Economic Growth in Middle Tennessee: Can Local Public Services Keep Up?

David A. Penn

The Middle Tennessee economy is growing rapidly, creating opportunities for workers and businesses but also difficult challenges for local governments. With a population of 2.2 million in 41 counties, Middle Tennessee leads the state in population and job growth. Manufacturing is a very important source of jobs and payroll, with concentrations in transportation equipment, electrical equipment and appliances, and printing and publishing. Housing construction is expanding rapidly in response to population increases and income growth. Rapid growth, however, has strained local government services, challenging the ability of schools to accommodate growing numbers of students. Revenue options for local governments are limited, with most local revenues produced from property and sales taxes.

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Middle Tennessee is growing rapidly: Two Midstate counties (Rutherford and Williamson) rank among the top 100 nationally in population growth, and Rutherford County is the fastest-growing large county in the United States for the third consecutive quarter as of 2004:Q4. As an informal definition, Middle Tennessee consists of 41 counties stretching from the Tennessee River in the west to the Cumberland Plateau in the east (Figure 1). The Midstate[1] population is 2,235,000 as of July 1, 2004; if it were a separate state, Middle Tennessee would rank 36th in size, smaller than Nevada but larger than New Mexico. The six largest counties account for more than half of the Midstate's population:

- Davidson County (572,000),
- Rutherford County (210,000),
- Williamson County (146,000),
- Montgomery County (142,000),
- Sumner County (141,000), and
- Wilson County (97,000).

The recently redefined Nashville-Davidson-Murfreesboro metropolitan statistical area (Nashville MSA) comprises 13 counties, with Davidson County at the center. Approximately two-thirds of the Midstate's population reside in the Nashville MSA. Population growth is relatively vigorous in the Nashville MSA, rising by 6.0 percent from 2000 to 2004, compared with 4.0 percent for the remaining Midstate counties, 2.4 percent for the rest of Tennessee, and 4.1 percent for the United States (Figure 2).

This study reviews the performance of the Middle Tennessee economy since the recent recession and examines the impact of rapid growth on the demand for public services and the consequent search for alternative revenue sources. The first section examines the industrial structure of the Midstate economy and summarizes recent trends in employment and housing construction.

[1] This paper uses the terms "Midstate" and "Middle Tennessee" interchangeably.

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Figure 1

Counties in Midstate Tennessee

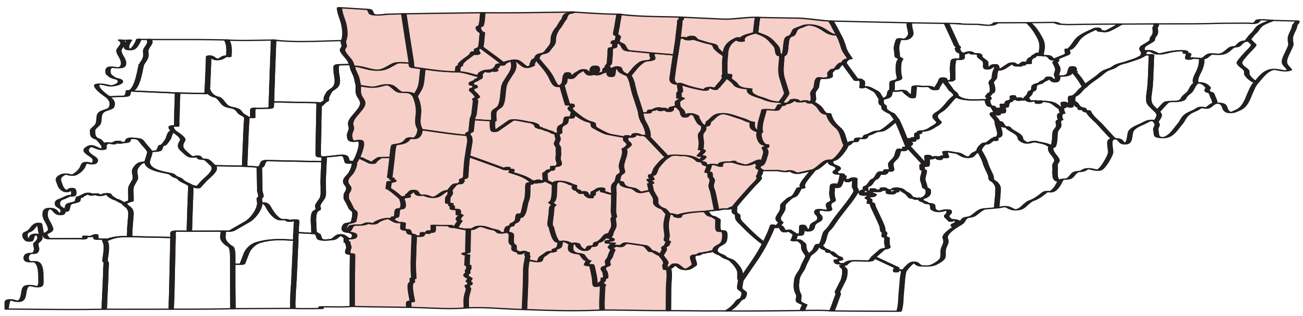
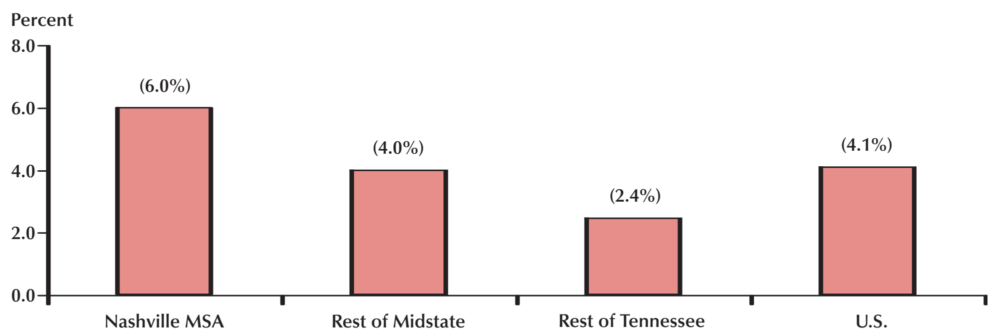


Figure 2

Population Growth 2000-04



The paper then sketches the effects of growth on the demand for public services, followed by a discussion of possible revenue sources for local governments. The final section offers conclusions.

INDUSTRIAL STRUCTURE AND RECENT ECONOMIC PERFORMANCE

Compared with the nation's economy, Tennessee is much more reliant on manufacturing as a source of payroll and employment. In fact, Tennessee has the ninth largest proportion of payroll from manufacturing among the 50 states. On average in the Midstate, manufacturing accounts for 16.5 percent of employment and 19.5 percent of total wages, much higher than the national average of 11.1 percent of employment and 13.6 percent of total wages.[2] But the Midstate average is heavily skewed by large Davidson County, which is much less dependent on manufacturing. Excluding Davidson County, the importance of manufacturing in the Midstate rises considerably to 22.8 percent of employment and 29.2 percent of total wages. In fact, manufacturing

[2] These figures are based on the QCEW (Quarterly Census of Employment and Wages) compiled by the Tennessee Department of Labor & Workforce Development for the U.S. Bureau of Labor Statistics.

generates at least one-third of total payroll for 17 of the 41 Midstate counties.

The comparative industrial structure of a local economy can be assessed using location quotients (LQs). An LQ is the share of employment (or wages) for a particular local industry divided by its national share. Thus, a Midstate industry with an LQ of more than 1 indicates that the sector is a more important source of jobs locally than nationally. Table 1 shows Midstate LQs for employment and total wages by major sector. With an LQ of 1.4, manufacturing clearly is much more important for the Midstate economy than for the nation. Two other major sectors, education and health services and leisure and hospitality, are also more important sources of wages in the Midstate than nationally. The high LQ for education and health services can be explained by a concentration of health care providers, headquarters for health care companies, and private universities in the Nashville MSA. The relatively large LQ for leisure and hospitality is due to country music, entertainment, and convention-related employers in Nashville.

Three manufacturing industries are particularly important in the Nashville MSA: transportation equipment manufacturing, electrical equipment and appliance manufacturing, and printing and related support activities; more than one in three manufacturing workers are employed in these industries. The transportation equipment sector includes large employers such as Nissan North America, Saturn, Bridgestone-Firestone, Visteon, and Peterbilt Motors. Numerous automotive parts manufacturers are also located in the Midstate. As for the printing industry, Nashville is well-known for its concentration of religious-oriented printing and publishing establishments.

Turning now to recent employment trends, the Midstate and national economies were affected similarly during the first 12 months of the 2001 recession. Employment for both peaked in the first quarter of 2001, reaching a trough about a year later. From peak to trough, payroll employment fell 1.8 percent for the national economy and 1.5 percent for the Midstate. By contrast, employment dropped much more for Tennessee, falling by 2.4 percent during the same interval.

Table 1

Midstate Location Quotients

Supersector	Employment	Total wages
Construction	0.408	0.500
Manufacturing	1.419	1.375
Trade, transportation, and utilities	1.010	1.043
Information	0.951	0.800
Financial activities	0.874	0.822
Professional and business services	0.929	0.814
Education and health services	1.007	1.194
Leisure and hospitality	1.004	1.132
Other services	0.804	0.885

NOTE: Calculated from QCEW series, third quarter 2004.

Since the end of the recession, however, Midstate job growth greatly outperformed that of the nation and state, rising 3.4 percent from first quarter 2002 to first quarter 2004 compared with 0.2 percent for the United States and 1.4 percent for Tennessee (Table 2). The much stronger job growth for the Midstate can be attributed to two factors: (i) employment in services-providing industries increased much more rapidly, particularly in the non-Nashville MSA counties, and (ii) job losses in the Midstate goods-producing sectors were less severe, thus exerting much less of a negative drag on net job growth. In fact, the Nashville MSA actually produced a modest job gain for the goods-producing sectors during the period.

As shown in Table 3, the strength of Midstate services-providing job growth from 2002 to 2004 is due to substantial gains in education and health services (9.6 percent), leisure and hospitality (6.6 percent), and trade, transportation, and utilities (6.3 percent). The information and manufacturing sectors lost jobs, while jobs were added in the construction sector.

Recent employment growth paths underscore the superior economic performance of the

Table 2

Employment Growth, 2002:Q1 to 2004:Q1

Area	Goods-producing	Services-providing	Private sector	Total
Midstate	–2.2%	5.6%	3.6%	3.4%
Nashville MSA	0.4%	4.7%	3.9%	3.8%
Tennessee	–3.7%	3.0%	1.3%	1.4%
U.S.	–4.7%	1.4%	0.1%	0.2%

NOTE: Calculated from QCEW series, U.S. Bureau of Labor Statistics.

Table 3

Midstate Employment Growth by Industry, 2002-04

Industry	Employment growth
Construction	3.1%
Manufacturing	–3.6%
Trade, transportation, and utilities	6.3%
Information	–8.6%
Financial activities	3.2%
Professional and business services	4.4%
Education and health services	9.6%
Leisure and hospitality	6.6%
Other services	1.8%

NOTE: Calculated from QCEW series, U.S. Bureau of Labor Statistics for the first quarters, private sector only.

Midstate. Figure 3 shows indexed payroll employment trends for the Midstate, Nashville MSA, Tennessee, and the United States. Beginning in the first quarter of 2003, employment rose more rapidly for the Midstate than the United States and the state overall.

Trends for manufacturing employment are similar, except that the Midstate and Tennessee itself peaked about one quarter before the nation did (Figure 4). Gains are strongest in the Nashville MSA; since the third quarter of 2003, employment rose 2.7 percent, a gain of 1,700 jobs, compared with 0.7 percent for the other Midstate counties, 0.6 percent for the rest of Tennessee, and –0.4 percent for the United States.

Employment growth in the services-providing industries is much stronger for the Midstate than for the state and nation (Figure 5). In the Midstate, services-providing sectors increased 5.6 percent from third quarter 2002 to first quarter 2004, compared with 3.0 percent for Tennessee and 1.4 percent for the United States.

Midstate Growth in Comparison

The Nashville MSA generated eight of every ten net new jobs in the Midstate since the first quarter of 2002 and six of ten net new jobs in Tennessee. As for individual counties, employment and wage growth vary considerably. Although some counties experienced very rapid growth during the past two years, others suffered losses. In fact, of the 41 counties comprising the Midstate, 13 counties experienced employment losses from third quarter 2002 to third quarter 2004. On the other hand, employment grew by a relatively strong 3.0 percent or more in 19 counties during the two-year period.

Each quarter the Bureau of Labor Statistics reports employment and wage growth for the 300 largest counties in the United States. The most recent report for the fourth quarter of 2004 shows Rutherford County ranking first nationally in terms of the employment growth rate, measured from December 2003 to December 2004. Rutherford County's payroll employment grew 8.9 percent over the year, outdistancing second-place Manatee County, Florida (8.7 percent), and third-place Clark County, Nevada (7.2 percent) (Bureau of Labor Statistics, July 19, 2005). In 2004, Rutherford County ranked first in three of four

Figure 3

Payroll Employment Trends for the Nashville MSA, Midstate, Tennessee, and the U.S.
(index of seasonally adjusted figures, 2000 = 100)

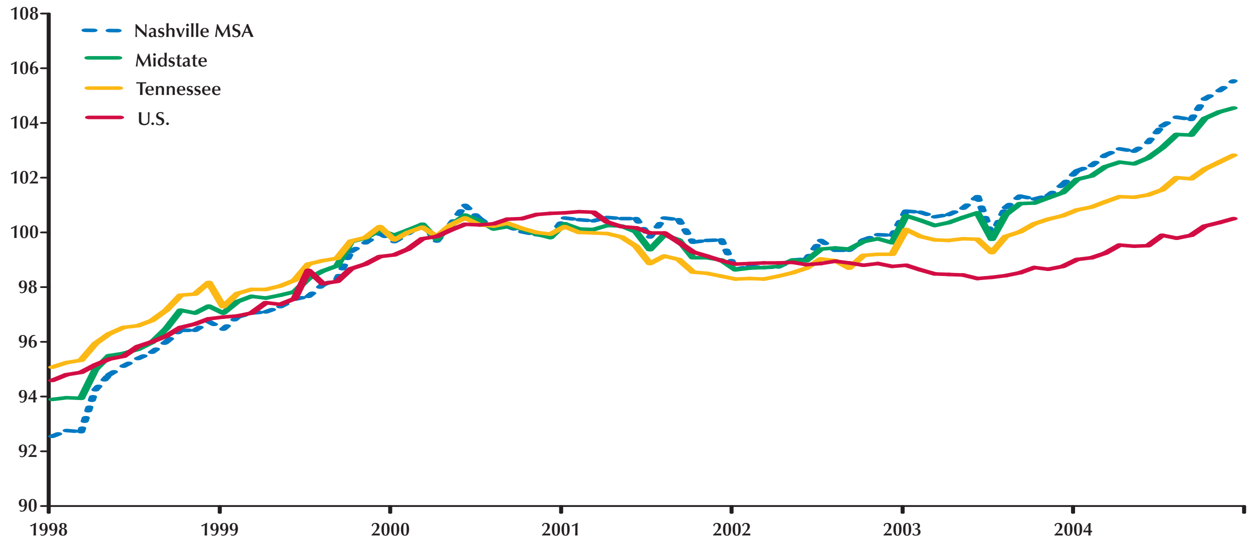


Figure 4

Manufacturing Employment Trends for the Nashville MSA, Midstate, Tennessee, and the U.S.
(index of seasonally adjusted figures, 2000 = 100)

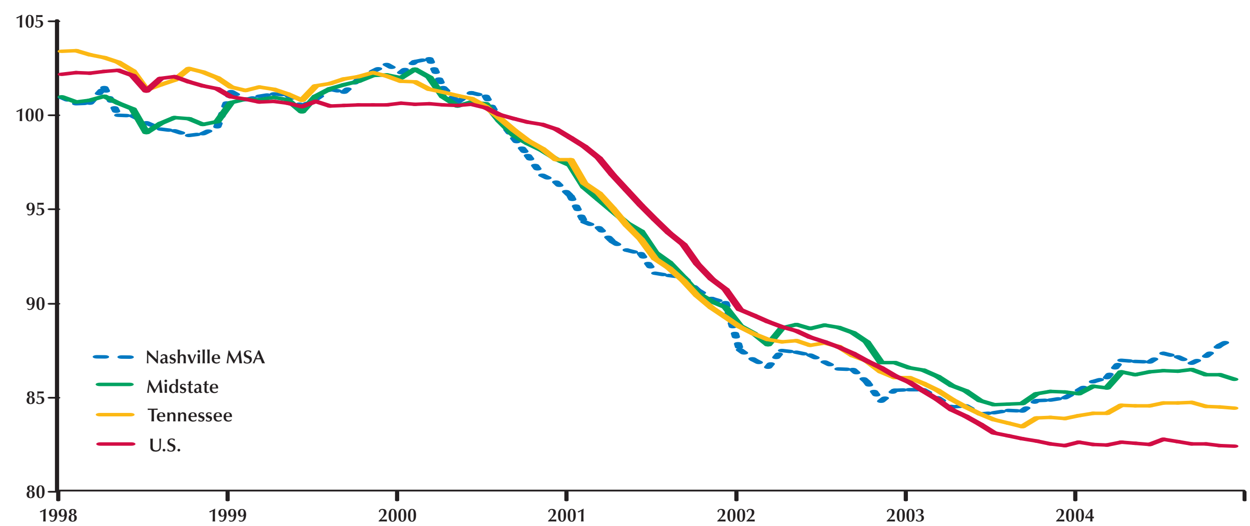
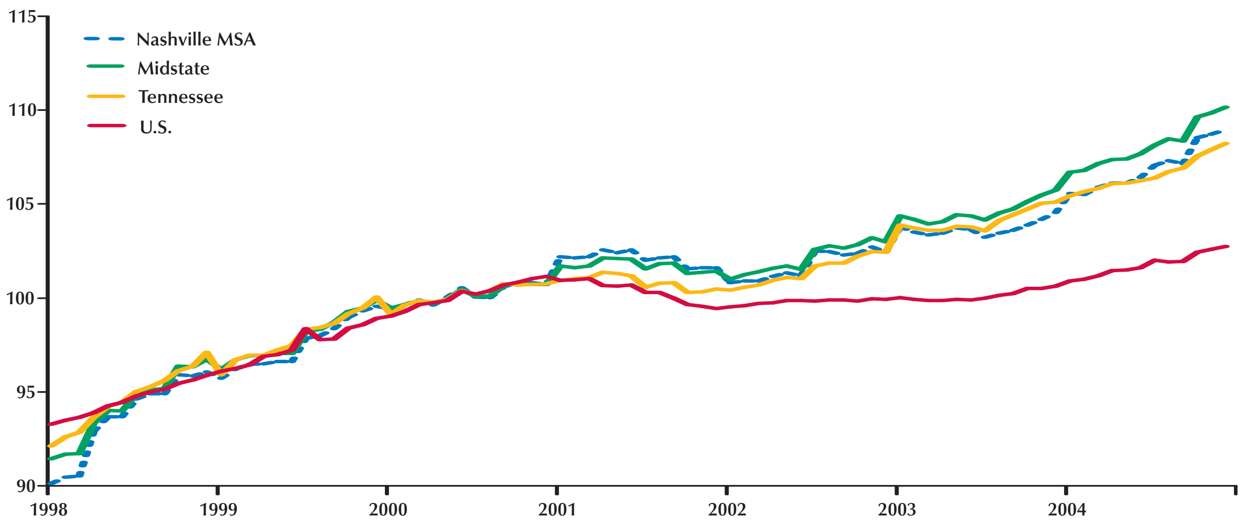


Figure 5

Services-Providing Industries Employment Trends for the Nashville MSA, Midstate, Tennessee, and the U.S.
(index of seasonally adjusted figures, 2000 = 100)



quarters in 2004 and ranked in the top ten growing counties for all of 2003 and 2004.

Examining the data more closely, we find that a very large share of Rutherford County's job growth, about 42 percent of growth during the past two years, occurred in the professional and business services sector. Virtually all the job growth in this sector appears to have originated from either temporary help agencies or companies that provide business support services. Similar job-growth patterns are evident among several of the other fastest-growing Midstate counties.

Very rapid employment growth in temporary help agencies and support services could be a sign that employers wish to hire but choose to proceed with caution; consequently, they hire temporary workers who can be easily laid off if business conditions suddenly turn sour. If businesses become convinced that growth is sustainable, they may hire more permanent workers and fewer temporary workers over the long run.

An alternative interpretation is that the temporary employment gains are not temporary but permanent. According to this interpretation, employers are out-sourcing certain needed skills and functions; growth of businesses that provide temporary employment services and support services for businesses could be tapping into a strong and growing demand for outsourced services, a demand that will likely continue as the national and worldwide economies become more and more competitive and pressures to improve productivity and minimize cost become even more intense.

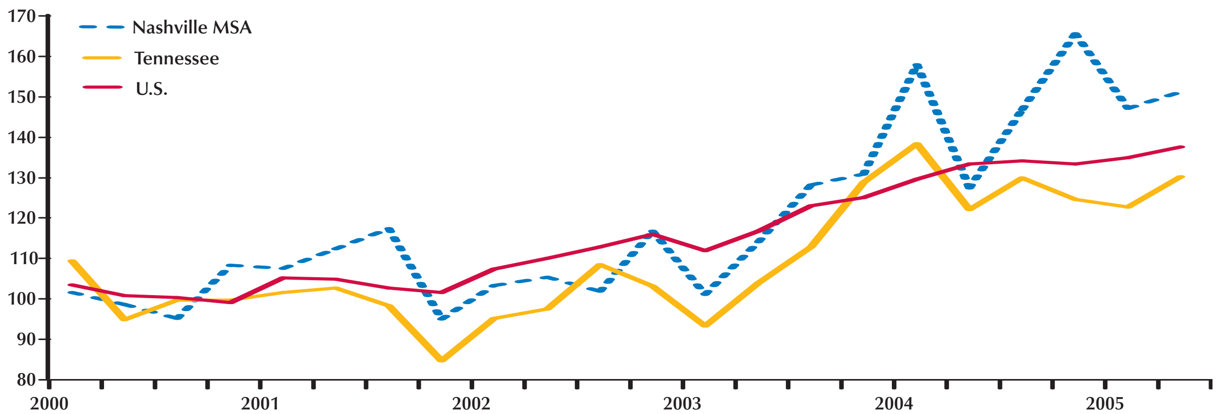
Housing Construction

New housing construction facilitates the movement of population into the Midstate area, particularly to the counties that form the outer ring of the Nashville MSA, including Rutherford, Wilson, Sumner, and Williamson. In the first quarter of 2005, Nashville MSA single-family home construction reached 3,300 units, a modest 4.0 percent gain over 2004.

Spurred by population growth, housing construction in the Nashville MSA is rising much faster than in the state or nation (Figure 6). As of the first quarter of 2005, Nashville MSA permit-

Figure 6

Index of Single-Family Home Construction Permits, 2000:Q1 to 2005:Q2
(index of seasonally adjusted figures, 2000 = 100)



authorized single-family home construction reached 149 percent of its level from the first quarter of 2000, compared with 129 percent for Tennessee and 128 percent for the nation.

Housing construction creates well-paying jobs for people in a number of specialized occupations including carpenters, floor layers, roofers, plumbers, electricians, and so on. Construction also creates additional demand for building materials such as brick, concrete, stone, lumber, and steel; many building materials are purchased locally by construction contractors. From third quarter 2000 to third quarter 2004, employment in the residential building construction sector (North American Industry Classification System [NAICS] 2361) increased 31.2 percent in the Nashville MSA, rising from 3,000 in 2000 to 3,900 in 2004. Total wages paid in this industry jumped by 47.8 percent during the same period. By 2004, the average employee in the industry earned $40,100 during the first quarter on an annual basis, far higher than the average Nashville MSA across-industry pay.

Relatively recent evidence suggests that slower growth may be in the cards for housing construction in the Nashville MSA. Interestingly, the problem is not demand, because demand is expected to remain strong as long as mortgage rates remain at relatively low levels. Rather, construction activity may slow because of supply-side bottlenecks caused by an acute shortage of lots to build on. Land developers are hard pressed to keep up with the demand for lots by the construction industry. Tighter supply coupled with unabated demand has resulted in higher prices for developed lots, on the order of 10 percent to 20 percent over the year. One builder reports that higher costs for lots have added $4,000 to $10,000 to the price of homes he builds.

Greater scrutiny from local land-use planners and related environmental concerns have added several months to the process of getting a new development approved; a year or more is now required for approval, compared with six months in the recent past. Also, developers and builders are moving from easier-to-develop properties to areas that are more difficult to develop. Because the prime (and lower-cost) properties have already been developed, builders are moving further out from the central locations into areas that are more challenging because of rock content, lack of infrastructure, and other engineering difficulties (Russell, 2005).

Eventually, higher overall home prices due to higher development costs and supply bottlenecks may slow the rate of growth of housing construction. Little evidence exists to show this is occurring presently, however, as closings on homes in the Nashville MSA remain strong, median prices are rising, and the inventory of unsold homes is falling.

DEMAND FOR PUBLIC SERVICES

Rapid employment and population growth produce greater economic opportunities for both businesses and workers. For example, the expansion of the local employment base means that Midstate high school and college graduates have a much better chance of pursuing a career close to home. However, growth can also strain the ability of local governments to provide necessary services. Local governments must provide critical services such as police and fire protection, K-12 education, streets and roads, water supply, sanitary sewers, and waste disposal for a growing population. In general, rapid growth not only raises the demand for local government services, but may also increase the average cost of providing the services and affect local quality of life. For example:

- Wastewater treatment: Costs are rising because the local watershed is unable to accept additional treated wastewater. Some local governments are beginning to rely on nontraditional, and more expensive, methods of disposal such as land spraying.
- Air quality: Increased consumption of gasoline related to traffic growth exacerbates local air-quality problems. Reduced air quality can cause health problems in at-risk populations and lost productivity for workers. State and local officials are working to develop alternatives to slow the rate of growth of vehicle emissions.
- Higher education: Two local public universities are experiencing rapid enrollment growth, straining the institutions' ability to maintain quality.
- Law enforcement: Some jails are overcrowded, and some sheriffs complain about lack of funding. Some have gone so far as to sue county governments for additional funds.

Public Schools

The effect of growth on the demand for K-12 education services in the Midstate is dramatic. School systems in high-growth areas must accommodate increasing numbers of families with children moving into the area. Maintaining class sizes at the present level means that schools must hire, on average, one additional teacher for every 15 additional K-12 students. Further, additional support staff, counselors, and administrators are needed to maintain and manage a new or expanded school.

On the cost side, operating costs per student in the Midstate rose from $5,500 to $6,700 per student over the most recent four years, a 5.2 percent annual rate of growth, considerably greater than the rate of inflation as measured by the growth of the consumer price index. Even school systems with slow enrollment growth are experiencing substantial cost increases. For example, enrollment in Nashville city schools rose just 1.4 percent from 2000 to 2004, yet operations expenditures increased 30.4 percent (Tennessee Department of Education).

The Nashville city government is considering a proposal to increase the sales tax rate from 9.25 percent to the state maximum 9.75 percent, with most of the revenue intended for rising costs of providing education. Increased costs for Nashville schools are driven by four factors: seniority raises required by contract, pension and insurance benefit costs, expenses related to opening new schools, and annual pay increases (Long, 2005).

In the fall of 2000, public schools in the Nashville MSA enrolled about one fifth of Tennessee's schoolchildren and Midstate schools enrolled approximately 36 percent. During the 2000-04 period, the vast majority of Tennessee's net enrollment growth occurred in the Midstate counties: Average daily attendance in Tennessee public schools rose by a total of 1.7 percent, but in the Midstate counties it rose by 4.1 percent and in the Nashville MSA by 6.1 percent. Put another way, of the net new 14,314 children in Tennessee public schools, 77 percent were in the Nashville MSA and 89 percent in the Midstate counties.

Rutherford County experienced the highest enrollment growth in the state, both in absolute terms and the growth rate: The county school system added 4,100 students during 2000-04, rising by 4.2 percent annually. Other Midstate counties with enrollment growth of 1,000 or more include Williamson, Wilson, Sumner, and Montgomery. Taken together, these five counties experienced an aggregate enrollment increase of 11,000 students, about three quarters of Tennessee's net increase during the four-year period.

The demand for classroom space, teachers, and all the materials and supplies needed to operate schools caused spending for operations to increase greatly: From 2000 to 2004, Midstate schools increased spending from $1.728 billion to $2.175 billion, a 25.8 percent increase. Interestingly, the revenue stream required to pay for this increase relied mostly on local sources. Total revenue received from the state increased just 11.5 percent from 2000 to 2004. By contrast, total local revenue rose by 35.8 percent, mostly from increased property tax collections due to housing and commercial growth and also to higher property tax rates.

Capital expenditures are also on the rise. The Rutherford County school system, for example, estimates that, if present enrollment trends continue, the county will need to build two to three new schools each year for the next decade, an estimated expenditure of more than $500 million plus millions more for annual operating expenses to hire new teachers and staff.

SOURCES OF REVENUE FOR LOCAL GOVERNMENTS

The rapidly rising demand for public services, especially schools, has produced a lively discussion of how to pay for growth. Options for local government, especially county government, are not numerous (Penn, 2004). County governments rely on three primary sources: state revenue, local property taxes, and local option sales taxes. Other revenue sources exist, such as development fees, wheel taxes, and adequate facilities taxes, but these generate much smaller revenue streams.

Development fees and adequate facilities taxes recover at least part of the additional costs associated with providing public services to new residents. A development fee is a flat fee charged on each new housing unit; the development fee is currently $1,500 in Rutherford County. By contrast, the adequate facilities tax is a charge levied per square foot of a new home ($1.00 per square foot, for example). Thus, the tax levy varies from home to home depending on square footage—larger homes pay more, smaller homes pay less. Of the two, the development fee is more regressive; a high-priced new home pays a smaller percentage of the sales price to the development fee than does a low-priced new home.

The wheel tax is an annual fee collected for each vehicle owned. The wheel tax ranges from $25 to $50 per vehicle in Midstate counties. In Rutherford County, a $40 wheel tax generated $6.6 million in revenue in fiscal year 2002, making the tax the third-largest source of local revenue for the county government.

Not surprisingly, local residents are reluctant to raise taxes; a recent exception is Dickson County, where voters approved a $20 increase in the wheel tax in January 2005. By contrast, voters in Williamson County recently defeated a tax-increase proposal.

The local option sales tax is a very important source of funds for cities, schools, and county government. Some counties, such as Rutherford County, currently levy the maximum sales tax rate allowed by state law, a combined state and local rate of 9.75 percent on most items. Interestingly, the spending base for the state sales tax and the base for the local option sales tax are not the same. The most important difference is that spending subject to the local option tax has a single-article limit; the local portion of the sales tax applies only to the first $1,600 of the sales price for a single article. For example, the entire value of a $2,000 plasma television is subject to the 7 percent state sales tax rate, but the local option sales tax is limited to the first $1,600 of the transaction. When the article is a $35,000 vehicle, it is easy to see that the state treasury collects much more revenue per penny of tax than does the local government. When the economy is growing and big-ticket items such as vehicles, furniture, and large appliances are selling well, local governments receive less of a revenue boost from the tax on sales, due to the single-article cap, than does the state government.

Perhaps the biggest hurdle facing local governments, particularly county governments, in fast-growing areas is how to expand the portfolio of revenue options available to pay for rising costs of services and growth-related costs and at the same time avoid property tax increases. Explicit approval from the state legislature is necessary to implement new kinds of taxes or to increase certain fees or taxes. For example, a county cannot on its own authority levy a development tax or adequate facilities tax without the specific permission of the state legislature; increases for some existing taxes and fees typically must also pass muster with the legislature. This requirement creates obvious opportunities for lobbying efforts from opponents of growth-related taxes. For example, a local real estate transaction tax proposed in the legislature several years ago was defeated in the legislature after intensive lobbying efforts by the real estate industry.

The housing construction and real estate industries argue that increasing the development tax or levying new adequate facilities taxes places too much of the burden on a relatively narrow portion of the housing market—new housing. The Rutherford County home-building industry has stated that it would consider supporting a broad-based tax, such as a local real estate transaction tax, since it would apply to sales of both new and existing homes. The real estate brokerage industry, however, remains opposed to any new taxes (Shaw, 2004).

Some communities have considered placing limits on growth. For example, city leaders in Franklin (Williamson County) recently considered a temporary moratorium on any new zoning changes that would allow additional housing growth. Interestingly, the Franklin city administrator warned that limiting the annual growth of housing below 600 single-family units could have very significant impacts on the city's budget. The city has substantial debt service obligations related to new wastewater treatment capacity; if fees and tax revenue from new housing construction are not sufficient to cover the annual debt service, other city services must be cut to make up the difference (Watson, 2005).

CONCLUSIONS

The Midstate economy generates a large number of jobs in a variety of industries. Rapid job and population growth create opportunities for workers and businesses, but also produce considerable stress on the ability of local governments to provide services. Local revenue sources have difficulty keeping pace with growth if there are no tax increases. Counties rely on the property tax to generate funds that are not sufficiently forthcoming from other sources such as the local option sales tax. Voters are voicing more and more concern about steadily rising property taxes, forcing local governments to more aggressively pursue alternative sources of revenue.

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