unrelated regression represents an improvement over previous research in the field. Research that uses part-time employment as an independent control variable is likely to provide biased estimates as a result of the endogeneity of part-time employment. More importantly, we interpret this to mean that managers jointly consider full-time and part-time employment when making decisions about the composition and size of their workforce. Finally, we note that our parameter estimates are robust to changes in the specification.

Many of the control variables used in the regressions have the expected signs. In particular, we note that as hourly pay increases for both full-time and part-time workers, employment declines, demonstrating a downward sloping demand curve for labor.

The forms of local government are related to different levels of employment. However, these control variables are more difficult to interpret since they typically do not change over time. We note that omitting all the variables that control for the form of government in our regression does not change our results. Compared to the mayor-council form of government (base case), we expect managers within the council-manager form of government to exhibit more discretion. This discretion may manifest itself in the employment of more part-time employees. Our parameter estimates are too imprecise to support this conjecture and we cannot reject the null hypothesis of zero effect. A council-administrator form of government is associated with
more full-time workers than other forms of government, perhaps reflecting the size and complexity of the administrative systems in these local governments. Finally, a *council-elected executive* form of government has a negative effect on both full-time and part-time employment. This finding seems to suggest that elected executives are more responsive to popular pressures for smaller government and therefore hire considerably fewer full-time and part-time employees.

Local governments differ in the variety and scope of the services they provide. This mix of services changes due to economic conditions and citizen preferences. We control for the number of publicly-financed services provided by a local government and an array of alternative service delivery arrangements used to deliver them. Governments that successfully deliver a wide variety of services may be less likely to contract those services out. Governments that are overextended, however, may look to outsource services. In general, we find no statistically relationship between the number of services and the size of the full-time and part-time workforce. The coefficients for $\Delta$ *other alternative service delivery arrangements* are positive and negative in the full-time and part-time equations, and both coefficients achieve statistical significance. The effective management of other tools of governance, such as inter-jurisdictional service agreements, franchises and concessions, subsidies, and volunteers, appear to require the hiring of additional full-time employees while slightly reducing the number of part-time employees.

Finally, fiscal stress is likely to affect the growth in public sector employment. We use local governments’ property tax revenues and transfer revenues received from the state as indicators of fiscal stress. Increases in property tax revenues result in increases in full-time employment, as expected, while having no statistically significant impact on part-time employment. Increased transfer revenues from the state have no statistically significant impact on full-time employment but are associated with increases in part-time employment.
In summary, the large correlation between the residuals in the full-time and part-time equations justifies the use of a seemingly unrelated regression technique. As expected, contracting with for-profit firms has a negative impact on the size of the full-time public workforce. Much of the negative full-time effect of for-profit contracting is offset by an associated increase in part-time employment resulting from for-profit contracting. Non-profit contracting appears to have no effect on either full-time or part-time employment; while the parameter estimates are negative, we cannot reject the null hypothesis of no effect. Greater reliance on local government authorities, franchises, subsidies, and volunteers to deliver services results in an increase in full-time employment and a smaller decline in part-time employment. Our results suggest future research opportunities in developing a better understanding of how the different alternatives to in house service delivery impact public employment.

**Discussion and Conclusion**

In this paper, we have shown that the conventional wisdom about the effect of contracting out on public employment is in part accurate: as local governments contract out additional services to private for-profit providers, some full-time public employees lose their jobs. A novel finding, however, is the positive effect of contracting with for-profits on part-time public employment. Together, these results fill an important gap in the literature and help us to understand why previous studies found the impact of contracting out on public employment to be negligible (NCEP, 1988; Donahue, 2002; Greene, 2002). The results of this study suggest that while Milward’s (1996) “hollow state” metaphor and Light’s (1999) “shadow workforce” description serve as partial explanations of the contracting out phenomenon, neither captures the full complexity of contracting out at the local level.

Perhaps more importantly, this study provides some insight into the strategies and motives of public managers who adopt privatization. These research results are consistent with
both the efficiency and flexibility rationales for privatization. However, we can provide no direct
test of managerial motives given the data. In general, we find that contracting with private for-
profit firms precipitates a shift in the composition of the workforce from full-time civil service
employees to more part-time workers. By off-loading a program with a large and unwieldy
payroll and replacing it with a contractual arrangement and less expensive part-time employees,
public managers may reduce labor costs, circumvent the perceived intractability and rigidity of
civil service rules, and gain flexibility in the use of human resources. In short, the evidence
suggests that contracting out allows public managers to simultaneously pursue the competing
administrative values of efficiency and flexibility (Rainey, 2003; Meier, 2000).

Finally, these findings point to some interesting implications for future research on local
contracting with non-profit organizations. More work is needed to make sense of why
contracting with non-profit firms results in no statistically significant effect on public
employment while the for-profit contracting effects are large and significant. We offer some
initial ideas but readily acknowledge that our research design and data limit our ability to offer
more definitive answers to this question. Future empirical research is also needed to differentiate
the effect of contracting on public employment by service area. Education, for example, accounts
for a large portion of the public workforce at the local level and was not included in this study.
Given its uniqueness, education employment may be impacted by contracting in an entirely
different way.
References


Table 1. Descriptive Statistics: Means and Changes for Independent and Dependent Variables

<table>
<thead>
<tr>
<th>Dependent Variables:</th>
<th>1997 mean</th>
<th>2002 mean</th>
<th>Change '02-'97</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full-time employment (number of full-time employees)</td>
<td>702.7</td>
<td>879.8</td>
<td>67.0</td>
</tr>
<tr>
<td></td>
<td>(1535.1)</td>
<td>(2728.6)</td>
<td>(302.5)</td>
</tr>
<tr>
<td>Part-time employment (number of part-time employees)</td>
<td>128.3</td>
<td>146.8</td>
<td>11.6</td>
</tr>
<tr>
<td></td>
<td>(265.0)</td>
<td>(272.9)</td>
<td>(171.8)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Independent Variables:</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>For-profit contracting (number of contracts with private for-profit providers)</td>
<td>6.3</td>
<td>6.7</td>
<td>0.4</td>
</tr>
<tr>
<td></td>
<td>(5.8)</td>
<td>(6.1)</td>
<td>(7.4)</td>
</tr>
<tr>
<td>Non-profit contracting (number of contracts with private non-profit providers)</td>
<td>1.9</td>
<td>1.8</td>
<td>-0.1</td>
</tr>
<tr>
<td></td>
<td>(2.6)</td>
<td>(2.6)</td>
<td>(3.2)</td>
</tr>
<tr>
<td>Services provided (number of services provided by local government)</td>
<td>37.9</td>
<td>38.5</td>
<td>0.4</td>
</tr>
<tr>
<td></td>
<td>(10.3)</td>
<td>(9.5)</td>
<td>(11.3)</td>
</tr>
<tr>
<td>Other alternative service delivery arrangements (number of services provided</td>
<td>6.9</td>
<td>6.6</td>
<td>-0.4</td>
</tr>
<tr>
<td>through other local government or authority, franchises/concessions, subsidies,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>and volunteers)</td>
<td>(7.3)</td>
<td>(7.7)</td>
<td>(9.7)</td>
</tr>
<tr>
<td>Obstacles (index of six types of obstacles: opposition from line employees;</td>
<td>1.1</td>
<td>0.9</td>
<td>-0.3</td>
</tr>
<tr>
<td>opposition from citizens; opposition from elected officials; opposition from</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>department heads; presence of restrictive labor contracts; and presence of legal</td>
<td>(1.5)</td>
<td>(1.4)</td>
<td>(1.8)</td>
</tr>
<tr>
<td>constraints)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Property tax’ (millions)</td>
<td>23.8</td>
<td>25.8</td>
<td>0.7</td>
</tr>
<tr>
<td></td>
<td>(63.2)</td>
<td>(63.3)</td>
<td>(30.3)</td>
</tr>
<tr>
<td>State revenues’ (millions)</td>
<td>5.0</td>
<td>6.5</td>
<td>1.2</td>
</tr>
<tr>
<td></td>
<td>(14.0)</td>
<td>(19.3)</td>
<td>(6.7)</td>
</tr>
<tr>
<td>Placement services (presence of programs to minimize privatization effects on</td>
<td>0.2</td>
<td>0.1</td>
<td>-0.1</td>
</tr>
<tr>
<td>local government employees)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.4)</td>
<td>(0.3)</td>
<td>(0.4)</td>
</tr>
<tr>
<td>Full-time hourly pay’</td>
<td>24.3</td>
<td>25.8</td>
<td>1.4</td>
</tr>
<tr>
<td></td>
<td>(18.6)</td>
<td>(18.2)</td>
<td>(4.0)</td>
</tr>
<tr>
<td>Part-time hourly pay’</td>
<td>10.5</td>
<td>11.7</td>
<td>1.2</td>
</tr>
<tr>
<td></td>
<td>(3.4)</td>
<td>(3.9)</td>
<td>(4.2)</td>
</tr>
</tbody>
</table>

Standard deviations in parentheses  
* 1997 averages adjusted to 2002 dollars using the CPI-RS.
Table 2. Results of Seemingly Unrelated Regression Analysis Comparing the Changes in Service Delivery of 485 Local Governments (2002–1997)
### Change in FT-employment
### Change in PT-employment

<table>
<thead>
<tr>
<th>Change in FT-employment</th>
<th>Change in PT-employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Δ for-profit contracting</td>
<td>-13.013</td>
</tr>
<tr>
<td></td>
<td>(3.33)**</td>
</tr>
<tr>
<td>Δ non-profit contracting</td>
<td>-8.01</td>
</tr>
<tr>
<td></td>
<td>(0.94)</td>
</tr>
<tr>
<td>Δ services provided (count)</td>
<td>-2.909</td>
</tr>
<tr>
<td></td>
<td>(1.07)</td>
</tr>
<tr>
<td>Δ other alternative service delivery arrangements</td>
<td>19.856</td>
</tr>
<tr>
<td></td>
<td>(6.90)**</td>
</tr>
<tr>
<td>council-manager</td>
<td>58.973</td>
</tr>
<tr>
<td></td>
<td>(0.65)</td>
</tr>
<tr>
<td>commission</td>
<td>-78.21</td>
</tr>
<tr>
<td></td>
<td>(0.16)</td>
</tr>
<tr>
<td>town meeting</td>
<td>-36.373</td>
</tr>
<tr>
<td></td>
<td>(0.07)</td>
</tr>
<tr>
<td>representative town meeting</td>
<td>-295.948</td>
</tr>
<tr>
<td></td>
<td>(0.45)</td>
</tr>
<tr>
<td>county commission</td>
<td>162.22</td>
</tr>
<tr>
<td></td>
<td>(1.28)</td>
</tr>
<tr>
<td>council-administrator</td>
<td>209.846</td>
</tr>
<tr>
<td></td>
<td>(2.15)*</td>
</tr>
<tr>
<td>council-elected executive</td>
<td>-272.464</td>
</tr>
<tr>
<td></td>
<td>(2.52)*</td>
</tr>
<tr>
<td>Δ obstacles</td>
<td>24.538</td>
</tr>
<tr>
<td></td>
<td>(1.95)</td>
</tr>
<tr>
<td>Δ property tax (millions)</td>
<td>2.052</td>
</tr>
<tr>
<td></td>
<td>(4.55)**</td>
</tr>
<tr>
<td>Δ state revenues (millions)</td>
<td>3.102</td>
</tr>
<tr>
<td></td>
<td>(1.48)</td>
</tr>
<tr>
<td>Δ placement services</td>
<td>-5.377</td>
</tr>
<tr>
<td></td>
<td>(0.12)</td>
</tr>
<tr>
<td>Δ Full-time hourly pay</td>
<td>-13.632</td>
</tr>
<tr>
<td></td>
<td>(2.31)*</td>
</tr>
<tr>
<td>Δ Part-time hourly pay</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>170.630</td>
</tr>
<tr>
<td></td>
<td>(1.95)</td>
</tr>
</tbody>
</table>

R^2: \[.260 \quad .224\]

Correlation of Residuals: \[0.250\]

Cor. between equations is zero: \[0.000\]

Observations: \[485 \quad 485\]

Absolute value of z statistics in parentheses

* significant at 5%; ** significant at 1%

The 1997 property tax, state revenues, and pay variables have been adjusted to 2002 dollars using the CPI-RS.

<table>
<thead>
<tr>
<th>Codes Included in Analysis</th>
<th>Codes Excluded From Analysis*</th>
</tr>
</thead>
<tbody>
<tr>
<td>001 = Airports</td>
<td>006 = National Defense (Federal)</td>
</tr>
<tr>
<td>005 = Correction</td>
<td>012 = Education - Instruction</td>
</tr>
</tbody>
</table>
023 = Financial Administration
024 = Firefighters
124 = Fire – Other
025 = Judicial and Legal
029 = Other Government Administration
032 = Health
040 = Hospitals
044 = Streets and Highways
050 = Housing and Community Development
052 = Local Libraries
059 = Natural Resources
061 = Parks and Recreation
062 = Police Protection – Officers
162 = Police – Other
079 = Welfare
080 = Sewerage
081 = Solid Waste Management
087 = Water Transport and Terminals
089 = Other and Unallocable
091 = Water Supply
092 = Electric Power
093 = Gas Supply
094 = Transit

112 = Education - Other Total
212 = Education - Admin/Clerical
312 = Education - Oper/Maint
412 = Education - Cafeteria
512 = Education - Bus Transport
612 = Education - Health/Rec
712 = Education - Student (Part-time Only)
812 = Education - Unallocable
014 = Postal Service (Federal)
016 = Higher Education - Other
018 = Higher Education – Instructional
021 = Other Education (State)
022 = Social Insurance Administration (State)
090 = Liquor Stores (State)

* We exclude function codes associated with education and those codes not applicable to municipal and county level governments. Our decision to exclude education codes stems from the jurisdictional complexity (i.e. special districts for education) surrounding local education and the lack of education variables in the ICMA data sets.