Privatization of Local Public Services: Lessons for New England

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As governments consider ways to provide public services more efficiently, privatization can seem like an attractive option. Yet the subject engenders sharp controversies. As noted in a recent report by the National Governors' Association, "Proponents of privatization believe private enterprise can deliver the same services government provides for less money, with higher quality of service and increased flexibility. . . . Opponents of privatization believe that such efforts undermine the quality of services, destroy public employee unions, invite corruption, and weaken government control of services key to the public interest" (1993, p. 43). In New England, the latter concerns appear to dominate, since local governments in the region generally have not engaged in as much privatization as those in other parts of the country.

This article examines the evidence on the relative merits of privatizing public services and attempts to determine whether these costs and benefits actually appear to explain local government behavior throughout the United States. The article begins with a broad description of the mechanisms used in privatization, followed by evidence on the extent to which state and local governments have privatized service delivery. Contracting with private vendors turns out to be more common than use of vouchers or subsidies. However, the tendency to contract out varies considerably across services. The advantages and disadvantages of contracting are then discussed, followed by an empirical analysis of why some localities contract out more or less than others. Measurable advantages and disadvantages vary by community, and explain part (but only part) of the differences in contracting across communities. The limited scope of privatization by New England local governments in particular defies explanation, suggesting that communities in the region may wish to reexamine their choices of how to provide services, if they have not done so recently.

I. What Is Privatization?

Privatization refers to a shift from public to private production. This article focuses on privatization of traditional public services.[1] By definition, these are services for which purely private markets are considered inadequate (see the box). Privatization takes advantage of the perceived cost efficiencies of private firms. However, government intervention is required even after privatization in order to ensure that sufficient services are provided to residents. Privatization of public services has been largely a "bottom up" experience in the United States, with local governments in the vanguard and higher levels of government trailing behind. As a result, this article concentrates on efforts by local and, to a lesser extent, state governments.[2]

Under a common privatization arrangement, the government enters into an agreement specifying that a selected private entity (rather than a government agency) is responsible for producing particular services. The government chooses the service level and pays the amount specified in the contract, but leaves decisions about production methods to the private firm. Contracting may be used, for example, to privatize the disposal of hazardous waste or operation of homeless shelters (as well as a range of other services).

Another form of privatization is the franchise, whereby a private firm or firms are awarded the right to perform a specified service within a geographic area over which the government has jurisdiction. The company charges members of the public for services (rather than receiving payment from the government, as in a contract), while the government regulates the level of service and the price charged. Examples of services for which franchises are awarded include trash collection, vehicle towing, and operation of a public utility. These are services for which governments typically charge user fees even when the service is produced internally.

Public Goods and Services

Pure public goods and services are those for which consumption is nonrival (that is, adding another consumer imposes no additional cost of providing the goods and services) and nonexcludable (that is, preventing another person from consuming the goods and services is either very expensive or impossible). Other goods and services have some degree of "public-ness," even though they are not "pure." Traditional textbook examples of public services include national defense and fire protection.

Economic theory has demonstrated that, in the absence of government intervention, the private sector would underprovide public goods and services compared to the level that society as a whole would prefer. By contrast, the private sector is the preferred provider of those goods and services for which each consumer is charged a (nonzero) price equal to the added cost of supplying the good or service to him/her, and where it is feasible costlessly to exclude anyone who does not pay.

Another, somewhat different justification for government intervention relates to distributive justice. The citizenry may object to purely private markets in cases where the prices charged would deter some individuals from consuming what are viewed as socially desirable quantities. In these cases, the government charges needy residents a price below the cost of providing the goods or services, and it funds the difference through other mechanisms, principally taxation.

[1] In some countries, governments have privatized state-owned enterprises involved in the production of goods and services that elsewhere are commonly produced by the private sector. Western European countries, especially the United Kingdom and France, have sold off state-owned enterprises in industries such as automobiles, glassmaking, telecommunications, airlines, finance, and insurance (see Hemming and Mansoor 1988). The countries of the former Soviet bloc are now engaged in similar privatization efforts, on a more massive scale. Once enterprises have been sold, they function like any other private business. By contrast with foreign economies, the role of commercial and industrial public enterprises has been considerably more limited in the United States. Government enterprises have been estimated to account for only about 1 percent of total U.S. GDP, compared to a range of 4 to 16 percent in other OECD countries, and 65 to 97 percent in the former Soviet bloc prior to recent reforms (Schwartz 1993). Furthermore, government enterprises in the United States tend to specialize in a limited range of activities (primarily postal services, utility services, and liquor sales) rather than competing with private corporations on a broad scale. In light of the relatively limited role of the public sector in the United States, it is not surprising that only minimal sales of government enterprises or other government-owned assets have taken place. In 1990–91, for example, the share of general own-source revenue raised by selling property was only 0.45 percent for the federal government, 0.04 percent for state government, and 0.22 percent for local governments (U.S. Bureau of the Census 1993, Table 6).

[2] For discussion of privatization by the federal government, see Donahue (1989), especially chapter 6. Also, the article's emphasis on public services, as opposed to public goods, simply reflects the fact that governments in the United States rarely provide goods.

A final type of privatization maintains a funding role for government (in order to maintain some level of demand for the services), but permits individual consumers to choose providers. For example, governments may issue vouchers to residents for the purchase of private day care.[3] Or they may provide subsidies to private service organizations, such as grants to private human services providers or capital equipment for use by citizen groups performing neighborhood improvement projects.

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Privatization alters who produces public services, but it does not inherently alter who pays. Suppose that prior to privatization, a service was produced by government employees and funded by the government. Upon privatization, the service would be produced by private sector employees, but the government could continue its financing role. In other cases, government funds might be supplemented by user fees—both before and after privatization. To take a specific example, a contract could specify that a private company provide free bus services for riders (to be paid for totally by the contracting government), or it might allow the company to charge a fare (thereby reducing the size of the public subsidy). Similar funding options apply to government-operated transportation services: they may be paid for by taxpayers in general, by individual consumers, or by some combination of the two groups. To take another example, suppose that prior to privatization, trash is collected by public employees, but residents are charged a fee for this service. Under a franchise arrangement, residents would pay fees to a private company.

If privatization saves on overall costs, government outlays decline even if service levels and user fees remain unchanged. Governments engaging in privatization sometimes decide to cut back the share of costs covered by public funds. In these cases, government outlays decline further. Residents consuming public services pay more if the overall cost saving from privatization is less than the decrease in public funding.

II. The Scope of Privatization

Although state and local governments on the whole continue to use their own employees for the majority of services provided to residents, a great variety of public services are fully or partially privatized in a large number of localities. Contracting is the most common form of privatization.

Privatization by Local Governments

Methods of delivering local services vary considerably, and a locality may use a mix of different types of public and private providers for any given service. The International City Management Association (1989) conducted a poll of 1,681 cities and counties regarding 71 services that may have been available to their residents in 1988. In general, public employees were more important producers of public services than private employees. Services differed in the extent to which they were privatized. The services most likely to be performed exclusively by local government employees were street cleaning, meter maintenance and collection, cemetery administration and maintenance, inspection and code enforcement, utility meter reading, water distribution, water treatment, traffic control and parking enforcement, building security, payroll, secretarial services, personnel services, and public relations/information. For these services, three-quarters of responding localities indicated using only their own employees. Police and fire services, which are considered by many to be at the core of local government functions, were exclusively performed by local government employees in about 70 percent of cases.[4]

By contrast with these functions, other local government functions have been privatized to a greater extent (Table 1). The most commonly privatized service is vehicle towing and storage: 80 percent of respondents reported issuing contracts, and another 8 percent issued franchises. This may be because towing services are identical whether vehicles are towed from public or private property. Several other services that are commonly contracted out,

[3] Special-purpose tax credits and deductions are equivalent to vouchers, even though they do not result in actual outlays by government. To emphasize their similarity to government spending programs, such credits and deductions often are referred to as tax expenditures.

[4] Some of the remaining cities and counties used employees of another level of government to supply services, in addition to their own employees. Intergovernmental arrangements were especially common in the case of health and human services.

Table 1
Private Provision of Public Services in a Sample of Cities and Counties, 1988

Percent of Respondents	Services and Method of Provision			
	Contract with Private Firm	Franchise	Subsidies	Volunteers
75 and higher	Vehicle towing and storage	—	—	—
50 to 74	Legal services	Gas	—	—
25 to 49	Solid-waste collection and disposal, street repair, traffic signal installation/maintenance, tree trimming/planting, bus system operation/maintenance, paratransit system operation/maintenance, airport operation, utility billing, street light operation, hazardous materials disposal, day care facility operation, operation of mental health/ retardation programs/facilities, drug/alcohol treatment programs/ facilities, operation of homeless shelters, food programs for the homeless, buildings/grounds maintenance, fleet management/ vehicle maintenance, labor relations	Electricity	Operation of homeless shelters, food programs for the homeless	Programs for the elderly, operation of homeless shelters, food programs for the homeless, recreation services, operation of cultural/arts programs, operation of museums

Note: Where applicable, respondents indicated more than one method of providing a service. Fewer than 10 percent of respondents indicated using vouchers or regulatory and tax incentives for any service.
Source: International City Management Association (1989).

including legal services and maintenance of equipment and facilities, also are often purchased by the private sector. In addition, a variety of transportation-related and human services have been privatized by local governments. Localities commonly grant franchises for gas and electricity supply (though, interestingly, not for water). Compared to contracts and franchises, vouchers and subsidies were used relatively rarely. Volunteers—another way of minimizing government employment—were used in at least one-quarter of localities for certain human and recreational services, as well as by between 15 and 20 percent of fire, police, and ambulance departments.

The quinquennial Census of Governments includes information about privatization starting in 1987.[5] One-third of all general-purpose local governments in the United States contracted out or issued franchises for at least one service shown in Table 2.[6] In broad consistency with the results of the ICMA poll, the Census data show that gas supply, public transport, and electric power often involve private sector employees, while the services of libraries, sewerage systems, fire protection, and water supply are usually supplied by public employees. The remaining services—airports, hospitals, landfills, nursing homes, and stadiums and conference centers—are intermediate cases.

On the whole, local governments were more likely to contract out for services that commonly are offered by the private sector or other levels of government. Conversely, they tended not to contract out for services that are commonly the responsibility of local government. For example, fire protection, sewerage systems, and water—which are among the least likely services to be contracted out—were provided by more local governments than was the case for the remaining services.[7] Two potential explanations exist

[5] Information from the 1992 Census of Governments was not yet available at the time this article was prepared.

[6] General-purpose governments provide a variety of services. By contrast, school districts and special districts perform a single function. In the terminology of the Census, "contracting" includes franchise agreements. Henceforth, this article will adopt the Census terminology.

[7] For all 12 services, a simple regression explaining the percentage of all governments contracting out by the percentage of all governments providing the service (using either their own or private employees) yielded a significant negative coefficient for the explanatory variable. The adjusted R-squared was 0.33.

for this behavior, the first attitudinal and the second practical. Services commonly provided by local governments may be viewed as part of their essential mission, and therefore officials may be reluctant to allow them to be performed under contract. Furthermore, for this category of services, outside contractors may be in scarce supply.

Townships were more likely to contract out than municipalities or counties.[8] In part, this reflects their limited size. Localities with under 10,000 in population generally were more likely to contract out than larger localities. For a variety of services, the largest local governments contracted out less often than medium-sized governments.

Contracting varies across geographic regions, with the Midwest (encompassing the West North Central and East North Central Census areas) and West South Central regions having the greatest and the South Atlantic the least tendency for private production (Table 2). New England was the second to lowest region, as only one-quarter of local governments have contracted out or issued franchises for the services indicated. Out of the nine Census regions, New England ranked seventh or lower in privatization of airports, electric power, fire protection, hospitals, landfills, libraries, and nursing homes. Only in the cases of gas supply, public transit, and water supply was New England's extent of private supply more extensive than the national average.

Local governments in New England are much more likely to provide fire protection, landfills, and libraries for their residents than is true nationwide.[9] For the reasons noted above, this fact may contribute to limited contracting. Conversely, gas supply and water are provided by a relatively low fraction of general-purpose local governments in New England, which may contribute to an above-average willingness among the remaining local governments to contract out for these services.[10] For the other seven services, however, contracting behavior in New England is not explained by a simple hypothesis about the extent to which they fall within the purview of local governments. Alternative hypotheses are examined later in this article.

Privatization by State Governments

According to the Council of State Governments, states have been slower to privatize services than have local governments, but their interest has accelerated sharply in the past several years (Chi 1993). Although comprehensive numerical data are not available, the New England states appear to be as active as others in privatizing a variety of services. Maine and Massachusetts are among 22 states issuing recent studies exploring the feasibility of privatization. Connecticut, Maine, Massachusetts, New Hampshire, and Vermont (along with 21 states outside New England) have reportedly privatized more than 15 percent of their mental health and mental retardation programs. Ten states (including Rhode Island and Vermont) have privatized more than 15 percent of their remaining health services programs, 14 (including New Hampshire and Vermont) social services, and 23 (including Maine, Massachusetts, and Vermont) transportation. However, no New England states were among those with high rates of privatization of general administrative services, corrections, or educational programs.[11]

III. Advantages and Disadvantages of Privatization

Case studies have been used to evaluate particular experiences with privatization of state and local government functions. Taken as a whole, these studies do not indicate that contracting is uniformly better or worse than provision of services by public sector employees. But they do come to a consensus on the advantages and disadvantages of contracting in cases where it has been tried.

Reduced Costs and Other Potential Advantages

In a wide variety of cases, contracting has resulted in the same level of service being provided at

[8] Only 18 states, concentrated in the Northeast and Midwest, have the township form of government. In other states, the smallest units are municipal governments. Municipalities serve specific population concentrations; townships serve inhabitants of geographic areas defined without regard to population concentrations. In some states, municipalities and townships serve overlapping territories, but this is not the case in New England.

[9] The percentages of New England localities providing these services were 73.2, 60.7, and 54.5, respectively, compared to national averages of 50.6, 21.2, and 20.6 percent.

[10] Only 1.5 percent of New England localities indicated that they were responsible for supplying gas, and 28.9 percent water, to their residents. The national averages were 5.7 and 36.9 percent, respectively.

[11] Eight states report privatization of at least 15 percent of their general administrative services. Five states report privatizing 11 to 15 percent of their corrections programs and two have privatized an equivalent share of educational programs.

Table 2
Local Governments Contracting Selected Services as a Percent of Total Providing Services, by Type of Government, Population, Size, and Geographic Region, 1987

	Airports	Electric Power	Fire Protection	Gas Supply	Hospitals	Landfills	Libraries	Nursing Homes	Public Transit
Type of Government									
Counties	31.1	73.5	23.9	77.8	35.2	22.2	15.2	25.5	39.8
Municipalities	28.5	50.9	11.4	57.5	53.8	42.3	12.8	56.7	47.5
Townships	47.7	84.9	52.1	93.6	71.4	35.7	23.2	68.4	59.5
Population									
100,000 and over	15.6	32.7	13.3	53.3	27.8	22.8	7.9	12.8	40.1
50,000 to 99,999	34.0	35.7	11.3	60.0	41.0	20.5	19.7	20.0	40.3
25,000 to 49,999	35.3	31.9	10.3	63.9	41.5	28.1	7.3	28.3	37.6
10,000 to 24,999	38.5	33.1	11.3	55.9	40.9	29.3	15.4	44.4	48.8
Less than 10,000	28.3	58.9	29.1	62.0	53.0	40.2	16.4	53.5	56.2
Geographic Region									
New England	23.4	47.3	8.4	75.0	37.8	30.1	3.6	29.2	70.8
Mid-Atlantic	45.8	72.9	35.9	97.0	61.6	46.0	26.1	30.2	54.7
East North Central	38.1	62.6	35.5	81.9	51.6	42.2	21.0	41.2	48.6
West North Central	23.7	56.0	36.0	69.2	39.3	45.4	11.2	39.1	44.9
West South Central	24.6	56.2	36.0	67.8	38.2	39.9	11.0	40.2	48.6
South Atlantic	34.6	42.2	13.1	40.1	48.1	26.0	16.9	44.9	37.5
East South Central	36.5	45.0	5.7	26.6	41.7	33.8	14.4	51.9	45.6
Mountain	26.1	49.2	10.3	71.9	51.3	31.6	12.2	50.6	41.3
Pacific	27.5	42.0	13.5	67.6	43.8	37.3	24.6	52.3	50.2
All Local Governments	30.1	55.3	26.1	61.4	45.7	36.4	15.4	39.6	48.5
Memo: Number of Governments Providing Service	3,059	3,846	19,698	2,204	1,404	8,268	8,032	1,148	1,313

Source: U.S. Bureau of the Census (1988).

substantially lower cost, although utilities seem to be an exception. In a response to a 1987 survey, three-quarters of city and county executives with experience with contracting cited cost reductions as the primary benefit of contracting out, and most indicated that they were satisfied with the quality of the work performed by the private contractor (David 1988). Of those reporting some cost saving, 18 percent estimated it at below 10 percent, 39 percent between 10 and 19 percent, and the remaining 43 percent at 20 percent or more. In response to a survey by the Council of State Governments, many states cited savings in the range of 11 to 30 percent (Chi 1993). Transit authorities in the United States and the United Kingdom have saved in the range of 20 to 30 percent by privatizing bus services (Gómez-Ibáñez and Meyer 1993).

Econometric analyses have provided concurring evidence in some cases. One such study examined public and private suppliers of municipal services in the Los Angeles metropolitan area (Stevens, as cited in Donahue 1989). After controlling for the scale of service, the level and quality of service, and the physical conditions of the service area, the author estimated cost savings ranging from 37 percent for tree maintenance to 96 percent for asphalt overlay construction, with intermediate results for janitorial service, traffic signal maintenance, street cleaning, trash collection, and turf maintenance. Private contractors and public employees were equally efficient

Sewerage System	Stadiums, Auditoriums, Convention Centers	Water Supply	Total	Memo: Number of Governments
19.5	22.2	21.6	32.1	3,300
6.3	20.4	5.8	25.6	19,910
21.4	46.8	24.4	48.7	9,036
5.7	16.5	7.8	30.2	771
13.1	9.2	9.0	29.6	900
14.7	18.9	10.6	29.4	1,598
12.5	24.2	11.7	30.3	3,385
7.2	30.2	7.2	33.4	25,592
6.9	21.4	8.6	25.4	1,752
17.4	38.0	16.7	34.8	3,925
10.7	35.6	9.0	36.5	8,504
2.8	26.1	5.1	40.6	7,141
2.9	24.0	5.5	39.3	8,083
9.6	17.9	7.3	24.5	2,998
7.5	12.6	8.0	25.5	1,848
6.2	16.9	4.7	26.8	1,639
10.6	19.0	4.8	30.7	1,526
8.2	22.8	7.8	32.7	32,246
13,224	969	14,367		

in providing the remaining service, payroll preparation. Another econometric study found greater operating efficiency for privately owned than for publicly owned urban transit systems across the United States (Perry and Babitsky 1986).[12]

Studies of water and electric utilities are less decisive. Seven out of the thirteen studies cited in Donahue (1989) indicate no significant difference in costs between publicly and privately owned utilities, after controlling for other factors (such as the size of the service area) that might affect unit costs. Of the remaining six studies, all but one found publicly owned utilities to be more cost efficient than privately owned utilities.

Cost savings from using private contractors may come from a variety of sources. Some authors contend that privatization reduces costs primarily by introducing competition into markets in which public agencies enjoyed a monopoly position (see, for example, Savas 1992 and Gómez-Ibáñez and Meyer 1993).[13] Under this view, governments can foster cost efficiencies by encouraging bidding by multiple entities when a contract is up for renewal and by ensuring that the current supplier does not have an unfair advantage in the contract process.[14] The argument also provides an explanation for the lack of cost savings from privatizing utilities. Because utilities are natural monopolies, with per customer costs falling as the service area increases, competition is not advantageous.

Additional studies point to specific cost advantages of private suppliers (see, for example, Kettl 1993a and 1993b, Dudek & Company 1988). Private firms may pay lower wages and fringe benefits (notably retirement benefits) than local governments. But they also often appear to have higher labor productivity. Private firms have more flexibility to use part-timers to meet peak loads, to fire unsatisfactory workers, and to allocate workers across a variety of tasks. In some cases, a private contractor may enjoy greater economies of scale or scope, or access to more productive capital. For example, the private contractor providing firefighting services to Scottsdale, Arizona also serves adjacent rural communities and designs its own specialized vehicles and equipment (Donahue 1989, p. 71).

While a private contractor may produce services more efficiently than public employees, governments incur new contracting and monitoring costs when they shift to private suppliers. The best studies of contracting have attempted to measure these additional costs in evaluating privatization efforts, although admittedly this is hard to do. Actions against contractors overrunning projected costs, not main-

[12] However, the authors found that private management of publicly owned transit systems did not result in cost savings; they attributed this result to a lack of sufficient incentives in contracts.

[13] In a similar vein, Boardman and Vining (1989) concluded that previous studies comparing public and private enterprises failed to find greater efficiencies on the part of the latter largely because they examined markets with limited possibilities for competition. Their own study, which is limited to industrial markets where competition exists, finds greater efficiencies for private firms.

[14] The United Kingdom introduced mandatory competitive bidding for local services starting in 1988. This provision covers refuse collection, street cleaning, and maintenance of vehicles and grounds, among others (Lauder 1992). However, Donahue (1989, p. 64) notes that open competition is an expensive option if it results in a loss of economies of contiguity.

taining quality standards, or perhaps even engaging in fraud are likely to engage multiple departments of government.

Burdens for Public Employees and Other Potential Disadvantages

The burdens of contracting are concentrated on the public sector work force. In some cases, privatization results in layoffs of public sector employees, although governments often lower the burdens on employees by reassigning them to other government jobs, placing them with private contractors, or offering early retirement programs. One study proposes that governments link the pace of privatization to the rate of public employee attrition, in order to avoid disruptions for workers (Cox and Love 1992). Still, because burdens on civil servants often are not eliminated entirely, public employee unions oppose privatization. Surveys have indicated that, where present, this opposition lowers the likelihood that public services will be contracted out (Dudek & Company 1988; The Mercer Group 1990, 1992).[15]

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On the whole, consumers do not appear to be hurt by contracting, and in some cases they actually benefit. For example, privately operated prisons have been found to result in higher satisfaction for inmates and guards, lower escape rates, and fewer disturbances (Thomas and Logan 1993). Studies of transit have found better maintenance, greater safety, and more innovations in the private sector (Perry and Babitsky 1986; Cromwell 1991; Gómez-Ibáñez and Meyer 1993).

Even though consumers as a whole may not suffer from privatization, certain subsets may be at risk. For example, contracting can be used to mask decisions to reduce services (Donahue 1989, p. 136). Contracting can be especially risky in human services. Elderly residents and those with infirmities tend to be sensitive to the way services are provided, and government may have very imperfect measures of quality with which to measure performance by the contractor (see especially Kettl 1993a and Schlesinger, Dorwart, and Pulice 1986). Furthermore, part of what advocates of privatization call waste on the part of the public sector may be the inevitable consequence of a conscious effort to redistribute resources to particular parts of the population (Borcherding and Pommerehne 1982). Despite these natural obstacles to privatization of human services, many examples of contracting exist—in part because of legislative mandates that governments seek bids from outside vendors.[16]

Finally, scattered examples exist of contractors who failed to live up to expectations, even though the average experience does not appear to be negative. As a consequence, elected officials may feel they can more readily avoid political risks by having public services operated by public employees.

IV. Determinants of Contracting

The previous section suggests that contracting can result in savings if private sector firms are more cost-effective suppliers of services than the public sector, and if markets for contracted services are sufficiently competitive. On the other hand, public sector employees have an incentive to block privatization because their jobs and incomes are at risk. Public sector unionization may increase the effectiveness of opposition to privatization. This section tests whether these factors actually appear to explain contracting patterns among local governments in the United States.[17]

[15] Unions may lobby for legislation that limits the potential cost savings from privatization, as well as directly opposing particular moves to privatize. For example, Chi (1992) reports that New York state has a law requiring government contractors to pay prevailing union wage rates.

[16] For example, Schlesinger, Dorwart, and Pulice (1986) cite a Massachusetts law requiring all new contracts for mental health patient services valued in excess of $40,000 to be competitively bid and all renewal contracts to be subject to competitive bidding at least once every three years. Before the enactment of the law, contracting existed but often was limited to designated private nonprofit organizations staffed at least in part by state employees.

[17] By way of comparison, Abraham and Taylor (1993) found multiple explanations for contracting by private firms. These included a desire to reduce labor costs, make use of specialized skills, and meet volatile demands.

Potential Explanations for Contracting

This section describes how the extent of contracting and potential explanations for contracting are measured. Appendix Table I provides additional details.

Extent of Contracting. The data on contracting are taken from the 1987 Census of Governments.[18] The sample consists of 655 municipalities and townships with population of at least 25,000 that provide at least four of the 12 services covered in the Census questionnaire.[19] The extent of contracting is measured as follows. For each service j that it provides, locality i is assigned a contracting dummy d_{ij}, equal to 1 if the service is contracted out and 0 if it is not contracted out. Let μ_j equal the fraction of all localities that contract out for service j (in other words, the average value of d_{ij}). The overall contracting index for locality i is measured as the sum of the deviations of its contracting dummies from their average values for all localities:

$$C_i = \sum_{j \in J_i} (d_{ij} - \mu_j)$$

where J_i represents the set of services provided by locality i. A positive value of the contracting index indicates that the locality contracts out more than average, adjusting for the mix of services provided to its residents and the fact that not all services are equally likely to be contracted out. A negative value indicates below-average contracting.

It is important to bear in mind that C_i provides a somewhat imprecise measure of the extent of contracting. The Census data indicate that a community contracts out for a service whether or not the service is entirely provided by outside contractors. Frequently, only some aspects of a given service are contracted out. For example, a town may contract out for hookup of new water customers while using its own employees to read meters. Or it may operate a general public transit system while it contracts out for shuttle services for senior citizens. In the extreme case, a single private sector manager may be hired to supervise civil servants. All these examples yield a contracting dummy equal to 1 in the Census survey, even though they represent different degrees of privatization. Unfortunately, no estimates of the dollar value of contracts or the number of contract employees exist for a broad sample of governments.

A potential problem with interpreting the Census data is that measured contracting includes cases when governments contract with other governments or quasi-governmental agencies. Therefore Census-measured contracting is not necessarily equivalent to privatization. The results of a small, informal survey confirm that the reported percentages of contracting for library and water services, though relatively low, indeed may overstate the degree of privatization.[20]

Costs of Providing Services. All else equal, a community should be more likely to hire private contractors the higher the costs of providing services by public employees relative to the cost of providing them using workers from the private sector. Average monthly earnings of local government noneducational workers are used to measure costs in the public sector. Average revenues per employee in the business services industry are used as an indicator of the costs of hiring private contractors.[21] Unfortunately, measures of non-wage cost differentials, which some studies find to be substantial, were not available.[22]

As the literature summary indicated, in the absence of competition among contractors, the community may not achieve potential cost savings from privatization because contractors are able to earn monopoly profits. Small, remote localities are especially likely to encounter this problem. The regressions include a dummy variable indicating whether or not the community is located in a metropolitan area as a proxy for the availability of contractors.[23]

[18] Note again that the Census of Governments uses "contracts" to encompass both contracts and franchises.

[19] Counties are omitted from the study and are a relatively unimportant level of government in New England. The omission of municipalities and townships with population below 25,000 reduced the total sample size from 28,946 to 1,662. The sample was further reduced to 1,196 because some communities did not report on the manner in which they provide the services covered in the Census questionnaire. Omitting localities that provide fewer than four services and those that lacked some of the explanatory variables further reduces the sample to 655.

[20] In connection with the current study, 22 communities in Massachusetts and Michigan were called in order to ascertain the nature of their contracts. All three communities contracting for library services, two (out of four) contracting for water supply, one (out of one) contracting for sewerage treatment, and one (out of four) contracting for transit did so with another government or public authority. Also, one administrator believed that the 1987 response to the Census of Governments regarding contracting for water was erroneous. In the cases of airports, hospitals, and landfills, the respondents confirmed that the contracts were with private firms.

[21] This measure was used by Good (1992).

[22] For example, Gómez-Ibáñez and Meyer (1993) note that more than one-half of the savings associated with transport privatization come from sources other than wages.

[23] Abraham and Taylor (1993) found this variable to be significant in explaining contracting behavior for two of the four private industries they studied.

Finally, abstracting from location issues, smaller localities may incur relatively high unit costs if they operate their own services as a result of not being able to achieve economies of scale. They may benefit from turning to a contractor that serves multiple communities. This hypothesis is tested by including the population of the locality among the explanatory variables.

Privatization may be more acceptable in fast-growing communities, where services are being expanded and contractors are less likely to displace public employees.

Opposition to Privatization. The study evaluates whether public employees may provide more effective opposition to privatization where they are unionized. In the regressions, the unionized percentage of local noneducational public employees varies by state, and is measured separately for municipalities and townships in cases where a state has these two forms of local government.[24] On the other hand, privatization may be more acceptable in fast-growing communities. If services are being expanded to cover new residents, contractors are less likely to displace existing public sector employees. The regressions use each locality's population growth rate over a six-year period.

Sensitivity to Costs. Even if two communities face identical cost differentials between private contractors and public employees, one may be more likely than the other to economize because its residents are less willing to pay for services. Per capita income provides one indication of the community's ability to pay. Income tends to be positively related to the value of property, which in turn is the major tax base for many communities. Furthermore, for a given value of property, a community will find it easier to raise revenues the higher the monetary income of its residents.[25]

Another measure of sensitivity to costs relates to the number of local governments in a given geographic area. Where government density is higher, each locality will be under greater pressure to minimize the costs of providing a given bundle of services (or to maximize the services it provides per dollar of revenue collected locally) in order to attract households and businesses. Eberts and Gronberg (1988) have shown that, all else equal, per capita government spending falls as the number of local general-purpose governments rises, a result they attribute to competition among governments.

Finally, contracting may vary with the number of services provided to residents. As the number of services increases, differences in the cost and effectiveness with which they are provided become more apparent. Prevailing pay scales or work rules may limit the possibilities for altering how public employees deliver services. Therefore, all else equal, localities providing diverse services may be more open to exploring private-sector alternatives than those localities where services are more limited.[26] The regressions include as an explanatory variable the total number of services covered by the Census questionnaire that are provided in the locality, whether by government employees or private contractors.

Other Determinants. The receptivity of a community to contracting may also depend on how residents view the role of their government. If citizens believe that local government should emphasize a narrow range of essential services, they might be relatively comfortable with using contractors in order to minimize the number of public employees. On the other hand, in places where the local government has a broader mandate to redistribute income, citizens may be less likely to support privatization. The first measure tested in the regressions is the percentage of the

[24] Information on the extent of unionization for individual municipalities and townships is not publicly available. For private firms, Abraham and Taylor (1993) found no systematic association between unionization and contracting out.

[25] Because information on contracting is available only for 1987, this study cannot distinguish factors that originally lead a locality to contract out for services from those factors that continue to play a role. For this reason, the study does not examine direct measures of fiscal health or fiscal stress, since they tend to fluctuate with business cycles. Alm, McKee, and Skidmore (1993) found, for example, that in the earlier years of their sample, fiscal stress contributed to states' decisions to adopt lotteries. More recently, decisions have been more influenced by practices in neighboring states.

[26] Somewhat analogously, Abraham and Taylor (1993) find that firms requiring diverse skills are more likely to contract out for work that pays wages that lie outside company norms. Specifically: "Our finding that high-wage establishments are more likely to contract out for janitorial services suggests that these establishments cannot easily pay low wages to janitors on their own payrolls. Similarly, the finding that low-wage establishments are more likely to contract out for certain types of high-skill services suggests that these establishments cannot easily pay high wages to workers in selected occupational groups."

locality's general noneducational expenditures allocated to core services, here measured as police and fire protection. The other is the percentage spent on human services, measured as public welfare plus health and hospitals. Because these indicators are negatively correlated with each other, they are entered sequentially rather than simultaneously.[27] Finally, regional dummies are used to test for attitudes or other unspecified influences that may be widespread in a region rather than being specific to any given community.

Regression Results

The regressions reveal that, in deciding how to provide services, smaller localities respond more to economic variables than do larger localities. In both cases, attitudinal variables also matter, as do additional factors not taken into account in the regressions. Table 3 presents the most satisfactory regression results, while Appendix Table 2 presents results using a more comprehensive set of explanatory variables.[28]

Costs are highly significant determinants of contracting for localities with a population under 50,000 (columns 1 to 3). These localities were more likely to contract out if the average wage in the public sector was high, if they were located in a metropolitan area, and if they were small. Costs mattered both for non-utility services and for utilities, though they mattered more for the former category.[29] Private sector revenues per employee were not significant (Appendix Table 2). Unionization and population growth were significant at the 10 percent level for non-utility services; they entered with the expected signs (negative and positive, respectively) for utility services, but were not significant. The number of services provided was a strong predictor of the likelihood of contracting. The performance of the other measures of sensitivity to costs—per capita income and the density of governments—was disappointing; often they were insignificant or entered with the wrong sign. As expected, localities where government expenditures are highly concentrated on health and human services were less likely to contract out. Conversely, places where the government concentrates on providing "core" services are more likely to contract out, although the significance of this variable was somewhat lower than the health and human services variable. (This latter version of the regression is not shown in the tables.)

Columns 4 to 6 report on regressions with selected regional dummies.[30] The New England dummy enters with a negative coefficient that is significantly different from zero in the "All Services" equation. With the regional dummy variables, the unionization and population growth variables lose significance, which suggests that the exact causes of objections to or acceptance of privatization are hard to pin down. Finally, adjusted R-squared values in the range of 0.2 to 0.3 confirm that localities are strongly guided by factors that are not measured in the regressions—including perhaps the presence or absence of political leaders who support privatization, the reputation of local contractors, or differences in costs of providing fringe benefits or in productivity between the public and private sectors.

A smaller set of explanatory factors mattered for localities with population of 50,000 or more (columns 7 to 9). The larger localities in this group were a little less likely to contract out than localities with population under 50,000. Higher public sector wages contributed to contracting, but the coefficients were not as significant and were smaller than for communities with population of less than 50,000. Since all places with population of at least 50,000 are located in a metropolitan area, the availability of contractors was not an issue. Contracting was more prevalent in localities providing a greater number of services (among the 12 covered) or concentrating a greater share of expenditures on core services, and among those located in the Middle Atlantic states. Unionization and population growth were insignificant (even in the absence of regional dummies), and the explanatory power of the regressions was less than in the case of smaller communities.

[27] The omitted category of expenditures largely represents public infrastructure. It includes roads, recreational facilities, and community development.

[28] A separate set of regressions (not shown) used a probit model to examine privatization with respect to individual services. Variables generally entered with the same signs as in the regressions measuring the total extent of contracting, but the coefficients were less likely to be significantly different from zero. In another set of alternative regressions, contracting indexes were defined separately for localities with population under and over 50,000, based on each group's average contracting experiences. In other words, the values of μ_1 were allowed to differ between the two groups. These regressions yielded results very similar to the ones reported, which used averages from the entire sample.

[29] The non-utility regressions are estimated for those localities providing at least four (out of nine) non-utility services. The utility regressions include localities providing at least two of the following three services: electricity, gas, and water. As a result of these criteria, the number of observations is much smaller for the utility equation than the other equations.

[30] Omitted dummies were rarely (if ever) significant in any regression.

Table 3
Contracting Regressions

Independent Variable	Population Between 25,000 and 49,999						Population 50,000 and Over		
	Without Regional Dummies			With Regional Dummies					
	All Services (1)	Non-Utility Services (2)	Utilities (3)	All Services (4)	Non-Utility Services (5)	Utilities (6)	All Services (7)	Non-Utility Services (8)	Utilities (9)
Costs									
Average wage in public sector	.8123*** (.1942)	.9780*** (.2148)	.5268** (.2446)	.7761*** (.1987)	.9646*** (.2218)	.5031** (.2354)	.3410* (.1859)	.2164 (.1676)	.0593 (.2554)
Location in metropolitan area	.6659*** (.1774)	.4445*** (.1649)	.4521** (.2248)	.6729*** (.1766)	.4613*** (.1656)	.4875** (.2348)			
Population	−.0195** (.0097)	−.0218** (.0102)	−.0146 (.0125)	−.0212** (.0097)	−.0223** (.0102)	−.0125 (.0129)	−.0004** (.0001)	−.0003*** (.0001)	−.0002 (.0002)
Opposition to Contracting									
Unionization	−.0053 (.0041)	−.0078* (.0043)	−.0057 (.0047)	−.0037 (.0047)	−.0073 (.0051)	−.0042 (.0057)	.0020 (.0053)	.0016 (.0046)	.0082 (.0087)
Population growth	.0033 (.0039)	.0107* (.0055)	.0040 (.0043)	.0023 (.0039)	.0093 (.0056)	.0031 (.0044)	.0037 (.0050)	.0037 (.0045)	.0021 (.0068)
Sensitivity to Costs									
Number of services	.3034*** (.0432)	.2580*** (.0447)	.2424*** (.0423)	.3148*** (.0433)	.2534*** (.0444)	.2431*** (.0427)	.2224*** (.0384)	.1568*** (.0354)	.1825*** (.0468)
Other									
Concentration on core functions							.0186** (.0094)	.0171** (.0087)	.0133 (.0129)
Concentration on health and human services	−.0139*** (.0051)	−.0096* (.0053)	−.0061 (.0054)	−.0134*** (.0051)	−.0094* (.0052)	−.0053 (.0056)			
New England dummy				−.4835** (.2255)	−.3081 (.2262)	−.3324 (.2986)	−.0481 (.3059)	−.0999 (.2621)	.3868 (.9377)
Middle Atlantic dummy				.1364 (.2584)	.3758 (.3677)	.0488 (.4140)	.8450*** (.2743)	.9106*** (.2656)	1.442*** (.3968)
West North Central dummy				−.4492* (.2558)	−.3555 (.2409)	−.3121 (.3724)	−.4801* (.2698)	−.3888* (.2260)	−.0362 (.3191)
Constant	−2.855*** (.5317)	−2.742*** (.5379)	−2.318*** (.6916)	−2.756*** (.5354)	−2.628*** (.5427)	−2.366*** (.7071)	−2.747*** (.5015)	−2.063*** (.4473)	−2.170*** (.7175)
Adjusted R-squared	.200	.240	.298	.215	.252	.291	.119	.126	.255
Number of observations	316	213	89	316	213	89	339	269	86

***Significant at 1 percent level.
**Significant at 5 percent level.
*Significant at 10 percent level.

Contracting Decisions in the New England States

The equations including regional dummies fit the New England averages very closely.[31] Without the dummies, New England contracting is overpredicted. For example, for localities with population under 50,000, the regression excluding regional dummies predicts the overall New England contracting index to be close to, rather than substantially below, the

[31] For localities with population under 50,000, the nine regional values of the overall contracting index ranged from −0.32 to +0.60; New England's value of −0.26 was the second lowest (Table 4). For localities with population of at least 50,000, New England had the third to lowest value.

Table 4
Regression Variables

Variable	Population Between 25,000 and 49,999		Population 50,000 and Over	
	United States	New England	United States	New England
Contracting Index				
Overall	.09	−.26	−.12	−.24
Non-utility services	.08	−.24	−.12	−.30
Utilities	.07	−.14	.07	[a]
Average wage in public sector	2.00	2.03	2.19	2.05
Location in metropolitan area	.81	.90	1.00	1.00
Population	34.54	33.87	197.23	97.24
Unionization	35.49	53.80	36.78	64.39
Population growth	8.55	1.40	8.65	−.35
Number of services	5.52	5.73	6.10	5.97
Concentration on core functions	24.50	24.57	24.70	23.52
Concentration on health and human services	4.71	6.62	4.51	9.92

Note: The values shown for the independent variables are average values for localities providing at least four (of the twelve) services.
[a]Only one local government in New England was included in the utilities regression.

national average. In other words, the region's low contracting tendency remains a mystery.

Table 4 indicates the role of measurable influences on privatization. Given their cost factors, New England localities with population under 50,000 would be expected to contract out more than their counterparts in other parts of the country. Ninety percent are located in a metropolitan area, compared to 81 percent nationally. Also, the average New England locality pays slightly higher wages and is slightly smaller than the average included community in the nation. For localities with population over 50,000, cost factors are mixed.

Factors other than costs partly explain low privatization in New England. In other states, on average only about one-third of public sector employees are unionized, compared to over one-half in New England. Population growth has been minimal in the region, which means that there is little need for expansion of public services. Therefore, private contractors would be likely to displace public employees. Finally, a relatively high share of government non-education spending is devoted to health and human services, which the regressions showed was a negative indicator of contracting.[32]

V. Conclusions

Surveys and other analyses confirm that state and local governments can achieve savings, without sacrificing quality, by privatizing the delivery of services through judicious use of private contractors. Regressions indicate that localities do in fact tend to contract out to avoid paying high public sector wages. They also are more likely to contract out if they provide multiple services. A wide range of functions apparently makes cost comparisons across programs more feasible, while making it less likely that civil service rules produce desirable results for all programs. Local governments are more likely to contract out when they serve a small population and when they are located in a metropolitan area. In such circumstances, they may find it difficult to achieve sufficient scale economies on their own, but have access to a number of contractors to ensure competition.

These factors, while significant, do not explain much of the observed variation in the degree of contracting across localities. Attitudes are important. Places where government concentrates a greater share of resources on provision of basic public services such as police and fire protection are more likely to contract out than places where the government is charged with more active redistribution of resources. Unobservable factors—including perhaps the views of local politicians or relative non-wage costs between the public and private sectors—also affect government decisions.

In addition to this variation across localities, some services are less likely to be contracted out than others. In particular, basic public services such as fire protection are contracted out far less often than services that are commonly purchased individually by private businesses. The reason for this discrep-

[32] A study by Tannenwald (1990) had found that New England's high priority on collective services and redistributional expenditures limited the extent to which the region could rely on user fees to finance public expenditures. An interesting extension of the work in that article and the current study would be to consider in a simultaneous model the effects of preferences for public services on methods of service delivery and financing.

ancy may be partly economic (the relative abundance or scarcity of private contractors for some services) and partly attitudinal (whether or not the service is viewed as the responsibility of local governments). For electric power and gas supply, contracting rates are relatively high, despite evidence that public utilities often can produce services at costs that are no higher, and may even be lower, than those of private utilities.

Cities and towns in New England have shown less willingness to privatize public services than their national counterparts. This discrepancy could not be explained. Despite historical opposition, however, there is reason to believe that contracting out and other forms of privatization will become more popular in the future. A general move to improve cost efficiency and productivity in government has created considerable interest in privatization efforts, and some state officials in the region are actively exploring further use of this option. Equally important, New England's local governments serve communities that on average are smaller, but more likely to be located close to concentrations of population, than is true for the nation as a whole. Access to multiple service providers increases the likelihood of being able to produce meaningful competition among contractors, which is an important prerequisite to achieving cost savings.

Appendix Table 1
Variable Definitions, Sources, Means, Minimums, and Maximums

Variable	More Detailed Definition	Data Source	Mean (Observations for 1196 Localities)	Minimum	Maximum
Contracting index	See text.	a	3.86e-10	−2.43	6.97
Average wage in public sector	Average October 1987 earnings of full-time employees, thousands of dollars.	b	2.15	.94	4.63
Location in metropolitan area	Dummy = 1 if the municipality or township is located in a metropolitan statistical area.	a	.94	0	1
Population	1986 population, thousands.	a	91.41	25.02	7,262.75
Unionization	Percent of public noneducational employees that are organized, by state. Computed separately for municipalities and townships.	b	37.73	1.31	93.67
Population growth	Population growth rate from 1980 to 1986.	a	9.85	−24.21	497.86
Government density	The number of county, municipal and township governments per square mile, by state. Computed separately for metropolitan statistical areas and other areas.	b & d	.03	.00	.08
Revenues per employee	Annual receipts for firms providing business services relative to the number of paid employees.	a	3,005.5	350.0	11,070.6
1987 income per capita	Per capita money income, thousands of dollars.	c	12.89	4.39	36.69
Number of services	Sum of the number of services operated and the number of services contracted.	a	4.43	0	12
Concentration on core functions	Expenditures on police and fire protection as a percent of total expenditures less education.	b	25.6	0	57.5
Concentration on health and human services	Expenditures on public welfare and health and hospitals as a percent of total expenditures less education.	b	3.4	0	79.8
New England dummy	Dummy = 1 if state = CT, MA, ME, NH, RI, or VT.	a	.1	0	1
Middle Atlantic dummy	Dummy = 1 if state = NJ, NY, or PA.	a	.17	0	1
East North Central dummy	Dummy = 1 if state = IL, IN, MI, OH, or WI.	a	.17	0	1
West North Central dummy	Dummy = 1 if state = IA, KS, MN, MO, NE, ND, or SD.	a	.07	0	1
South Atlantic dummy	Dummy = 1 if state = DE, DC, FL, GA, MD, NC, SC, VA, or WV.	a	.11	0	1
East South Central dummy	Dummy = 1 if state = AL, KY, MS, or TN.	a	.04	0	1
West South Central dummy	Dummy = 1 if state = AR, LA, OK, or TX.	a	.09	0	1
Mountain dummy	Dummy = 1 if state = AZ, CO, ID, MT, NV, NM, UT, or WY.	a	.06	0	1
Pacific dummy	Dummy = 1 if state = AK, CA, HI, OR, or WA.	a	.19	0	1

Source: U.S. Bureau of the Census: [a]machine readable data, 1988; [b](1988); [c](1993); [d]unpublished data.

Appendix Table 2

Contracting Regressions with a Comprehensive Set of Independent Variables

	Population Between 25,000 and 49,999								
	Without Regional Dummies			With Regional Dummies			Population 50,000 and Over		
Independent Variable	All Services (1)	Non-Utility Services (2)	Utilities (3)	All Services (4)	Non-Utility Services (5)	Utilities (6)	All Services (7)	Non-Utility Services (8)	Utilities (9)
Costs									
Average wage in public sector	.6534***	.8660***	.4186*	.5064**	.7845***	.2933	−.0797	−.0856	−.2763
	(.2199)	(.2558)	(.2510)	(.2305)	(.2737)	(.2743)	(.2326)	(.2091)	(.2928)
Revenues per employee in private services sector	.0473	−.0237	.0082	.0355	−.0448	−.0070	.0070	−.0277	.0866
	(.0756)	(.0926)	(.1134)	(.0748)	(.0921)	(.1133)	(.0812)	(.0734)	(.0906)
Location in metropolitan area	.5595***	.3983**	.3205	.5437***	.4185**	.3104			
	(.1970)	(.1842)	(.2644)	(.1950)	(.1836)	(.2740)			
Population	−.0138	−.0172	−.0134	−.0159	−.0176	−.0108	−.0004**	−.0003**	−.0001
	(.0104)	(.0111)	(.0133)	(.0103)	(.0110)	(.0134)	(.0001)	(.0001)	(.0002)
Opposition to Contracting									
Unionization	−.0061	−.0083*	−.0077	−.0028	−.0068	−.0033	.0066	.0055	.0073
	(.0044)	(.0047)	(.0053)	(.0050)	(.0055)	(.0065)	(.0057)	(.0050)	(.0094)
Population growth	.0033	.0103	.0060	.0030	.0102	.0048	.0049	.0048	−.0017
	(.0042)	(.0064)	(.0046)	(.0041)	(.0063)	(.0047)	(.0053)	(.0047)	(.0073)
Sensitivity to Costs									
Number of services	.3185***	.2706***	.2457***	.3323***	.2664***	.2473***	.2345***	.1608***	.1730***
	(.0449)	(.0459)	(.0447)	(.0446)	(.0455)	(.0441)	(.0395)	(.0364)	(.0494)
Per capita income	.0302	.0252	.0430	.0505**	.0369	.0670*	.0821***	.0710***	.0616
	(.0231)	(.0237)	(.0364)	(.0240)	(.0248)	(.0394)	(.0282)	(.0269)	(.0395)
Government density	−.3232	−.7637	6.715	1.634	1.285	7.281	.9190	.1050	−4.423
	(3.821)	(4.528)	(5.723)	(4.056)	(4.749)	(5.661)	(4.215)	(4.202)	(6.380)
Other									
Concentration on core functions							.0215**	.0181**	.0178
							(.0098)	(.0091)	(.0136)
Concentration on health and human services	−.0147***	−.0099*	−.0064	−.0137***	−.0092*	−.0046			
	(.0054)	(.0054)	(.0058)	(.0053)	(.0054)	(.0060)			
New England dummy				−.6974***	−.4454*	−.6012*	−.4719	−.4410	.7034
				(.2489)	(.2550)	(.3203)	(.3342)	(.2940)	(.9613)
Middle Atlantic dummy				−.0019	.3082	.2980	.6846**	.7869**	1.409***
				(.2809)	(.3846)	(.4440)	(.3131)	(.3070)	(.5114)
West North Central dummy				−.4525	−.3651	−.5339	−.4762*	−.4049*	.0013
				(.2820)	(.2743)	(.4255)	(.2870)	(.2444)	(.3525)
Constant	−3.171***	−2.907***	−2.697***	−3.132***	−2.824***	−2.820***	−3.133***	−2.355***	−2.322***
	(.5854)	(.6026)	(.7682)	(.5788)	(.5981)	(.7685)	(.5525)	(.4951)	(.8127)
Adjusted R-squared	.198	.236	.292	.220	.251	.310	.146	.149	.279
Number of observations	303	202	85	303	202	85	321	252	80

***Significant at 1 percent level.
**Significant at 5 percent level.
*Significant at 10 percent level.

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