# A Revolution in Responsibilities of North Carolina Governments

*Michael L. Walden*

I n 2006 and 2007, the North Caro-
lina General Assembly made five
legislative changes affecting the re-
sponsibilities and the finances of the
state and local governments:

• It capped the state gas (motor fuels)
  tax at 29.9 cents per gallon through
  June 30, 2009.

• It gave counties the authority to par-
  ticipate in financing highway
  construction and maintenance.

• It provided for the state fully to take
  over the county share of Medicaid
  funding, by July 2009.[1]

• In compensation for the state's
  assumption of the counties' share of
  Medicaid funding, it provided for the
  state to remove authorization for the
  counties to collect 0.50 percent of the
  local sales tax and to transfer this
  rate to the state sales tax.[2]

• It gave counties the authorization to
  enact either a 0.25 percent local sales
  tax or a 0.40 percent land transfer
  tax, but not both, with approval
  from a public referendum.[3]

Although one can consider these
changes in isolation, one can connect dots
among several of them. Obviously the
state's assumption of county Medicaid
funding and the state's takeover of 0.50
percent of the local sales tax are related.
State lawmakers decided that because
they were relieving the counties of a major
expense, they were justified in transferring
a local funding source to state coffers.

Perhaps less apparent, the freezing of
the gas tax and the provision of authority
for counties to finance roads also may

*The author is a William Neal Reynolds
Distinguished Professor in the Department
of Agricultural and Resource Economics at
North Carolina State University.* Contact
him at michael_walden@ncsu.edu.

be related. The freezing of the gas tax will result in reduced state highway revenues. Therefore one interpretation is that the state is encouraging counties to share in highway responsibilities by giving them highway-financing authority. Then, with the new tax options, counties have a direct financing mechanism for highways. Or they can use those options for alternative purposes and free up other public revenue resources for highways.

This article focuses on the implications of these connections for the state's counties. First, it discusses trends in the two public functions involved in the changes, highways and Medicaid. Then it attempts to answer two essential questions: What will be the net financial impact of the changes on the counties, and if the impact is negative, what is implied for local revenue sources, including the newly authorized taxes?

## The Highway Hot Potato

For many decades, North Carolina was known as the "good roads state."[4] A major reason was that the state's financing system for highways kept pace reasonably well with both economic growth and prices. The primary source of financing for highway projects has been the gas tax.[5] The tax is effectively a user fee applied to drivers, so as use of highways has increased—that is, as drivers have traveled more miles—revenues have automatically risen.

However, being a rate (cents) per gallon, the tax is susceptible to declines in purchasing power as price inflation occurs. In the past, legislators addressed

> **Are the freezing of the gas tax and the provision of authority for counties to finance roads related?**

this issue either by increasing the rate periodically or, since 1986, by linking a portion of the rate to the level of wholesale gas prices.

Yet in recent years, these adjustments have not been adequate to maintain the gas tax's purchasing power (see Figure 1). Since the early 1990s, the gas tax adjusted for inflation in highway construction prices has trended downward. For example, in 2005 the tax, in constant dollars, was 30 percent lower than in 1992. Also, as a percentage of the size of the state economy (the gross state product), total highway spending in the state from all sources, including the federal government, has been almost 40 percent lower in recent years compared with the early 1970s.[6]

Figure 1. **North Carolina Gas Tax and Highway Spending, 1972–2005**



Sources: N.C. Department of Revenue, "Motor Fuels Tax Rate," June 16, 2008, www.dornc.com/taxes/motor/rates.html; U.S. Census Bureau, "State and Local Government Finances," www.census.gov/govs/www/estimate.html; U.S. Department of Commerce, Bureau of Economic Analysis, "Gross State Product by State," www.bea.gov/regional/gsp/; U.S. Department of Transportation, Federal Highway Administration, "Price Trends for Federal-Aid Highway Construction," www.fhwa.dot.gov/programadmin/pricetrends.cfm.

*The gas tax is adjusted for changes in the price index of highway construction.

to that state.[9] The state highway use tax is a sales tax on the retail sale of vehicles. All three revenue sources face issues.

As long as the gas tax remains capped, the purchasing power of its revenues will drop. For example, at a relatively modest annual inflation rate of 3 percent, the gas tax per gallon in constant dollars would fall 34 percent in ten years, and highway spending per vehicle mile (also in constant dollars) would drop 15 percent. After twenty years, the reduction in the gas tax would be 81 percent, and the fall in spending per vehicle mile, 41 percent.[10]

The outlook may be even more dismal for federal highway assistance. The federal gas tax, at 18.4 cents per gallon, was last changed in 1996. Consequently its purchasing power has severely eroded, and payments from the federal Highway Trust Fund have exceeded receipts. The Congressional Budget Office estimates that the fund will be exhausted sometime during fiscal year 2009. Also, the federal gas tax will expire in 2011.[11] Therefore, whether the federal government will be a source of highway financing for North Carolina (and other states) in coming years is uncertain.

Two issues confront the state highway use tax. First, the amount of the tax is capped for commercial vehicle sales. Second, the price of vehicles is not assured of rising with the increase in highway construction costs. In fact, average vehicle prices fell during the 2000s.[12] As a result, the average annual increase in receipts from the highway use tax this decade has been only 1 percent, well below the average annual increase in highway construction costs prompted by significant jumps in worldwide use of concrete, steel, and other building materials.[13]

## The Medicaid Takeover

Medicaid has been one of the fastest-growing components of any government budget. For the Medicaid share of North Carolina counties, the average annual rate of increase since 1991 has been just under 10 percent.[14] The Congressional Budget Office forecasts that Medicaid spending will increase at an average annual rate of 7.9 percent

Further, vehicles have become heavier and therefore have generated more wear per mile.[7] North Carolina perhaps is becoming a "poor roads state." Indeed, North Carolina's rankings on various measures of road quality have fallen in the past two decades. From 1984 to 2003, the percentage of North Carolina rural interstate pavement in poor condition almost tripled, and the percentage of urban interstate pavement in

### Has North Carolina lost its reputation as the "good roads state"?

poor comdition more than doubled. In 2003, North Carolina ranked in the 40s among the 50 states on these measures.[8]

Three sources make up 80 percent of highway financing in North Carolina: the state gas tax (described earlier), federal highway assistance, and the state highway use tax. Federal highway assistance is funded through a federal gas tax per gallon, although monies collected from each state are not necessarily returned

between 2008 and 2018.[15] By the time the state takeover of county Medicaid spending is fully implemented, it will relieve counties of almost $700 million in annual spending, while counties will lose nearly $550 million in sales tax receipts.[16]

However, all counties will not be relieved to the same degree. A 2002 analysis in *Popular Government* by John Saxon clearly shows a relationship between the relative size of a county's Medicaid expenditures and the county's economic condition.[17] In general, counties with a high poverty rate and low wealth pay a higher percentage of their budget for Medicaid expenses and devote a higher proportion of their property tax base to those expenses. For example, using fiscal year 2002 data, Saxon shows that Medicaid spending took five to six times more of the budgets of high-poverty/low-wealth counties than of low-poverty/high-wealth counties. Also, the cents per $100 of property value needed for Medicaid expenditures could be ten times greater in high-poverty/low-wealth counties than in low-poverty/high-wealth counties.

The General Assembly recognized that counties' fiscal position would be

Table 1. **Estimated Net Gains from the Medicaid/Sales Tax Swap as a Percentage of County-Raised Public Revenue, Fiscal Years 2010–11 and 2011–12**

| County | FY 2010–11 (%) | FY 2011–12 (%) | County | FY 2010–11 (%) | FY 2011–12 (%) | County | FY 2010–11 (%) | FY 2011–12 (%) |
|---|---|---|---|---|---|---|---|---|
| Alamance | 0.48 | 0.80 | Gates | 6.12 | 5.83 | Person | 1.33 | 1.80 |
| Alexander | 2.24 | 2.13 | Graham | 6.07 | 6.70 | Pitt | 3.73 | 4.38 |
| Alleghany | 4.35 | 4.14 | Granville | 1.24 | 1.18 | Polk | 2.50 | 2.38 |
| Anson | 11.74 | 12.91 | Greene | 3.92 | 3.74 | Randolph | 0.57 | 0.54 |
| Ashe | 3.00 | 3.61 | Guilford | 0.94 | 1.27 | Richmond | 5.83 | 6.80 |
| Avery | 2.12 | 2.02 | Halifax | 9.77 | 10.87 | Robeson | 11.65 | 13.03 |
| Beaufort | 6.45 | 7.24 | Harnett | 0.69 | 0.66 | Rockingham | 1.22 | 1.95 |
| Bertie | 12.77 | 14.02 | Haywood | 1.98 | 2.51 | Rowan | 1.60 | 2.19 |
| Bladen | 5.98 | 6.93 | Henderson | 0.57 | 0.54 | Rutherford | 3.46 | 4.20 |
| Brunswick | 0.38 | 0.63 | Hertford | 9.44 | 10.39 | Sampson | 4.80 | 5.65 |
| Buncombe | 2.48 | 2.94 | Hoke | 2.06 | 1.96 | Scotland | 6.48 | 7.28 |
| Burke | 0.86 | 1.62 | Hyde | 5.60 | 5.33 | Stanly | 1.10 | 1.38 |
| Cabarrus | 0.31 | 0.30 | Iredell | 0.78 | 1.16 | Stokes | 1.35 | 1.29 |
| Caldwell | 0.97 | 1.73 | Jackson | 1.21 | 1.15 | Surry | 2.08 | 2.73 |
| Camden | 5.42 | 5.17 | Johnston | 0.61 | 1.08 | Swain | 5.47 | 5.21 |
| Carteret | 0.71 | 0.67 | Jones | 6.84 | 6.51 | Transylvania | 1.40 | 1.33 |
| Caswell | 3.40 | 3.24 | Lee | 1.81 | 2.25 | Tyrrell | 10.06 | 9.58 |
| Catawba | 0.66 | 1.10 | Lenoir | 7.27 | 8.10 | Union | 0.34 | 0.32 |
| Chatham | 0.82 | 0.78 | Lincoln | 0.78 | 0.74 | Vance | 6.15 | 7.02 |
| Cherokee | 5.17 | 5.89 | Macon | 2.21 | 2.62 | Wake | 0.06 | 0.06 |
| Chowan | 5.00 | 5.71 | Madison | 3.38 | 3.67 | Warren | 4.29 | 5.05 |
| Clay | 5.21 | 4.97 | Martin | 7.98 | 8.85 | Washington | 9.63 | 10.72 |
| Cleveland | 4.26 | 5.17 | McDowell | 1.67 | 1.59 | Watauga | 1.12 | 1.07 |
| Columbus | 12.23 | 13.45 | Mecklenburg | 1.25 | 1.45 | Wayne | 3.16 | 3.88 |
| Craven | 0.69 | 1.11 | Mitchell | 4.87 | 5.67 | Wilkes | 2.45 | 3.15 |
| Cumberland | 0.33 | 0.83 | Montgomery | 3.42 | 4.14 | Wilson | 3.96 | 4.58 |
| Currituck | 0.85 | 0.81 | Moore | 0.70 | 0.67 | Yadkin | 1.68 | 1.60 |
| Dare | 0.43 | 0.41 | Nash | 1.90 | 2.52 | Yancey | 3.44 | 3.60 |
| Davidson | 0.48 | 0.59 | N. Hanover | 1.72 | 1.99 | | | |
| Davie | 1.32 | 1.25 | Northampton | 5.20 | 6.06 | | | |
| Duplin | 2.33 | 3.06 | Onslow | 0.52 | 0.50 | | | |
| Durham | 0.60 | 0.91 | Orange | 0.32 | 0.30 | | | |
| Edgecombe | 9.41 | 10.44 | Pamlico | 3.75 | 3.57 | | | |
| Forsyth | 1.70 | 2.05 | Pasquotank | 4.59 | 5.21 | | | |
| Franklin | 1.05 | 1.30 | Pender | 1.11 | 1.06 | | | |
| Gaston | 2.51 | 3.12 | Perquimans | 4.36 | 4.15 | | | |

*Source:* The calculations are mine. The dollar amounts of net gains are from the North Carolina Association of County Commissioners, www.ncacc.org/medicaid_1007.html. The county-raised public revenues also are from the North Carolina Association of County Commissioners, with the latest data for fiscal year 2005–6 projected to fiscal years 2010–11 and 2011–12 using the county average annual growth rate in revenues for 1995 to 2005.

affected in different degrees by the Medicaid/sales tax swap and that, indeed, some counties, particularly high-wealth counties with relatively low Medicaid rolls and high sales tax receipts, could lose from the exchange. Consequently, it added two components to the plan to guarantee that all counties would benefit financially. First, of the 2.0 percent local sales tax remaining after the 0.5 percent taken back by the state, 1.5 percent will be returned to the counties that generated the tax revenue, while 0.5 percent will be allocated to counties on a per capita basis. Without this change, 1.0 percent would have been distributed to the generating county, and 1.0 percent would have been allocated by the per capita method. The change favors counties that serve as regional retail centers, many of which are the higher-wealth areas with relatively low Medicaid rolls.

Second, the legislation added a "hold harmless" provision guaranteeing that all counties will come out ahead from the Medicaid/sales tax swap. Specifically, the state will calculate the reductions in county Medicaid costs and the net change in revenues from the loss of the 0.5 percent sales tax together with the change in the distribution formula of the remaining local sales tax. If the result shows that the county has lost more revenues than it has gained in spending reductions, the state will provide the county with additional revenues to make the net gain equal $500,000. Also, if the county shows spending reductions exceeding revenue losses, but the net gain is under $500,000, the state will provide revenues to bring the net gain up to $500,000.[18]

County budgets will fare variously in the first two full fiscal years of the Medicaid/sales tax swap, measured by net gain as a percentage of county-raised revenue (see Table 1). In fiscal year 2011, the range will be from a low

> **The Medicaid funding takeover by state government is a win for counties, particularly low-wealth ones.**

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## Details of the Model to Evaluate the Tradeoff in a Highway Handoff

The model estimated the net financial impact on counties over the seven years (2008–15) of the State Transportation Improvement Plan (STIP). For highway revenues, the focus was on the state gas tax.[1]

To find savings to drivers from the capped gas tax, I calculated payments with and without the cap. These calculations used projections of vehicle miles traveled (VMT) in each county, fuel efficiency (miles per gallon), and gas prices. I based VMT projections on past county trends, I assumed that miles per gallon would increase at a rate of 0.4 percent per year, and I used three alternative paths for future gas prices: 3, 5, and 10 percent annual increases.[2] For the capped gas tax, I based revenues on the cap of 29.9 cents per gallon. For the uncapped gas tax, I based revenues on the gas tax formula used before the cap.[3]

I then estimated highway spending to be paid by the county. First, I estimated the reduction in the availability of state highway funding entailed by the cap in the state gas tax for each year of the projection period. Second, I distributed the reductions to each county on the basis of the county's spending share in that year of the STIP.[4]

I then calculated the net gain (gas taxes saved minus reduced state highway spending in the county) for each county for each year. I converted the stream of annual net gains for 2008–15 to an annualized present value in 2008 to provide a summary measure.[5]

Last, I divided the annualized present-value net gain by a county's own projected public revenue in 2008 to express the results in relative terms.

### Notes

1. I examined only the state gas tax because of the article's focus on the changing responsibilities of the state and the counties in North Carolina.

2. VMT trends by county are from North Carolina Department of Transportation data, compiled by the North Carolina Capital Area Metropolitan Planning Organization. The annual gain in fuel efficiency is an extrapolation of state trends from 1990 to 2004, also from the North Carolina Capital Area Metropolitan Planning Organization. The 10 percent annual increase in gas prices is the approximate rise since 1999, and the 3 and 5 percent rates reflect more modest increases.

3. The formula sets the gas tax at a flat rate (17.5 cents per gallon) plus a variable-rate component of 7 percent of the wholesale price of gas. North Carolina Office of State Budget and Management, *North Carolina Tax Guide 2007* (Raleigh, NC: North Carolina Office of State Budget and Management, 2007), 75, www.osbm.state.nc.us/files/pdf_files/2007TaxGuide.pdf.

4. The STIP is the largest of the state highway-spending programs, usually accounting for close to half of all highway spending in any year. A projection of total highway spending by county for 2008–15 does not exist. However, a high degree of correlation (0.865) exists between average county spending shares in the 2008–15 STIP and average county spending shares for total state highway spending from 1990 to 2004 (according to data gathered by the North Carolina Department of Transportation and compiled by the North Carolina Capital Area Metropolitan Planning Organization). Therefore the STIP county shares should be representative of average county spending shares for total highway spending.

5. Analysis of variations in highway construction costs and gas prices from 1976 to 2006 showed that highway construction costs increased at a rate equal to 70 percent of the increase in gas prices. Therefore the nominal discount rate used in the present value calculations varied with the assumed increase in gas prices. In all cases, a real discount rate of 2 percent was used. Tao Wu, "Estimating the 'Neutral' Real Interest Rate in Real Time," *FRBSF Economic Letter*, no. 2005-27, October 21, 2005. For gas price increases of 3 percent, the inflation component was therefore 2.1 percent (0.7 multiplied by 3), and the total discount rate was 4.1 percent. For gas price increases of 5 percent, the inflation component was 3.5 percent, and the total discount rate, 5.5 percent. For gas price increases of 10 percent, the inflation component was 7 percent, and the total discount rate, 9 percent.

net gain of 0.06 percent in Wake County to a high net gain of 12.77 percent in Bertie County, and the average net gain will be 3.36 percent. In fiscal year 2012, the range will be from a low net gain of 0.06 percent in Wake County to a high net gain of 14.02 percent in Bertie County, and the average net gain will be 3.72 percent. Because Medicaid spending is expected to grow faster than county-raised public revenues, the net gains for counties should increase over time.[19]

Furthermore, the net gains will be higher, on average, for high-poverty counties. Comparisons of the net gains in fiscal years 2011 and 2012 show that the variation in the county poverty rate can statistically explain 60 percent of the variation in the net gain. In both years, the county net gain rises by an average of 0.5 percent points with each percentage-point increase in the poverty rate.[20]

There was little correlation between the net gains and county real property wealth per capita, probably because of the change in the sales-tax distribution formula to favor higher-wealth counties and because of the hold-harmless provision.[21]

In summary, the Medicaid takeover will be a win for counties. Low-wealth counties will gain the most, but even high-wealth counties will be guaranteed a net gain of $500,000 annually. Also, the change in the sales-tax distribution formula will ensure greater gains for high-wealth counties.

## The Highway Handoff: Win, Lose, or Draw for Counties?

The dots that I have connected between the freezing of the state gas tax and the provision of new authority for counties to finance roads imply a partial handoff of the financial responsibility for highways from the state to the counties. Although no legislation mandates that such a handoff occur, as long as the freeze on the gas tax continues, state highway revenue (in constant dollars) will decline. Unless the state institutes a new source of revenue for roads, county financing will be needed to fill the gap. If this scenario unfolds, studying the resulting financial impact on counties is important.

Table 2. **Average Annual Net Gains from Reduced State Gas Tax Payments and Added Local Highway Spending, as a Percentage of County-Raised Public Revenue, by County, 2008–2015**

| County | Assumed Annual Inflation of Gas Price | | | | | |
| | Without Medicaid Net Gain | | | With Medicaid Net Gain | | |
| | 3% | 5% | 10% | 3% | 5% | 10% |
| --- | --- | --- | --- | --- | --- | --- |
| Alamance | 2.68 | 2.94 | 3.88 | 4.51 | 4.67 | 5.41 |
| Alexander | 6.10 | 6.70 | 8.10 | 8.36 | 8.87 | 10.06 |
| Alleghany | − 6.83 | − 7.57 | − 8.05 | − 2.01 | − 2.98 | − 3.94 |
| Anson | 2.53 | 2.79 | 3.94 | 17.44 | 16.92 | 16.41 |
| Ashe | − 9.14 | − 10.18 | − 10.79 | − 4.50 | − 5.79 | − 6.91 |
| Avery | 3.83 | 4.19 | 5.14 | 6.10 | 6.36 | 7.08 |
| Beaufort | − 19.56 | − 20.24 | − 21.53 | − 10.98 | − 12.11 | − 14.35 |
| Bertie | 1.08 | 1.95 | 3.96 | 17.22 | 17.25 | 17.46 |
| Bladen | − 2.81 | − 3.34 | − 3.31 | 5.62 | 4.66 | 3.74 |
| Brunswick | − 4.68 | − 5.19 | − 5.26 | − 3.51 | − 4.08 | − 4.28 |
| Buncombe | − 2.34 | − 2.69 | − 1.67 | 1.38 | 0.84 | 1.44 |
| Burke | 4.35 | 4.85 | 6.01 | 7.33 | 7.67 | 8.50 |
| Cabarrus | 0.68 | 0.62 | 1.03 | 1.22 | 1.14 | 1.50 |
| Caldwell | − 0.35 | − 0.39 | 0.13 | 2.73 | 2.53 | 2.71 |
| Camden | − 5.68 | − 6.05 | − 6.36 | − 0.18 | − 0.79 | − 1.61 |
| Carteret | 1.13 | 1.28 | 2.44 | 2.30 | 2.40 | 3.43 |
| Caswell | 6.78 | 7.40 | 8.87 | 11.60 | 11.98 | 12.92 |
| Catawba | 5.38 | 5.86 | 7.71 | 7.33 | 7.71 | 9.34 |
| Chatham | 6.63 | 7.28 | 8.87 | 7.46 | 8.08 | 9.59 |
| Cherokee | 3.20 | 3.57 | 4.70 | 10.05 | 10.07 | 10.43 |
| Chowan | − 7.23 | − 8.16 | − 10.30 | − 0.19 | − 1.48 | − 4.41 |
| Clay | − 4.94 | − 5.12 | − 5.28 | 0.36 | − 0.04 | − 0.70 |
| Cleveland | 0.58 | 0.45 | 0.93 | 7.19 | 6.72 | 6.46 |
| Columbus | 7.75 | 8.56 | 10.70 | 22.78 | 22.82 | 23.26 |
| Craven | 1.64 | 1.96 | 3.78 | 3.83 | 4.04 | 5.62 |
| Cumberland | − 3.65 | − 3.98 | − 3.95 | − 1.90 | − 2.33 | − 2.49 |
| Currituck | 3.18 | 3.54 | 4.36 | 4.05 | 4.37 | 5.11 |
| Dare | − 9.23 | − 9.96 | − 11.31 | − 8.74 | − 9.50 | − 10.89 |
| Davidson | 5.79 | 6.27 | 7.79 | 7.61 | 8.00 | 9.32 |
| Davie | 4.00 | 4.42 | 5.69 | 5.33 | 5.70 | 6.84 |
| Duplin | 9.03 | 9.90 | 12.11 | 13.40 | 14.04 | 15.75 |
| Durham | 0.81 | 0.82 | 1.48 | 2.38 | 2.31 | 2.80 |
| Edgecombe | 3.16 | 3.42 | 4.53 | 15.08 | 14.72 | 14.49 |
| Forsyth | − 3.97 | − 4.49 | − 3.85 | − 1.24 | − 1.90 | − 1.57 |
| Franklin | 3.06 | 3.28 | 4.32 | 5.38 | 5.48 | 6.26 |
| Gaston | 4.60 | 5.05 | 6.39 | 8.69 | 8.92 | 9.80 |
| Gates | − 19.07 | − 22.01 | − 23.86 | − 12.87 | − 16.08 | − 18.51 |
| Graham | − 28.52 | − 32.35 | − 36.94 | − 20.37 | − 24.60 | − 30.08 |
| Granville | 8.80 | 9.69 | 11.76 | 10.23 | 11.06 | 13.00 |
| Greene | 9.38 | 10.30 | 12.46 | 14.65 | 15.30 | 16.89 |
| Guilford | − 2.67 | − 3.01 | − 2.64 | − 0.78 | − 1.22 | − 1.06 |
| Halifax | 7.27 | 7.98 | 9.64 | 19.76 | 19.83 | 20.08 |
| Harnett | 0.58 | 0.42 | 0.85 | 2.02 | 1.79 | 2.07 |

The potential highway handoff to the counties would have pluses and minuses. On the plus side, if gas prices continued to rise, drivers would pay lower state gas taxes (with the capped gas tax) and no federal gas taxes if the federal tax was eliminated. Also, counties that have been net donors of state highway taxes (those that have paid more state highway taxes than they have received in state highway funding) might gain from the shift to greater local funding of roads.

On the minus side, counties (and their residents, including drivers) might be responsible for funding that part of highway spending not now available because of the lower state and federal gas taxes. Also, counties that have been net beneficiaries of state highway taxes (those that have received more state highway funding than they have paid in state highway taxes) might lose from the move to local funding.

These tradeoffs would be complicated and have no obvious outcome. Therefore I developed a model to evaluate how counties might be financially affected by the highway handoff. The model estimated the net financial impact on counties over the seven years (2008–15) of the State Transportation Improvement Plan (STIP). It accounted for anticipated highway revenues and savings to drivers under two conditions: with the capped gas tax and without it (a condition that would require action by the General Assembly). Savings to drivers were based on calculations of vehicle miles traveled, fuel efficiency,

## Table 2. Average Annual Net Gains

### Assumed Annual Inflation of Gas Price

| County | Without Medicaid Net Gain | | | With Medicaid Net Gain | | |
|--------|------|------|------|------|------|------|
| | 3% | 5% | 10% | 3% | 5% | 10% |
| Haywood | 3.64 | 4.00 | 5.13 | 7.01 | 7.20 | 7.95 |
| Henderson | 2.80 | 3.17 | 4.14 | 3.99 | 4.30 | 5.14 |
| Hertford | − 8.96 | − 10.17 | − 12.93 | 2.98 | 1.16 | − 2.94 |
| Hoke | 6.01 | 6.71 | 8.34 | 9.42 | 9.94 | 11.21 |
| Hyde | − 1.42 | − 0.95 | 0.16 | 4.40 | 4.62 | 5.17 |
| Iredell | 0.69 | 0.85 | 1.64 | 2.58 | 2.65 | 3.22 |
| Jackson | − 0.69 | − 0.79 | − 1.00 | 0.63 | 0.47 | 0.13 |
| Johnston | 6.51 | 7.13 | 8.77 | 8.39 | 8.91 | 10.35 |
| Jones | − 30.78 | − 35.67 | − 39.43 | − 23.40 | − 28.61 | − 33.10 |
| Lee | 0.61 | 0.86 | 1.46 | 3.59 | 3.70 | 3.95 |
| Lenoir | − 4.00 | − 4.33 | − 4.12 | 5.38 | 4.56 | 3.72 |
| Lincoln | 2.53 | 2.84 | 3.78 | 3.98 | 4.22 | 5.01 |
| Macon | 2.08 | 2.41 | 3.18 | 5.29 | 5.46 | 5.86 |
| Madison | − 9.91 | − 9.97 | − 10.13 | − 4.81 | − 5.14 | − 5.86 |
| Martin | 4.42 | 4.71 | 6.23 | 14.75 | 14.51 | 14.87 |
| McDowell | 1.87 | 1.93 | 3.75 | 4.45 | 4.39 | 5.94 |
| Mecklenburg | − 2.23 | − 2.38 | − 2.46 | − 0.42 | − 0.67 | − 0.95 |
| Mitchell | − 9.05 | − 10.08 | − 11.25 | − 2.07 | − 3.45 | − 5.40 |
| Montgomery | − 19.67 | − 22.47 | − 25.26 | − 14.24 | − 17.33 | − 20.72 |
| Moore | 3.65 | 4.06 | 5.01 | 4.48 | 4.85 | 5.73 |
| Nash | 3.69 | 4.12 | 5.39 | 7.29 | 7.53 | 8.40 |
| New Hanover | − 1.36 | − 1.53 | − 1.53 | 1.14 | 0.85 | 0.56 |
| Northampton | 1.99 | 2.17 | 3.15 | 9.52 | 9.31 | 9.45 |
| Onslow | − 1.66 | − 1.81 | − 1.67 | − 1.07 | − 1.26 | − 1.16 |
| Orange | 2.06 | 2.27 | 2.89 | 2.38 | 2.58 | 3.17 |
| Pamlico | 5.40 | 5.91 | 7.10 | 9.56 | 9.88 | 10.65 |
| Pasquotank | − 1.98 | − 2.42 | − 2.19 | 4.34 | 3.58 | 3.09 |
| Pender | 8.21 | 8.96 | 10.98 | 9.95 | 10.62 | 12.45 |
| Perquimans | 3.47 | 3.71 | 5.83 | 7.89 | 7.93 | 9.64 |

## Figure 2. Average Annual Net Gains from Reduced Gas Tax Payments and Added Local Highway Spending, as a Percentage of County-Raised Public Revenue, 2008–2015, *without* Medicaid Net Gain
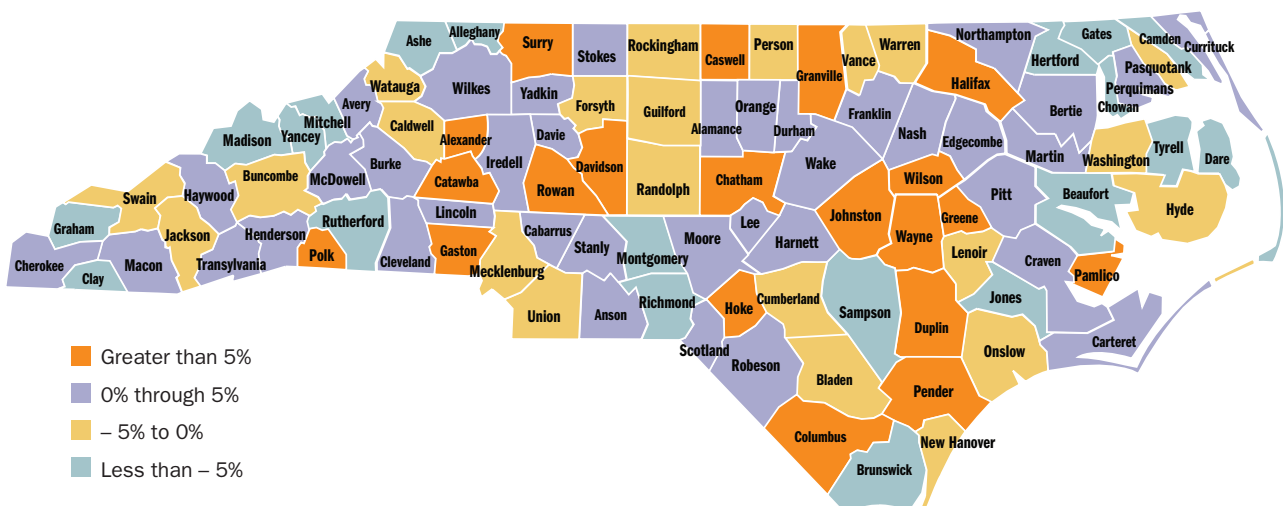


- Greater than 5%
- 0% through 5%
- − 5% to 0%
- Less than − 5%

## Table 2. **Average Annual Net Gains**

### **Assumed Annual Inflation of Gas Price**

| County | Without Medicaid Net Gain | | | With Medicaid Net Gain | | |
|---|---|---|---|---|---|---|
| | 3% | 5% | 10% | 3% | 5% | 10% |
| Person | – 0.62 | – 0.86 | – 0.86 | 2.01 | 1.65 | 1.35 |
| Pitt | 2.13 | 2.43 | 3.27 | 7.67 | 7.68 | 7.91 |
| Polk | 7.31 | 8.09 | 9.92 | 9.84 | 10.52 | 12.11 |
| Randolph | – 3.07 | – 3.28 | – 2.88 | – 1.81 | – 2.07 | – 1.80 |
| Richmond | – 18.06 | – 20.34 | – 21.48 | – 9.62 | – 12.33 | – 14.42 |
| Robeson | 4.15 | 4.81 | 6.56 | 19.22 | 19.10 | 19.16 |
| Rockingham | – 2.33 | – 2.70 | – 3.26 | 0.84 | 0.31 | – 0.61 |
| Rowan | 4.84 | 5.41 | 6.76 | 7.97 | 8.38 | 9.38 |
| Rutherford | – 6.31 | – 6.99 | – 7.24 | – 0.89 | – 1.85 | – 2.70 |
| Sampson | – 9.22 | – 10.28 | – 11.50 | – 2.18 | – 3.61 | – 5.62 |
| Scotland | 4.26 | 4.68 | 5.67 | 12.71 | 12.69 | 12.73 |
| Stanly | 1.60 | 1.87 | 2.51 | 4.05 | 4.20 | 4.56 |
| Stokes | 3.54 | 3.98 | 5.01 | 4.98 | 5.36 | 6.27 |
| Surry | 7.56 | 8.30 | 10.06 | 11.36 | 11.91 | 13.24 |
| Swain | – 2.72 | – 2.68 | – 1.57 | 3.31 | 3.07 | 3.58 |
| Transylvania | 2.33 | 2.59 | 3.26 | 4.02 | 4.19 | 4.68 |
| Tyrrell | – 129.30 | – 147.33 | – 168.12 | – 119.11 | – 137.58 | – 159.32 |
| Union | – 2.99 | – 3.12 | – 3.28 | – 2.62 | – 2.76 | – 2.95 |
| Vance | 0.04 | – 0.18 | 0.66 | 8.33 | 7.68 | 7.59 |
| Wake | 3.49 | 3.85 | 4.81 | 3.81 | 4.17 | 5.10 |
| Warren | – 3.03 | – 3.65 | – 2.87 | 3.23 | 2.29 | 2.37 |
| Washington | – 3.32 | – 4.06 | – 5.76 | 9.09 | 7.70 | 4.62 |
| Watauga | – 2.05 | – 1.97 | – 1.60 | – 0.91 | – 0.88 | – 0.62 |
| Wayne | 4.62 | 5.05 | 6.33 | 9.71 | 9.88 | 10.59 |
| Wilkes | 3.43 | 3.73 | 5.21 | 7.71 | 7.79 | 8.79 |
| Wilson | 6.85 | 7.52 | 9.10 | 12.48 | 12.86 | 13.81 |
| Yadkin | 2.95 | 3.40 | 4.88 | 4.96 | 5.32 | 6.60 |
| Yancey | – 37.32 | – 40.67 | – 46.12 | – 32.41 | – 36.00 | – 42.00 |

*Source:* The calculations are mine. I used the model and the data described in "Details of the Model to Evaluate the Tradeoff in a Highway Handoff," page 8.

and gas prices. The model calculated highway spending to be paid to each county on the basis of the reduction in the availability of state highway funding (because of the cap in the state gas tax), and it allocated those reductions according to each county's spending share in each year of the STIP. (For details of the model's construction, see the sidebar on page 8.)

If the net gain to counties from the Medicaid takeover was not included, the split between "winning" and "losing"counties would vary little with the assumed annual increases in gas prices: 60–40 for 3 percent increases, 58–42 for 5 percent increases, and 61–39 for 10 percent increases (see Table 2, columns 2–4). The size of the relative net gains also would vary little with gas price inflation. (For the results geographically for the mid-range case of a 5 percent annual increase in gas prices, see Figure 2.)

The reason for these outcomes is the strong correlation between the rate of increase in gas prices and the rate of increase in highway construction costs. The costs of both commodities (gas and highway construction inputs) are tied to the price of oil. Indeed, a separate analysis shows that highway construction costs would rise at a rate equal to 70 percent of the rise in gas prices.[22] Therefore, higher gas prices, which in the model resulted in greater tax savings to drivers, would be countered by higher highway construction costs to be paid by the county.

## Figure 3. **Average Annual Net Gains from Reduced Gas Tax Payments and Added Local Highway Spending, as a Percentage of County-Raised Public Revenue, 2008–2015, *with* Medicaid Net Gain**



Legend:
- Greater than 5%
- 0% through 5%
- – 5% to 0%
- Less than – 5%
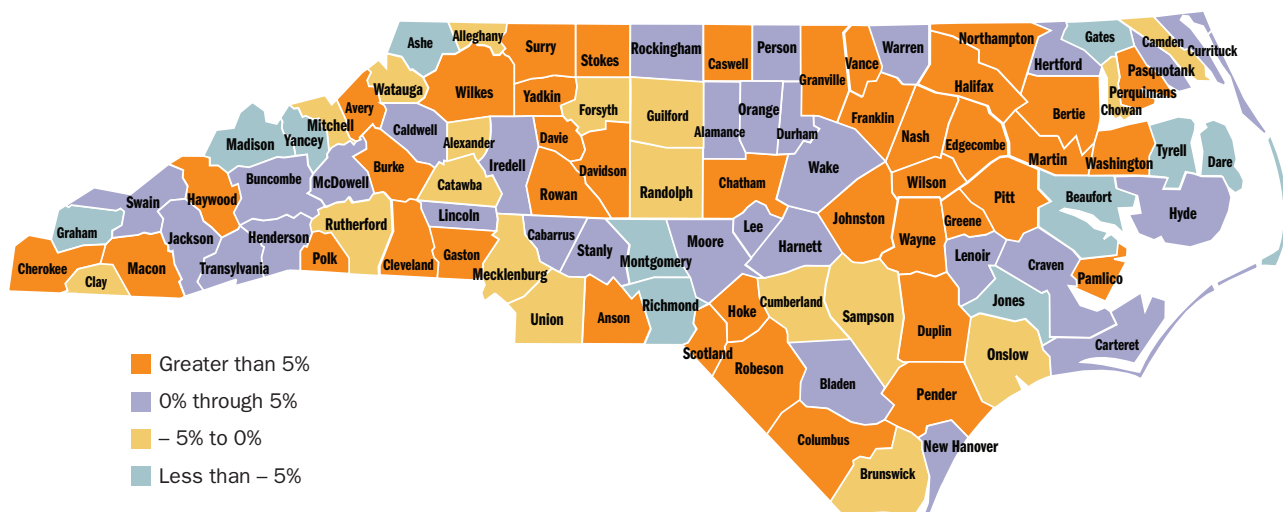
The two effectively would cancel each other out.

A modest negative correlation existed between the net gain and the poverty rate in the counties, suggesting that the net gain would be higher for low-poverty counties and lower for high-poverty counties.[23] This finding implies that some redistribution of funds would occur in the STIP from low-poverty, "net donor" counties to high-poverty, "net beneficiary" counties.[24] Therefore, moving from state financing of highways to county financing would be an advantage to net donor counties and a disadvantage to net beneficiary counties. Some counties, most notably Tyrrell, would be severely disadvantaged.[25]

Geographically, a mix of winning and losing counties would occur across the midsection of the state, but along the eastern coastal area and in the western mountain region, there would be a higher proportion of losing counties. This suggests that counties in both the far east and the far west have been net beneficiaries of the current formula for state highway funding.[26]

If the net gains from the Medicaid takeover were added to the net gains from the change in highway responsibilities (see Table 2, columns 5–7), all the percentages would be greater (either more positive or less negative) because every county would experience a net gain from the Medicaid takeover. (For the geographical results of the 5 percent gas inflation rate, see Figure 3.) Consequently the winning-losing split between the counties would shift to the winning side, with more than 70 percent of the counties now having a net gain.[27] However, several counties still would experience large net losses, and they again would be concentrated on the eastern coast and in the western mountains.

## On Balance: Increases in Local Revenue to Make Up the Difference?

The net gains when the Medicaid takeover was included in the model were calculated as the state gas tax savings to drivers in the county (due to the capped gas tax), plus the savings to county budgets from the Medicaid takeover, minus the highway spending that the county would need to fund as a result of the reduced availability of state highway money. Probably, most counties realizing a net gain from the calculation still would need to increase locally raised public revenue to make up for the loss in state-funded highway spending. Although residents still would be left with a net gain (that is, the increase in

**(Savings in state gas tax + savings from Medicaid takeover) – increased local taxes = net gain for taxpayers. But communicating this might be difficult.**

local taxes would be less than the combined savings in state gas taxes and local Medicaid funding), communicating this result to local taxpayers might be challenging for local officials.

To see the possible impacts of the Medicaid takeover and the highway handoff on local taxes, consider the mid-range case of a 5 percent annual increase in gas prices (see Figure 3). Of the 73 counties that would experience a net gain, 26 would garner enough savings from the Medicaid takeover to pay their local road expenses. Of the remaining 47 with a net gain, 25 would be able to meet their new highway responsibilities with the authorized 0.25 percent sales tax, and 4 could cover their road costs with the 0.40 percent land transfer tax.[28] The other 18 counties would need to increase property taxes by an average of 3.6 percent to supplement whichever tax (the 0.25 cent sales tax or the 0.40 percent land transfer tax) provided more revenue.[29]

Of the 27 counties that would suffer a net loss from the Medicaid takeover and the highway handoff, only 2 would collect enough revenue from either the 0.25 percent sales tax or the 0.40 percent land transfer tax to cover their new

highway responsibilities.[30] The remaining 25 would require an average increase of 20 percent in property tax revenue to supplement the maximum that they would receive from either the 0.25 percent sales tax or the 0.40 percent land transfer tax. However, the range around this average is substantial. Five counties would need less than a 5 percent rise in property tax revenues, while 6 would require more than a 30 percent jump.

## The Reality of the Revolution

North Carolina may be on track to experience the most significant realignment of state-local public responsibilities since the 1930s. The takeover of local Medicaid spending by the state government is a clear win for counties. Although the shift is progressive (in that high-poverty counties gain the most), thanks to the tweaking of the tax-distribution formula and the introduction of the hold-harmless provision, all local budgets will be winners. Issues of funding Medicaid and addressing its rapidly rising costs now shift completely to the federal and state governments.

The shift of highway responsibilities implied by the cap on the state gas tax and the new authority for counties to finance roads is more complicated. Drivers will pay less in state gas taxes than they would have paid without the cap, but the state will have fewer revenues for state-funded projects. Thus, if localities are to realize the same amount of highway construction and maintenance that they would have received without the cap, they will have to tap local public resources.

The results of a model for the next STIP show that the combination of the two shifts in responsibility would be, at net, beneficial to more than 70 percent of the counties. Although this finding is encouraging, it still would leave two issues for public officials. One is to convince drivers that their future tax burden is effectively being lowered by the capped state gas tax. Increases in the uncapped gas tax do not represent an increase in "real" (inflation-adjusted) highway taxes because such increases are prompted only by rises in gas prices. The formula for the uncapped gas tax represents a way for highway revenues to keep pace (partially) with highway construction costs. So, with continuing rises in gas prices, the capped gas tax represents an ongoing tax cut for drivers.

In reality, however, most drivers would not interpret circumstances in this manner. So if local taxes were increased to offset the decline in state highway funds, drivers would likely view such an action as a "real" tax hike. Hence economic

> **Under a Medicaid takeover/ highway handoff, about one-fourth of the counties would be net losers. Few could fund highway spending from the new tax options.**

education must be a crucial part of the new reality of state and local responsibilities.

The second issue rests with the counties that would not be net beneficiaries of the responsibility shift. For example, assuming an annual inflation rate of 5 percent in gas prices, 27 counties would be net losers from the combined Medicaid takeover/highway handoff. Only 2 of these counties would be able to fund the resulting deficit from either the new 0.25 percent local sales tax or the 0.40 percent local transfer tax. The rest would require supplementary increases in local property taxes, with several requiring more than a 30 percent increase. Such increases probably are unrealistic for counties.

The Medicaid takeover is a reality and will be a winner for all county public budgets. Such is not the case with the highway handoff. First, however, it may not happen. The General Assembly could unfreeze the state gas tax, which would slow, but not eliminate, the decline in inflation-adjusted state highway revenues. Alternatively the state could implement other revenue sources for highway funding.

If the highway handoff did occur, though, this analysis suggests that the

transition would not be easy. Even in counties where the financial result would be a net plus, residents would have to be educated about the relative gains and losses to their wallets and about the implications for how highway money would be raised and spent.[31] The task would be tougher in the roughly 25 percent of counties that could experience a net loss from the combined Medicaid takeover/highway handoff.

The aftermaths of revolutions can sometimes be challenging, even disappointing. North Carolina appears to be in the midst of rethinking its division of responsibilities between the state and local levels. Education and analysis are part of the keys to making sure the crowd on the other side of the barricades is welcoming.

## Notes

1. The state assumed 25 percent of the local Medicaid share on October 1, 2007, and 50 percent on July 1, 2008. The complete state takeover of the local share begins July 1, 2009.

2. The switch in the rate from the local sales tax to the state sales tax will occur in two stages, with 0.25 percent occurring in 2008 and another 0.25 percent occurring in 2009. Therefore the loss in the local sales tax will be 0.25 percent in 2008 and 0.50 percent in 2009 and thereafter.

3. Details on each of the laws can be found in North Carolina General Assembly, *Summaries of Substantive Ratified Legislation—2007,* available at www.ncleg.net. There is some question about the longevity of the option to adopt a land transfer tax, because bills were introduced in the 2008 session of the General Assembly to repeal it for local governments. Karl W. Smith evaluates the economic and political implications of the two taxes in "Evaluating New Revenue Sources for Counties," *Popular Government,* Fall 2008, pp. 20–30.

4. State Library of North Carolina, *Historical Highlights of North Carolina,* http://statelibrary.dcr.state.nc.us/nc/history/history.htm.

5. In 2006 the gas tax accounted for 54 percent of all state-raised funds for highways. North Carolina Office of State Budget and Management, *North Carolina Tax Guide 2006* (Raleigh, NC: North Carolina Office of State Budget and Management, 2006), 70, www.osbm.state.nc.us/files/pdf_files/NCTaxGuide2006.pdf.

6. Trends in other highway spending measures, such as inflation-adjusted spending per mile driven, show the same pattern. Gross state product is a measure of total economic production in the state in a given year.

7. After declining from the mid 1970s to the late 1980s, average vehicle weight increased 29 percent from 1987 to 2007 to reach a record for the past thirty-three years. U.S. Environmental Protection Agency, *Light-Duty Automotive Technology and Fuel Economy Trends: 1975 through 2007,* www.epa.gov/otaq/cert/mpg/fetrends/420r07008.pdf. For the relationship between vehicle weight and road use, see Kenneth Small, Clifford Winston, and Carol Evans, *Road Work: A New Highway Pricing and Investment Policy* (Washington: Brookings Institution Press, 1991).

8. David T. Hartgen, *TEA-21's Impact: Performance of State Highway Systems 1984–2003,* 14th Annual Report (Charlotte, NC: University of North Carolina at Charlotte, 2005), www.johnlocke.org/acrobat/policyReports/2005_highway_performance_report.pdf.

9. Traditionally, North Carolina has received less than a dollar in federal highway assistance per dollar paid in federal gas taxes. The cumulative ratio of federal highway assistance received per dollar of federal gas taxes paid from 1956 to 2005 was 0.90, third lowest among all states. However, the ratio has improved in recent years. For example, in 2005 the ratio for North Carolina was 1.03. Jonathan Williams, *Paying at the Pump: Gasoline Taxes in America,* Background Paper no. 56 (Washington, DC: Tax Foundation, 2007).

10. Estimates of the reductions in spending per vehicle mile traveled are based on a regression analysis relating spending per vehicle mile (in constant dollars) to the gas

tax (also in constant dollars), federal highway spending in North Carolina as a percentage of North Carolina gross state product, and the North Carolina highway use tax.

11.  *Status of the Highway Trust Fund: 2007*, Testimony of Donald B. Marron, Deputy Director, Congressional Budget Office, before the Subcommittee on Highways and Transit, Committee on Transportation and Infrastructure, U.S. House of Representatives, March 27, 2007 (Washington, DC: Congressional Budget Office, 2007), www.cbo.gov/ftpdocs/79xx/doc7909/03-27-Highway_Testimony.pdf.

12.  U.S. Department of Labor, Bureau of Labor Statitistics, *Consumer Price Index* (Washington, DC: Bureau of Labor Statistics, U.S. Department of Labor, 2000–2007).

13.  Office of State Budget and Management, *North Carolina Tax Guide 2006.*

14.  North Carolina Association of County Commissioners, "Medicaid Spending by County," www.ncacc.org. The data are periodically taken off the site. They are not available now.

15.  Congressional Budget Office, *The Budget and Economic Outlook: 2008–2018* (Washington, DC: Congressional Budget Office, 2008), 52.

16.  Todd McGee, "Medicaid Relief Made Simple" (Raleigh, NC: North Carolina Association of County Commissioners, n.d.), www.ncacc.org/medicaid_1007.html.

17.  John L. Saxon, "The Fiscal Impact of Medicaid on North Carolina Counties," *Popular Government*, Summer 2002, pp. 14–22.

18.  The hold-harmless provision also takes into account municipalities' loss of sales tax revenue. Municipalities are compensated for these losses.

19.  As stated in text at reference note 17, Medicaid spending is expected to increase an average of 7.9 percent annually through 2018. During the ten years from 1995 to 2005, public revenues raised from local sources (that is, not including transfers from the federal and North Carolina governments) increased at an average annual rate of 6.3 percent for North Carolina counties. U.S. Census Bureau, "State and Local Government Finances," www.census.gov/govs/www/estimate.html.

20.  The findings result from conducting a regression analysis of the net gain on the county poverty rate. The poverty rate is from 2005, the latest year available (www.census.gov/did/www/saipe/index.html).

21.  The correlation between the poverty rate and property wealth per capita also is weak, at only 0.11. Property wealth per

capita is from the North Carolina Data Center and is for 2005, the latest year available (http://linc.state.nc.us/).

22.  The correlation is based on an analysis that I did for 1974–2006 using data from the U.S. Census Bureau and the Bureau of Labor Statistics.

23.  The correlation of the net gain with the poverty rate is – 0.24. The correlation with property wealth per capita is only – 0.06.

24.  An analysis of state highway spending for 1991–2005 by the North Carolina Capital Area Metropolitan Planning Organization also found groups of net donor and net beneficiary counties. North Carolina Capital Area Metropolitan Planning Organization, "North Carolina Transportation Tax Return Rates by County," www.campo-nc.us/Statistics/Transportation_Revenue_Return_Rate_Map_and_Table_2006_11_30.pdf.

25.  The large net losses for Tyrrell County are easily explained by looking at the county's spending shares in the STIP. With only 0.05 percent of the state's population and 0.30 percent of the state's vehicle miles traveled, Tyrrell is scheduled to receive an average of 1.10 percent of state highway spending in the STIP during 2008–2015.

26.  Indeed, this also is the finding of an analysis of state highway funding by the North Carolina Justice Center. Stephen Jackson, *At the Crossroads: Recommendations for the Future of Transportation in North Carolina* (Raleigh, NC: North Carolina Justice Center, 2008), www.ncjustice.org/assets/184_btcrpt28feb08roadfund.pdf.

27.  The winning-losing split is 74–26 for 3 percent gas price inflation, 73–27 for 5 percent gas price inflation, and 71–29 for 10 percent gas price inflation.

28.  Estimates of county revenues from the 0.25 percent sales tax and the 0.40 percent land transfer tax are from the North Carolina Association of County Commissioners, www.ncacc.org/documents/revenueauthority_073107.pdf. Because revenues from the land transfer tax vary with the performance of the real estate market, revenue estimates from the tax were averaged for 2006 (a good year in real estate) and 2007 (a more modest year in real estate). All dollar values are adjusted to 2008. The four counties with highway expenses covered by the land transfer tax are counties where revenues from the one-quarter-cent sales tax would fall short of highway costs.

29.  The average of 3.6 percent is a simple average of the increases for the eighteen counties. The range of the increase is from 0.3 percent to 9.0 percent.

30.  In both cases the 0.40 percent land transfer tax provided more revenue than the 0.25 percent sales tax.

31.  Residents could be informed that more local financing of highways would move North Carolina closer to the highway financing model used in other states, where 60 percent of spending is from the state level, and 40 percent, from the local level. The latest (2005) data for North Carolina show an 86–14 percent state-local split. U.S. Census Bureau, *State and Local Government Finance*, Table 1. State and Local Government Finances by Level of Government and by State: 2005–06, www.census.gov/govs/estimate/0634ncsl_1.html.