Is State and Local Government Capital Spending Among the New England States Too Low?

Ronald C. Fisher
Visiting Scholar, New England Public Policy Center, Federal Reserve Bank of Boston
Professor of Economics, Michigan State University

Riley Sullivan
New England Public Policy Center
Federal Reserve Bank of Boston
Research Background

- Forthcoming Policy Report from NEPPC
- Work conducted while Fisher was a Visiting Scholar at NEPPC
- Joined by Riley Sullivan, Policy Analyst at NEPPC
- The views expressed are those of the authors and do not indicate concurrence by the Federal Reserve Bank of Boston, or by the principals of the Board of Governors, or the Federal Reserve System.
Why Study State-local Government Capital Spending?

• Substantial
  o 2% of GDP; 12% of state-local expenditure

• Infrastructure Depreciation
  o Roads, bridges, dams, water and sewer systems, schools, electricity generation and distribution
  o Public safety, congestion, environmental effects

• Effects on Economic Growth

• Interstate Effects
  o May be particularly important in New England
Figure 1. Real Capital Outlay (billions of 2010 dollars)

State & Local Government  |  State Government  |  Local Government

<table>
<thead>
<tr>
<th>Fiscal year</th>
<th>State &amp; Local Government</th>
<th>State Government</th>
<th>Local Government</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>$319</td>
<td>$207</td>
<td>$112</td>
</tr>
<tr>
<td>2001</td>
<td>$328</td>
<td>$213</td>
<td>$115</td>
</tr>
<tr>
<td>2002</td>
<td>$349</td>
<td>$227</td>
<td>$122</td>
</tr>
<tr>
<td>2003</td>
<td>$338</td>
<td>$220</td>
<td>$118</td>
</tr>
<tr>
<td>2004</td>
<td>$338</td>
<td>$222</td>
<td>$110</td>
</tr>
<tr>
<td>2005</td>
<td>$333</td>
<td>$217</td>
<td>$113</td>
</tr>
<tr>
<td>2006</td>
<td>$330</td>
<td>$220</td>
<td>$117</td>
</tr>
<tr>
<td>2007</td>
<td>$338</td>
<td>$234</td>
<td>$120</td>
</tr>
<tr>
<td>2008</td>
<td>$353</td>
<td>$247</td>
<td>$117</td>
</tr>
<tr>
<td>2009</td>
<td>$364</td>
<td>$246</td>
<td>$119</td>
</tr>
<tr>
<td>2010</td>
<td>$365</td>
<td>$235</td>
<td>$118</td>
</tr>
<tr>
<td>2011</td>
<td>$352</td>
<td>$213</td>
<td>$112</td>
</tr>
<tr>
<td>2012</td>
<td>$325</td>
<td>$200</td>
<td>$113</td>
</tr>
</tbody>
</table>
Key Findings

- Evidence from Census data that state-local capital expenditure was well below the national average during the period 2000 - 2012 in all six of the New England states
  - Per capita, relative to personal income, as a percentage of expenditure
- Substantial differences among the New England states in the level of investment
- Substantial differences among the New England states in the composition of capital investment
- Why?
State & Local Government Capital Expenditure Relative to Population and Personal Income, 2000-2012

State and Local Government Capital Expenditure as a Percentage of Personal Income

- **US**: $1,098, 2.7%
- **CT**: $913, 1.6%
- **ME**: $651, 1.8%
- **MA**: $1,006, 1.9%
- **NH**: $682, 1.5%
- **RI**: $648, 1.6%
- **VT**: $723, 1.9%

Percentage of Personal Income
State and Local Government Capital Expenditure as a Percentage of Total Expenditure, 2000-2012

- US: 11.7%
- CT: 9.0%
- ME: 7.4%
- MA: 9.3%
- NH: 8.8%
- RI: 6.6%
- VT: 7.5%
### Average Annual Real Per Capita State and Local Capital Expenditure, 2000-2012

<table>
<thead>
<tr>
<th>Category</th>
<th>US</th>
<th>CT</th>
<th>ME</th>
<th>MA</th>
<th>NH</th>
<th>RI</th>
<th>VT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital Expenditure, total</td>
<td>$1,098</td>
<td>$913</td>
<td>$651</td>
<td>$1,006</td>
<td>$682</td>
<td>$648</td>
<td>$723</td>
</tr>
<tr>
<td>Capital Expenditure, general</td>
<td>$957</td>
<td>$844</td>
<td>$625</td>
<td>$858</td>
<td>$673</td>
<td>$587</td>
<td>$675</td>
</tr>
<tr>
<td>Higher Education</td>
<td>$90</td>
<td>$84</td>
<td>$55</td>
<td>$83</td>
<td>$74</td>
<td>$35</td>
<td>$119</td>
</tr>
<tr>
<td>Elementary &amp; Secondary Education</td>
<td>$209</td>
<td>$196</td>
<td>$112</td>
<td>$143</td>
<td>$141</td>
<td>$50</td>
<td>$109</td>
</tr>
<tr>
<td>Hospitals</td>
<td>$25</td>
<td>$4</td>
<td>$2</td>
<td>$9</td>
<td>$0</td>
<td>$1</td>
<td>$0</td>
</tr>
<tr>
<td>Highways</td>
<td>$280</td>
<td>$183</td>
<td>$235</td>
<td>$279</td>
<td>$190</td>
<td>$188</td>
<td>$275</td>
</tr>
<tr>
<td>Correction</td>
<td>$12</td>
<td>$3</td>
<td>$5</td>
<td>$6</td>
<td>$9</td>
<td>$9</td>
<td>$1</td>
</tr>
<tr>
<td>Natural Resources</td>
<td>$19</td>
<td>$7</td>
<td>$10</td>
<td>$11</td>
<td>$6</td>
<td>$5</td>
<td>$5</td>
</tr>
<tr>
<td>Parks &amp; Recreation</td>
<td>$34</td>
<td>$16</td>
<td>$7</td>
<td>$12</td>
<td>$8</td>
<td>$6</td>
<td>$7</td>
</tr>
<tr>
<td>Sewerage</td>
<td>$60</td>
<td>$41</td>
<td>$31</td>
<td>$86</td>
<td>$11</td>
<td>$21</td>
<td>$26</td>
</tr>
<tr>
<td>Solid Waste Management</td>
<td>$7</td>
<td>$4</td>
<td>$5</td>
<td>$4</td>
<td>$4</td>
<td>$15</td>
<td>$3</td>
</tr>
<tr>
<td>Utility</td>
<td>$141</td>
<td>$69</td>
<td>$26</td>
<td>$148</td>
<td>$13</td>
<td>$66</td>
<td>$53</td>
</tr>
<tr>
<td>Other</td>
<td>$222</td>
<td>$306</td>
<td>$162</td>
<td>$225</td>
<td>$225</td>
<td>$252</td>
<td>$124</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau
Real Average Per Capita Capital Spending by Type, 2000-2012

K-12 Education

Higher Education

Highways

Dollars ($)
What is State-local Government Capital Expenditure?

• Census Bureau data; definitions
  o Construction of buildings, roads, and other improvements
  o Purchases of equipment, land, and existing structures
  o Payments on capital leases

• Consistent definitions, consistent accounting practices, state and local governments together, other governmental entities included (public universities, special districts)

• May be different than data reported in state or city budgets or financial reports

• FY2000 – FY 2012
Possible Explanations

- Economic, social, and political characteristics included in previous research do not seem sufficient to explain the observed levels of state-local capital expenditure among the New England states relative to all states
  - Population and population growth, income, federal grants, density, capital depreciation
- In aggregate, the available evidence does not seem to support the view that additional capital spending by state and local governments in New England was not necessary because of an unusually high existing quantity or quality of public capital
Possible Explanations

• Capital spending among the New England states remains less than the average for all states even if capital spending for utilities is excluded.

• The overall level and importance of capital spending for higher education among the New England states is not appreciably different than nationally.

• In New England, state governments have a relatively greater role in capital spending than is the case nationally (45% vs 33%); may contribute to relatively low level of aggregate state-local capital spending.
Average Annual Real Per Capita Expenditure Excluding Utilities, 2000-2012

Expenditure excluding utilities  Utility capital expenditure

2010 dollars

US $957  $141
CT $844  $69
ME $625  $26
MA $858  $148
NH $669  $13
RI $583  $66
VT $670  $53
Relative State Government Role in Capital Spending, 2000-2012

- State Government Share of Total Expenditure
- State Government Share of Direct Expenditure
- State Government Share of Capital Expenditure
- Ratio, State Capital vs State Direct

State Government Share of Total Expenditure:
- US: 0.75
- CT: 0.78
- ME: 0.76
- MA: 0.87
- NH: 0.89
- RI: 1.00
- VT: 0.87

State Government Share of Capital Expenditure:
- US: 60%
- CT: 56%
- ME: 61%
- MA: 59%
- NH: 60%
- RI: 64%
- VT: 59%

State Government Share of Direct Expenditure:
- US: 60%
- CT: 56%
- ME: 61%
- MA: 59%
- NH: 60%
- RI: 64%
- VT: 59%
Possible Explanations

• Political choices attempting to lower state government debt may have contributed to a lessened degree of investment in public capital.

• Massachusetts
  o Report on Capital Spending and Borrowing in the Commonwealth, 2013-14: “Most of the capital plans issued by the Patrick Administration have been limited by the restraint on growth caused by the requirement that new debt cannot exceed $125 million per year because this requirement operates to limit the capital budget to debt retired by the Commonwealth plus $125 million.”
Possible Explanations

• Rhode Island
  o 2006 state constitutional amendment required that the Rhode Island Capital Plan Fund be used exclusively for capital investment rather than debt service and debt reduction allowed previously. It seems possible that use of Capital Plan funds for debt reduction may have contributed to a reduction in capital spending in the past.
  o Rhode Island FY 2015 capital budget notes “The Governor’s Capital Improvement Plan reflects a policy of controlling Rhode Island’s capital debt by limiting the issuance of new debt, reallocation of current resources to preserving and improving infrastructure, and controlling capital expenditures to a level that is affordable.”

• Vermont
  o Capital Debt Affordability Advisory Committee: “For a number of years Vermont has pursued a strategy to achieve a triple-A rating from all three nationally recognized credit rating agencies. To facilitate this goal, CDAAC and the State have employed conservative debt load guidelines that are consistent with the measures that the rating agencies use to measure debt burden.”
### Outstanding Long-Term State-Local Debt 2012

<table>
<thead>
<tr>
<th></th>
<th>Per Capita</th>
<th>Per Capita Excluding Private Purposes</th>
<th>Percentage of Personal Income</th>
<th>Percentage of Personal Income Excluding Private Purposes</th>
<th>Percentage of Annual Revenue</th>
<th>Percentage of Annual Revenue Excluding Private Purposes</th>
</tr>
</thead>
<tbody>
<tr>
<td>US Total</td>
<td>$9,298</td>
<td>$7,383</td>
<td>20.9%</td>
<td>16.6%</td>
<td>95.5%</td>
<td>75.9%</td>
</tr>
<tr>
<td>CT</td>
<td>$11,698</td>
<td>$8,193</td>
<td>19.4%</td>
<td>13.6%</td>
<td>105.1%</td>
<td>73.6%</td>
</tr>
<tr>
<td>ME</td>
<td>$6,498</td>
<td>$4,374</td>
<td>16.3%</td>
<td>11.0%</td>
<td>73.3%</td>
<td>49.3%</td>
</tr>
<tr>
<td>MA</td>
<td>$14,278</td>
<td>$9,838</td>
<td>25.1%</td>
<td>17.3%</td>
<td>129.3%</td>
<td>89.1%</td>
</tr>
<tr>
<td>NH</td>
<td>$8,124</td>
<td>$4,852</td>
<td>16.2%</td>
<td>9.7%</td>
<td>98.6%</td>
<td>58.9%</td>
</tr>
<tr>
<td>RI</td>
<td>$11,248</td>
<td>$6,361</td>
<td>24.4%</td>
<td>13.8%</td>
<td>105.5%</td>
<td>59.7%</td>
</tr>
<tr>
<td>VT</td>
<td>$7,034</td>
<td>$4,401</td>
<td>15.8%</td>
<td>9.9%</td>
<td>59.2%</td>
<td>37.1%</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau
Differences Among the New England States

- Not all of the New England states differ equally from the national averages
- Per capita capital spending
  - Low in Maine, New Hampshire, Rhode Island, and Vermont
- Relative to personal income
  - Low in Connecticut, New Hampshire and Rhode Island
- Total state-local spending
  - Low in Maine, Rhode Island, and Vermont
- Adjustment for economic circumstances
  - Low in Connecticut, Massachusetts, New Hampshire, and Rhode Island
- Rhode Island is the most extreme case, shown to have relatively low state-local government capital expenditure by every measure
Recent Behavior

- Connecticut and Massachusetts acted to increase state-local government capital spending substantially in 2012, whereas the other four New England states decreased capital spending that year.
- For Maine and Vermont, the decrease in 2012 broke a three-year trend of rising per capita capital spending.
State and Local Per Capita Capital Expenditure

Dollars


US  CT  ME  MA  NH  RI  VT
Conundrum

- The relatively low levels of state-local government capital expenditure for the New England states shown by U.S. Census data for 2000 through 2012 do not seem to be explained by any one factor.
- Are they “too low?”
- Seems worthy of further attention by state and local government leaders in the region.
Beyond New England


• Statistical analysis of interstate differences in state-local capital expenditure, 2000-2010, allowing for differences in income, density, population growth, federal grants, and political differences

• Substantial unexplained differences among states

• Figure shows state-local spending differences relative to that predicted by the economic and political characteristics
FIGURE 4
State Fixed Effects from Regression (2) in Table 1
Capital Investment Since the Great Recession

- State-local government capital spending increased during and immediately after the recession due to federal government stimulus efforts.
- Substantial decreases beginning in 2010.
- State-local capital spending in 2013 almost 20 percent lower than in 2007, before the recession.
- Trend is consistent with a general decline in the relative fiscal magnitude of the state-local government sector since the Great Recession.
- Obviously has concerning long-run implications.
Thank you!

Comments and suggestions appreciated.