

Maine State- and Local-Government Payroll and Expenditure in 2007

Philip A. Trostel*

School of Economics &
Margaret Chase Smith Policy Center
University of Maine

October 2010

* I am very grateful to Lisa Bragg for excellent research assistance.

Executive Summary

This report updates the background analysis written several years ago for the Brookings Institution as part of their work with GrowSmart Maine. The earlier report examined state- and local-government spending in Maine in comparison to the rest of the nation using data for fiscal year 2002. This report examines data for FY2007. The intention of both this and the earlier report is to provide readily available factual information about Maine's state- and local-government spending practices. The goal is to help replace a lot of anecdotes and impressions of wasteful government in Maine with more systematic analysis.

This report systematically examines interstate data on payroll and expenditure in 21 categories of state- and local-government services. Some of the key findings from this analysis are:

Aggregates

- After removing quasi-private enterprises, such as public hospitals and public utilities, from the data, Maine's aggregate state- and local-government expenditure less transfers from the federal government is high in comparison to the rest of the nation. Maine's aggregate net expenditure was 15% of state personal income in FY2007 (i.e., 15 cents every dollar we earn is used to provide state- and local-government services). This is 13% higher than the national average.
- Maine's aggregate state- and local-government payroll is also high in comparison to the rest of the nation. Maine's aggregate payroll as a percentage of income was 8% above the national average in FY2007.
- From FY2002 to FY2007 Maine moved slightly further away from the national averages of state- and local-government payroll and net expenditure.

Local Services

- Primary and secondary education is by far the largest state- and local-government service category, and in this Maine is high compared to the rest of the nation. Net expenditure per student in Maine is 8% higher than the national average, despite per capita income in Maine being well below the national average. Moreover, Maine being a relatively rural state apparently is not the reason for Maine's relatively high expenditure on public education.
- Maine's primary and secondary education spending per student increased slightly faster than the rest of the nation between 2002 and 2007.
- Maine spends much less on police protection as a percentage of income than the rest of the nation. This, however, appears to be due to Maine's relatively low crime rate and low income. After accounting for these factors Maine's level of police protection is about the same as in the rest of the nation.
- Maine's spending on fire protection is low compared to the rest of country, but this appears to be due to a cost advantage from being a rural state. Indeed, Maine's fire expenditure relative to personal income is higher than in other rural states.

- Maine's spending on fire protection increased faster than in the rest of the country from 2002 to 2007.
- Parks and recreation spending relative to income is low in Maine compared to the rest of nation and compared to other rural states, although Maine's spending in this category increased faster than in the rest of nation since 2002.
- Sewerage costs in Maine increased noticeably faster than nationally from 2002 to 2007. And Maine's sewerage spending relative to income is higher than in similarly rural states.
- Maine's spending on solid waste management increased substantially from 2002 to 2007 while it decreased in the rest of the nation. And Maine's spending on solid waste management is very high compared to the rest of the country.
- Spending on libraries in Maine is relatively low in comparison to other states.

State Services

- Public higher education net expenditure in Maine is low in comparison to the rest of the nation. Maine's net spending for higher education as a percentage of income is 18% lower than the national average. Maine's net spending per student is 14% lower than the national average.
- Maine moved slightly closer toward the national average in the public provision of higher education between 2002 and 2007.
- Public higher education in Maine may have unusually high costs in non-instructional areas. Maine has the nation's second highest non-instructional payroll relative to instructional payroll.

Mixed State and Local Services

- In comparison to the rest of the nation, Maine's spending on highways is high relative to income and relative to vehicle miles. This appears to be attributable to Maine's winter weather. Indeed, after taking weather into account, Maine's highways spending appears to be close to the interstate norm.
- Maine's spending on welfare benefits (mostly Medicaid) and on the administration of public welfare is very high in comparison to the rest of the nation. Maine's net expenditure as a percentage of income is the nation's 5th highest and 66% higher than the average. Public welfare payroll (i.e., the administration of public welfare as opposed to welfare benefits) as a percentage of personal income in Maine is the 2nd highest in the country and 68% greater than the national average.
- Maine's relative payroll in public welfare increased 46% since 2002. Nationally it decreased 13%.
- Although the evidence is conflicting, state government provision of financial administration in Maine may be high compared to the rest of the nation.
- Maine's corrections expenditure relative to income is well below the U.S. average, but Maine's relative number of prison inmates is even further below the U.S. average. Maine's corrections expenditure per inmate is 2nd highest in the nation and more than double the national average. Moreover, Maine being a relatively rural state apparently is not the reason for Maine's relatively high expenditure on corrections.

- Maine's legislative expenditure relative to income is 4th highest in the country and 68% greater than the average of similarly rural states.
- Maine is relatively high in local other-government administration compared to the rest of the nation and compared to other rural states.
- Maine's net spending on public health relative to state income is the 3rd highest in the nation, 125% greater than the national average, and 80% greater than the average of similarly rural states.
- Net expenditure on public health relative to income grew 5.1% in Maine since FY2002, while it decreased 9.1% nationally.
- In spending on judicial and legal services, Maine is low compared to most other states. Much, although not all, of this appears to be due to Maine's relatively low crime rate.
- In comparison to other states, Maine is somewhat high in spending on general public buildings, but this is mostly a consequence of being a rural state. Moreover, Maine moved considerably closer toward the national average from 2002 to 2007.
- Maine's net spending in the catch-all category Other and Unallocable is very high in comparison to other states. Maine's other and unallocable net expenditure as a percentage of income is 62% higher than the national average, although this difference is slightly smaller than it was in FY2002.

It is important to stress that all of the above conclusions are only interstate comparisons of state- and local-government payroll and expenditure data. They are not judgments about Maine's service levels. Nor can they prove excess costs in providing services. Expenditure levels in other states are not necessarily the most desirable levels for Maine. Moreover, the data do not account for many important factors such as differences in service quality. These comparisons simply reveal other possibilities for state- and local-government spending levels. The intention of these interstate comparisons is to provide relevant factual information that may help enlighten difficult decisions about state and local fiscal choices.

Table of Contents

Executive Summary		1
Table of Contents		4
List of Tables		6
1. Introduction		9
2. Framework		
Comparison States		10
Measures		13
Duplication		15
Cost Differentials		16
State- and Local-Government Service Categories		17
3. Aggregate Totals		20
4. Local Functions		
Elementary and Secondary Education		23
Police Protection		28
Fire Protection		33
Parks and Recreation		34
Sewerage		37
Solid Waste Management		39
Housing and Community Development		40
Libraries		42
5. State Functions		
Higher Education		44
Natural Resources		49
Employment Security Administration		50
Other Education		52
6. Mixed Functions		
Highways		55
Public Welfare		59
Financial Administration		63
Corrections		65
Other Government Administration		70
Health		74
Judicial and Legal		77
General Public Buildings		81
Other and Unallocable		82

7.	Discussion	
	Recap of Findings	84
	Aggregate Totals	86
	Local Functions	86
	State Functions	88
	Mixed Functions	89
	No Magic Bullet	92
	The 800 Pound Gorilla	93
	Puzzling Priorities	93
	Administrationland	94
	Large State Government	95
	Being Rural	96
	Cost Advantages	97

List of Tables

Table 1	Comparison States	12
Table 2	Percentages of Total State- and Local-Government Payroll	19
Table 3	Total State and Local Government Excluding Quasi-Private Enterprises (Hospitals, Utilities, etc.)	21
Table 4	Total Government Payroll Excluding Quasi-Private Enterprises Local versus State	22
Table 5	Elementary and Secondary Education	24
Table 6	Elementary and Secondary Education Payroll Instructional versus Other	26
Table 7	Elementary and Secondary Education Per Student	27
Table 8	Police Protection	29
Table 9	Police Payroll Police with Power of Arrest versus Other	30
Table 10	Police Payroll Local versus State	31
Table 11	Police Protection Per Crime	32
Table 12	Fire Protection	33
Table 13	Fire Payroll Firefighters versus Other	35
Table 14	Parks and Recreation	36
Table 15	Parks and Recreation Payroll Local versus State	37
Table 16	Sewerage	38
Table 17	Solid Waste Management	40
Table 18	Housing and Community Development	41

Table 19	Libraries	43
Table 20	Higher Education	45
Table 21	Higher Education Payroll Instructional versus Other	46
Table 22	Higher Education Per Full-Time Equivalent Student	47
Table 23	Natural Resources	50
Table 24	Employment Security Administration	51
Table 25	Employment Security Administration Per Unemployed	53
Table 26	Other Education	54
Table 27	Highways	55
Table 28	Highways Payroll Local versus State	57
Table 29	Highways Per Million Vehicle Miles	58
Table 30	Public Welfare	60
Table 31	Public Welfare Payroll Local versus State	61
Table 32	Public Welfare Per Single Mother	62
Table 33	Financial Administration	63
Table 34	Financial Administration Payroll Local versus State	65
Table 35	Corrections	66
Table 36	Corrections Payroll Local versus State	67

Table 37	Corrections Per Inmate	69
Table 38	Other Administration	71
Table 39	Other Administration Expenditure Legislative versus Other	72
Table 40	Other Administration Payroll Local versus State	73
Table 41	Health	75
Table 42	Health Payroll Local versus State	76
Table 43	Judicial and Legal	78
Table 44	Judicial and Legal Payroll Local versus State	79
Table 45	Judicial and Legal Per Crime	80
Table 46	General Public Buildings Expenditure	81
Table 47	Other and Unallocable	83
Table 48	Other and Unallocable Payroll Local versus State	84
Table 49	Net Expenditures Summary	85

1. Introduction

This report is an update of a 2006 report written for the Brookings Institution as part of their work with GrowSmart Maine. Like the earlier report, this report examines state- and local-government spending in Maine in comparison to the rest of the nation, but uses more recent data. This study is intended to provide readily available factual information about Maine's state- and local-government spending practices.

To borrow from a famous line from an old television series, this report takes a "just-the-facts" approach. The intention of both this report and its predecessor is to help replace anecdotes and impressions of wasteful government spending in Maine with systematic analysis. Although the perception that the state is rife with wasteful government spending may be overly cynical, there are legitimate reasons to believe that Maine may suffer from too much diffusion and proliferation in the delivery of local-government services. Moreover, the current budget difficulties caused by the recession make such issues even more important than before.

This report attempts to help fill the information void in factual information about public service provision by examining recent data on state- and local-government employment, payroll, and spending in Maine and in the rest of the nation. To be specific, this project is a systematic examination of 21 distinct state- and local-government service categories for fiscal year 2006-07. Two subcategories for five of these state- and local-government functions are also examined. Altogether 31 service categories and subcategories are examined. These public services are examined at both the local-government level and at the state-government level.

Particular emphasis is placed on the issues of possible excess costs and possible unnecessary redundancy in the provision of state- and local-government services in Maine. Where the data indicate the presence of possible excess costs, rough estimates of their magnitude are calculated. The presence of possible excess costs in the provision of public services is identified by comparing Maine's levels of payroll, employment, and expenditure to those in the rest of the nation and, particularly, to levels in other similarly rural states. Such a simplistic method clearly cannot prove the existence of waste in the provision of Maine's public services. Cost factors and service levels and quality can differ across states. Thus, this study only identifies the presence of *possible* excess costs. The intention is to suggest service areas that may deserve closer inspection.

Several cost measures are examined to provide as clear a picture as possible of Maine's provision of state and local government services compared to the rest of the nation. For example, levels of state- and local-government payroll and expenditure as a percentage of state personal income are presented. State- and local-government employment per capita is also shown. In some spending categories, such as public welfare, highways, and health, it is appropriate to calculate expenditure net of federal government transfers. It is important to compare the various measures to ensure that the findings are consistent. Wherever possible, the analysis of each of the state- and local-government services attempts to control for potentially important confounding influences. For instance, when

examining police payroll and expenditure, it is important to control for differences in crime rates across states. When examining primary and secondary education, it is important to control for the number of students in each state.

A systematic analysis of 31 state- and local-government service categories and subcategories is an ambitious undertaking. Indeed, it may be overly ambitious. There are numerous ways that this analysis provides only an incomplete picture of Maine's provision of specific public services. All of the potentially important issues simply cannot be addressed within one study. This report makes no claim that any specific government service in Maine is adequately studied here.

In other words, this report cuts a wide, but shallow, path in analyzing Maine's public spending policies. Despite the obvious limitations of this approach, there are important advantages. As will hopefully become apparent in the following report, to adequately understand Maine's provision of public services it is crucial to examine the individual functions. There is limited value in just examining the aggregate totals. Moreover, examination of specific state- and local-government services in isolation provides an incomplete picture of the difficult fiscal choices facing the state.

Thus, although this study does not examine any of the specific public services provided in Maine in great depth, it does identify areas where Maine appears to be out of step with the rest of the nation. In doing so this report is intended to identify service areas in Maine warranting a closer inspection or "a check under the hood."

2. Framework

Comparison States

An important problem in evaluating levels of costs is finding appropriate benchmarks. For instance, one could compare current levels to past levels. Or one could compare Maine's levels to the national averages. A norm for comparison is needed, but rarely is there an unambiguously ideal norm. Past levels are clearly problematic norms because economic conditions are always changing. Levels in other states are better norms, but there are clear problems with this as well. For example, other states obviously might not have ideal levels any more than Maine does (although the differences from the ideal levels may average out across states).

Nonetheless, benchmarks must be chosen in order to evaluate levels of cost. The primary benchmarks emphasized in this report are national averages. This has the advantage of being a simple and obvious benchmark. But states clearly differ in many important dimensions.

Location and geography are obvious ways that Maine differs from most of the rest of the nation. Thus, it is practically standard practice to compare Maine to the New England average. Although this study follows typical practice and reports the New England averages, these are not emphasized in comparison to Maine. The reason for not

comparing Maine to the New England average is that such a comparison is essentially a comparison to Massachusetts and Connecticut because 70% of New England's population lives in these two states (45% of New Englanders live in Massachusetts alone). Moreover, these states bear little resemblance to Maine in terms of population density and income. In the 2000 Census, 25% of Maine's population lived in urban areas, compared to 87% in Massachusetts and Connecticut together. Per capita income in Massachusetts and Connecticut was 47% higher than in Maine in 2006-07.

A better regional comparison is to the other northern New England states New Hampshire and Vermont. As shown in Table 1, except for population density and per capita income in New Hampshire, these states are broadly similar to Maine. In addition to geographic proximity, the northern New England states are mostly non-urban and have small populations.

A potentially important dimension where Maine differs considerably from the rest of the nation is in the degree of urbanization. Moreover, this dimension could be particularly important for the issue of possible unnecessary fragmentation and duplication in the provision of local government services. Rural areas are likely to have more difficulty in capturing economies of scale. Indeed, the blame for Maine's perceived high costs of local government is sometimes placed on this factor.

Maine is much less urban than most states. As noted above and shown in Table 1, less than 25% of Maine's population lives in areas classified as urban.¹ In the rest of the country more than 68% of the population lives in urban areas. Thus, in addition to the comparison to the national averages, this study compares Maine to states that are the most similar in their urban/rural compositions. To be specific, Maine is compared to the five most rural states (other than Maine): Mississippi, Montana, South Dakota, Vermont, and Wyoming.² The rural-state averages reported in the tables are the average values for these five states.³

Table 1 shows population density as well. In this measure, Maine is the most similar to Oregon and Colorado. Total state population is also included in Table 1. The rural comparison states are generally similar to Maine in this respect. Montana, South Dakota, Vermont, and Wyoming have smaller populations than Maine; while Mississippi is larger.

¹ The Census Bureau has two measures of urban. This study uses their "urban area" measure, which consists of densely settled territory (at least 1,000 people per square mile) with 50,000 or more people. The other Census Bureau measure consists of densely settled territory with 2,500 or more people. As a dividing line for small-scale service delivery, the first measure seems more relevant. The Census Bureau also has a metropolitan/non-metropolitan measure. This measure, however, applies a different standard to New England than it does to the rest of the country. Hence, this measure seems questionable for this analysis.

² This list would be identical if the metropolitan percentage was used, although Maine is 45th in this measure (instead of 48th). The list would be similar if the other urban measure (at least 2,500 people) was used. In this case Montana and Wyoming would be replaced by West Virginia and Arkansas, and Maine is ranked 49th.

³ Hence, the rural-state average is an unweighted average and excludes Maine, while the United States and New England averages are weighted averages (i.e., larger states such as California and Massachusetts affect the averages more than small states) and include Maine.

Table 1
Comparison States

	Urban		Population		Population		Income	
	Percentage		Density					
Maine	24.6%	48	42.6	38	1,314	40	\$34,422	33
United States	68.3%		84.8		299,827		\$38,622	
New England	74.6%		226.8		14,246		\$46,953	
New Hampshire	44.7%	36	146.1	20	1,311	41	\$42,194	9
Vermont	17.3%	50	67.1	30	620	49	\$36,986	21
Rural-State Average	23.9%		30.3		1,158		\$35,968	
Mississippi	23.9%	49	62.0	32	2,909	31	\$28,677	50
Montana	26.0%	45	6.5	48	951	44	\$33,142	41
South Dakota	25.8%	46	10.4	46	792	46	\$34,981	27
Wyoming	25.5%	47	5.3	49	518	50	\$46,052	5

"Urban percentage" is the proportion of the population living in densely settled territories (at least 1,000 people per square mile) that contain at least 50,000 people, and is from the 2000 U.S. Census. The other numbers are for FY2007. "Population density" is people per square mile, "population" is in thousands, and is from the U.S. Census Bureau, Population Division. "Income" is personal income per capita, and is from U.S. Bureau of Economic Analysis. "Rural-State Average" is the average of the five states (other than Maine) with the lowest urban percentage. The whole numbers to the right of the ratios are the state ranks.

Per capita income is also shown in Table 1. Maine's income per capita in 2006-07 was 10.9% below the national average. Three of the five rural comparison states are roughly similar to Maine in per capita income, while Mississippi is considerably lower and Wyoming is much higher. Thus, average per capita income among the five rural comparison states is 4.3% above Maine's.

Clearly there is plenty of room to legitimately argue over the choice of comparison states. Per capita income could be particularly important, thus perhaps Mississippi should not be in the comparison group. Or population density might matter more than urban percentage, hence the low-density Western states perhaps should be excluded from the comparison group. The problem is that there is no simple way to devise a true comparison group. States differ in practically an infinite number of potentially important dimensions.

Rather than use some combination of ad hoc rules, this study uses just one simple objective dividing line between the comparison states and non-comparison states: the five states (other than Maine) with the lowest urban percentages. The comparison group that it creates is obviously debatable. But a more complicated criterion (say, states ranked between 30th and 35th in per capita income) or group of criteria will not solve this problem.

It is important, though, to keep in mind the problematic nature of the comparison group (of any comparison group). No two states are ever truly equal in any important dimension. For this reason, data for each of the rural comparison states are presented in the following tables rather than just their average. This provides the opportunity for the reader to choose among the rural states for comparison.

Measures

Understanding relative levels of state and local government services and costs is made more difficult by the multitude of legitimate ways of presenting the results. There is no single measure that is unambiguously the best way to examine the data. For example, some studies examine state and local governments combined, while other studies only examine local governments. Some articles emphasize government spending per capita, while others emphasize government spending per dollar of state income. Some publications emphasize government employment, and others emphasize government expenditure. Moreover, reasonable arguments can usually be made for using each of these measures.

To the extent possible, this study uses a consistent framework to examine each category of state and local government employment and spending. A consistent analytical framework is applied to each government service category for three important reasons. First, a consistent methodology is easier to understand and follow than a changing one. Second, a consistent framework facilitates comparison across categories. Third, by eliminating the choice of measure to emphasize, the potential for subjectivity is reduced. Thus, the choice of measures is guided primarily by the ability to apply them consistently across states and across categories of government services.

For various reasons, though, it is inappropriate to only apply a uniform framework to every government service category. Services usually differ in important dimensions. Thus, some extensions to the basic framework are necessary to best illuminate how the service is being provided. For example, the availability of data allows examination of subcategories of services in some instances, but not in others. Some services are provided exclusively by local governments or state government, while others services are provided at both levels.

Also, for some services, but not all, there are obvious ways to improve the measures of services and costs. Indeed, an ideal measure would be the cost per unit of output. Moreover, an ideal measure such as this would also account for differences in service quality and differences in prices across states. Such data do not exist, which is part of the

reason why there are various (imperfect) measures of government costs. In some instances, though, data are available to construct rough measures of cost per unit of output. In education, for instance, there are data available to examine cost per student. In corrections one can examine cost per inmate. In highways one can examine cost per mile of roads.

Except for the handful of cases where there are obvious better measures such as those above, this study emphasizes three measures of state- and local-government costs: payroll as a percentage of state personal income, full-time equivalent (FTE) employment per capita, and net expenditure⁴ as a percentage of state personal income. Fortunately, these measures usually yield a fairly consistent picture. There are some important exceptions, however.

There is clear reason to emphasize expenditure. Expenditure is the bottom-line contribution to the tax burden. There are a few potential problems with just looking at expenditure, though. Cost can vary for reasons other than inefficiency. First, interstate differences in the cost of living can clearly create differences in service cost. Labor and land are clearly more expensive in Connecticut than in New Mexico. Similarly, one would think that Maine winters create higher costs of maintaining highways than winters in Florida. Second, some expenditure categories include transfer payments, such as welfare programs and college scholarships. Although transfer payments obviously contribute to the tax burden, they do not indicate possible inefficiency in providing government services. Third, some expenditure categories include federal programs administered through states, such as Medicaid. Federal programs administered through states do not indicate possible inefficiency in providing state and local services.

This study, however, attempts to remove the influence of federal programs by reporting expenditure net of intergovernmental transfers from the federal government.⁵ Attempt is also made to remove some of the influence of cost-of-living differences by reporting net expenditure as a percentage of state personal income.⁶ All else the same, income is higher in higher-cost regions. A second reason for emphasizing expenditure as a percentage of income, as opposed to per capita, is that economic choices depend on income. To stress only net expenditure per capita is like assuming every family has the same quality of housing regardless of income.

⁴ To be specific, net direct expenditure is examined in the case of state governments. That is, state grants to local governments are not included.

⁵ In several instances there are notable discrepancies between gross and net expenditure. In these cases both measures are reported.

⁶ State personal income data are from the U.S. Bureau of Economic Analysis. Income from third quarter 2006 through second quarter 2007 are matched to the FY2007 data. This study follows the Census Bureau's approach of using state personal income to normalize state spending levels. Arguments could be made for using other measures of income such as gross state product. To confine the analysis to a reasonable dimension, only the most standard approach is followed.

FTE employment, however, is reported per capita rather than per dollar of state income because wage rates differ considerably across states.⁷ FTE employment has both important advantages and disadvantages. It has the advantage of being the closest thing to a physical measure of inputs into the production of government services. Thus, relative FTE employment provides a somewhat direct indication of possible redundancy and excess costs in service provision. It also avoids the problem of transfer payments that are included in expenditures. FTE employment has potential problems, though. Real wages differ across states, thus it may be rational, not inefficient, for low-wage states to employ relatively more workers in state and local government (similarly, in some instances such as fire protection in rural areas, some employment is essentially volunteer labor). On the other hand, though, not all workers are equally productive. A FTE employee with an advanced degree is not the same as one without (this appears to be particularly important for teachers).

For these reasons, payroll⁸ as a percentage of state personal income receives the most emphasis in this study, particularly in regard to measuring possible unnecessary redundancy. This measure at least partly accounts for state differences in the cost of living, real wages, and worker qualifications. It also does not include transfer payments, and does not include federal intergovernmental transfers for the most part.

This study also puts the most emphasis on combined state- and local-government payroll, employment, and net expenditure. State- and local-government costs are also examined separately, but are not generally emphasized. The reason is that there are some important instances of variation in the jurisdiction of services. For example, elementary and secondary education is typically provided at the local level. In Hawaii, however, it is provided at the state level. Thus, if one only looks at local-government expenditure, then Hawaii appears to have by far the leanest public education system in the country. But this would clearly be a silly conclusion. Although, this is an extreme example, there are numerous instances of these types of jurisdictional differences.

Duplication

As discussed in the introduction, a reason to suspect that there could be excess costs in providing public services in Maine is its seemingly fragmented nature of local government. Too much fragmentation can cause unnecessary duplication in providing services.

This idea is often referred to as economies of scale, which means that cost per unit decreases as the number of units increases. Clearly it would be prohibitively costly to have a fire station on every city block. There would be too much duplication of fire-protection services. Economies of scale only occur up to a point, though. At some level duplication is desirable. Clearly it would be incredibly ineffective to have only one fire

⁷ Population data are from the U.S. Census Bureau, Population Division. Population estimates for July 1, 2006 and July 1, 2007 are averaged and matched to the FY2007 data.

⁸ Payroll data are collected in March only. To conform to income data the payroll data are converted into annual amounts.

station for the whole state. Thus, some fragmentation of government is desirable. Indeed, this is why there are local governments (rather than just state governments). But too much fragmentation can create costs that are higher than necessary.

There are two important problems in trying to identify unnecessary duplication of services. First, the desirable level of fragmentation will certainly vary depending on the service in question. There are clearly greater economies of scale, and hence a lower desirable level of duplication, in providing postsecondary education than in providing elementary education. Thus, evidence of excess costs from unnecessary duplication of services in one category does not necessarily imply excess duplication and costs in another service category.

Second, there often is no straightforward measure of the degree of duplication. The number of governments may seem like an obvious measure of duplication. It might not yield an accurate measure of duplication, though, because government sizes obviously vary considerably. For example, nine very small town governments and one large county government (ten governments) could provide a given level of services more effectively than, say, five somewhat small town governments and one very small county government (six governments), even if there are sizable economies of scale. The reverse could also be true. It depends on the nature of the service in question.

Thus, with limited data, inferring the degree of duplication is problematic. This study uses two imperfect measures to try to quantify duplication in providing local-government services. The number of local governments providing a particular service is examined.⁹ As discussed in the preceding paragraph, this measure is far from ideal.¹⁰ This study also uses differences in payroll as a percentage of personal income as a rough measure of the degree of duplication. This measure quantifies the value of the labor used to provide the service. Obviously this is not an ideal measure either. Payroll relative to income can vary for reasons other than duplication of efforts.

Cost Differentials

One of the goals of this report is to identify state and local government service areas where there may be higher costs than necessary. Another goal is to identify the possible magnitudes of the higher-than-necessary costs. This study identifies the possible presence of excess costs by comparing net expenditures in Maine to those in the rest of the nation and also the other rural states. Obviously a crude method such as this cannot prove the existence of waste in the provision of public services. Cost factors differ across states. The quantity and quality of services can also vary. Thus, it must be stressed that the study identifies the presence and estimates the magnitudes of *possible* excess costs. There is no claim whatsoever that these estimates are precise. The intention is only to suggest service areas that may deserve closer inspection.

⁹ A local government is counted as providing service in a category if, according to the Census Bureau data, it has payroll in that category.

¹⁰ Moreover, this measure only counts the public provision of services and does not capture local governments contracting with private firms to provide services.

It should also be stressed that this study is admittedly looking for possible cost savings in the provision of public services in Maine. That is, this report focuses on what governments in Maine may be doing wrong, not on what they may be doing right. In other words, this study is admittedly one-sided in its focus. The only reason for this one-sided approach is to try to keep the project manageable. The one-sided focus should not be taken to imply that the presence of waste in Maine government is a foregone conclusion.

It would be desirable to apply a uniform method to identify and quantify possible excess costs, but this is not really feasible. Services are not alike. As will become apparent later, the appropriate benchmark varies among services. In some service categories a comparison to rural states is clearly more appropriate than a comparison to the national average. That is, for some services cost levels appear to differ systematically with the degree of urbanization. For other services it does not, in which case it is probably better to compare to the national average. Moreover, the appropriate measure also varies among services. Rough measures of cost per unit of output (e.g., corrections expenditure per inmate) are available for only some of the services. In these cases these measures are likely to give a truer indication of possible excess costs than net expenditure relative to state income.

Thus, this report identifies possible excess costs using a consistent simple general framework, but the specific details vary depending on the service in question. The general framework is to calculate the difference in cost if Maine had the same level of some measure as the appropriate benchmark. Net expenditure per unit of output is used when it is available. Otherwise, net expenditure relative to state income is used. The national average is used as the benchmark unless net expenditure levels appear to depend on being relatively rural. The average of the other rural states is used if being a rural state appears to affect net expenditure. When there is some doubt if being rural matters, the norm that yields a more conservative (i.e., smaller) estimate of the potential cost savings is used. Given the interstate variation in state/local jurisdictions, combined state and local government levels are used. In some instances, though, the cost differentials are separated into the separate state and local components.

There are a number of ways to try to increase the precision of the estimates of possible excess costs. Given the magnitude of the uncertainty about the appropriate measure and the appropriate norm, to attempt to increase the precision over this very simple method probably does not make sense. That is, when one measure suggests a 10% difference and another suggests 20%, and when one benchmark indicates a 5% difference while another indicates at 25% difference, attempts to increase precision are not worthwhile.

State- and Local-Government Service Categories

The categories and subcategories of state- and local-government services are dictated by the availability of comparable cross-state data. The U.S. Census Bureau, Governments Division provides employment and payroll data for 41 categories and subcategories of services (31 categories and 10 subcategories). They provide direct expenditure data for

38 categories and subcategories (26 categories and 12 subcategories). Altogether, there are data for 49 categories and subcategories (31 categories and 18 subcategories).¹¹ The latest year of complete data is FY2007.

Many of these 49 separate categories and subcategories are likely to indicate misleading pictures of relative state and local government costs. For example, one of the larger categories is Hospitals, but states differ widely in their public/private mix of hospital services. Moreover, well over half of the costs of public hospitals are covered by direct charges. Well over half the costs of public utilities (water, sewerage, electricity, gas) and transportation are financed through user charges as well. Moreover, there are also significant differences in their public/private mix across states. Thus, the following categories are not examined in this report: Hospitals; Air and Water Transportation; Water, Electricity, and Gas Utilities; Transit; and State Liquor Stores.

To confine the scope of this analysis to a manageable dimension, several additional categories and subcategories are not examined. The purpose of this report is to scrutinize Maine's provision of public services. Thus, social insurance benefits and subcategories of Public Welfare expenditures are not examined. Public employee pensions are not examined either, because they are not assigned to specific public services. Interest on debt is not studied. Nor does this report examine current operations versus capital outlays subcategories of expenditures.

Just about all other state- and local-government costs are studied in this report. The 21 categories of state- and local-government services examined in this report are listed in Table 2. These account for 96.4% of total state- and local-government employment in Maine, and 89.8% of total state- and local-government employment nationwide. The primary category excluded in Table 2 is Hospitals. Public hospital payroll is 6.2% of total state- and local-government payroll nationally, and 2.1% in Maine. The other significant exclusions are Public Utilities (1.8% of the national total and 0.9% of the Maine total) and Transit (1.7% of the national total and 0.1% of the Maine total).

The 21 categories of services are divided into three types of service functions: those that are provided primarily by local governments, those that are provided primarily by state government, and those provided by both levels of government.

There are eight "local functions" in this report. For these categories at least three-fourths of combined state- and local-government payroll is local both nationally and in Maine. These eight functions in decreasing order of importance (in Maine) are Elementary and Secondary Education, Police Protection, Fire Protection, Parks and Recreation, Sewerage, Solid Waste Management, Housing and Community Development, and Libraries. Altogether, these local functions account for 55.8% of total state- and local-government payroll in Maine, and 51.7% across the country.

¹¹ The Census Bureau's state- and local-government data are sorted by service category, not by government agency.

Table 2
Percentages of Total State- and Local-Government Payroll

	Maine		United States	
Local Functions				
Elementary & Secondary Education	45.07%	(99.9%)	38.18%	(99.1%)
Police Protection	4.80%	(79.0%)	6.86%	(88.4%)
Fire Protection	2.27%	(100%)	2.73%	(100%)
Parks & Recreation	1.00%	(77.4%)	1.28%	(86.7%)
Sewerage	0.94%	(100%)	0.82%	(98.2%)
Solid Waste Management	0.71%	(100%)	0.60%	(97.4%)
Housing & Community Development	0.63%	(100%)	0.66%	(100%)
Libraries	0.41%	(100%)	0.61%	(99.5%)
State Functions				
Higher Education	10.86%	(0.0%)	12.83%	(17.1%)
Natural Resources	1.84%	(2.7%)	1.10%	(20.0%)
Employment Security Administration	0.50%	(0.0%)	0.49%	(0.0%)
Other Education	0.39%	(0.0%)	0.58%	(0.0%)
Mixed State & Local Functions				
Highways	5.94%	(40.7%)	3.20%	(53.3%)
Public Welfare	4.69%	(9.5%)	2.81%	(54.9%)
Financial Administration	3.49%	(44.4%)	2.46%	(56.2%)
Corrections	3.02%	(31.4%)	4.38%	(35.6%)
Other Government Administration	2.46%	(65.9%)	1.76%	(79.1%)
Health	2.31%	(14.3%)	2.59%	(57.0%)
Judicial & Legal	1.62%	(17.3%)	2.96%	(56.6%)
General Public Buildings	1.00%	(64.1%)	0.64%	(74.8%)
Other and Unallocable	3.51%	(25.2%)	2.96%	(53.8%)
Sum	96.44%	(65.5%)	89.84%	(72.3%)

Numbers are for FY2007 state and local governments combined, and are derived from data from the U.S. Census Bureau, Governments Division. The numbers in parentheses are the fraction of the function payroll (expenditure in the case of General Public Buildings) from local government. The sums (excluding General Public Buildings) are less than 100% because several functions (mainly public hospitals, public utilities, and transit) are excluded.

Four of the service categories are classified as “state functions”. These four functions in decreasing order of importance (in Maine) are Higher Education, Natural Resources, Employment Security Administration, and Other Education. At least three-fourths of combined state- and local-government payroll is state for these service categories.

Together these state functions account for 13.6% of the total government payroll in Maine, and 15.0% nationally.

The remaining nine service categories are “mixed functions”. In either Maine or across the nation, at least one-third and no more than two-thirds of the combined state- and local-government payroll is local. These functions in decreasing order of importance (in Maine) are Highways, Public Welfare, Financial Administration, Other Government Administration, Corrections, Health, Judicial and Legal, General Public Buildings, and the catch-all category Other and Unallocable. Most of these categories are predominately state functions in Maine. Nationally, however, most of these categories are local or mixed functions.

Overall, Maine provides these public services more at the state level than the rest of the nation. 65.5% of the combined payroll in these 21 service categories is at the local level in Maine, compared to the national average of 72.3%.

Table 2 reports data from fiscal year 2006-07. This is the latest census year for the local-government data. Information from all local governments is collected only every five years, and data for intervening years are based on samples of local governments. As a result, in some instances there is considerable year-to-year variation in the numbers, and clearly much of this variation does not measure real changes.

3. Aggregate Totals

Table 3 shows total state- and local-government payroll as a percentage of personal income, FTE employment per capita, net expenditure as a percentage of personal income, and local general-purpose governments per capita. These “totals” only include the public-service categories shown in Table 2. That is, only the services that contribute to the tax burden on a near dollar-for-dollar basis are included, and the quasi-private enterprises public hospitals, public utilities, public transit, and state liquor stores are excluded from the totals. As noted earlier, Maine’s government provision of these quasi-private activities is much less than the national average. Thus, excluding these services considerably affects how Maine’s public payroll, employment, and net expenditure compare to the rest of the nation.

The FY2007 Census Bureau data for Maine report public payroll in 16 counties, 484 cities, and towns, 214 special districts, and 97 independent school districts. Maine’s 6.2 local governments per 10,000 people is more than 2.5 times the national average, but this is less than in four of the five other very rural states. Maine ranks 10th among states in local governments per capita, but this is not unusual for a small non-urban state.

Maine is above average in total state- and local-government payroll, employment, and net expenditure. Maine has the 15th highest state- and local-government payroll as a percentage of personal income, and is 8.1% above the national average. But Maine’s public payroll is about the same as the average of the five other most rural states. Maine has the 8th highest FTE employment per capita, and is 13.2% above the U.S. average. In

Table 3
Total State and Local Government
Excluding Quasi-Private Enterprises (Hospitals, Utilities, etc.)

	<u>Payroll</u>		<u>FTE Employment</u>		<u>Net Expenditure</u>		<u>Local Governments</u>	
Maine	6.46%	15	56.26	8	14.98%	6	6.17	10
United States	5.97%		49.70		13.21%		2.43	
New England	5.38%		50.58		12.03%		2.35	
New Hampshire	5.33%	45	53.59	18	10.87%	50	3.86	18
Vermont	7.27%	2	62.70	3	15.45%	4	10.41	4
Rural-State Average	6.48%		60.75		12.96%		9.89	
Mississippi	6.20%	20	53.39	20	10.92%	49	2.67	26
Montana	6.51%	11	56.49	7	13.04%	28	9.34	5
South Dakota	5.40%	42	52.37	23	11.39%	44	18.41	2
Wyoming	7.01%	5	78.82	1	14.02%	15	8.61	7

Numbers are for FY2007 state and local governments combined, and are derived from data from the U.S. Census Bureau, Governments Division. "Payroll" is reported as a percentage of personal income. "FTE Employment" is full-time-equivalent employment per 1,000 people. "Net Expenditure" is expenditure less transfers from federal government, and is reported as a percentage of personal income. "Local Governments" is the number of sub-state governments per 10,000 people. The whole numbers to the right of the ratios are the state ranks.

this measure Maine is similar to the other non-urban states (except for Wyoming, which skews the rural-state average). Maine has the 6th highest net expenditure as a percentage of income, and is 13.4% above the national average. In this measure Maine is unlike most of the rural states and is 15.5% above their average. Thus, in comparison to other non-urban states, Maine is typical in public payroll and employment, but is quite high in net expenditure.

Maine became a little more above average in total state and local government from FY2002 to FY2007.¹² Maine's interstate ranking increased in each of the three measures of the relative size of government (to 15th from 26th, to 9th from 8th, and to 6th from 8th respectively). Maine's difference from the national average also increased in each of the

¹² For the FY2002 numbers see P. Trostel, "Maine State- and Local-Government Payroll and Expenditure", Brookings Institution, 2006.

three measures (from 0.6% to 8.1%, from 11.2% to 13.2%, and from 12.7% to 13.4%). Total government payroll as a percentage of income and FTE employment per capita respectively increased by 1.4% and 2.3% in Maine from FY2002 to FY2007, compared to -5.6% and 0.4% respective changes nationally. Total net expenditure as a percentage of income changed by -0.7% in Maine, compared to -1.3% nationally.

Table 4 shows total local-government payroll and total state-government payroll separately (after removing the quasi-private services). Compared to other states, Maine provides relatively more public services through the state government than through local governments. Local-government payroll in Maine is 2.5% below the national average, while state government payroll is 36.0% above the national average. In this respect Maine is similar to the other rural states. Each of the other five rural states has a higher state/local ratio than the national average.

	<u>Local</u>		<u>State</u>	
Maine	4.22%	17	2.24%	16
United States	4.33%		1.64%	
New England	3.65%		1.73%	
New Hampshire	3.80%	39	1.54%	41
Vermont	4.14%	21	3.13%	4
Rural-State Average	4.10%		2.38%	
Mississippi	4.17%	20	2.04%	20
Montana	3.82%	37	2.69%	7
South Dakota	3.49%	46	1.90%	26
Wyoming	4.87%	3	2.14%	17

Numbers are for FY2007 state and local governments separately, and are derived from data from the U.S. Census Bureau, Governments Division. "Payroll" is reported as a percentage of personal income. The whole numbers to the right of the ratios are the state ranks.

There is considerable variation in Maine's relative levels of providing specific public services. That is, Maine's net expenditure as a percentage of income is not 13.4% above the national average in all service categories. Indeed, far from it. In some services Maine is well above the national and rural averages. In others, Maine is well below the national and rural norms. Thus, to obtain a clear picture of Maine's provision of public services it is essential to examine the individual functions.

4. Local Functions

Elementary and Secondary Education

Elementary and secondary education accounts for the largest share of state- and local-government payroll by far. Its share of total payroll in FY 2007 is 45.1% in Maine and 38.2% nationally. Essentially all of this government function is provided at the local level, both in Maine and nationally. In fact, Maine is one of only nine state governments that report any payroll in this category. The Census Bureau data indicate that 264 governments in Maine had payroll in this category in FY2007: 166 cities and towns, 97 independent school districts, and the state. As shown in Table 5, the per capita number of Maine local governments with K-12 education payroll is 4.1 times the national average. The other rural states also have a relatively high number of local governments in this service category.

As shown in Table 5, public elementary and secondary education net expenditure is 4.3% of state income in Maine.¹³ This is 8.6% above the national average, and the 13th highest percentage in the nation. This is also 10.7% higher than the average of the other rural states, although two of the five other rural states have higher percentages than Maine. In public K-12 payroll as a percentage of state income, Maine is the 4th highest and is 18.9% above the U.S. average, and 10.9% above the average of the other rural states. In FTE employment per capita, Maine is again 4th highest and is 26.7% above the national average, and 3.5% above the rural-state average. The discrepancy between relative payroll and employment is due to public education salaries being low in Maine compared to the rest of country.¹⁴

The fiscal changes in Maine's provision of public K-12 education from 2002 to 2007 are quite mixed. Maine's K-12 FTE employment per capita was essentially unchanged over these five years, and its interstate ranking was unchanged. Nationally, however, K-12 employment per capita rose by 2.5% over the period. Thus, Maine inched a little closer to the rest of nation in this measure (although it was still 26.7% above the national

¹³ Data on federal transfers to individual states for education are not separated into those for K-12 and those for higher education. Nationally about 96% of these intergovernmental transfers are for K-12. Thus, for simplicity all federal transfers to states for education are assumed to be for K-12.

¹⁴ The Census Bureau data suggest that Maine's public K-12 salaries are 35th highest among state and 16.4% below the national average (42nd and 21.2% below the U.S. average in instructional salaries). But this is probably at least partly due to a relatively low proportion of Maine's public school teachers having advanced degrees. The *Schools and Staffing Survey* for 2003-04 from the U.S. Department of Education, National Center for Education Statistics indicates that 34.3% of Maine's teachers have advanced degrees, compared to 48.1% nationally. Maine ranks 41st in the proportion of teachers with advanced qualifications.

Table 5
Elementary and Secondary Education

	<u>Payroll</u>		<u>FTE Employment</u>		<u>Net Expenditure</u>		<u>Local Governments</u>	
Maine	3.02%	4	28.80	4	4.27%	13	2.00	5
United States	2.54%		22.73		3.93%		0.48	
New England	2.49%		25.08		3.76%		0.91	
New Hampshire	2.52%	25	27.67	6	3.89%	21	1.40	8
Vermont	3.29%	2	31.93	2	4.75%	5	4.54	1
Rural-State Average	2.72%		27.82		3.86%		2.39	
Mississippi	2.69%	17	25.35	15	3.30%	40	0.52	23
Montana	2.45%	30	23.81	24	3.35%	39	3.59	2
South Dakota	2.25%	40	24.23	22	2.87%	50	2.25	4
Wyoming	2.94%	6	33.76	1	5.01%	3	1.06	11

Numbers are for FY2007 state and local governments combined, and are derived from data from the U.S. Census Bureau, Governments Division. "Payroll" is reported as a percentage of personal income. "FTE Employment" is full-time-equivalent employment per 1,000 people. "Net Expenditure" is expenditure less transfers from federal government, and is reported as a percentage of personal income. "Local Governments" is the number of sub-state governments per 10,000 people. The whole numbers to the right of the ratios are the state ranks.

average in 2007). But Maine moved a little further away from the rest of the nation in public K-12 payroll as a percentage of income. Maine experienced a 0.4% decline in this measure over the period, but the national average declined by 4.2%; and Maine's ranking climbed from 10th to 4th. Public K-12 salaries increased considerably less than the increase in overall income during this period, but not nearly as much in Maine. Maine also experienced a decrease in net expenditure relative to income over the five years, but in this measure the decrease is larger than in the rest of the nation (the change in Maine was -4.1% compared to -2.7 nationally). Thus, Maine moved closer to the rest of the country (from 10.3% to 8.6% above the national average, and from 7th highest to 13th).

Although there is strong evidence that Maine's relatively high cost of providing education is at least partly due to having many very small school districts and hence unrealized economies of scale,¹⁵ the other rural states do not appear to have a cost

¹⁵ See P. Trostel and C. Reilly, "Improving Educational Resource Allocation in Maine: A Study of School District Size" Margaret Chase Smith Policy Center, 2005.

disadvantage in providing education. Indeed, the average net expenditure of the other rural states is 1.9% below the U.S. average. Moreover, the number of local governments per capita is not correlated with net expenditure relative to income. Although Vermont has the most local governments per capita and the 5th highest net expenditure relative to income, South Dakota has the 4nd highest number of governments and the lowest net expenditure, and Montana has the 2nd highest number of governments and is 39th in net expenditure. In other words, Maine's sizable unrealized economies of scale in providing primary and secondary education are evidently not solely due to Maine being rural.

Primary and secondary education payroll and employment data are separated into the subcategories Instructional and Other by the Census Bureau. The Instructional subcategory includes not only teachers, but also principals, guidance councilors, and librarians. The Other subcategory includes any employees who are not teachers such as administrative personnel, cafeteria workers, custodians, bus drivers, etc. Instructional employees account for about four fifths of elementary and secondary education payroll. As shown in Table 6, Maine's instructional payroll as a percentage of personal income is 19.8% above the national average, and 9.6% above the average of the other rural states. In other payroll, Maine is 15.4% above the U.S. average and 15.8% above the rural-state average.

A disturbing trend in K-12 education payroll in Maine is that other payroll as a percentage of income rose by 3.2% from FY2002 to FY2007, while instruction payroll relative to income fell by 1.3%. Moreover, this is not part of a national trend.

Measures per student are probably better than measures per capita or relative to income. Indeed the correlation coefficients¹⁶ between the number of students in each state and education payroll, FTE employment, and net expenditure in each state are 0.968, 0.979, and 0.955 respectively.¹⁷ Table 7 shows payroll, FTE employment, and net expenditure per student.¹⁸ The Census Bureau data indicate that Maine's FY2007 net expenditure is just under \$10,000 per student. This is 7.9% above the national average and 10.9% above the rural-state average. Maine is 14th in spending per student, despite having the 33rd highest personal income (10.9% below the national average).¹⁹ Maine's payroll per student is the 9th highest in the nation and is 18.1% higher than the national average and 13.0% higher than the average of the other rural states. In FTE employment per student, Maine ranks 3rd and is 41.2% greater than the U.S. average and 11.3% greater than the

¹⁶ A correlation coefficient measures the strength of the relationship between two variables. A value of 1.0 indicates a perfect linear correlation; a value of -1.0 indicates a perfect inverse relationship; and a value of 0.0 indicates no correlation between the variables. Unless otherwise noted, all correlation coefficients reported in this study are statistically different from zero with at least 99% confidence.

¹⁷ Observations from Alaska are not included when computing the correlation coefficients in this report. Alaska is clearly an outlier in terms of state and local government spending, presumably because of its high level of revenues from petroleum royalties.

¹⁸ Estimates of enrollment in academic year 2006-07 are from the U.S. Department of Education, National Center for Education Statistics.

¹⁹ There is a strong correlation between states' per capita income and net expenditure per student (the correlation coefficient between them is 0.779). Thus, Maine is an outlier in terms of net expenditure per student and income.

Table 6
Elementary and Secondary Education Payroll
Instructional versus Other

	<u>Instructional</u>		<u>Other</u>	
Maine	2.39%	5	0.63%	6
United States	1.99%		0.55%	
New England	2.08%		0.41%	
New Hampshire	2.13%	17	0.39%	45
Vermont	2.73%	1	0.56%	18
Rural-State Average	2.18%		0.54%	
Mississippi	2.17%	14	0.51%	28
Montana	1.95%	29	0.50%	31
South Dakota	1.78%	42	0.47%	38
Wyoming	2.26%	8	0.67%	5

Numbers are for FY2007 state and local governments combined, and are derived from data from the U.S. Census Bureau, Governments Division. "Payroll" is reported as a percentage of personal income. The whole numbers to the right of the ratios are the state ranks.

rural average. These per-student measures yield a broadly similar comparison of Maine to the rest of the nation as the earlier per-income measures.

All three per-student measures of primary and secondary education per student grew noticeably both in Maine and nationally since FY2002, although the growth was greater in Maine. After accounting for inflation, payroll per student grew by 13.6% in Maine over the five-year period, compared to 7.2% nationally. FTE employment per student grew by 6.9% in Maine and by 4.3% nationally. After controlling for inflation, net spending per student grew 9.3% in Maine, versus 8.9% nationwide.

Although the exact magnitude is unclear, the data clearly indicate that Maine spends a relatively high amount on primary and secondary education. This does not prove the existence of waste in Maine's school systems, but it does suggest that the costs of providing this service merit more in-depth scrutiny. Since K-12 education is such a large

Table 7
Elementary and Secondary Education
Per Student

	<u>Payroll</u>		<u>FTE Employment</u>		<u>Net Expenditure</u>	
Maine	\$7,038	9	0.195	3	\$9,961	14
United States	\$5,960		0.138		\$9,234	
New England	\$7,603		0.163		\$11,496	
New Hampshire	\$6,859	11	0.178	4	\$10,559	12
Vermont	\$7,909	6	0.208	1	\$11,418	8
Rural-State Average	\$6,229		0.175		\$8,978	
Mississippi	\$4,526	46	0.149	21	\$5,569	49
Montana	\$5,348	30	0.157	12	\$7,315	38
South Dakota	\$5,141	36	0.158	11	\$6,551	45
Wyoming	\$8,222	3	0.205	2	\$14,037	3

Numbers are for FY2007 state and local governments combined, and are derived from data from the U.S. Census Bureau, Governments Division and U.S. Department of Education, National Center for Education Statistics. "Net Expenditure" is expenditure less transfers from federal government. The whole numbers to the right of the ratios are the state ranks.

part of state- and local-government spending, even just a percentage point of cost savings translates into a large amount. According to the Census Bureau data, in FY2007 Maine's net expenditure on K-12 education was \$1.93 billion. If Maine's net expenditure per student was the same as the national average (which is 7.9% below Maine's), there would be \$141.0 million in annual cost savings. This is 2.08% of Maine's total state- and local-government net expenditure. These numbers are somewhat smaller than the numbers estimated in the previous study using FY2002 data (\$174 million in 2007 dollars after adjusting for inflation, and 2.25% of total net expenditure), largely because the number of public K-12 students in Maine shrank by 5.1% between 2002 and 2007.

Moreover, a 7.9% cost reduction in K-12 spending to reach the national average is a conservative figure because Maine's income is below the national average. Maine's K-12 spending as a percentage of income would still exceed the U.S. average. Maine's spending on public education would also still be above the average of the other most rural

states. Indeed, a basic multivariate regression analysis²⁰ that simultaneously controls for urban percentage and per capita income suggests that Maine's net expenditure per student exceeds the interstate norm by 17.2% (the estimate from the FY2002 data was 19.7%).²¹ Thus, the cost differential calculated above appears to be quite conservative. Moreover, the regression analysis confirms that the interstate data do not support the notion that Maine's education spending has to be relatively high because Maine is so rural.

It is worth keeping in mind, though, that the (conservative) \$141 million cost differential is not an estimate of waste in Maine's public education. A much more in-depth analysis would be required to properly estimate excess costs.

Police Protection

Police Protection is the 4th largest state- and local-government payroll category in Maine, and the 3rd largest nationally. The Census Bureau data indicate that 160 governments in Maine reported payroll for police services in FY2007: 143 cities and towns (well below the 169 in the FY2002 data), all 16 counties, and the state. As shown in Table 8, Maine is similar to the other rural states in having a relatively high number of local governments per capita providing police protection.

Spending and employment for police are relatively low in Maine. Maine ranks in the lowest quintile of states for police payroll, FTE employment, and expenditure. Maine's police payroll and expenditure as proportions of state personal income are below the national averages by 29.6% and 29.5% respectively. Maine's police employment per capita is 24.3% below the U.S. average.

Police spending, payroll, and employment are relatively low in most of the non-urban states, though. But this appears to account for only part of the reason why Maine is well below most of the rest of the nation in spending on police protection. Maine's relative payroll, FTE employment, and expenditure on police services are lower than the rural-state averages by 6.0%, 18.2%, and 19.6% respectively.

Since FY2002 Maine's police payroll relative to income and FTE employment per capita both fell 5.0%, but Maine's police expenditure relative to income rose 3.6%. Nationally from 2002 to 2007, payroll fell 6.1%, employment rose 1.0%, and expenditure declined 0.4%. Maine's interstate rankings in 2007 in police protections were little changed from 2002.

²⁰ Multivariate regression analysis is the standard statistical procedure to quantify effects simultaneously. It is often important to estimate effects simultaneously to try to overcome the problem of spurious correlation. Consider the case of public education. By itself, urban percentage appears to have a significant positive effect on cost per student. But what is actually driving this spurious correlation is the correlation between urban percentage and income per capita. It is the higher per capita income in urban states that has a positive effect on cost per student. The regression analysis indicates that the independent effect of urban percentage on cost per student is negative but not statistically different from zero.

²¹ As in the case of the correlation coefficients, data from Alaska are not included in the multiple regression analyses in this report.

Table 8
Police Protection

	<u>Payroll</u>		<u>FTE Employment</u>		<u>Expenditure</u>		<u>Local Governments</u>	
	Maine	0.32%	46	2.36	43	0.51%	45	1.21
United States	0.46%		3.11		0.73%		0.56	
New England	0.42%		3.28		0.56%		0.67	
New Hampshire	0.35%	39	2.85	31	0.53%	43	1.63	3
Vermont	0.35%	38	2.45	39	0.62%	33	1.34	8
Rural-State Average	0.34%		2.88		0.64%		1.43	
Mississippi	0.35%	37	3.05	19	0.69%	21	1.13	14
Montana	0.34%	42	2.66	37	0.65%	30	1.15	13
South Dakota	0.28%	48	2.31	44	0.49%	47	1.98	1
Wyoming	0.39%	21	3.93	4	0.74%	14	1.56	4

Numbers are for FY2007 state and local governments combined, and are derived from data from the U.S. Census Bureau, Governments Division. "Payroll" is reported as a percentage of personal income. "FTE Employment" is full-time-equivalent employment per 1,000 people. "Expenditure" is reported as a percentage of personal income. "Local Governments" is the number of sub-state governments per 10,000 people. The whole numbers to the right of the ratios are the state ranks.

Police protection is divided into the subcategories Police with Power of Arrest (police officers) and Other, which is support personnel such as dispatchers. As shown in Table 9, the ratio of police-officer payroll to support-personnel payroll in Maine is in line with the rest of the nation. In Maine, the payroll ratio is 4.26 police officers per support personnel. The national average is 4.16. Four of the five other non-urban states, however, have much lower payroll for officers relative to support staff. The average of the other rural states is 3.14. The FY2002 data were very similar in these respects.

Although most police protection is provided at the local level, it is also provided state governments (in all states except Hawaii). As shown in Table 10, local police protection is relatively low and state police protection is high in Maine compared the rest of the nation. State police payroll in Maine exceeds the national average by 27.3%, while local police payroll in Maine is lower than the national average by 37.1%. But evidently this is characteristic of Maine being a non-urban state. All of the other rural states are similar to Maine in this respect. And the same pattern was observed in the FY2002 data.

Table 9
Police Payroll
Police with Power of Arrest versus Other

	<u>Police with Power of Arrest</u>		<u>Other</u>	
Maine	0.26%	42	0.06%	43
United States	0.37%		0.09%	
New England	0.36%		0.06%	
New Hampshire	0.28%	36	0.06%	39
Vermont	0.25%	46	0.10%	8
Rural-State Average	0.26%		0.08%	
Mississippi	0.27%	40	0.08%	23
Montana	0.25%	47	0.09%	14
South Dakota	0.23%	50	0.05%	48
Wyoming	0.30%	25	0.09%	12

Numbers are for FY2007 state and local governments combined, and are derived from data from the U.S. Census Bureau, Governments Division. "Payroll" is reported as a percentage of personal income. The whole numbers to the right of the ratios are the state ranks.

An obvious possible driver of interstate differences in police expenditure is interstate differences in crime rates. There is a very strong correlation between police protection and the crime rate. The correlation coefficient between the number of crimes per capita and police: payroll relative to income is 0.859, FTE employment is 0.905, and expenditure in 0.905.²² Using data from the U.S. Department of Justice, Bureau of Justice Statistics for 2006 and 2007 indicates that Maine ranks 44th in violent and

²² Moreover, these very strong positive correlations are observed despite the deterrent effect of police protection on crime. That is, causation runs both ways between spending on police and crime, although in opposite directions. Thus, to the extent that police protection deters crime, the causal effect of crime on police spending is even greater than suggested by the observed correlation coefficients.

Table 10
Police Payroll
Local versus State

	<u>Local</u>		<u>State</u>	
Maine	0.25%	45	0.07%	12
United States	0.40%		0.05%	
New England	0.32%		0.10%	
New Hampshire	0.30%	34	0.04%	37
Vermont	0.18%	50	0.17%	2
Rural-State Average	0.26%		0.08%	
Mississippi	0.29%	37	0.06%	18
Montana	0.28%	43	0.06%	20
South Dakota	0.23%	48	0.05%	35
Wyoming	0.33%	26	0.07%	13

Numbers are for FY2007 state and local governments separately, and are derived from data from the U.S. Census Bureau, Governments Division. "Payroll" is reported as a percentage of personal income. The whole numbers to the right of the ratios are the state ranks.

property crimes per capita, 31.2% below the national average and 6.6% below the average of the other rural states.

Hence, in terms of police payroll, employment, and expenditure per crime, Maine is not that different from the rest of the country. This is shown in Table 11. Maine's police payroll and expenditure per crime are 8.8% and 8.7% below the national averages, respectively, while its employment per crime is 10.0% above the national average. The other rural states are also relatively high in police employment per crime, but are decidedly mixed in payroll and expenditure per crime. In police expenditure per crime, the urban percentage does not appear to matter; particularly after accounting for interstate differences in per capita income which is what does appear to matter (the correlation coefficient between police expenditure per crime and per capita income is 0.708). Evidently, greater police protection is demanded where incomes are higher because there is more income and wealth to protect (as well as higher costs of living).

Table 11
Police Protection
Per Crime

	<u>Payroll</u>		<u>FTE</u>		<u>Expenditure</u>	
Maine	\$4,254	22	0.091	17	\$6,777	26
United States	\$4,666		0.082		\$7,425	
New England	\$7,350		0.122		\$9,725	
New Hampshire	\$7,189	5	0.140	3	\$11,124	3
Vermont	\$5,282	12	0.100	14	\$9,284	10
Rural-State Average	\$4,596		0.106		\$8,484	
Mississippi	\$2,872	41	0.087	19	\$5,615	36
Montana	\$3,716	30	0.089	18	\$7,226	24
South Dakota	\$5,386	10	0.128	6	\$9,609	8
Wyoming	\$5,723	8	0.124	7	\$10,684	5

Numbers are for FY2007 state and local governments combined, and are derived from data from the U.S. Census Bureau, Governments Division and U.S. Department of Justice, Bureau of Justice Statistics. The whole numbers to the right of the ratios are the state ranks.

Given that Maine's per capita income is relatively low, police expenditure per crime should be expected to be relatively low in Maine. Indeed, this is confirmed in a multivariate regression analysis of expenditure per crime that simultaneously controls for urban percentage and per capita income suggests that Maine's police expenditure per crime is 0.3% above the interstate norm.

Thus, although Maine certainly spends relatively much less on police protection than most other states, it appears that this is entirely attributable to Maine's relatively low income and crime rate. After accounting for these two factors, Maine's spending on police services is comparable to that in the rest of the country.

Fire Protection

Of the 19 service categories with payroll (not counting Other and Unallocable), Fire Protection is the 10th largest state- and local-government payroll category in Maine, and the 8th largest nationally. The Census Bureau data indicate that fire services in Maine are provided by 239 governmental units in FY2007 (well above the 212 in the FY2002 data): 225 cities and towns, 12 counties, and two special districts. As shown in Table 12, Maine has the nation's 3rd highest number of per capita governments providing fire protection.

Fire payroll and expenditure are relatively low in Maine, while FTE employment is relatively high. This is shown in Table 12. Maine's fire payroll and expenditure as a proportion of state personal income are below the national averages by 16.2% and 12.9% respectively. Maine's FTE employment per capita, however, is 21.8% above the national average. Evidently, at least some fire "employment" in Maine is really quasi-volunteer labor. Hence, despite having a relatively high number of fire departments, fire protection does not appear to be relatively costly in Maine.

Table 12
Fire Protection

	<u>Payroll</u>		<u>FTE Employment</u>		<u>Expenditure</u>		<u>Local Governments</u>	
Maine	0.15%	29	1.37	7	0.28%	32	1.82	3
United States	0.18%		1.12		0.32%		0.38	
New England	0.21%		1.67		0.30%		0.69	
New Hampshire	0.18%	16	1.43	6	0.31%	22	0.99	8
Vermont	0.07%	48	0.57	45	0.18%	45	0.77	14
Rural-State Average	0.10%		0.76		0.25%		1.13	
Mississippi	0.14%	34	1.13	26	0.26%	36	0.52	27
Montana	0.11%	41	0.71	42	0.29%	25	1.23	5
South Dakota	0.07%	45	0.53	46	0.20%	43	0.90	9
Wyoming	0.10%	43	0.85	38	0.33%	12	2.22	1

Numbers are for FY2007 state and local governments combined, and are derived from data from the U.S. Census Bureau, Governments Division. "Payroll" is reported as a percentage of personal income. "FTE Employment" is full-time-equivalent employment per 1,000 people. "Expenditure" is reported as a percentage of personal income. "Local Governments" is the number of sub-state governments per 10,000 people. The whole numbers to the right of the ratios are the state ranks.

On the other hand, fire protection is relatively low in the other rural states too. Indeed, fire payroll and FTE employment in Maine exceed the levels in all five of the other most rural states and the rural-state averages by 57.9% and 80.5% respectively. Maine's fire expenditure exceeds the rural-state average by 9.6%. Hence, despite the considerable help of volunteer firefighters, fire protection in Maine is costly relative to the rural comparison states.

Moreover, Maine's spending fire protection increased significantly between 2002 and 2007. Maine's payroll relative to income, employment per capita, and expenditure relative to income respectively increased by 12.6%, 20.0%, and 19.0% over the five years. The national averages of these measures changed by -0.4%, 5.4%, and 8.3% respectively, and Maine's interstate rankings in fire protection increased noticeably (respectively from 35th to 29th, 16th to 7th, and from 38th to 32nd).

Fire Protection is divided into the subcategories Firefighters and Other, which is administrative and support personnel. This is shown in Table 13. The ratio of firefighter payroll to support personnel payroll in Maine is considerably higher than the national average. In Maine, the payroll ratio is 21.5 firefighters per support person. The national average is 13.6.

In summary, Maine's provision of fire protection appears costly. Although Maine spends relatively less on fire protection than most states, it does not appear to be due to greater cost effectiveness. It appears to be due to the lower need for fire protection in non-urban states. Expenditure on fire protection as a proportion of personal income in Maine is 9.6% higher than the rural-state average (and there is a larger difference in payroll).²³ In FY2007, Maine spent \$125.3 million on fire protection. This figure would be \$11.0 million lower if Maine had the same expenditure relative to income as the average of the other rural states. Moreover, this cost differential appears to be on the conservative side. Again, it is important to keep in mind that an estimate of the cost differential is not an estimate of wasteful spending.

Parks and Recreation

The category Parks and Recreation covers expenditure and employment related to public parks and other public recreational and cultural-scientific facilities. This includes zoos, marinas, museums, and convention centers. Parks and Recreation is the 13th largest state- and local-government payroll category in Maine, and 12th largest in the rest of the country. The Census Bureau data indicate that parks and recreation in Maine is provided by 120 governmental units in FY2007: the state and 119 cities and towns (considerably higher than the 99 in FY2002). As shown in Table 14, Maine has the nation's 5th highest number of per capita governments providing parks and recreation services. The other rural states also have high numbers of local governments per capita in parks and recreation.

²³ A basic multivariate regression analysis that simultaneously controls for urban percentage and per capita income suggests that Maine's fire expenditure relative to income is 23.5% above the interstate norm.

Table 13
Fire Payroll
Firefighters versus Other

	<u>Firefighters</u>		<u>Other</u>	
Maine	0.15%	29	0.01%	32
United States	0.17%		0.01%	
New England	0.20%		0.01%	
New Hampshire	0.17%	15	0.01%	27
Vermont	0.06%	48	0.00%	47
Rural-State Average	0.09%		0.01%	
Mississippi	0.14%	32	0.00%	40
Montana	0.10%	41	0.01%	20
South Dakota	0.07%	45	0.00%	49
Wyoming	0.09%	43	0.01%	26

Numbers are for FY2007 state and local governments combined, and are derived from data from the U.S. Census Bureau, Governments Division. "Payroll" is reported as a percentage of personal income. The whole numbers to the right of the ratios are the state ranks.

Parks and recreation payroll as a percentage of income and employment per capita are low in Maine vis-à-vis other states. They are 21.9% and 25.0% below the national averages respectively. Maine's parks and recreation expenditure is even lower vis-à-vis the rest of the nation: 46.1% below the national average.²⁴ Maine has the nation's 6th lowest parks and recreation expenditure relative to income. Having a relatively high number of governments evidently does not cause high costs for this service. Naturally it is possible, however, that the low costs in Maine are more of an indication of less provision of these amenities than cost effectiveness.

²⁴ Moreover, Maine is relatively more reliant on parks and recreation charges than the national and rural averages. Thus, the differences are even larger in terms of net state- and local-government contribution on parks and recreation.

Table 14
Parks and Recreation

	<u>Payroll</u>		<u>FTE Employment</u>		<u>Expenditure</u>		<u>Local Governments</u>	
	Maine	0.07%	34	0.68	37	0.17%	45	0.91
United States	0.09%		0.91		0.32%		0.34	
New England	0.05%		0.54		0.14%		0.45	
New Hampshire	0.04%	48	0.52	46	0.17%	46	0.74	7
Vermont	0.05%	46	0.44	48	0.15%	48	0.66	11
Rural-State Average	0.07%		0.78		0.32%		0.78	
Mississippi	0.05%	47	0.57	43	0.18%	44	0.42	21
Montana	0.05%	44	0.53	45	0.21%	42	0.66	10
South Dakota	0.08%	27	0.77	31	0.45%	11	0.91	4
Wyoming	0.12%	6	1.57	3	0.60%	2	1.24	2

Numbers are for FY2007 state and local governments combined, and are derived from data from the U.S. Census Bureau, Governments Division. "Payroll" is reported as a percentage of personal income. "FTE Employment" is full-time-equivalent employment per 1,000 people. "Expenditure" is reported as a percentage of personal income. "Local Governments" is the number of sub-state governments per 10,000 people. The whole numbers to the right of the ratios are the state ranks.

Parks and recreation expenditure relative to income in Maine is comparable to the levels in three of the five other most rural states. But Maine's level is a fraction of the levels in Western rural states South Dakota and Wyoming. Given that Maine is well known for its tourism industry, one might expect that Maine would be similar to these states in this respect.

Maine's parks and recreation payroll relative to income and FTE employment relative to population respectively declined by 1.1% and 0.1% since FY2002. But these were slightly smaller than the national declines of 5.6% and 0.6% respectively. Thus, Maine is a little closer the national averages in FY2007. National parks and recreation expenditure relative to income also declined, by 4.6%. But Maine's park and recreation expenditure as a percentage of income increased 14.0%, despite the decline in payroll.

Although most parks and recreation is provided by local governments, it is also provided to some extent by state governments. Table 15 shows how parks and recreation payroll is split between state and local government. Compared to the rest of the nation, Maine

Table 15
Parks and Recreation Payroll
Local versus State

	<u>Local</u>		<u>State</u>	
Maine	0.05%	34	0.02%	18
United States	0.07%		0.01%	
New England	0.04%		0.01%	
New Hampshire	0.03%	46	0.01%	36
Vermont	0.02%	50	0.03%	4
Rural-State Average	0.06%		0.02%	
Mississippi	0.04%	43	0.01%	28
Montana	0.04%	41	0.01%	35
South Dakota	0.06%	26	0.02%	14
Wyoming	0.11%	6	0.01%	26

Numbers are for FY2007 state and local governments separately, and are derived from data from the U.S. Census Bureau, Governments Division. "Payroll" is reported as a percentage of personal income. The whole numbers to the right of the ratios are the state ranks.

provides more of these services at the state level and less at the local level. Maine's state parks and recreation payroll in Maine is 32.2% higher than the national average, and its local parks and recreation payroll is 30.2% below the national average. Four of the five other non-urban states are similar in having relatively high state payrolls and relatively low local payrolls.

In summary, there is no strong evidence that Maine has abnormally high costs in parks and recreation. If anything, Maine is abnormally low in this service category. But, generally, Maine is similar to other rural states in this category.

Sewerage

Sewerage is the collection and treatment of sewage and other water pollution control. Of the 19 service categories with payroll (not counting Other and Unallocable), Sewerage is

the 14th largest state- and local-government payroll category nationally and in Maine. Sewerage services in Maine are provided by 124 governmental units: 67 cities and towns and 57 special districts.

The data presented in Table 16 indicate that sewerage payroll and employment in Maine are relatively high, while its net expenditure is relatively low. Maine's payroll as a percentage of income ranks 10th and is 15.3% above the national average, FTE employment per capita ranks 11th and 16.6% above the national average, but net expenditure as a percentage of income ranks 23rd and is 9.6% below the national average.²⁵ The relatively high number of local governments providing this service in Maine, and in the other rural states, does not appear to create a noticeable cost disadvantage.

Table 16
Sewerage

	Payroll		FTE Employment		Net Expenditure		Local Governments	
Maine	0.06%	10	0.50	11	0.33%	23	0.94	11
United States	0.05%		0.43		0.37%		0.40	
New England	0.04%		0.39		0.28%		0.39	
New Hampshire	0.03%	42	0.28	46	0.20%	48	0.53	20
Vermont	0.04%	40	0.32	39	0.32%	26	0.98	10
Rural-State Average	0.03%		0.29		0.29%		1.09	
Mississippi	0.02%	50	0.21	49	0.23%	46	0.36	31
Montana	0.04%	38	0.31	40	0.23%	45	1.38	3
South Dakota	0.04%	39	0.31	41	0.39%	15	1.49	1
Wyoming	0.03%	47	0.30	43	0.28%	37	1.22	5

Numbers are for FY2007 state and local governments combined, and are derived from data from the U.S. Census Bureau, Governments Division. "Payroll" is reported as a percentage of personal income. "FTE Employment" is full-time-equivalent employment per 1,000 people. "Net Expenditure" is expenditure less transfers from federal government, and is reported as a percentage of personal income. "Local Governments" is the number of sub-state governments per 10,000 people. The whole numbers to the right of the ratios are the state ranks.

²⁵ Part of the reason that Maine's net expenditure for sewerage is relatively low is that Maine receives a relatively high amount of federal aid in this service category (many states do not receive any federal money for sewerage).

Public sewerage services appear to be significantly less costly in rural areas, though. Sewerage relative payroll and employment in Maine are much higher than in all of the other non-urban states. Maine's sewerage payroll and employment exceed the average of the other rural states by 90.8% and 71.7% respectively. In sewerage net expenditure Maine exceeds the rural-state average by only 13.6%. The Maine's differences are also very pronounced in comparison to its closest neighbor with similar geography and weather. Sewerage payroll relative to income, FTE employment per capita, and net expenditure relative to income exceed those in New Hampshire by 89.7%, 79.2%, and 62.9% respectively.

Moreover, Maine's sewerage provision increased noticeably more than nationally from FY2002 to FY2007. Maine experienced increases in all three sewerage measures (7.0%, 2.8%, and 14.3% respectively) while two of the three national averages decreased (the changes are -8.0%, -2.1%, and 5.1% respectively). Maine's interstate ranking thus rose in all three measures (from 19th to 10th, from 14th to 11th, and 29th to 23rd respectively).

As in the case of fire protection, the evidence on Maine's spending for sewerage appears conflicting because the degree of urbanization appears to affect the cost. Maine's sewerage net expenditure as a percentage of personal income is lower than the national average, but it is higher than the average of the other rural states. In FY2007, Maine's net expenditure on sewerage was \$149.3 million. If Maine had the same net expenditure as a percentage of income as the average of the other rural states, \$17.9 million would be saved. This cost differential from the benchmark, however, is not necessarily the amount of waste in the provision of sewerage in Maine.

Solid Waste Management

Solid waste management is the collection and disposal of garbage and other solid wastes, as well as street cleaning. This is one of the smallest state- and local-government payroll categories examined in this report. Solid waste management in Maine is provided by 210 governmental units: 197 cities and towns, one county, and 12 special districts (up from 4 in the FY2002 data). On a per-capita basis, this is the highest number of governments providing this service of all the states (by a considerable margin).

Maine is high in the provision of solid waste management relative to the rest of the nation. As shown in Table 17, Maine's relative payroll, employment, and expenditure on solid waste management are respectively 20.3%, 24.7%, and 31.9% higher than the national averages. Maine's measures exceed the rural-state averages by 24.4%, 8.4%, and 32.7% respectively (although these measures vary considerably among the rural states).

Moreover, Maine's provision of solid waste management appeared to increase substantially from 2002 to 2007 while it decreased in the rest of the nation. Maine's payroll relative to income increased 18.6%, while the national average decreased 14.9% (and Maine's rank rose from 19th to 12th). Maine's FTE employment per capita rose 17.8%, while the national average fell 5.3% (and Maine's ranking rose from 23rd to 13th).

Table 17
Solid Waste Management

	<u>Payroll</u>		<u>FTE Employment</u>		<u>Expenditure</u>		<u>Local Governments</u>	
	Maine	0.05%	12	0.46	13	0.26%	8	1.60
United States	0.04%		0.37		0.20%		0.27	
New England	0.03%		0.27		0.17%		0.52	
New Hampshire	0.03%	27	0.38	20	0.21%	21	1.15	4
Vermont	0.02%	40	0.24	39	0.17%	32	1.32	2
Rural-State Average	0.04%		0.43		0.20%		0.96	
Mississippi	0.03%	32	0.36	23	0.22%	17	0.50	15
Montana	0.05%	9	0.53	11	0.25%	10	0.90	7
South Dakota	0.03%	35	0.27	31	0.12%	43	0.90	9
Wyoming	0.06%	6	0.72	3	0.22%	18	1.20	3

Numbers are for FY2007 state and local governments combined, and are derived from data from the U.S. Census Bureau, Governments Division. "Payroll" is reported as a percentage of personal income. "FTE Employment" is full-time-equivalent employment per 1,000 people. "Expenditure" is reported as a percentage of personal income. "Local Governments" is the number of sub-state governments per 10,000 people. The whole numbers to the right of the ratios are the state ranks.

Paradoxically, Maine's solid waste management expenditure relative to income declined 7.8%, similar to the national decline of 8.0%. But this appears to be due to Maine's measured solid waste management expenditure being anomalously high in FY2002 (i.e., it was disproportionately high compared to its relative payroll and employment).

The data thus suggest that Maine exceeds the interstate norm in the provision of solid waste management. Maine's expenditure in this service category exceeds the national average by almost 32%. In FY2007, Maine's expenditure on solid waste management was \$118.3 million. If Maine had the same expenditure as a percentage of income as the national average, \$28.6 million would be saved.

Housing and Community Development

The category Housing and Community Development includes all construction, operation, and support of public and private housing developments, as well as community development. This is one of the smaller state- and local-government payroll categories

(16th largest in Maine and 15th largest nationally). Housing and community development in Maine is provided by 53 governmental units: 24 cities and towns and 29 special districts. Maine's number of local governments per capita in this service category is 40.0% higher than the national average, and is 69.6% above the rural-state average. Maine ranks 4th highest in this measure.

Housing and Community Development is essentially a federal category administered locally. Federal funding is 71.3% of the national total in the category in FY2007. In Maine, 85.6% of the housing and community development expenditure is federally funded. The average of the five other most rural states is 69.0% federal funding, although the proportion varies widely.

Table 18 shows housing and community development payroll, FTE employment, net expenditure, and gross expenditure. Gross expenditure (i.e., inclusive of federal transfers) is included in this case because, unlike in most other cases, there are substantial

	Payroll		FTE Employment		Net Expenditure		Gross Expenditure	
Maine	0.04%	16	0.39	15	0.08%	25	0.56%	4
United States	0.04%		0.38		0.11%		0.40%	
New England	0.05%		0.55		0.14%		0.47%	
New Hampshire	0.03%	36	0.31	25	0.10%	19	0.32%	25
Vermont	0.03%	41	0.26	31	0.17%	7	0.52%	7
Rural-State Average	0.02%		0.23		0.09%		0.31%	
Mississippi	0.04%	22	0.32	23	-0.01%	49	0.24%	38
Montana	0.03%	32	0.24	42	0.08%	23	0.33%	23
South Dakota	0.02%	46	0.24	38	0.13%	13	0.37%	16
Wyoming	0.01%	50	0.12	50	0.07%	27	0.11%	49

Numbers are for FY2007 state and local governments combined, and are derived from data from the U.S. Census Bureau, Governments Division. "Payroll" is reported as a percentage of personal income. "FTE Employment" is full-time-equivalent employment per 1,000 people. "Net Expenditure" is expenditure less transfers from federal government. Net and gross expenditure are reported as percentages of personal income. "Local Governments" is the number of sub-state governments per 10,000 people. The whole numbers to the right of the ratios are the state ranks.

differences between gross and net expenditure. In payroll and employment Maine is close to the national averages (4.9% higher and 4.3% lower respectively), although ranked above the median. In net expenditure Maine is well below the national average (29.7% lower), but ranked in the middle. And in gross expenditure Maine is well above the national average (40.0% higher) and the 4th highest. Thus, Maine is relatively high nationally in housing and community development only in federal spending.

Compared to the other non-urban states, however, housing and community development payroll, employment, and gross expenditure are relatively high in Maine (74.3%, 68.43%, and 69.6% higher respectively). The rural states are generally low in this service category as housing and community development is geared more toward urban areas.²⁶ In net expenditure relative to income, though, Maine is 10.4% lower than average of the other rural states.

Maine experienced substantial increases in housing and community development since FY2002 vis-à-vis the nation. Maine's payroll relative to income and employment per capita increased by 0.8% and 7.4% respectively, compared to national decreases of 15.5% and 7.5% (and Maine's rankings rose from 19th to 16th and from 18th to 15th respectively). Maine's net and gross expenditure in housing and community development increased by 26.2% and 59.7% respectively compared the national increases of 12.1% and 11.0% (and Maine's rankings rose from 29th to 25th and from 17th to 4th respectively). The large difference in Maine's growth of net and gross expenditure indicates that the increase in Maine's provision of housing and community development was mostly federally financed.

Thus, while Maine's gross expenditures on housing and community development increased to a relatively high level, evidently this was a consequence of federal policies and funding. Maine is not out of step with the rest of the nation in terms of housing and community development financed by the state.

Libraries

Libraries is the smallest state- and local-government payroll category in Maine. According to the FY2007 data, public libraries are provided by 105 cities and towns in Maine. On a per-capita basis, Maine has the 6th highest number of local governments with libraries. This is shown in Table 19.

Local-government spending on libraries is relatively low in Maine. Payroll as a percentage of income, FTE employment per capita, and expenditure as a percentage of income are 33.1%, 32.7%, and 23.0% below their respective national averages. Maine ranks 37th or lower in each of these measures. Evidently, having a relatively high number of governments does not cause high costs for this service. As in the case of parks and

²⁶ The correlation coefficient between state urban percentage and housing and community development payroll relative to income is 0.456, and 0.384 between urban percentage and both FTE employment per capita and net expenditure relative to income.

Table 19
Libraries

	<u>Payroll</u>		<u>FTE Employment</u>		<u>Expenditure</u>		<u>Local Governments</u>	
	Maine	0.03%	41	0.29	41	0.07%	37	0.80
United States	0.04%		0.44		0.09%		0.24	
New England	0.04%		0.52		0.08%		0.54	
New Hampshire	0.04%	19	0.52	13	0.06%	43	1.18	4
Vermont	0.02%	47	0.25	47	0.07%	38	1.08	5
Rural-State Average	0.03%		0.37		0.10%		0.72	
Mississippi	0.02%	45	0.29	42	0.06%	44	0.20	34
Montana	0.03%	38	0.32	39	0.09%	26	0.75	7
South Dakota	0.03%	35	0.35	35	0.08%	34	1.25	3
Wyoming	0.04%	18	0.62	6	0.21%	2	0.31	23

Numbers are for FY2007 state and local governments combined, and are derived from data from the U.S. Census Bureau, Governments Division. "Payroll" is reported as a percentage of personal income. "FTE Employment" is full-time-equivalent employment per 1,000 people. "Expenditure" is reported as a percentage of personal income. "Local Governments" is the number of sub-state governments per 10,000 people. The whole numbers to the right of the ratios are the state ranks.

recreation, it is possible that the low costs in Maine are more of an indication of less provision of this amenity than cost effectiveness, though.

Except for Wyoming, the other rural states are also relatively low in the provision of library services. Maine, however, is lower in spending on libraries than in three of the five other rural states. Maine's payroll, employment, and expenditure are respectively 11.6%, 19.8%, and 30.0% below the average of the other non-urban states.

Maine's provision of libraries in 2007 was little changed from 2002, although it did increase slightly more than in the rest of the nation. Maine's library payroll as a percentage of income, employment per capita, and expenditure as a percentage of income changed by 2.8%, 1.9%, and 3.3% respectively, compared to national changes of -5.0%, 0.8%, and -0.3% respectively.

These data do not reveal any evidence that Maine has higher-than-necessary costs in libraries. Indeed, Maine is relatively low cost in this service category. Moreover, this is

a small category of state and local services. In FY2007, Maine's expenditure on libraries was \$32.4 million.

5. State Functions

Higher Education

Higher Education is the 2nd largest category of state- and local-government payroll. It is easily the largest category of state-government payroll. In Maine, public higher education is provided solely by the state government. Nationally, it is provided mostly by state governments, although there is some local provision of community colleges and vocational and technical colleges, typically through counties and special districts.

In addition to the usual measures, Table 20 also shows gross expenditure for higher education as a percentage of personal income. A significant fraction of public higher education is financed through charges, such as tuition, fees, room and board, etc., and these vary considerably across states. Thus, the comparison of gross and net expenditures can differ considerably. Nationally in FY2007, states finance 56.8% of total higher education direct expenditure. In Maine, the state government foots 49.4% of the total cost, which ranks 34th in the country.

As shown in Table 20, Maine is low in the provision of public higher education in comparison to the rest of the nation. Maine ranks 36th or lower in higher education in all four measures. In payroll relative to income, FTE employment per capita, net expenditure relative to income, and gross expenditure relative to income Maine is below the U.S. averages by 14.7%, 16.0%, 18.1% and 5.8% respectively.

The other rural states, however, exceed the national average in the provision of higher education (with the exception of South Dakota in net and gross expenditure). Thus, Maine's provision of public higher education is particularly low in comparison to the other rural states. Maine's payroll, employment, net expenditure, and gross expenditure are below the averages of the other rural states by 31.8%, 36.8%, 36.6%, and 30.5% respectively.

Maine's 2007 interstate rankings in the provision of higher education rose slightly from 2002. In relative payroll and employment Maine moved from 42nd to 40th. Maine's payroll relative to income increased 3.0%, while the national average decreased 2.9%. But Maine's FTE employment declined 1.5%, while the U.S. average rose 1.0%. Maine's net and gross expenditures relative to income increased more than their national averages and Maine's ranking moved from 41st and 42nd respectively to 36th and 37th.

Higher education payroll and employment data are separated into the subcategories Instructional and Other. The Instructional subcategory is personnel engaged in teaching and related academic research. The Other subcategory is everything else, such as administration, facilities maintenance, and support personnel. Instructional employees

**Table 20
Higher Education**

	<u>Payroll</u>		<u>FTE Employment</u>		<u>Net Expenditure</u>		<u>Gross Expenditure</u>	
Maine	0.73%	40	5.38	40	0.82%	36	1.66%	37
United States	0.85%		6.41		1.00%		1.76%	
New England	0.59%		5.07		0.62%		1.29%	
New Hampshire	0.62%	45	5.06	45	0.46%	50	1.38%	43
Vermont	1.03%	21	7.62	22	1.31%	14	3.10%	4
Rural-State Average	1.07%		8.51		1.30%		2.44%	
Mississippi	1.29%	6	8.78	8	1.73%	4	2.76%	5
Montana	1.08%	16	7.72	21	1.07%	27	2.39%	13
South Dakota	0.90%	29	7.12	24	0.77%	40	1.68%	35
Wyoming	1.03%	20	11.30	3	1.59%	6	2.25%	21

Numbers are for FY2007 state and local governments combined, and are derived from data from the U.S. Census Bureau, Governments Division. "Payroll" is reported as a percentage of personal income. "FTE Employment" is full-time-equivalent employment per 1,000 people. "Net expenditure" is expenditure less charges (i.e., tuition, fees, etc.). Net and gross expenditure are reported as a percentage of personal income. The whole numbers to the right of the ratios are the state ranks.

account for 36.4% of public higher education payroll in Maine. Nationally, however, instructional payroll is 46.4% of the total.

As shown in Table 21, Maine's instructional payroll as a percentage of personal income is the 4th lowest in the nation and 33.1% lower than the national average. Moreover, every rural comparison state is well above the national average. Maine's instructional payroll relative to income is 49.3% lower than the average of the other rural states.

In higher education other payroll relative to income, though, Maine is ranked 31st and 1.2% above the national average. All but one of the rural comparison states are above the national average in this subcategory as well. Maine's other payroll relative to income is 15.1% less than the average of the other rural states.

Comparison of these higher education subcategories reveals that Maine has the nation's 2nd highest other/instructional proportion (i.e., Maine's 36.4% of higher education payroll

Table 21
Higher Education Payroll
Instructional versus Other

	<u>Instructional</u>		<u>Other</u>	
Maine	0.26%	47	0.46%	31
United States	0.40%		0.46%	
New England	0.26%		0.33%	
New Hampshire	0.30%	45	0.32%	45
Vermont	0.48%	21	0.55%	20
Rural-State Average	0.52%		0.54%	
Mississippi	0.61%	5	0.68%	8
Montana	0.52%	15	0.55%	18
South Dakota	0.51%	17	0.40%	38
Wyoming	0.48%	20	0.55%	19

Numbers are for FY2007 state and local governments combined, and are derived from data from the U.S. Census Bureau, Governments Division. "Payroll" is reported as a percentage of personal income. The whole numbers to the right of the ratios are the state ranks.

going to instruction is the 2nd lowest in the nation).²⁷ Another way of phrasing this is that for every \$1 going to instructional payroll in Maine, \$1.75 goes to other payroll. This ratio is 51.4% higher than nationally where there is \$1.15 of other payroll for every dollar of instructional payroll. Moreover, each of the rural comparison states has a lower other/instructional ratio than the national average. The average of the other rural states is \$1.04 of other payroll per dollar of instructional payroll (Maine's ratio exceeds this average by 67.5%).

Measures per student are probably preferable to measures relative to income or population. Despite the fact that universities have research and service missions beyond

²⁷ The FY2002 data indicated that Maine was even more disproportionately low in higher education payroll being used for instruction. According to the University of Maine System Office the earlier numbers were incorrect because they did not report their data to the Census Bureau correctly.

just teaching students, the correlation coefficients between the number of FTE students in public higher education and payroll, FTE employment, net expenditure, and gross expenditure are respectively 0.993, 0.984, 0.983, and 0.994.²⁸ Table 22 shows higher education payroll, employment, net expenditure, and gross expenditure per FTE student.

Maine's higher education measures per FTE student are closer to the rest of the country than the measures relative to income. Payroll per FTE student in Maine is ranked 38th, and is 10.1% below the national average and 7.0% below the rural-state average. FTE employment per FTE student in Maine is ranked 39th, and is 0.7% lower than the U.S. average and 10.1% lower than the average of the other rural states. Maine's net expenditure per FTE student is 32nd in the nation, and is 13.7% below the U.S. average and 14.2% below the average of the other rural states. Maine's gross expenditure per student is 25th, and is 0.7% lower than the national average and 9.0% lower than the rural average.

Table 22
Higher Education
Per Full-Time-Equivalent Student

	<u>Payroll</u>		<u>FTE Employment</u>		<u>Net Expenditure</u>		<u>Gross Expenditure</u>	
Maine	\$9,343	38	0.20	39	\$10,552	32	\$21,363	25
United States	\$10,390		0.20		\$12,223		\$21,506	
New England	\$11,686		0.22		\$12,293		\$25,673	
New Hampshire	\$10,785	21	0.21	33	\$7,941	48	\$24,098	11
Vermont	\$12,403	6	0.25	9	\$15,804	6	\$37,359	1
Rural-State Average	\$10,051		0.22		\$12,303		\$23,470	
Mississippi	\$9,306	39	0.22	19	\$12,503	18	\$19,954	40
Montana	\$9,433	36	0.20	35	\$9,393	42	\$20,982	32
South Dakota	\$8,181	49	0.18	46	\$6,967	50	\$15,211	50
Wyoming	\$10,934	20	0.26	4	\$16,850	5	\$23,845	14

Numbers are for FY2007 state and local governments combined, and are derived from data from the U.S. Census Bureau, Governments Division and U.S. Department of Education, National Center for Education Statistics. "Net expenditure" is expenditure less charges (i.e., tuition, fees, etc.). The whole numbers to the right of the ratios are the state ranks.

²⁸ Estimates for FTE enrollment in public colleges in Fall 2006 are from the U.S. Department of Education, National Center for Education Statistics.

Higher education FTE employment per FTE student in Maine fell by 13.3% from FY2002 to FY2007 (because the number of students increased while employment was essentially unchanged). Employment per student also fell nationally, but only by 4.4% and Maine's ranking in this measure fell from 20th to 39th. Higher education payroll per FTE student in Maine declined by 3.0% (after accounting for inflation) over the five-year period. Nationally this measure rose by 1.1%, and Maine's interstate rank fell from 31st to 38th. Net expenditure per student (after accounting for inflation) decreased slightly both in Maine and nationally, although Maine's decrease was a little smaller and Maine's rank rose from 39th to 32nd. Real gross expenditure per student increased slightly both in Maine and nationally, although Maine's increase was a little smaller and Maine's rank fell from 23rd to 25th.

The reason why Maine's relative per-student measures differ from its relative per-income measures is that Maine has a relatively low number of students in public higher education. In Maine, 2.68% of the population is in public higher education (on a full-time-equivalent basis). This is 15.5% less than the national proportion of 3.17%. It is 29.7% less than the rural-state average of 3.81%. All of the rural comparison states have higher proportions than Maine, and all but one (Vermont) have relatively larger student proportions than the national average.

Several factors combine to give Maine a relatively low number of students in public higher education. Maine has a relatively small college-age population (i.e., Maine has a relatively old population). Relatively more college students from Maine attend private colleges. Maine's college-attendance rate is relatively low. And, probably most importantly, Maine is a large net exporter of college students. That is, many more students from Maine attend out-of-state colleges than students from other states attend Maine public colleges.

Maine's relatively low college-student population and the differences between the two types of measures raise an interesting question of causation. Is Maine's relatively low state support for higher education as a percentage of income due to having a relatively low number of college students, or is the relatively low number of college students due to Maine's relatively low state support for higher education?²⁹ Relatively low state support leads to high tuition relative to college quality, which can affect three of the four factors driving Maine's relatively low number of public college students. Causality probably runs in both directions, and it is unclear which is more important. This is an important unresolved question in this context because the choice of which set of measures to emphasize depends on which effect is more important. If the more important effect is state support being low because there are few students, then the per-student measures should be emphasized. If the more important effect is there being few students because state support is low, then it is appropriate to emphasize the per-income measures.

²⁹ For further discussion of this issue see P. Trostel and J. Ronca, "A Simple Unifying Measure of State Support for Postsecondary Education" *Research in Higher Education*, 2009.

In any event, neither set of measures suggests unusually high costs in providing higher education services in Maine. However, the examination of the Instructional and Other subcategories of higher education payroll suggests that there could be excess costs in non-instructional areas. Moreover, the Other subcategory is a large part of a large category of state- and local-government services. If Maine's other payroll per FTE student in 2007 (\$5,941) was the same as the national average (\$5,565), \$13.2 million would have been saved. The data do not allow inspection of the composition of non-instructional payroll. But Maine having 15 separate public colleges and universities serving only 35,206 FTE students (47,770 total students) creates the suspicion that there may be excess duplication and costs in the administration of higher education.

Natural Resources

The category Natural Resources includes conservation, regulation, and promotion of natural resource industries. It also includes inspection of agricultural products. Some examples of things in this category are irrigation, drainage, flood control, soil conservation and reclamation; wetlands and watershed management; geological surveying and mapping; regulation of mineral resources including oil and gas drilling; dam and reservoir safety; and public education and technical assistance related to the above activities. Other examples are support and promotion of agricultural associations and fairs; agricultural boards; agricultural extension services; agricultural research; promotion, improvement, and control of livestock and dairy products; promotion of improved methods to store, pack, and label farm products; regulation of quality and safety of agricultural products; and protection of crops and livestock from natural hazards including predators.

Natural Resources is the 11th largest state- and local-government payroll category in Maine, and the 13th largest nationally. It is mostly a state function nationally, and it is almost exclusively a state function in Maine.

Maine's natural resource payroll relative to income, employment per capita, and net expenditure relative to income are much higher than the national averages. Respectively, they exceed the national averages by 69.1%, 47.0%, and 5.6%. This is shown in Table 23.

Not surprisingly, rural states generally spend relatively more in this category than the rest of the country. Indeed, natural resources payroll relative to income, per capita employment, and net expenditure relative to income in Maine are lower than the averages of the other rural states. Respectively, they are below the rural averages by 27.8%, 43.0%, and 52.5%. These large differences arise mainly from the low-population-density Western states, which are particularly high in this category.

State provision of natural resources declined significantly both in Maine and nationally from 2002 to 2007. The decrease in Maine was somewhat larger than the national decrease, though. In relative payroll, Maine declined 13.9% compared to 11.8% nationally, and Maine's interstate rank was unchanged. In relative employment, Maine

Table 23
Natural Resources

	<u>Payroll</u>		<u>FTE Employment</u>		<u>Net Expenditure</u>		<u>Local Governments</u>	
Maine	0.12%	13	0.90	15	0.15%	19	0.17	29
United States	0.07%		0.61		0.14%		0.18	
New England	0.04%		0.38		0.06%		0.11	
New Hampshire	0.04%	47	0.34	46	0.06%	41	0.12	35
Vermont	0.15%	8	1.05	11	0.08%	33	0.19	26
Rural-State Average	0.17%		1.58		0.32%		1.09	
Mississippi	0.14%	11	1.23	10	0.16%	17	0.48	9
Montana	0.23%	4	1.89	4	0.49%	3	1.37	4
South Dakota	0.14%	10	1.40	7	0.18%	11	1.59	2
Wyoming	0.19%	5	2.35	3	0.68%	1	1.81	1

Numbers are for FY2007 state and local governments combined, and are derived from data from the U.S. Census Bureau, Governments Division. "Payroll" is reported as a percentage of personal income. "FTE Employment" is full-time-equivalent employment per 1,000 people. "Net Expenditure" is expenditure less transfers from federal government, and is reported as a percentage of personal income. "Local Governments" is the number of sub-state governments per 10,000 people. The whole numbers to the right of the ratios are the state ranks.

decreased 12.5% compared to a 6.8% decrease nationally, and Maine's rank declined from 12th to 15th. In relative net expenditure, Maine decreased 53.1% compared to a 33.9% decrease nationally, and Maine's rank fell to 19th from 14th.

Being rural clearly matters for the level of provision of natural resources services. Thus, in this category it makes sense to compare Maine to the other rural states. Compared to rural states Maine does not appear to have higher-than-normal costs in this state service category.

Employment Security Administration

Employment Security Administration is the administration of unemployment compensation and employment services. This does not include payment of unemployment benefits, which are counted in Insurance Trust expenditure. Unemployment insurance and employment services are technically state programs, but

they operate within federal guidelines. Nationally, it is the smallest of the 19 state- and local-government service categories with payroll. In Maine, it is the 17th largest category.

The data on Maine’s provision of employment security administration are conflicting, largely because of the high annual volatility in insurance trust receipts, expenditures, and intergovernmental transfers which create dramatic differences in the measures across states and over time. The payroll and employment measures are much more stable than the expenditure measures, though, and provide a more accurate picture of the relative provision of employment security administration.

Maine’s payroll as a percentage of income and FTE employment per capita in this service category are slightly above the national averages (by 3.0% and 2.8 respectively). As shown in Table 24, Maine ranks 20th in both measures. In employment security administration net expenditure as a percentage of income Maine is 16.2 times higher than

Table 24
Employment Security Administration

	Payroll		FTE Employment		Net Expenditure		Gross Expenditure	
Maine	0.03%	20	0.27	20	0.014%	6	0.02%	40
United States	0.03%		0.27		0.001%		0.03%	
New England	0.03%		0.24		0.000%		0.03%	
New Hampshire	0.02%	37	0.26	23	0.013%	8	0.05%	17
Vermont	0.04%	13	0.34	16	0.054%	2	0.07%	5
Rural-State Average	0.06%		0.49		0.021%		0.07%	
Mississippi	0.04%	11	0.35	13	-0.022%	49	0.03%	38
Montana	0.10%	1	0.78	1	-0.002%	32	0.05%	19
South Dakota	0.03%	22	0.34	14	-0.015%	46	0.07%	7
Wyoming	0.05%	9	0.64	2	0.092%	1	0.13%	1

Numbers are for FY2007 state and local governments combined, and are derived from data from the U.S. Census Bureau, Governments Division. "Payroll" is reported as a percentage of personal income. "FTE Employment" is full-time-equivalent employment per 1,000 people. "Net expenditure" is expenditure less transfers from the federal government. Gross and net expenditure are reported as a percentage of personal income. The whole numbers to the right of the ratios are the state ranks.

the national average and ranked 6th. In gross expenditure, however, Maine is 27.4% lower than the national average and ranked 40th.

All of Maine's measures of employment security administration are very low in comparison to the other rural states, though. Maine's relative payroll is lower than four of the five rural states and 39.5% below their average. Maine's relative employment and gross expenditure is much lower than all the rural comparison states and 44.1% and 45.1% lower than their averages respectively. Maine is also 34.7% lower than the rural-state average in net expenditure on employment security administration, although Maine's level is higher than three of the five rural states.

Relative payroll and employment in employment security administration declined significantly since FY2002 both in Maine and nationally. The declines were larger in Maine than in the rest of the nation (34.6% and 29.1% respectively, compared to 20.1% and 13.9%), though, and Maine's interstate rankings rose to 20th from 14th and 13th respectively.

Perhaps a better way to study cost of employment security administration is per unemployed person.³⁰ The correlation coefficient between states' number of unemployed workers and employment security administration payroll is 0.862. For FTE employment it is 0.879. For gross expenditure it is 0.860. For net expenditure, though, the correlation coefficient is -0.044, and is not statistically different from zero. Thus, gross, rather than net, expenditure per unemployed worker is shown in Table 25.

Maine is unambiguously low in these three measures of employment security administration compared to the rest of the country. Maine's payroll per unemployed worker is ranked 29th, and is 13.4% lower than the national average and 55.8% lower than the rural-state average. Maine's FTE employment per unemployed is ranked 28th, and is 3.0% lower than the U.S average and 57.5% lower than the rural average. Maine's gross expenditure per unemployed is ranked 45th, and is 39.0% lower than the national average and 59.4% lower than the rural average

Thus, Maine does not appear to have higher-than-normal costs in employment security administration. Indeed, Maine has lower-than-typical costs in this service category in FY2007. This result should be interpreted with some caution, though, because of the considerable yearly volatility in this category. In FY2002 Maine appeared to have higher-than-typical costs in providing employment security administration.

Other Education

The small category Other Education includes training and education of the blind, deaf, or other handicapped; adult, vocational, or special education that operate outside of school systems; and educational activities not assignable to primary and secondary education or higher education. Some examples in this category are schools for the blind or deaf, adult

³⁰ The average numbers of unemployed civilians in 2006 and 2007 are from the U.S. Department of Labor, Bureau of Labor Statistics.

Table 25
Employment Security Administration
Per Unemployed

	<u>Payroll</u>		<u>FTE Employment</u>		<u>Gross Expenditure</u>	
Maine	\$464	29	0.011	28	\$347	45
United States	\$536		0.011		\$569	
New England	\$547		0.010		\$665	
New Hampshire	\$485	28	0.013	21	\$1,085	10
Vermont	\$722	14	0.015	17	\$1,258	7
Rural-State Average	\$1,050		0.026		\$1,472	
Mississippi	\$426	33	0.012	25	\$268	48
Montana	\$1,948	1	0.044	1	\$856	15
South Dakota	\$664	17	0.021	6	\$1,485	4
Wyoming	\$1,488	2	0.038	2	\$3,492	1

Numbers are for FY2007 state and local governments combined, and are derived from data from the U.S. Census Bureau, Governments Division and from the U.S. Department of Labor, Bureau of Labor Statistics. The whole numbers to the right of the ratios are the state ranks.

education; vocational-technical schools offering less than two-year certificates; and general supervision and services to elementary and secondary schools. Services in this category are exclusively state functions.

In this service category Maine's relative payroll and employment are low compared to the rest of the country, while Maine's relative expenditure is very slightly above the U.S. average. This is shown in Table 26. In other education payroll relative to state income, Maine is 40th and 31.0% below the national average. In FTE employment per capita, Maine is also 40th and 33.1% below the national average. In expenditure relative to income, Maine is 23rd and 3.6% above the U.S. average. The other rural states have relatively high levels of other education, though. Maine's payroll, employment, and expenditure are lower than the averages of the other rural states by 62.2%, 64.2%, and 21.5% respectively.

In FY2002 Maine was about average in other education. In the five following years other education payroll and employment shrunk substantially. Payroll relative to income

**Table 26
Other Education**

	<u>Payroll</u>		<u>FTE Employment</u>		<u>Expenditure</u>	
Maine	0.03%	40	0.20	40	0.33%	23
United States	0.04%		0.30		0.32%	
New England	0.05%		0.39		0.32%	
New Hampshire	0.03%	42	0.24	36	0.17%	47
Vermont	0.13%	1	0.97	1	0.56%	6
Rural-State Average	0.07%		0.57		0.43%	
Mississippi	0.07%	12	0.53	12	0.39%	17
Montana	0.05%	21	0.38	22	0.48%	9
South Dakota	0.05%	18	0.51	14	0.31%	26
Wyoming	0.05%	25	0.45	16	0.39%	16

Numbers are for FY2007 state and local governments combined, and are derived from data from the U.S. Census Bureau, Governments Division. "Payroll" is reported as a percentage of personal income. "FTE Employment" is full-time-equivalent employment per 1,000 people. "Expenditure" is reported as a percentage of personal income. The whole numbers to the right of the ratios are the state ranks.

decreased 41.3% in Maine compared to a 14.9% decrease nationally, and Maine rank fell from 29th to 40th. Employment per capita decreased 38.3% in Maine compared to a decrease of 10.5% nationally, and Maine's rank fell from 33rd to 40th. Maine's other education expenditure relative to income fell only 5.4%, but the U.S. average rose 6.7%, and Maine's rank went from 22nd to 23rd.

Thus, other education does not appear to be an area that may have significant unnecessary costs in Maine. Moreover, this is one of the smaller categories of state- and local-government spending. Thus, the opportunity for cost savings in this category appears quite limited.

6. Mixed Functions

Highways

The category Highways is the construction, maintenance, and operation of non-toll highways, roads, bridges, tunnels, ferry boats, and other transportation infrastructure. It is the 3rd largest category of state- and local-payroll in Maine, and the 5th largest nationally. Highways is a decidedly mixed government category. In Maine, 59.3% of highways payroll is in state government in FY2007. Nationally, 46.7% of highways payroll is in state government. This service is provided by 305 governments in Maine: 300 cities and towns, 3 counties, 1 special district, and the state. In governments per person Maine ranks 7th and is three times the national average.

Relative to the rest of the nation, the provision of highways is high in Maine. This is shown in Table 27. In payroll relative to income, per capita FTE employment, and net

Table 27
Highways

	Payroll		FTE Employment		Net Expenditure		Local Governments	
Maine	0.40%	5	3.17	8	1.23%	12	2.31	7
United States	0.21%		1.79		0.94%		0.77	
New England	0.22%		1.94		0.62%		0.92	
New Hampshire	0.29%	14	2.66	14	0.83%	37	1.56	14
Vermont	0.47%	4	3.56	5	1.19%	15	3.82	3
Rural-State Average	0.40%		3.65		1.39%		2.32	
Mississippi	0.28%	17	2.76	13	1.10%	22	0.80	21
Montana	0.47%	2	3.62	4	1.21%	14	1.20	19
South Dakota	0.32%	10	3.09	9	1.74%	2	4.14	1
Wyoming	0.47%	3	5.24	2	1.73%	3	1.66	12

Numbers are for FY2007 state and local governments combined, and are derived from data from the U.S. Census Bureau, Governments Division. "Payroll" is reported as a percentage of personal income. "FTE Employment" is full-time-equivalent employment per 1,000 people. "Net Expenditure" is expenditure less transfers from federal government, and is reported as a percentage of personal income. "Local Governments" is the number of sub-state governments per 10,000 people. The whole numbers to the right of the ratios are the state ranks.

expenditure relative to income, Maine exceeds the national averages by 86.7%, 76.5%, and 31.0% respectively. Maine's interstate rankings are 5th, 8th, and 12th respectively.

The rural states generally have high levels of highways provision compared to the rest of the nation. In fact, all of the rural states exceed the national averages in all three measures. Being rural appears to create a significant cost disadvantage in providing highway services. The correlation coefficients between urban percentage and payroll relative to income, FTE employment per capita, and net expenditure relative to income are respectively -0.697, -0.691, and -0.550.³¹ Thus, Maine is a little lower than some of the other rural states in the provision of highways. Maine's relative payroll, employment, and net expenditure in highways are 0.8%, 13.3%, and 11.9% below their respective rural averages.

The provision of highways fell in relative terms both in Maine and nationally from 2002 to 2007, but by roughly similar proportions. Thus, the comparison of Maine to the rest of the nation using the FY2007 data is essentially the same as the earlier comparison using the FY2002 data. Highways payroll as a percentage of income declined 10.1% nationally and 6.7% in Maine, and Maine's interstate rank was unchanged. Employment per capita fell 5.3% nationally and 8.0% in Maine, and Maine's rank fell from 4th to 8th. Net expenditure as a percentage of income fell 2.6% nationally and 2.4% in Maine, and Maine's rank rose from 21st to 12th.

Table 28 shows how Maine compares to other states in local provision versus state provision of highways. As mentioned earlier, Maine has a higher proportion of highways payroll at the state level than the national average, and this is reflected in Table 28. Maine's highways payroll at the local government level is 42.6% higher than the national average, but at the state level it is 137.1% higher than the national average. In this respect Maine is somewhat like the other rural states, although they vary considerably in the local/state ratios.

In the case of highways there are data that can be used to construct at least rough measures of cost per unit. To be specific, there are data on road miles, as well as road lane miles. There are also data on vehicle miles, and vehicle miles has the strongest correlation with highways cost. Evidently it is road use that drives highways costs the most. The correlation between states' vehicle miles and states' highways payroll, employment, and net expenditure are 0.887, 0.917, and 0.954, respectively.³²

As shown in Table 29, measuring highway payroll, employment, and net expenditure per vehicle mile makes the interstate comparison quite different. Maine is still higher than the national averages, but not as much higher as when using the per-income measures. In payroll, FTE employment, and net expenditure per vehicle mile, Maine exceeds the

³¹ The correlation with population density was also examined, but the correlation with urban percentage is considerably stronger.

³² Estimates of vehicle miles for 2007 are from the U.S. Department of Transportation, Office of Highway Policy Information.

Table 28
Highways Payroll
Local versus State

	<u>Local</u>		<u>State</u>	
Maine	0.16%	10	0.24%	6
United States	0.11%		0.10%	
New England	0.11%		0.10%	
New Hampshire	0.15%	16	0.14%	14
Vermont	0.22%	2	0.24%	5
Rural-State Average	0.17%		0.23%	
Mississippi	0.16%	12	0.12%	22
Montana	0.15%	18	0.32%	2
South Dakota	0.18%	6	0.14%	16
Wyoming	0.15%	15	0.31%	4

Numbers are for FY2007 state and local governments separately, and are derived from data from the U.S. Census Bureau, Governments Division. "Payroll" is reported as a percentage of personal income. The whole numbers to the right of the ratios are the state ranks.

national averages by 47.0%, 55.9%, and 3.2% respectively, and Maine's interstate rankings are 9th, 10th, and 22nd.

Winter weather is another factor that could drive highways costs. Indeed, there is a strong correlation between states' highways cost measures and states' annual heating-degree days.³³ The correlation coefficients between heating-degree days and payroll relative to income, employment per capita, and net expenditure relative to income are respectively 0.600, 0.460, and 0.282 (the last one is statistically different from zero with only 95% confidence), and the correlation coefficients between heating-degree days and

³³ Heating-degree days is the preferred measure of winter weather, rather than, say, average temperature, because it measures the degree of cold weather as well as the length of winter. Average annual heating-degrees over a 30-year period are from the National Oceanographic and Atmospheric Administration, U.S. Department of Commerce.

Table 29
Highways
Per Million Vehicle Miles

	<u>Payroll</u>		<u>FTE Employment</u>		<u>Net Expenditure</u>	
Maine	\$11,964	9	0.277	10	\$36,946	22
United States	\$8,137		0.178		\$35,817	
New England	\$10,951		0.210		\$31,195	
New Hampshire	\$11,953	10	0.259	14	\$34,262	26
Vermont	\$13,930	4	0.287	7	\$35,561	25
Rural-State Average	\$10,822		0.268		\$37,585	
Mississippi	\$5,400	44	0.185	29	\$21,090	47
Montana	\$13,119	5	0.305	3	\$33,698	31
South Dakota	\$9,725	19	0.271	11	\$53,478	4
Wyoming	\$11,934	11	0.290	5	\$44,099	12

Numbers are for FY2007 state and local governments combined, and are derived from data from the U.S. Census Bureau, Governments Division and U.S. Department of Transportation, Office of Highway Policy Information. "Net Expenditure" is expenditure less transfers from federal government. The whole numbers to the right of the ratios are the state ranks.

payroll, employment, and net expenditure per vehicle mile are respectively 0.588, 0.508, and 0.264 (the last one is statistically different from zero with only 93% confidence).³⁴

Controlling for winter temperature through multivariate regression analysis greatly affects the conclusions about the provision of highways services. As noted earlier, being rural appears to create a significant cost disadvantage in providing highways services. Similarly, the number of local governments per capita involved in providing highways services has a noticeable positive correlation with the measures of highways provision, suggesting that having too many local governments duplicating efforts contributes to the rural cost disadvantage. When simultaneously controlling for average annual heating-degree days, though, neither of these conclusions appears to be supported by the data. That is, the observed correlations of highways costs with urban percentage and

³⁴ The correlation between highways costs and winter precipitation was also examined, but it was statistically insignificant.

governments per capita are evidently mostly spurious. Urban percentage and governments per capita just happen to be correlated with cold winter weather, and, evidently, that is what is really driving relatively high highways costs.

Moreover, a basic multivariate regression analysis that simultaneously controls for annual heating-degree days and urban percentage suggests that Maine's highways provision is not higher than the interstate norm. Maine is obviously a cold-winter state (it is 7th highest in heating-degree days). After controlling for heating-degree days and urban percentage, Maine's net expenditure per vehicle mile is 0.2% below the interstate norm.

Thus, despite most of the measures suggesting that Maine may have higher-than-necessary costs in providing highways services, apparently this is mostly a consequence of Maine's winter weather. After taking weather into account, Maine appears to be close to the interstate norm in highways. Highways is a large category of state- and local-government spending, though. Maine's net expenditure on highways in FY2007 was \$555.5 million. Given this and some uncertainty about the interstate comparison, this service category probably deserves further scrutiny.

Public Welfare

The category Public Welfare is the administration of federal welfare programs and expenditures on welfare benefits such as Medicaid, Temporary Assistance for Needy Families, etc. In terms of state- and local-government payroll, it is the 5th largest payroll category in Maine, and the 7th largest nationally. In terms of net direct expenditure, though, it is the 2nd largest category both nationally and in Maine. Public welfare is mostly administered at the state level in Maine. Nationally, however, it is almost evenly divided between state and local governments. According to the FY2007 Census Bureau data, public welfare is provided by the state and 48 cities and towns in Maine. In terms of governments per capita, this is a relatively high number of local governments (2.83 times the national average). It is also relatively high compared to most of the other rural states (30.2% higher than the rural-state average).

As shown in Table 30, Maine is one of the highest in the nation in the provision of public welfare. Public welfare payroll as a percentage of personal income in Maine is the 2nd highest in the country and 68.3% greater than the national average. FTE employment per capita in Maine is the 4th highest nationally and 57.5% greater than the U.S. average. Maine's net expenditure as a percentage of income is the nation's 5th highest and 66.1% higher than the average. And in gross expenditure (i.e., including federal funding) Maine is the nation's highest and exceeds the national average by 63.5%. Maine's public welfare measures are also higher than in all of the other most rural states.

Maine's net and gross expenditures relative to income grew moderately and only slightly faster than their national averages from FY2002 to FY2007. Net expenditure as a percentage of income grew 13.9% in Maine and 11.8% nationally. Gross expenditure as a percentage of income grew 8.8% in Maine and 3.1% nationally. Maine's relative payroll and FTE employment in public grew dramatically since 2002, though. These

Table 30
Public Welfare

	<u>Payroll</u>		<u>FTE Employment</u>		<u>Net Expenditure</u>		<u>Gross Expenditure</u>	
Maine	0.31%	2	2.72	4	1.95%	5	5.33%	1
United States	0.19%		1.73		1.21%		3.26%	
New England	0.17%		1.69		1.61%		3.49%	
New Hampshire	0.28%	4	3.18	1	1.40%	15	2.65%	42
Vermont	0.27%	6	2.12	12	1.82%	7	5.16%	4
Rural-State Average	0.18%		1.72		0.82%		3.59%	
Mississippi	0.09%	47	0.96	47	-0.01%	50	4.80%	7
Montana	0.25%	10	2.28	10	0.22%	47	2.67%	40
South Dakota	0.16%	29	1.67	25	0.94%	37	2.74%	37
Wyoming	0.14%	39	1.56	29	1.16%	25	2.58%	45

Numbers are for FY2007 state and local governments combined, and are derived from data from the U.S. Census Bureau, Governments Division. "Payroll" is reported as a percentage of personal income. "FTE Employment" is full-time-equivalent employment per 1,000 people. "Net Expenditure" is expenditure less transfers from federal government. Net and gross expenditure are reported as percentages of personal income. "Local Governments" is the number of sub-state governments per 10,000 people. The whole numbers to the right of the ratios are the state ranks.

measures increased by 45.9% and 44.2% respectively, while these measured decreased by 13.2% and 5.2% nationally. Thus, Maine's interstate rankings increased from 20th and 21st respectively to 2nd and 4th.

Table 31 separates public welfare payroll into its local and state components. As mentioned earlier, in Maine public welfare is mostly administered at the state level, but nationally it is roughly evenly split between state and local governments. As a result, Maine's local provision of public welfare is relatively low, and its state provision is relatively high. Local-government payroll in Maine is 70.8% below the national average, while Maine's state payroll is 3.37 times the national average. In this respect, Maine is similar to the other rural states. Public welfare is mostly administered through state governments in the rural states.

Very rough cost-per-unit measures can be constructed for public welfare. There is a very strong statistical correlation between levels of public welfare and numbers of families

Table 31
Public Welfare Payroll
Local versus State

	<u>Local</u>		<u>State</u>	
Maine	0.03%	27	0.28%	2
United States	0.10%		0.08%	
New England	0.04%		0.13%	
New Hampshire	0.17%	7	0.11%	28
Vermont	0.00%	50	0.27%	3
Rural-State Average	0.02%		0.16%	
Mississippi	0.01%	41	0.08%	36
Montana	0.05%	16	0.20%	7
South Dakota	0.03%	31	0.13%	20
Wyoming	0.01%	40	0.13%	21

Numbers are for FY2007 state and local governments separately, and are derived from data from the U.S. Census Bureau, Governments Division. "Payroll" is reported as a percentage of personal income. The whole numbers to the right of the ratios are the state ranks.

headed by a single female. Obviously not all single mothers receive welfare benefits, but this is the predominant demographic group receiving public assistance. The correlation coefficients between states' numbers of single-female families and states' public welfare payroll, FTE employment, and net expenditure are respectively 0.860, 0.890 and 0.851.³⁵ These correlations are noticeably higher than with other measures such as the numbers under the poverty line, the number of children in poverty, etc.

Public welfare payroll and expenditure per single-female family are shown in Table 32. The interstate comparison using these measures is similar to the comparison using the measures as a percentage of personal income or per capita. Maine's public welfare payroll, FTE employment, and net expenditure per single mother are 76.9%, 85.7%, and 69.3% greater than their respective national averages.

³⁵ Estimates of numbers of single mothers are from the 2005 – 2007 American Community Survey.

Table 32
Public Welfare
Per Single Mother

	<u>Payroll</u>		<u>FTE</u> <u>Employment</u>		<u>Net</u> <u>Expenditure</u>	
Maine	\$2,565	5	0.065	2	\$15,926	8
United States	\$1,450		0.035		\$9,406	
New England	\$1,768		0.038		\$16,800	
New Hampshire	\$3,270	1	0.088	1	\$16,282	6
Vermont	\$2,422	6	0.051	11	\$16,134	7
Rural-State Average	\$1,573		0.041		\$7,935	30
Mississippi	\$360	50	0.013	50	-\$56	50
Montana	\$2,142	12	0.060	6	\$1,930	47
South Dakota	\$1,274	28	0.039	21	\$7,625	33
Wyoming	\$1,667	18	0.041	18	\$14,043	13

Numbers are for FY2007 state and local governments combined, and are derived from data from the U.S. Census Bureau, Governments Division and U.S. Census Bureau, American Community Survey. "Net Expenditure" is expenditure less transfers from federal government. The whole numbers to the right of the ratios are the state ranks.

Maine is clearly high in the provision of public welfare (which is mostly Medicaid) compared to the rest of the nation. A large part of this is almost certainly due to Maine choosing to have a relatively high level of welfare benefits. It is not clear to what extent Maine may be unusually costly in administering welfare benefits. Maine's cost differential in public welfare net expenditure is \$361.2 million (i.e., the reduction in Maine's \$882.2 million net expenditure in public welfare in FY2007 if the state's net expenditure per single mother was the same as the national average). Maine's cost differential in public welfare payroll is \$80.3 million (i.e., the reduction in Maine's \$142.1 million public welfare payroll if the state's payroll per single mother was the same as the national average). Clearly public welfare payroll is about the administration of welfare programs and not the level of welfare benefits. Thus, the \$80.3 million estimate can be interpreted as the cost differential in the provision of public welfare services. The magnitude of this cost differential suggests that Maine's provision of public welfare deserves much closer inspection.

Financial Administration

Financial administration is tax assessment and collection, purchasing, budgeting, auditing, accounting, and other financial activities. It is the 6th largest state- and local-government payroll category in Maine, and the 10th largest nationally. According to the FY2007 Census Bureau data, there is financial administration in 440 governments in Maine: the state, all 16 counties, and 439 cities and towns. As shown in Table 33, Maine has the nation's 6th highest number of local governments per capita with financial administration, and is 3.55 times the national average.

Financial administration payroll relative to income, FTE employment per capita, and expenditure relative to income are high in Maine vis-a-vis the rest of the nation. They are 42.5%, 56.1%, and 22.1% greater than the respective national averages, and their respective ranks are 7th, 3rd, and 17th. Four of the give other rural states are also relatively high in financial administration. Maine's payroll, employment, and expenditure differ from the rural-state average by 15.1%, 10.9%, and -10.7% respectively.

Table 33
Financial Administration

	<u>Payroll</u>		<u>FTE Employment</u>		<u>Expenditure</u>		<u>Local Governments</u>	
Maine	0.23%	7	2.07	3	0.42%	17	3.34	6
United States	0.16%		1.33		0.34%		0.94	
New England	0.16%		1.52		0.31%		1.04	
New Hampshire	0.16%	30	1.48	16	0.28%	38	1.72	11
Vermont	0.25%	4	1.95	7	0.35%	23	3.93	5
Rural-State Average	0.20%		1.87		0.47%		3.86	
Mississippi	0.16%	32	1.22	41	0.31%	30	0.76	26
Montana	0.20%	12	1.86	10	0.73%	3	1.57	14
South Dakota	0.19%	17	1.83	12	0.45%	16	11.05	2
Wyoming	0.23%	10	2.46	2	0.51%	11	1.97	9

Numbers are for FY2007 state and local governments combined, and are derived from data from the U.S. Census Bureau, Governments Division. "Payroll" is reported as a percentage of personal income. "FTE Employment" is full-time-equivalent employment per 1,000 people. "Expenditure" is reported as a percentage of personal income. "Local Governments" is the number of sub-state governments per 10,000 people. The whole numbers to the right of the ratios are the state ranks.

Thus, rural states appear to have a slight, although distinct, cost disadvantage in financial administration. Indeed, the correlation coefficients between urban percentage and financial administration payroll relative to income, FTE employment per capita, and expenditure relative to income are respectively -0.264 (statistically different from zero with only 93% confidence), -0.470, and -0.223 (statistically significant with only 88% confidence). There are positive correlations between the number of per capita governments and the measures of financial administration, but they are small and not statistically different from zero.

Nationally, the relative measures of financial administration declined slightly since FY2002. Relative payroll, employment, and expenditure fell by 4.3%, 0.1%, and 7.3% respectively. Maine, however, experienced significant increases in financial administration payroll and employment (11.5% and 14.6%), but a significant decrease in relative expenditure (15.4%). Maine's interstate rankings in financial administration in 2002 ranged between 10th and 13th, but in 2007 the rankings ranged between 3rd and 17th. Thus, the changes in Maine's measures of financial administration are conflicting and puzzling.

Despite having a relatively high number of local governments with financial administration, Maine's relatively high level of financial administration occurs mostly in state government and not so much in local governments. This is shown in Table 34. Local-government financial administration payroll as a percentage of income in Maine is the 19th highest among states, and is 12.7% above the national average and 1.6% below the rural-state average. Maine's state-government financial administration payroll relative to income is the 6th highest, and is 80.8% above the national average and 33.2% above the average of the other rural states.

Evidently, the rural cost disadvantage in financial administration occurs at the state-government level and not at the local-government level. In the case of Maine at least, the relatively high cost of state financial administration probably has a lot to do with having both a state income tax and a state sales tax.

Overall, Maine appears relatively high in financial administration, particularly in state government. State-government financial administration payroll as a percentage of income is a third higher than the average of the other rural states (and the difference is much larger in comparison to the national average). Maine's state-government payroll in financial administration was \$58.7 million in FY2007. If Maine had the same state-government payroll relative to income as the average of the other rural states, there would be \$14.6 million in cost savings. This is slightly higher than the \$9.3 million (in 2007 dollars) cost differential in the FY2002 data. This \$14.6 million cost differential is not necessarily the amount of waste in state financial administration, though. Moreover, the financial administration expenditure data suggest a different conclusion. Although Maine's relative financial administration expenditure is higher than the national average, it is below the average of the other rural states. Thus, although some evidence points to a sizable cost differential in this service category in Maine, the evidence is inconclusive.

Table 34
Financial Administration Payroll
Local versus State

	<u>Local</u>		<u>State</u>	
Maine	0.10%	19	0.13%	6
United States	0.09%		0.07%	
New England	0.07%		0.09%	
New Hampshire	0.08%	32	0.08%	22
Vermont	0.11%	12	0.13%	5
Rural-State Average	0.11%		0.10%	
Mississippi	0.10%	21	0.06%	46
Montana	0.08%	35	0.12%	8
South Dakota	0.12%	6	0.07%	32
Wyoming	0.12%	9	0.11%	13

Numbers are for FY2007 state and local governments separately, and are derived from data from the U.S. Census Bureau, Governments Division. "Payroll" is reported as a percentage of personal income. The whole numbers to the right of the ratios are the state ranks.

Corrections

Corrections covers prisons, jails, and other detention centers as well as probation officers and parole boards. It is one the larger categories of state- and local-government spending. Nationally, it is the 4th largest payroll category. It is only the 7th largest category in Maine, though.

Corrections is mostly provided by state governments, although a significant fraction is provided by local governments. As reported in Table 2, Maine provides a slightly higher proportion of correctional services at the state level than the rest of the nation (68.6% of Maine's corrections payroll is in state government, compared to 64.4% nationally). According to the Census Bureau data, Maine provides corrections using the state government and the 16 counties. Maine has somewhat more governments per capita

providing corrections than the rest of the nation. But Maine has far fewer governments per capita than four of the five other rural states.

As shown in Table 35, Maine's relative payroll, employment, and expenditure for corrections are well below the national averages. To be specific, Maine's payroll per dollar of income is 30.6% below the national average. FTE employment per capita in Maine is 36.9% less than the national average. Corrections expenditure per dollar of income in Maine is 25.4% below the national average. In each of these measures Maine ranks 39th or lower.

The rural states are also generally low in the provision of corrections. Maine's numbers are closer to the averages of the other rural states than the national averages. Corrections relative payroll, employment, and expenditure in Maine are less than their respective rural averages by 9.2%, 28.8, and 22.0%.

Although rural states have more governments per capita providing corrections, it does not

	<u>Payroll</u>		<u>FTE Employment</u>		<u>Expenditure</u>		<u>Local Governments</u>	
Maine	0.20%	43	1.54	49	0.44%	39	0.12	25
United States	0.29%		2.44		0.59%		0.09	
New England	0.19%		1.64		0.39%		0.02	
New Hampshire	0.17%	48	1.55	48	0.30%	50	0.08	35
Vermont	0.24%	30	1.94	36	0.49%	34	0.00	47
Rural-State Average	0.22%		2.16		0.56%		0.26	
Mississippi	0.22%	36	1.86	40	0.52%	29	0.24	11
Montana	0.21%	41	1.96	35	0.58%	21	0.30	4
South Dakota	0.18%	46	1.86	39	0.50%	32	0.32	2
Wyoming	0.26%	24	3.17	3	0.72%	7	0.46	1

Numbers are for FY2007 state and local governments combined, and are derived from data from the U.S. Census Bureau, Governments Division. "Payroll" is reported as a percentage of personal income. "FTE Employment" is full-time-equivalent employment per 1,000 people. "Expenditure" is reported as a percentage of personal income. "Local Governments" is the number of sub-state governments per 10,000 people. The whole numbers to the right of the ratios are the state ranks.

appear to cause a cost disadvantage. Indeed, rural states appear to have a significant cost advantage in this service category. As will be discussed further below, rural states generally have relatively fewer prison inmates.

The national relative measures of corrections declined slightly from 2002 to 2007. Corrections payroll and expenditure relative to income declined 5.8% and 4.9% nationally, and corrections employment per capita declined 0.4% nationally. Corrections payroll relative to income also declined in Maine, but not quite as much as nationally. Moreover, Maine's corrections employment and expenditure increased since 2002. Maine's 10.2% increase in corrections expenditure was particularly large relative to the rest of the nation, and Maine's interstate rank rose from 47th to 39th.

Table 36 shows that Maine's local-government payroll for corrections is particularly low relative to the rest of the nation. Maine's local-government corrections payroll relative to

	Local		State	
Maine	0.06%	34	0.14%	39
United States	0.10%		0.19%	
New England	0.03%		0.16%	
New Hampshire	0.05%	41	0.12%	43
Vermont	0.00%	47	0.24%	9
Rural-State Average	0.06%		0.16%	
Mississippi	0.06%	36	0.17%	28
Montana	0.07%	33	0.15%	38
South Dakota	0.07%	29	0.10%	47
Wyoming	0.10%	18	0.16%	32

Numbers are for FY2007 state and local governments separately, and are derived from data from the U.S. Census Bureau, Governments Division. "Payroll" is reported as a percentage of personal income. The whole numbers to the right of the ratios are the state ranks.

income is 39.0% below the national average. Maine's state-government payroll for corrections is 26.0% below the state national average. Most of the rural states are relatively more reliant on state governments for providing corrections.

The reason why Maine's spending on corrections is well below the national average is that Maine has a relatively small prison population. In fact, Maine has the nation's smallest number of prison inmates per capita by far. Maine has 1.62 state prison inmates per thousand people.³⁶ The next lowest proportions are 1.75 and 2.08 in Massachusetts and New Hampshire. Maine's proportion is only 33.0% of the national average of 4.89 inmates per thousand people. Moreover, relatively more of Maine's correctional services are provided through state government than in the rest of the country. Applying the state proportions of total state- and local-government payroll in corrections to the numbers of state prison inmates provides a reasonable extrapolation for the total number of state prison and local jail inmates (i.e., estimated total inmates = state inmates ÷ state payroll share). This suggests that Maine has about 2.35 inmates per 1,000 people ($1.62 \div 0.686$), which is only 31% of the national average of 7.60 per 1,000 ($4.89 \div 0.644$). The next lowest state (Massachusetts has about 2.62 per 1,000 people.

Thus, measuring corrections payroll, FTE employment, and expenditure on a per-inmate basis reveals a very different picture from the low-cost story presented above.³⁷ Given that Maine's relative inmate population is 69% below the national average, it could be argued that Maine's corrections payroll, employment, and expenditure should be more than 31%, 37%, and 25% below the national averages. The size of the inmate population is clearly a driver of corrections cost. The correlation coefficients between the number of inmates and corrections payroll, employment, and expenditure are respectively 0.850, 0.948, and 0.829.³⁸ Table 37 indicates that Maine has the nation's second highest corrections expenditure per prisoner and more than double the national average.³⁹ Maine's corrections payroll, employment, and expenditure per inmate are 88.6%, 92.6%, and 114.8% greater than their respective U.S. averages.

Maine's corrections cost per inmate is also substantially higher than in the other non-urban states. There does not appear to be a cost disadvantage of providing corrections in rural states. Indeed, the opposite appears to be the case. The other rural states generally have somewhat lower costs per inmate than the rest of the country. Thus, compared to the average of the other rural states, Maine is 107.5% higher in corrections payroll per inmate, 78.5% higher in FTE employment per inmate, and 125.8% higher in expenditure per inmate.

³⁶ Numbers of (non-federal) prison inmates are the averages of the 6/30/2006 and 6/30/2007 values and are from the U.S. Department of Justice, Bureau of Justice Statistics.

³⁷ Corrections measures per crime were also considered, but the correlations between the corrections measures and the number of crimes were not as strong as their correlations with the number of inmates.

³⁸ These high correlation coefficients suggest that the estimated numbers of total state prison and local jail inmates are fairly precise.

³⁹ Many states have some privately operated prisons. Inmates in private facilities make up 5.9% of the total nationally. The costs of these private facilities are counted as state- and local-government expenditure, but not payroll and employment. Thus, the payroll and employment measures are per inmate in public facilities, and the expenditure measure is per inmate in public and private facilities.

Table 37
Corrections
Per Inmate

	<u>Payroll</u>		<u>FTE</u>		<u>Expenditure</u>	
Maine	\$29,639	2	0.656	1	\$64,155	2
United States	\$15,718		0.341		\$29,872	
New England	\$24,810		0.453		\$50,629	
New Hampshire	\$23,665	8	0.521	8	\$42,051	14
Vermont	\$25,980	4	0.559	6	\$42,656	13
Rural-State Average	\$14,303		0.367		\$28,413	
Mississippi	\$6,445	48	0.187	49	\$12,157	50
Montana	\$12,984	34	0.361	29	\$26,620	30
South Dakota	\$8,212	45	0.247	43	\$23,358	35
Wyoming	\$17,896	24	0.483	14	\$37,276	20

Numbers are for FY2007 state and local governments combined, and are derived from data from the U.S. Census Bureau, Governments Division and U.S. Department of Justice, Bureau of Justice Statistics. The whole numbers to the right of the ratios are the state ranks.

Moreover, Maine's corrections cost per prison inmate is surprisingly high even without comparing it to other states. An annual corrections cost of \$64,155 per inmate is 1.9 times the state's income per capita. Thus, even from just a purely fiscal standpoint, Maine is fortunate to have such relatively small prison population.

Corrections employment per prisoner fell significantly both nationally and in Maine since 2002 (by 42.6% and 38.9% respectively), presumably because of substantial increases in incarceration rates (the national rate increased from 6.67 per 1,000, and Maine's rate rose from 1.80 to 2.35). Corrections payroll and expenditure per inmate also decreased. Real national payroll and expenditure per inmate fell 7.4% and 8.2% respectively, while they fell 21.9% and 9.9% in Maine.

In summary, the evidence on Maine's provision of corrections appears conflicting at first glance. Relative to income or population, Maine is low cost in providing correctional services. But Maine has the nation's lowest proportion of prison inmates. Relative to the prison population, Maine is very high cost in providing correctional services. Maine's expenditure per inmate is 115% greater than the national average. Moreover, this cost differential does not appear to come from being rural. Maine's corrections expenditure in FY2007 was \$198.5 million. If Maine had the same estimated expenditure per inmate as the national average (i.e., more than halving it), \$106.1 million in annual savings would be achieved. This does not prove \$106 million in wasteful spending in corrections in Maine. However, this does suggest that this service category merits closer scrutiny.⁴⁰

Other Government Administration

The category Other Government Administration includes all executive, administrative, and staff duties that do not fall under another specific function. Some examples are offices of county and municipal government; chief executives such as mayors and town managers; central personnel administration; planning and zoning; record keeping; and town councils and boards. This is mostly a local-government function both in Maine and nationally, but a significant fraction of payroll and expenditure in this category are in state government. According to the FY2007 Census Bureau data there is other government administration payroll in 420 governments in Maine: 419 cities and towns (down from 436 in the FY2002 data), the 16 counties, and the state. Maine has 2.77 times as many local governments per person in this service category as in the rest of the nation, and ranks 9th among states, but this is not usual for a non-urban state.

Table 38 reports the interstate data on other government administration. It shows that Maine is relatively high. Maine's payroll relative to income, per capita FTE employment, and expenditure relative to income exceed the national averages by 40.6%, 46.2%, and 25.5% respectively, and Maine rankings in these measures are 7th, 6th, and 16th.

The rural states generally exceed the national-average measures of other government administration. Rural states appear to have some cost disadvantage in this category, although it does not appear to be due to having a relatively high number of local governments per capita. Maine is thus similar to the other rural states in other administration. Maine's payroll and expenditure relative to income are 1.9% and 1.6% higher than the rural-state average, while Maine's FTE employment per capita is 8.3% lower than the rural-state average.

⁴⁰ It has been suggested that the cost differential may be due to the Maine's Department of Corrections having more responsibilities than in the average state. For example, the Maine Department of Corrections is responsible for juvenile corrections, whereas some states assign this responsibility to a different agency. The Census Bureau, however, classifies expenditure and payroll by function, not by agency. In other words, spending on juvenile probation, for example, is supposed to be classified as corrections expenditure whether it is made by a child welfare agency or a state department of corrections.

**Table 38
Other Administration**

	<u>Payroll</u>		<u>FTE Employment</u>		<u>Expenditure</u>		<u>Local Governments</u>	
	Maine	0.16%	7	1.36	6	0.30%	16	3.19
United States	0.12%		0.93		0.24%		1.15	
New England	0.10%		1.03		0.16%		0.99	
New Hampshire	0.10%	38	0.97	30	0.25%	24	1.59	20
Vermont	0.22%	3	2.05	2	0.25%	21	3.61	6
Rural-State Average	0.16%		1.49		0.29%		4.31	
Mississippi	0.13%	23	0.98	29	0.26%	20	1.23	24
Montana	0.18%	5	1.55	5	0.26%	19	1.70	19
South Dakota	0.13%	25	1.08	19	0.17%	44	12.86	2
Wyoming	0.15%	10	1.78	4	0.51%	2	2.14	12

Numbers are for FY2007 state and local governments combined, and are derived from data from the U.S. Census Bureau, Governments Division. "Payroll" is reported as a percentage of personal income. "FTE Employment" is full-time-equivalent employment per 1,000 people. "Expenditure" is reported as a percentage of personal income. "Local Governments" is the number of sub-state governments per 10,000 people. The whole numbers to the right of the ratios are the state ranks.

From 2002 to 2007 Maine's expenditure on other government administration grew much more rapidly than the national average and Maine's interstate ranking rose from 29th to 16th. But this appears to be due to Maine's expenditure being understated in the FY2002 data. In the earlier data Maine's payroll and employment were relatively high (as they are in the FY2007 data), while its expenditure data was similar to the national average. The three relative measures of other government expenditure are more consistent with each other in 2007 (and similar to the payroll and employment measures in 2002).

The expenditure data (although not the payroll data) splits Other Government Administration into the subcategories Legislative and Other. The Legislative subcategory covers all expenditure on state legislatures, including research and investigative agencies and committees that report to the legislature. Other is everything else. In Maine, the Legislative subcategory makes up 18.5% of the total other government administration in Maine. This is the 10th highest proportion in the nation. The national average is 10.0% and the average of the other most rural states is 12.2% (and Maine is higher than four of the five other rural states).

Table 39 shows the Legislative and Other subcategories of other government administration expenditure as a percentage of income. Maine is relatively high in legislative expenditure. As a percentage of income, Maine has the nation's 4th highest legislative expenditure, 131.7% above the national average and 68.2% above the average of the other rural states. The relative legislative expenditure in four of the five other rural states also exceeds the national average, although none are as high as Maine. Thus, there appears that there may be a rural cost disadvantage in this expenditure subcategory. The correlation coefficient between urban percentage and legislative expenditure as a percentage of income is not statistically significant, though.

Maine is slightly above average in other other government administration expenditure. Other government administration expenditure relative to income in Maine is 13.7% above the U.S. average. Maine's other administration expenditure is 6.8% below the rural-state

	<u>Legislative</u>		<u>Other</u>	
Maine	0.05%	4	0.24%	18
United States	0.02%		0.21%	
New England	0.03%		0.13%	
New Hampshire	0.02%	32	0.22%	23
Vermont	0.04%	10	0.21%	27
Rural-State Average	0.03%		0.26%	
Mississippi	0.03%	26	0.23%	19
Montana	0.05%	6	0.21%	25
South Dakota	0.02%	41	0.15%	42
Wyoming	0.03%	23	0.49%	1

Numbers are for FY2007 state and local governments combined, and are derived from data from the U.S. Census Bureau, Governments Division. "Expenditure" is reported as a percentage of personal income. The whole numbers to the right of the ratios are the state ranks.

average, but this is due to one outlier state (Wyoming), as Maine's level is higher than four of the five other rural states.

Local and state other government payroll are separated in Table 40. Maine is somewhat high at the local level in comparison to other states. Maine's local other government administration payroll relative to income is 17.1% higher than the national average and 9.8% above the rural-state average. Rural states may have a small cost disadvantage in other government administration at the local level. But it does not appear to be due to having a relatively high number of local governments per capita.

Maine is very high in other government administration payroll at the state level in comparison to the rest of the nation. Maine's state other government administration payroll relative to income is 129.2% higher than the national average and the 6th highest among states. But relatively high other state government administration appears common

	<u>Local</u>		<u>State</u>	
Maine	0.11%	13	0.06%	8
United States	0.09%		0.02%	
New England	0.07%		0.04%	
New Hampshire	0.08%	39	0.03%	25
Vermont	0.10%	22	0.12%	2
Rural-State Average	0.10%		0.06%	
Mississippi	0.10%	20	0.03%	31
Montana	0.11%	15	0.07%	5
South Dakota	0.07%	41	0.05%	10
Wyoming	0.11%	10	0.04%	16

Numbers are for FY2007 state and local governments separately, and are derived from data from the U.S. Census Bureau, Governments Division. "Payroll" is reported as a percentage of personal income. The whole numbers to the right of the ratios are the state ranks.

among rural states. Maine is 10.4% lower than the rural-state average in this measure. Thus, the rural cost disadvantage in overall other government administration discussed earlier evidently occurs mostly in state government.

Although not all the interstate data on other government administration in Maine point in the same direction, there are some pretty clear conclusions. Maine is relatively high vis-à-vis the nation in this category, but much, although not all, of this appears to be due to being a rural state.

One area in other government administration where Maine clearly exceeds the rural-state benchmark is in legislative expenditure. Maine's relative legislative expenditure exceeds the average of the other rural states by 68.2%. Maine's legislative expenditure was \$24.9 million in FY2007. If Maine had the same legislative expenditure as a percentage of income as the average of the other rural states, \$7.9 million would be saved. Again, it is important to keep in mind that this \$7.9 million is a cost differential, not an estimate of profligate spending.

Maine is also high in local other government administration compared to the rural-state average (9.8% higher). Other government administration expenditure in Maine in FY2007 was \$134 million, 65.9% of which was at the local level. Combining these numbers indicates a cost differential of, coincidentally, \$7.9 million in local other government administration in Maine. Thus, Maine's total cost differential in this other government administration is \$15.8 million.

Health

The category Health is public health programs. It does not include hospital care or public assistance in health (i.e., mostly Medicaid), which are included in other categories. Just about everything else to do with public health is included, such as public health administration, health education, alcohol and drug abuse programs, health inspection, animal control, immunization programs, research, environmental health activities, etc.

Health is the 9th largest state- and local-government payroll category both in Maine and nationally. Public health services are primarily provided through the state government in Maine. Nationally, however, it is a more mixed category, with somewhat more than half of total health payroll being in local governments. In the FY2007 data public health services in Maine are provided by the state government, 102 cities and towns, and one county government. This gives Maine the nation's 3rd highest per capita local governments providing health services, 3.0 times the national average (although is down from having 4.7 times as many governments per capita providing this service in FY2002). Clearly, most of these 103 Maine cities, towns, and counties are providing relatively very low levels of services, because together they make up only 14.3% of Maine health payroll. Most of the other rural states also have relatively high per capita local governments in this service category.

As shown in Table 41, Maine's measures of health provision in comparison to other states are conflicting. In relative payroll and employment Maine is 10.3% and 20.5% below their respective national averages. In these measures Maine is also below the rural-state averages by 8.9% and 23.5% respectively. In health net expenditure, however, Maine is very high compared to the national average and rural-state averages. Maine's health net expenditure relative to income is the 3rd highest in the country and 125.2% above the national average. Maine's health net expenditure relative to income is 80.3% greater than the average of the other non-urban states.

A similar conflicting pattern in Maine's measures of health provision was found in the FY2002 data. Maine's interstate rankings in these measures were practically the same in 2002 and 2007. Relative payroll and employment in health decreased somewhat nationally and in Maine, although the decreases were slightly smaller in Maine. From 2002 to 2007 health payroll relative to income and FTE employment per capita respectively fell 8.1% and 5.9% nationally and 5.9% and 2.0% in Maine. Net health

Table 41
Health

	Payroll		FTE Employment		Net Expenditure		Local Governments	
Maine	0.15%	33	1.15	36	0.91%	3	0.78	3
United States	0.17%		1.45		0.41%		0.19	
New England	0.14%		1.29		0.21%		0.43	
New Hampshire	0.09%	49	0.86	44	0.18%	43	0.48	7
Vermont	0.16%	31	1.30	29	0.41%	19	0.39	10
Rural-State Average	0.17%		1.51		0.51%		0.61	
Mississippi	0.14%	36	1.07	39	0.24%	31	0.18	30
Montana	0.21%	13	1.80	12	0.74%	6	0.72	4
South Dakota	0.13%	37	1.17	34	0.21%	38	0.92	1
Wyoming	0.20%	18	2.21	5	0.93%	2	0.83	2

Numbers are for FY2007 state and local governments combined, and are derived from data from the U.S. Census Bureau, Governments Division. "Payroll" is reported as a percentage of personal income. "FTE Employment" is full-time-equivalent employment per 1,000 people. "Net Expenditure" is expenditure less transfers from federal government, and is reported as a percentage of personal income. "Local Governments" is the number of sub-state governments per 10,000 people. The whole numbers to the right of the ratios are the state ranks.

expenditure relative to income also fell nationally (by 9.1%), but it grew 5.1% in Maine. Thus, Maine's relative net expenditure in health diverged somewhat further from the national average since 2002 (although it did move somewhat closer to the rural-state average).

The huge discrepancy in Maine's relative levels of health payroll and expenditure is puzzling. Perhaps Maine's government has dramatically more contracting with private firms in health than in the rest of the nation (which would show up as expenditure but not payroll and employment). Indeed, payroll is only a fraction, albeit not a small fraction, of health net expenditure. In Maine, payroll is 16.9% of health net expenditure. Nationally, it is 42.4%.

Table 42 shows that, compared to the rest of the country, Maine is particularly low in health payroll at the local level and relatively high at the state level. Compared to the

	Local		State	
Maine	0.02%	45	0.13%	13
United States	0.10%		0.07%	
New England	0.03%		0.11%	
New Hampshire	0.01%	46	0.08%	25
Vermont	0.01%	50	0.15%	10
Rural-State Average	0.04%		0.13%	
Mississippi	0.01%	48	0.13%	14
Montana	0.10%	13	0.11%	20
South Dakota	0.03%	42	0.10%	22
Wyoming	0.07%	24	0.13%	12

Numbers are for FY2007 state and local governments separately, and are derived from data from the U.S. Census Bureau, Governments Division. "Payroll" is reported as a percentage of personal income. The whole numbers to the right of the ratios are the state ranks.

national averages, Maine is 77.5% lower in local payroll relative to income and 78.7% higher in state payroll relative to income. This is to be expected given that health is much more of a state government function in Maine than nationally. The non-urban states are generally similar in this respect, although not as much as Maine on average. Compared to the rural averages, Maine is 50.1% lower in local payroll relative to income and 5.7% higher in state payroll relative to income.

The interstate comparison of the Census Bureau data on public health thus yields a conflicting picture. In health payroll and employment Maine is below the national and rural averages. In net expenditure relative to income Maine is 80.3% above the average of the other rural states. Maine's net expenditure on health was \$413.3 million in FY2007. Thus, if the interstate net expenditure data are the appropriate guide, there could be a substantial cost differential. If Maine's health net expenditure was the same as the average of the other most rural states, \$184.1 million would have been saved (and the cost differential would be considerably larger if the national average was used as the benchmark). Given the magnitude of this cost differential, further investigation is clearly warranted in this service category.

Judicial and Legal

The Judicial and Legal category includes all court activities as well as public legal services. Of the 19 state- and local-government service categories with payroll (not counting Other and Unallocable), Judicial and Legal is the 12th largest payroll category in Maine, and the 6th largest nationally. Judicial and legal services are mostly provided at the state level in Maine, but a majority of these services are provided at the local level in the rest of the nation. According to the 2007 Census Bureau data, judicial and legal services are provided by 27 governments in Maine: the state, the 16 counties, and 10 cities and towns (down from 14 in the 2002 data). Unlike every other service category with local government provision in Maine, the rest of the nation has more local governments per capita providing judicial and legal services. Maine also has less local governments per capita in this service than all of the rural comparison states.

As shown in Table 43, Maine has the nation's lowest judicial and legal FTE employment per capita, the nation's 2nd lowest payroll relative to income, and the 7th lowest expenditure relative to income. Maine is 44.9%, 45.5%, and 31.4% below the national averages in relative payroll, employment, and expenditure. Three of the five other most non-urban states are also relatively low in judicial and legal services, although not as low as Maine (except for South Dakota in expenditure). If anything, rural states appear to have some cost advantage in this service category. Maine's measures are respectively 34.1%, 41.4%, and 25.0% below the rural-state averages.

From 2002 to 2007 Maine moved slightly closer to the national averages in judicial and legal services, though. Judicial and legal employment per capita increased 0.2% nationally since 2002 and 6.2% in Maine. National payroll and expenditure relative to income decreased by 5.1% and 5.2% respectively. In Maine, relative payroll decreased 0.1%, and relative expenditure increased 4.9%.

Table 43
Judicial and Legal

	<u>Payroll</u>		<u>FTE Employment</u>		<u>Expenditure</u>		<u>Local Governments</u>	
	Maine	0.11%	49	0.77	50	0.23%	44	0.20
United States	0.20%		1.41		0.33%		0.34	
New England	0.16%		1.36		0.30%		0.14	
New Hampshire	0.10%	50	0.97	46	0.22%	47	0.33	30
Vermont	0.15%	37	1.10	39	0.26%	35	0.31	31
Rural-State Average	0.16%		1.31		0.31%		1.03	
Mississippi	0.13%	44	0.93	48	0.25%	37	0.98	7
Montana	0.20%	13	1.57	13	0.41%	7	1.25	3
South Dakota	0.14%	40	1.13	36	0.23%	45	1.06	5
Wyoming	0.19%	15	1.83	7	0.38%	12	1.56	2

Numbers are for FY2007 state and local governments combined, and are derived from data from the U.S. Census Bureau, Governments Division. "Payroll" is reported as a percentage of personal income. "FTE Employment" is full-time-equivalent employment per 1,000 people. "Expenditure" is reported as a percentage of personal income. "Local Governments" is the number of sub-state governments per 10,000 people. The whole numbers to the right of the ratios are the state ranks.

State- and local-judicial payroll as a percentage of income are shown separately in Table 44. Given that Maine, like most other rural states, provides these services mostly at the state level, Maine's state judicial and legal payroll is not as low compared to the rest of the country as its local judicial and legal payroll. Maine's state judicial and legal payroll relative to income is 5.1% higher than the national average and 12.2% below the rural-state average. Maine's local judicial and legal payroll relative to income is 83.2% and 70.0% lower than the national and rural averages respectively.

As in the cases of police protection and corrections, the cost of judicial and legal services are likely to be driven to a large extent by the rate of crime, and Maine has a relatively low crime rate. The correlation coefficients between states' number of crimes and their judicial and legal payrolls, employment, and expenditures are 0.866, 0.912, and 0.843 respectively. Thus, better measures of relative judicial and legal levels are per crime.⁴¹ These are shown in Table 45.

⁴¹ Judicial and legal costs per arrest would seem to be more preferable measures, but the correlation coefficients between arrests and judicial and legal payroll, employment, and expenditure are somewhat

Table 44
Judicial and Legal Payroll
Local versus State

	<u>Local</u>		<u>State</u>	
Maine	0.02%	44	0.09%	28
United States	0.11%		0.09%	
New England	0.01%		0.16%	
New Hampshire	0.03%	42	0.08%	30
Vermont	0.01%	48	0.15%	10
Rural-State Average	0.06%		0.10%	
Mississippi	0.08%	21	0.05%	39
Montana	0.10%	16	0.10%	23
South Dakota	0.05%	37	0.10%	24
Wyoming	0.08%	22	0.11%	18

Numbers are for FY2007 state and local governments separately, and are derived from data from the U.S. Census Bureau, Governments Division. "Payroll" is reported as a percentage of personal income. The whole numbers to the right of the ratios are the state ranks.

Maine's provision of judicial and legal services measured per crime are low compared to rest of the nation, although not quite as low as in the earlier measures. Maine's judicial and legal payroll, employment, and expenditure per crime are below the national averages by 28.6%, 20.9%, and 11.2% respectively. Maine's interstate rankings in these measures range from 42nd in employment to 29th in expenditure. Maine's per crime measures are also low compared to the other rural states. Maine's payroll, employment, and expenditure are well below those in four of the five other rural states and 36.0%, 39.5%, and 25.8% below their respective rural-state averages.

weaker. Moreover, there appear to be some anomalies in the arrest data (such as the number of arrests exceeding the number of crimes in some states). The arrest data has become available only relatively recently, thus they may not be as reliable as the crime data that have been collected for decades.

Table 45
Judicial and Legal
Per Crime

	<u>Payroll</u>		<u>FTE</u>		<u>Expenditure</u>	
Maine	\$1,435	38	0.030	42	\$3,038	29
United States	\$2,010		0.037		\$3,423	
New England	\$2,864		0.051		\$5,272	
New Hampshire	\$2,176	18	0.048	14	\$4,609	10
Vermont	\$2,322	14	0.045	18	\$3,962	18
Rural-State Average	\$2,242		0.049		\$4,095	
Mississippi	\$1,081	47	0.027	44	\$2,073	41
Montana	\$2,196	17	0.052	8	\$4,485	11
South Dakota	\$2,805	8	0.063	3	\$4,414	13
Wyoming	\$2,809	7	0.058	5	\$5,541	6

Numbers are for FY2007 state and local governments combined, and are derived from data from the U.S. Census Bureau, Governments Division and U.S. Department of Justice, Bureau of Justice Statistics. The whole numbers to the right of the ratios are the state ranks.

As in the case of police protection per crime, much of the interstate variation in judicial and legal services per crime appears to be due to differences in per capita income. States' judicial and legal payroll, employment, and expenditure per crime are highly correlated with their per capita incomes. The respective correlation coefficients are 0.667, 0.672, and 0.499. Evidently, greater judicial and legal services are demanded where incomes are higher. A basic multivariate regression analysis that simultaneously controls for per capita income and urban percentage suggests that Maine's judicial and legal expenditure per crime is 7.3% lower than the interstate norm.

Thus, Maine appears to be somewhat below the interstate norm in providing judicial and legal services. But this does not prove that Maine is necessarily cost effective.

General Public Buildings

The category General Public Buildings is the construction, equipping, maintenance, and operation of public buildings not assigned to specific functions. Some examples are general county office buildings, town halls, and other multi-purpose office buildings. There is no employment assigned to this function, thus there are only expenditure data for this category. Most of this category is in local governments both in Maine (64.8%) and nationally (74.8%).

Table 46 shows that Maine is relatively high in the provision of general public buildings. Maine's expenditure as a percentage of income is the 12th highest in the nation and 51.2% above the national average. But all of the least urban states are above the national average in relative expenditure on general public buildings. Maine is only 3.2% above the rural-state average. Evidently rural states face a cost disadvantage in this category.

Although Maine is relatively high in general public buildings expenditure compared to the rest of the nation in 2007, Maine moved considerably closer to the rest of nation since 2002. Maine's expenditure as a percentage of income in this category decreased 23.9%

Table 46
General Public Buildings Expenditure

	Total		Local		State	
Maine	0.18%	12	0.12%	14	0.07%	13
United States	0.12%		0.09%		0.03%	
New England	0.13%		0.10%		0.03%	
New Hampshire	0.09%	45	0.07%	37	0.01%	40
Vermont	0.18%	11	0.05%	45	0.14%	5
Rural-State Average	0.18%		0.10%		0.08%	
Mississippi	0.15%	19	0.09%	27	0.07%	12
Montana	0.13%	23	0.09%	24	0.04%	19
South Dakota	0.18%	13	0.13%	11	0.05%	15
Wyoming	0.24%	6	0.13%	9	0.10%	8

Numbers are for FY2007 and are derived from data from the U.S. Census Bureau, Governments Division. "Expenditure" is reported as a percentage of income. The whole numbers to the right of the ratios are the state ranks.

from 2002 to 2007. Nationally it decreased 2.3%. Maine's interstate rank fell from 6th to 12th.

Table 46 also reveals that it is mostly at the state level where Maine is relatively high in expenditure on general public buildings, but this is typical of a non-urban state. Maine's local general public buildings expenditure relative to income is 29.4% higher than the U.S. average and 21.8% higher than the rural-state average. Maine's state general public buildings expenditure relative to income is 115.9% higher than the national average and 18.9% lower than the rural-state average.

In FY2007, Maine's expenditure on general public buildings was \$82.4 million. If Maine had the same expenditure as a percentage of income as the rural-state average, \$2.6 million would have been saved. But this is well below the \$30.2 cost differential in general public buildings in FY2002 (in 2007 dollars).

Other and Unallocable

Other and Unallocable is a leftover category for activities that are multifunctional or not allocable to a specific function. Some examples are National Guard, insurance premiums, judgments and compensation, administration of multifunctional agencies, economic development, voter registration and elections, etc. Payroll in this category is predominately at the state level in Maine, but is roughly evenly split between state and local governments nationally. In Maine there are 237 governments with payroll in this category: the state, 14 counties, 218 cities and towns, and 5 special districts.

As shown in Table 47, Maine is high compared to the rest of the country in Other and Unallocable. Maine's payroll relative to income in this catch-all category is 13th nationally and 19.6% higher than the national average. Maine's per capita employment is 18th and 20.8% greater than the U.S. average. Maine's net expenditure relative to income is 8th and 62.3% above the U.S. average.

The comparison of Maine's other and unallocable to the rural comparison states is puzzling, though. Wyoming is clearly an outlier in all three measures, presumably because of its large royalties from natural resource extraction. Excluding Wyoming, Maine is very similar to the other rural states in other and unallocable relative payroll and employment (0.9% higher and 4.5% lower respectively). Thus, Maine being relatively high nationally in payroll and employment appears to be due to being a rural state. In other and unallocable net expenditure, however, Maine is dramatically higher than all of the other rural states. Even after excluding Wyoming, Maine is 10.7 times higher than the average of the rural states in net expenditure as a percentage of income.

Moreover, the same interstate pattern in other and unallocable net expenditure was observed in the FY2002. In fact, Maine moved closer to the national and rural-state averages in this category from 2002 to 2007, and its interstate rank fell from 6th to 8th. Maine's net expenditure relative to income declined 17.8%, compared to a 7.5% decrease nationally. Maine's relative payroll and employment in other and allocable, however,

**Table 47
Other and Unallocable**

	<u>Payroll</u>		<u>FTE Employment</u>		<u>Net Expenditure</u>		<u>Local Governments</u>	
Maine	0.24%	13	1.86	18	1.18%	8	1.80	5
United States	0.20%		1.54		0.73%		0.52	
New England	0.19%		1.71		1.20%		0.71	
New Hampshire	0.20%	24	2.07	11	0.22%	44	1.27	14
Vermont	0.29%	7	2.22	7	0.26%	42	1.32	11
Rural-State Average	0.26%		2.35		-0.52%		1.62	
Mississippi	0.17%	32	1.45	33	-0.12%	47	0.58	23
Montana	0.23%	14	1.96	14	0.23%	43	1.73	6
South Dakota	0.23%	16	2.16	9	0.07%	45	2.25	1
Wyoming	0.35%	3	3.97	2	-3.02%	50	2.20	3

Numbers are for FY2007 state and local governments combined, and are derived from data from the U.S. Census Bureau, Governments Division. "Payroll" is reported as a percentage of personal income. "FTE Employment" is full-time-equivalent employment per 1,000 people. "Net Expenditure" is expenditure less transfers from federal government, and is reported as a percentage of personal income. "Local Governments" is the number of sub-state governments per 10,000 people. The whole numbers to the right of the ratios are the state ranks.

increased sharply from 2002 to 2007. Maine's measures increased 32.1% and 33.3% respectively, compared to national declines of 10.5% and 3.5% respectively. Maine's ranks rose from 34th and 35th respectively to 13th and 18th.

Local and state other and unallocable payroll as a percentage of income are shown separately in Table 48. At the local-government level, Maine is relatively low. Maine is 43.9% lower than the national average. In state other and unallocable payroll relative to income, Maine is 93.7% higher than the national average.

Other and Unallocable is a difficult category to evaluate because of the large discrepancy between Maine's relative levels of payroll/employment and net expenditure. Not only is it not known what exactly is in this category, but the interstate comparisons are not completely consistent across measures. To further compound the problem, this is not a trivial category. Maine's other and unallocable net expenditure in FY20072 was \$535.0 million. Thus, more information about this category clearly would be desirable.

Table 48
Other and Unallocable Payroll
Local versus State

	<u>Local</u>		<u>State</u>	
Maine	0.06%	40	0.18%	7
United States	0.11%		0.09%	
New England	0.06%		0.13%	
New Hampshire	0.05%	49	0.16%	13
Vermont	0.02%	50	0.27%	3
Rural-State Average	0.09%		0.17%	
Mississippi	0.05%	44	0.12%	19
Montana	0.08%	25	0.16%	11
South Dakota	0.11%	12	0.12%	21
Wyoming	0.18%	1	0.17%	8

Numbers are for FY2007 state and local governments separately, and are derived from data from the U.S. Census Bureau, Governments Division. "Payroll" is reported as a percentage of personal income. The whole numbers to the right of the ratios are the state ranks.

Moreover, Maine's net expenditure in this category is 62% above the national averages (and much further above the rural-state average). This suggests that Maine could have usually high costs here. If Maine had the same net expenditure relative to income as the national average, \$205.3 million would have been saved (moreover the cost differential in FY2002 was 272.0 million in 2007 dollars). A cost differential of this magnitude certainly deserves closer inspection.

7. Discussion

Recap of Findings

After going through the details of 21 different state- and local-government service categories, and some with subcategories, it is worth briefly recapping the findings. Table

49 provides a numerical review. In this summary it is important to keep in mind that the estimated cost differentials should not be interpreted as estimates of wasteful spending. They should be interpreted as signals for services in Maine that deserve closer inspection.

Table 49
Net Expenditures Summary

	<u>Maine</u>	<u>United States</u>	<u>Rural-State Average</u>	<u>Cost Differential (in millions)</u>	
Total (percent of income)	14.98%	13.21%	12.96%		
Elementary & Secondary Education (per student)	\$9,961	\$9,234	\$8,978	\$141	7.9% > U.S. Average
Police Protection (per crime)	\$6,777	\$7,425	\$8,484		
Fire Protection (percent of income)	0.28%	0.32%	0.25%	\$11	9.6% > Rural Average
Parks & Recreation (percent of income)	0.17%	0.32%	0.32%		
Sewerage (percent of income)	0.33%	0.37%	0.29%	\$18	13.6% > Rural Average
Solid Waste Management (percent of income)	0.26%	0.20%	0.20%	\$29	31.9% > U.S. Average
Housing & Community Development (percent of income)	0.08%	0.11%	0.09%		
Libraries (percent of income)	0.07%	0.09%	0.10%		
Higher Education (per FTE student)	\$10,552	\$12,223	\$12,013	\$13	6.7% > U.S. Average (a)
Natural Resources (percent of income)	0.15%	0.14%	0.32%		
Employment Security Administration (percent of income)	0.01%	0.00%	0.02%		
Other Education (percent of income)	0.33%	0.32%	0.43%		
Highways (per million vehicle miles)	\$36,946	\$35,817	\$37,585		
Public Welfare (per single mother)	\$15,926	\$9,406	\$7,935	\$80	69.3% > U.S. Average (b)
Financial Administration (percent of income)	0.42%	0.34%	0.47%		
Corrections (per inmate)	\$64,155	\$29,872	\$28,413	\$106	114.8% > U.S. Average
Other Government Administration (percent of income)	0.30%	0.24%	0.29%	\$16	68% & 10% > Rural Av. (c)
Health (percent of income)	0.91%	0.41%	0.51%	\$184	80.3% > Rural Average
Judicial & Legal (per crime)	\$3,038	\$3,423	\$4,095		
General Public Buildings (percent of income)	0.18%	0.12%	0.18%	\$3	3.2% > Rural Average
Other and Unallocable (percent of income)	1.18%	0.73%	-0.52%	\$205	62.3% > U.S. Average

Numbers are for FY2007 state and local governments combined. "Total" excludes quasi-private enterprises. Unless there is evidence of systematic cost differences in rural states, the U.S. average is used as the norm. (a) In the Other payroll subcategory. (b) In payroll only. (c) In the Legislative and local subcategories.

Aggregate Totals

Examination of aggregate state- and local-government payroll and expenditure is complicated by quasi-private enterprises, such as public hospitals and public utilities. The provision of these quasi-private goods are mostly financed through user charges and do not contribute to the tax burden nearly to the extent that they add to aggregate spending totals. Thus, it is appropriate to remove these categories from the aggregates to more accurately understand overall levels of state and local public goods.

After making this necessary adjustment to the data, Maine's aggregate net expenditure (i.e., direct expenditure less intergovernmental transfers from the federal government) is high in comparison to the rest of the nation. Maine's aggregate net expenditure in FY2007 was 15.0% of state personal income. This proportion exceeds the national average by 13%, and is the 6th highest of the 50 states. Maine's net expenditure relative to income is higher than in four of the five other most rural states, and is 16% above their average.

Maine is not as high in aggregate state- and local-government payroll and employment compared to the rest of the country. In payroll as a percentage of personal income, Maine is 8% above the national average, and ranks 15th. Moreover, Maine's relative payroll is essentially the same as the average of the five other most rural states. In FTE employment per capita, Maine is 13% higher than the U.S. average and 7% lower than the rural average. In this measure Maine ranks 8th.

Moreover, Maine moved slightly further above the national averages in the three measures of total state and local government from FY2002 to FY2007.

Like other rural states, Maine provides relatively more public services through the state government than through local governments. Local-government payroll in Maine is 3% below the national average, while state-government payroll is 36% above the national average. Compared to the other rural states, though, Maine's local-government payroll is 3% above their average, and its state-government payroll is 6% below the average of the other rural states.

Local Functions

Primary and Secondary Education

Local-government services are dominated by primary and secondary education. Public education is by far the largest local government service. More than 71% of all local-government payroll in Maine is in primary and secondary education. Maine's net expenditure on K-12 education in FY2007 was more than \$1.9 billion.

Compared to the rest of the nation, Maine spends a high amount on primary and secondary education. Net expenditure per student in Maine is 8% higher than the national average, and Maine's payroll per student is 18% higher than the national

average, despite per capita income in Maine being 11% below the national average. Moreover, other rural states evidently do not have a cost disadvantage in providing public education. Maine's net expenditure per student exceeds the average of the other rural states by 11%. Maine's payroll per student exceeds the rural-state average by 13%. If Maine's net expenditure per student were the same as the national average, \$141 million less would have been spent annually. Moreover, if differences in per capita income were taken into account, this cost differential would be even higher.

After controlling for inflation, net spending per student grew 9.3% in Maine, versus 8.9% nationally, from 2002 to 2007.

Police Protection

Maine spends much less on police protection than the rest of the country. It is not immediately clear, however, to what extent this is due to better cost performance in Maine, lower crime in Maine, lower crime in rural states generally, or lower income in Maine. Police payroll and expenditure per crime in Maine are both 9% lower than their national averages. But evidently this is entirely attributable to Maine's per capita income being 11% lower than the national average. After accounting for interstate differences in income and crime rates, Maine's spending on police services is about average in comparison to other states.

Fire Protection

Maine spends relatively less on fire protection than most states, but this is true for most rural states. Maine's fire expenditure relative to personal income is 10% greater than the average of the other most rural states. Non-urban states like Maine appear to have a cost advantage in fire protection. If Maine had the same fire expenditure relative to income as the average of the other rural states, annual spending on fire protection would have been \$11 million less. Moreover, this cost differential appears to be a conservative estimate.

From 2002 to 2007 Maine's spending fire protection increased 19%, while the national average increased 8%.

Parks and Recreation

Compared to both the national average and the rural-state average, parks and recreation spending is very low in Maine. Maine's expenditure in this category relative to income is 46% below the national average and 45% below the average of the other most rural states. However, parks and recreation spending in Maine increased 14% faster than state income from 2002 to 2007, compared to a 5% decline nationally.

Sewerage

Compared to the national average, Maine is 10% lower in sewerage net expenditure as a percentage of personal income. But compared to the average of the other rural states,

Maine is 14% higher. Sewerage evidently is less costly in rural areas. If Maine had the same net expenditure relative to income as the average of the other rural states, \$18 million less would have been spent per year. Moreover, net spending on sewerage relative to income in Maine increased 14% from 2002 to 2007, compared to a 5% national increase.

Solid Waste Management

In the provision of solid waste management services Maine is high relative to the rest of the nation. Expenditure as a percentage of income on solid waste management in Maine is 32% greater than the national average and 33% greater than the rural-state average. If Maine had the same expenditure as a percentage of state income as the national average, \$29 million less would have been spent per year.

Housing and Community Development

Maine is 40% higher than the national average and the 4th highest the nation in housing and community development gross expenditure as a percentage of income. But in net expenditure (i.e., netting out federal transfers) as a percentage of income Maine is 30% lower than the national average. Maine is thus relatively high in housing and community development only in federal spending in Maine. Net and gross expenditure in housing and community development increased substantially in Maine from 2002 to 2007, but most of this increase was federally funded. In state- and local-government funding of housing and community development Maine is relatively low in comparison to the rest of the nation and in comparison to similarly rural states.

Libraries

The provision of library services in Maine is relatively low in comparison to other states. Libraries expenditure as a percentage of income in Maine is 23% below the national average and 30% below the rural-state average. From 2002 to 2007, though, Maine's expenditure on libraries increased slightly more than its increase in income and slightly more than in the rest of the nation.

State Functions

Higher Education

Public higher education provision in Maine is low in comparison to the rest of the nation and to other rural states. The extent of this, however, depends on which measure is emphasized. Maine's net expenditure for higher education as a percentage of income is 18% below the national average and 37% below the rural-state average. Maine's net expenditure per FTE student, however, is 14% lower than the U.S. average and 12% lower than the average of other rural states. The reason for the differences is that Maine has a relatively low number of students in public higher education, especially in comparison to other rural states.

Both measures of Maine's net public spending on higher education moved slightly closer toward the national averages from 2002 to 2007, though.

Neither measure of public spending on higher education suggests unusually high costs of this service category in Maine. However, the interstate comparison of the Instructional and Other subcategories of higher education payroll indicates that Maine may have unusually high costs in non-instructional areas. Maine has the nation's 2nd highest ratio of other payroll to instructional payroll. For every \$1 going to instructional payroll, \$1.75 goes to non-instructional payroll in Maine, compared to \$1.15 nationally and \$1.04 in similarly rural states. If Maine had the national average amount of non-instructional payroll per student, \$13 million less would have been spent in FY2007.

Natural Resources

Maine's natural resource net expenditure relative to income is 6% above the national averages, but 52% below the average of the other rural states. Relative to the rural comparison states, Maine does not appear to have unusually high costs in this service category. Moreover, Maine's provision in the category of natural resources declined significantly 2002 to 2007.

Employment Security Administration

Employment security administration is largely a federal program administered through states, and it creates only a small net cost to states. In addition, there is substantial volatility in its net expenditure. Thus, interstate comparisons are problematic in this service category. The measures are conflicting for Maine's relative level of cost for employment security administration. In FY2007 Maine is relatively high in net expenditure as a percentage of income, but the other measures indicate that Maine is relatively low in this category.

Other Education

The interstate evidence on Maine's provision of other education is somewhat mixed. Maine's net expenditure relative to income is slightly above the national average, but it is well below the average of similarly rural states. Moreover, this small service category contracted relative to state income in Maine from 2002 to 2007. Thus, Other Education does not appear to be a category with significant unnecessary costs in Maine.

Mixed Functions

Highways

Relative to income, Maine's highways net expenditure is 31% higher than the national average. Relative to vehicle miles, though, Maine's net expenditure on highways is only 3% higher than the national average. Moreover, this difference appears to be due to

Maine's winter weather. After taking weather into account, Maine is right at the national average in net spending on highways per vehicle mile.

Public Welfare

Maine clearly has a high level of welfare benefits (predominantly Medicaid) in comparison to the rest of the nation and to other rural states. Maine's net expenditure as a percentage of income is 66% higher than the national average, and it grew slightly faster than in the rest of the nation from 2002 to 2007. Maine's net spending per single-female family (the strongest predictor of states' spending on public welfare) is 69% higher than the national average, and grew significantly faster than in the rest of the country since 2002.

Furthermore, since 2002 Maine has become very high in comparison with the rest of the country in the administration of public welfare. Maine was below the national average in public welfare payroll as a percentage of personal income in FY2002, but in FY2007 Maine was the 2nd highest in the nation and 68% greater than the average. Public welfare payroll is about the delivery welfare benefits and not the level of welfare benefits.

Thus, it appears that Maine has become unusually costly in administering welfare benefits. Maine's cost differential from the national average in public welfare payroll is \$80 million. Maine's cost differential in public welfare net expenditure is \$361 million.

Financial Administration

The evidence on Maine's interstate ranking in financial administration is somewhat conflicting. Maine's financial administration expenditure relative to income is 22% greater than the national average, but 11% less than the average of the five other most rural states. Rural states appear to have a cost disadvantage in financial administration. Moreover, Maine's expenditure on financial administration as a percentage of income declined significantly from 2002 to 2007.

The payroll data for financial administration, however, suggest that Maine may be high in comparison to the other rural states. In state-government financial administration as a percentage of income Maine exceeds the national average by 81% and the rural-state average by 33%. If Maine had the same state-government payroll relative to income as the average of the other rural states, there would have been \$15 million less spending. But the expenditure data suggest a different conclusion. Thus, some evidence points to a sizable cost differential in financial administration in Maine (in state government), the evidence is inconclusive.

Corrections

Maine's corrections expenditure relative to income is 25% below the U.S. average. But Maine's number of prison inmates per capita is 67% below the national average. Maine's corrections expenditure per inmate is more than double the U.S. and rural-state averages.

Rural states appear to have a cost advantage in corrections cost per inmate. If Maine's annual corrections expenditure per inmate of \$64,55 were the same as the nation's yearly expenditure per inmate of \$29,872, about \$106 million less would have been spent.

Other Government Administration

In other government administration Maine is high in comparison to the rest of the country, although much, but not all, of this appears to be due to Maine being relatively rural. Maine's expenditure on other government administration relative to income exceeds the national average by 26% and rural-state average by 2%. Rural states appear to have some cost disadvantage in this service category, although it does not appear to be due to having a relatively high number of local governments per capita. In two subcategories of other government administration, though, Maine is significantly higher than the similarly rural states.

The interstate comparison indicates that Maine's state legislative expenditure relative to income is 132% higher than the U.S. average and 68% higher than the average of the similarly rural states. If Maine had the same legislative expenditure as a percentage of income as the average of the other rural states, \$8 million less would have been spent.

The interstate comparison also indicates that Maine's local other government administration is relatively high. Maine's local part of other government administration payroll relative to income is 17% above the national average and 10% above the rural-state average. Maine's cost differential in this subcategory compared to the rural-state average is also about \$8 million.

Health

The interstate evidence on public health is conflicting. The health payroll and employment data suggest that Maine is relatively low in this service category. Maine's payroll relative to income is 10% below the national average and 9% below the rural average. The health net expenditure data, however, suggest that Maine is very high in this service category. Maine's net expenditure relative to income is 125% higher than the national average and 80% higher than the average of the other rural states. Maine's cost differential in providing public health is \$184 million.

Judicial and Legal

In judicial and legal services relative to income, Maine has the nation's 7th lowest expenditure. Maine's level is 31% below the national average and 25% below of average of the other most rural states. Much, but not all, of this difference is evidently due to Maine's relatively low crime rate. After taking this into account, though, Maine still appears to be somewhat below the interstate norm in providing judicial and legal services.

General Public Buildings

Maine's expenditure on general public buildings relative to income is 51% above the national average, but only 3% above the average of the other rural states. It appears that non-urban states have a cost disadvantage in this category. Moreover, Maine's expenditure in this category moved closer to the national mean from 2002 to 2007. If Maine had the same general public buildings expenditure relative to income as the rural-state average, spending would have been \$3 million less.

Other and Unallocable

Maine is relatively high in the catch-all category Other and Unallocable. Maine's net expenditure as a percentage of income is 62% higher than the national average and many times higher than in similarly rural states, although Maine actually moved somewhat closer to other states in other and unallocable since 2002. It is in state government where Maine is out of step with the rest of the country in this category. If Maine had the same other and unallocable expenditure relative to income as the national average, \$205 million less would have been spent.

No Magic Bullet

Although this may be obvious, it cannot be stressed enough that there is no easy fix in trying to streamline government in Maine. This study has identified numerous service categories where there may be potential for significant streamlining. But there is not just one obvious tree with low-hanging fruit ripe for cost cutting.

Moreover, there are reasons why government expenditures are what they are in Maine. Government streamlining would be easy if all we had to do was eliminate the boondoggles set up by crooked politicians in smoke-filled back rooms. Instead, streamlining means cutting programs that we value. To think that the choices are not difficult and painful is to fail to understand the situation.

Perhaps the easiest streamlining target identified in this study is the Other and Unallocable category. It is a large category (\$535 million net expenditure in FY2007). Maine is abnormally large in this category (an estimated cost differential of \$205 million). But most importantly, we do not really know what it is. Unlike say, education or public health, cutting other and unallocable does not sound like a harsh tradeoff. On the other hand, though, the specific areas to be targeted obviously need to be identified.

The next easiest target for streamlining may be corrections. It is also large (an expenditure of \$198 million in FY2007), and abnormally high in Maine (an estimated cost differential of \$106 million). It is also a service that may not be valued as highly by citizens as education and health.

Even if dramatic cost savings could be achieved in these two areas, it is unlikely that these would be nearly enough to satisfy the desires to significantly reduce Maine's tax

burden and/or to get more from our tax dollars. But the other possible targets for cost cutting identified in this report are the difficult ones, that is, services that many Mainers value dearly. Other service categories that are both large and appear to have sizeable cost differentials are primary and secondary education, public welfare, and public health. Making cuts in one of these programs will be painful, to put it mildly.

The 800 Pound Gorilla

After examining 21 different state and local spending categories in some detail, it is easy to lose sight of the big picture. In local fiscal policy, the big picture is basically primary and secondary education. If Bill Clinton studied local government spending, he would probably conclude “it’s K-12, stupid”. Primary and secondary education is like the proverbial 800 pound gorilla - not in a judgmental sense, but in how it dominates the local fiscal policy landscape across the country, and especially in Maine.

Nationally, 58.1% of total local-government payroll (excluding quasi-private enterprises) is in primary and secondary education. In Maine, primary and secondary education payroll is 71.4% of the total. In this ratio, Maine is 4th highest in the nation.

This has two important implications. First, comparisons of aggregate local-government payroll are almost comparisons of just primary and secondary education payroll. Second, Maine’s relatively high spending on primary and secondary education does not appear to leave much room for other local-government services. That is, having a relatively large primary and secondary education sector may to some extent crowd out the provision of other local amenities. Maine’s police, corrections, and judicial and legal services are relatively low as a percentage of income largely because of its relatively low crime rate. But Maine is also relatively low in parks and recreation and libraries. Budgetary pressure from primary and secondary education could be part of the reason.

Moreover, the state government provides a large fraction of the financing of primary and secondary education. Thus, some state services may feel the squeeze too. Maine is particularly low in higher education compared to the rest of the country. This may be in part due to fiscal pressure from Maine’s relatively large primary and secondary education sector.

Puzzling Priorities

Maine is an enigma in some of its state- and local-government spending priorities. That is, Maine is unusual compared to the rest of the nation in its relative mix of some services.

For example, Maine’s spending on primary and secondary education is relatively high, but relatively low on higher education (and also libraries). This is puzzling because in one area Mainers appear to place a relatively high value on education, but in another Mainers evidently place a relatively low value on education.

Nationally, state- and local-government net expenditure on primary and secondary education is 3.9 times the state- and local-government net expenditure on higher education. In Maine, the ratio is 5.2, which is 32.7% greater than the national average. Moreover, Maine's ratio is higher than all of the rural comparison states, all of which are below the national ratio. Maine's ratio exceeds the average ratio of the other rural states of 3.1 by 67.5%.

Some of this large difference may be attributable to Maine having relatively few students in higher education (mostly because Maine is one the nation's biggest net exporters of college students to other states). Maine's state- and local-government net expenditure per student in primary and secondary education is 94.4% of its state- and local-government net expenditure per FTE student in higher education. The national and rural-state averages are 75.6% and 74.4% respectively. Maine's ratio differs from these ratios by 24.9% and 26.9% respectively.

A related puzzle is that Maine has the nation's 2nd highest ratio of non-instructional payroll relative to instructional payroll in higher education, but in primary and secondary education Maine is ranked 25th and is slightly below the national average in non-instructional relative to instructional payroll (although it should be kept in mind that "instructional" payroll in primary and secondary education includes principals, guidance councilors, and school librarians).

Administrationland

Another area where Maine appears to have unusual priorities is in government administration. Compared to other states, Maine state and local government is consistently high in the administrative categories. Moreover, excess duplication appears to be at least part of the reason.

As just discussed, Maine has the nation's 2nd highest ratio of non-instructional payroll relative to instructional payroll in public higher education. The non-instructional data are not disaggregated, thus this does not necessarily prove excess administration in public higher education in Maine. But it does hint at it. Moreover, having fifteen separate university and college administrations serving a cumulative student body of 35,206 FTE students in 2007 is another strong hint.

Although the Census Bureau data are inadequate to reveal much evidence of it, data from the U.S. Department of Education for 2007 indicate that Maine has relatively more administration in primary and secondary education than in the rest of the country. Compared to the national averages, Maine has 2.92 times as many school-district administrators per student and 1.73 times as many school administrators per student. In these measures Maine is respectively the 5th and 2nd highest among the states. Moreover, Maine is higher than all of the similarly rural states in school administrators per student,

and higher than all but one of the other rural states in school-district administrators per student.⁴²

As noted in the section on public welfare, Maine also appears to be exceptionally high in the administration of public welfare (mostly Medicaid). Maine's welfare payroll as a percentage of income is the 2nd highest in the country and 68% greater than the national average.

In addition, relative to other states Maine may be high in every other administrative-type category. To be specific, Maine is high in comparison to other states in local other government administration payroll and in legislative expenditure. There is mixed evidence of Maine being relatively high in FY2007 in financial administration and employment security administration. In FY2002, however, Maine appeared distinctly high among states in these categories.

Moreover, there are other categories that could be considered administrative to some extent, and there is evidence that Maine is relatively high in these too. Maine is relatively very high in other and unallocable net expenditure, which may very well contain some administrative services. Maine is also slightly high in FY2007 in general public buildings (and Maine was distinctly high in this category in FY2002), which perhaps should be included as administrative-type category.

Large State Government

Many of the instances where Maine has relatively high levels of services compared to the rest of the nation appear to be in state government. Clearly Maine's state government is not relatively high in all service areas; and some of the service areas with higher-than-usual costs are local functions. Generally, though, there are a surprising number of public services where expenditures are higher than normal in state government.

One possible reason why Maine state-government payrolls and expenditures may be higher than in the rest of the nation is that Maine's state government may be performing duties that are done by local governments, particularly county governments, in other states. In other words, Maine's weak system of county government may force relatively more duties on to the state government. Although this may help explain some of the instances where Maine's state government seems to have higher-than-normal costs, it does not appear to be the whole explanation. In most of the services noted below, Maine's combined state- and local-government payrolls and expenditures are higher than the interstate norms, and those services are primarily the duties of the state government in Maine.

Corrections is primarily a state function in Maine, and corrections cost per inmate is very high in Maine compared to other states. Maine is relatively very high in public health, the administration of public welfare, and other and unallocable, and these are primarily

⁴² For more on this issue see Philip Trostel and Catherine Reilly, "Improving Educational Resource Allocation in Maine: A Study of School District Size", Margaret Chase Smith Policy Center, 2005.

state government functions in Maine. The state government part of financial administration and other government administration are also high in Maine compared to most other states.

Thus, many of the services areas that have been identified in this report as ones that deserve closer scrutiny are provided by the state government.

Being Rural

It is sometimes asserted that Maine's higher-than-normal cost in providing some public services is an unavoidable consequence of being rural. That is, being rural to some extent creates an inherent cost disadvantage and excess duplication of services because economies of scale cannot be fully realized. Although it is certainly possible that there is some merit in this idea for some services in some places, this notion is generally rejected by the interstate data. The data indicate that rural states generally do not appear to have significant cost disadvantages in providing most state- and local-government services. Indeed, the data suggest that rural states have more important cost advantages than cost disadvantages.

There are some government service areas where rural states appear to be at a cost disadvantage. Not surprisingly, governments in rural states generally spend more than urban states on natural resources relative to income. Rural states are also generally high in financial administration, other government administration, and general public buildings. The rural states also generally spend more on other education as a percentage of the income. These are not particularly large categories, though. Most rural states are relatively high in higher education as a percentage of income, but very mixed in higher education per student. Rural states appear to have a cost disadvantage in providing highways, but evidently the apparent cost disadvantage is really from winter weather.

The list of government service areas where rural states may have a cost advantage is longer. As a percentage of income, rural states generally spend less than urban states on fire protection, sewerage, and housing and community development. These are relatively small categories, however. The other rural states are also relative low in other and unallocable as a percentage of income and in corrections cost per inmate. Rural states are generally low in judicial and legal cost relative to income, but this appears to be due to their generally low crime rates rather than a real advantage in providing this service. Most rural states are relatively low in primary and secondary education spending per student and in police spending per crime, but these appear to be due to their relatively low incomes on average.

Of course, the above urban/rural differences may be more a reflection of service levels and cost advantages. Also, urban/rural differences, or lack of differences, among states are not necessarily the same as urban/rural differences within states. That is, interstate evidence that being a rural state does not appear to cause a cost disadvantage in providing a government service does not necessarily imply that there is not a rural cost disadvantage in providing that service within Maine.

Cost Advantages

Much has been made of Maine's relatively high tax burden. Indeed, concern over Maine's taxes is the main reason for the concern over Maine's spending on state- and local-government services, which is the reason for this study. Maine's tax burden could be considerably higher, though, if it were not for some significant cost advantages in Maine. In particular, Maine's relatively low crime rate creates three cost advantages. It allows Maine's spending relative to income to be low in police protection, corrections, and judicial and legal services. Moreover, police and corrections are two somewhat large service areas. Thus, Maine being 44th in crimes per capita, 31% below the national average, creates an important fiscal advantage for the state.

Of total state- and local-government payroll excluding quasi-private enterprises such as hospitals and public utilities, 14.2% goes to police protection, corrections, and judicial and legal services nationally. Of total net expenditure, 12.4% goes to these crime-related services nationally. In Maine, though, these proportions are respectively 9.4% and 7.9%. This creates a big fiscal advantage for Maine. The difference between 12.4% and 7.9% of Maine's total state- and local-government net expenditure is \$312 million, which is 0.7% of the state's personal income.

Maine tax burden could also be considerably higher if state support for higher education were more like that in other states.⁴³ Higher education is one of the larger categories of state- and local-government spending. Nationally, state government net expenditure for higher education is 7.6% of total state- and local-government net expenditure excluding quasi-private enterprises. In Maine, this proportion is 5.5%. The difference between 7.6% and 5.5% of Maine's total state- and local-government net expenditure is \$143 million.

These two fiscal advantages for Maine combined make a substantial impact. Recall from Table 3 that, as a percentage of income, Maine ranks 6th in total state- and local-government net expenditure excluding quasi-private enterprises. In this measure Maine is 13% above the national average and 16% above the average of the similarly rural states. This would be quite different if police, corrections, judicial and legal, and higher education are removed from the total. That is, in total state- and local-government net expenditure excluding quasi-private enterprises, crime-related categories, and higher education, Maine ranks 3rd. In this measure Maine is 23% higher than the national average and 28% higher than the average of the similarly rural states.

⁴³ Actually, this may not necessarily be the case. The higher incomes of college graduates have an important fiscal benefit to states through their effect on the tax base. Thus, in the long run, state funding for education may actually have an inverse effect on the state's tax burden. For more on this issue see P. Trostel, "The Fiscal Impacts of College Attainment" *Research in Higher Education*, 51 (3), 220-247, 2010.