The LeRoy Collins Institute, a public policy institute established in honor of Governor LeRoy Collins, celebrated its 25th anniversary in 2013. At that time, we recognized the accomplishments and legacy of a governor who exemplified unquestionable integrity and undaunted courage. The celebration reminded us how inspirational political leadership can prevail, even in very divisive times. Governor Collins combated racism in our state in the 1960s by standing up for what he believed to be right. Importantly, he was a visionary leader who came to office with ambitious goals. Although he met with great success, he had his share of disappointments. But he never expressed regret, saying “A fight for the right is never lost.”

To honor appropriately the legacy of this courageous and visionary governor, we believe the Collins Institute must take on the tough issues. This report, *Tougher Choices: Shaping Florida’s Future*, does just that. It builds on a 2005 Institute report which warned that the state’s revenue system was overly reliant on the booming housing market and rebuilding from hurricanes. We documented that the need for services—well-qualified teachers, health care for children and the needy, and exemplary higher education—was pressing and likely to become more urgent.

In this report, written by Jim Dewey and David Denslow with the Bureau of Economic and Business Research at the University of Florida, the news is grim. Revenues were hit hard by the recession and are only recently recovering. At the same time, the demand for education, health, and infrastructure spending continues to grow. This report also highlights the role of demographics and labor markets both now and in the future. And, ominously, it points out that Florida is experiencing a “hollowing out” of middle-wage jobs at a rate faster than the rest of the country. We hope that *Tougher Choices* will serve as the catalyst for meaningful discussion between citizens and their elected representatives about the future of Florida. The state seems to be falling behind in a number of economic and policy measures relative to other states, and those trends will continue without long-term thinking and thoughtful conversations about our state’s future. Governor Collins saw challenges and acted on them. “Ours is a generation in which great decisions can no longer be passed on to the next,” he said in 1960. “The hour grows late, and you and I have work to do.” Yes, we still do.

Lester Abberger
Chair
LeRoy Collins Institute
Ten years ago, the Jessie Ball duPont Fund provided financial support to the LeRoy Collins Institute for important research on the future of Florida. The report from that research, titled *Tough Choices: Shaping Florida’s Future*, analyzed spending and revenue trends and cautioned that the state was overly reliant on the booming housing market and rebuilding from hurricanes and was ignoring what appeared to be under-funding of key areas such as K-12 education, higher education, and infrastructure.

This report, *Tougher Choices: Shaping Florida’s Future*, again funded in part by the Jessie Ball duPont Fund, finds little progress since 2005. In key areas including teachers’ salaries and spending for higher education, the state has slipped further below the national average. Reliance on tourism and retirees can bring in sales tax revenues in the short-term but may have long-term negative effects on the state’s economy.

The Jessie Ball duPont Fund is proud to provide funding for this important work and hopes it will attract the interest of thoughtful Floridians and their elected officials throughout the state.

Sherry Magill
President
Jessie Ball duPont Fund
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Executive Summary

In 2005, the LeRoy Collins Institute published *Tough Choices: Shaping Florida’s Future*, a report that analyzed Florida’s revenue and spending trends and sounded a cautionary note. Florida is a state with boundless economic potential, we noted then, but tough choices remained as to whether the state would build on that potential. We cited concerns regarding the state’s overreliance on a booming housing market and tax receipts from rebuilding after hurricanes for revenue, and what appeared to be under-funding of K-12 education, dominance of Medicaid in the state’s budget, and a seeming lack of concern for aging infrastructure and overcrowded highways. This revisiting of *Tough Choices* finds that now, as then, the state’s future remains heavily tied to retirees, tourism and population growth. Though the role of population growth has diminished relative to the other two topics, Florida resides near or at the bottom of the 50-state rankings in important economic-development related issues including K-12 and higher education funding. Meanwhile, Medicaid’s share of state spending has continued to increase, even with one of the stingiest programs in the country.

This report, written by Drs. James Dewey, David Denslow and their colleagues at the University of Florida Bureau of Economic and Business Research (BEBR), examines the past and predicts a future in state revenues, demographics, the Florida Retirement System, K-12 education, higher education and infrastructure (particularly transportation).

Key findings include:

- Florida’s reliance on retirees and tourists comes at a price as the demands of older residents and tourists are disproportionately linked to lower-paid service jobs.

- Particularly troublesome is that the younger generation in Florida is less likely to have a college degree than older cohorts and is far below those of that age living in other states.

- Like the rest of the country, Florida has seen a “hollowing out” of its middle-wage jobs, but the decline has been stronger than in other states. Compared to the rest of the country, Florida has relatively fewer high-skill, high-wage jobs and relatively more low-skill, low-wage jobs. Florida’s average job-skill was three percent below the nation in 2008, down from two percent below in 2001.

- The trends of labor market polarization and baby boomer retirements suggest growing demands on Medicaid in the future, a program that is already the single largest expenditure in the state budget.
• The effective tax rate on property is much higher than the sales tax rate, and the gas tax has eroded significantly.

• In K-12 education, funding per-student and teacher salaries lag behind not only the nation, but the south as well.

• In higher education, the sum of state appropriations and net tuition ranked dead last in the U.S. in fiscal year 2012.

• Congestion in Florida’s urban areas is among the worst in the country. The state has less than its share of roads, a shortage particularly acute for major roads in urban areas.

The report is more sanguine on the status of the Florida Retirement System (although it suggests a possible improvement in the discount rate) and on the adequacy of the property tax and sales tax systems. While both taxes suffered greatly from the downward cyclical impact of the recession and recovery has been slow, they have the potential to be adequate to the state’s current revenue needs.

*Tough Choices* cited and built on a 1987 report entitled *Keys to Florida’s Future: Winning in a Competitive World*, developed by the State Comprehensive Plan Committee chaired by Miami businessman Charles Zwick. “The Zwick Report,” as it came to be known, concluded that relative to other states, Florida was not meeting its potential in terms of providing the best for its citizens. Similarly, *Tough Choices* found that this potential had not been met in the ensuing years. This report, *Tougher Choices*, is even more pessimistic, noting that the chances of Florida living up to its boundless potential are small indeed. It concludes that “Florida passed a tipping point in the 2000s – a point at which the gradual accumulation of many small changes became a large and (nearly) irreversible one.” Noting the lack of funding for education and infrastructure – both important in attracting high-skilled jobs – and complacent reliance on tourists and retirees – who encourage low-skilled jobs – the report concludes with a call for stronger leadership and an engaged citizenry to help turn around the ship of state. No longer can Florida be a state that is cheap and proud of it. That seems unfortunate, if not silly, in a competitive, global economy that feeds on high-skilled jobs. Tougher choices remain ahead.
1. Introduction

In 2005, supported by the Jessie Ball duPont Fund, the LeRoy Collins Institute presented *Tough Choices: Shaping Florida’s Future*, a study of public budget issues facing Florida. Widely reported in the press, *Tough Choices* benefited from preparation by a sizable team of scholars, critiques from distinguished public servants and promotion by people who were recognized for their dedication to the wellbeing of Floridians. The 15 chapters emphasized education (four chapters) and medical spending (three chapters), both of which continue to be the major contestants for limited state and local resources. There were also chapters on state and local revenue sources, expenditure projections (overview, roads and transportation, and public safety), and how particular characteristics of Florida’s economy were expected to impinge on budget issues: immigration, empty nesters and retirees, and the labor market.

After re-reading *Tough Choices*, surely with a bias toward forgiving its mistakes, we are struck by its realism. It was neither puffery about the state’s glowing future nor a jeremiad about approaching disaster. In the concluding chapter, Carol Weissert noted that many problems highlighted by the Zwick Report in 1987 – “low teachers’ salaries, poor roads, underfunded universities and too many children living in poverty – continue[d] to fester” in 2005, and that Medicaid had “become a much more dominant drain on the state’s budget.” She also wrote that “predictions of a train wreck ahead have to be viewed with some caution,” and praised the state’s “innovative approaches to public policy that other states and the national government have copied.” As an example of its realism, *Tough Choices* devoted no space to a state income tax, a non-starter in Florida.

Much has happened in the nine years since *Tough Choices* was published. Noting Florida’s then-booming housing market, the report said: “At some point the boom will end. No one knows when and how – abruptly or gently – but it will end. The challenge to Florida’s policy makers is to be ready for that time” (p. 13). What *Tough Choices* did not foresee was how severely the interaction between the collapse of the housing boom and the financial system would bring down the global economy in 2008 and 2009, nor how long the effects of that near-depression would linger. In retrospect, the report’s projections of state revenues were too rosy, not too bleak. To aid the understanding of the state’s choices, we would like to disentangle the structural components of the changes in revenues and expenditures.

This report, *Tougher Choices*, examines where matters stand with many of the issues raised in *Tough Choices* following the Great Recession. In addition to this brief introduction and a brief conclusion, it consists of six sections. Section Two considers major conditions and trends shaping Florida’s fiscal outlook. While population growth has resumed, albeit at a slower pace than in the 1990s, income per-capita and output per-worker appear to have exhibited a long-run downward trend relative to the U.S. since the early 1990s. This is due, in part, to the
automation of routine jobs that once made up the middle of the wage distribution, known as labor market polarization, coupled with the state’s reliance on tourism and retirees. Ongoing labor market polarization, the increased demand for relatively low-skill jobs created by Baby Boomer retirements, falling educational attainment among our young workers and lagging state investments in education and infrastructure mean this trend is likely to continue. To exacerbate matters, in-migrant Baby Boom retirees may be less supportive of paying higher taxes or fees to fund public services, and the usual generational gap, which makes reaching a common view of problems and priorities more difficult, is widened in Florida by an age-related divergence in the share minority.

Section Three documents how the Great Recession and structural factors have constrained Florida’s state and local revenue. Chastened by the over-optimism of our projections in 2005, we use what we learned not for new projections but rather to investigate trends impacting the sustainability of Florida’s current state and local revenues and expenditures, emphasizing risks and challenges, as well as opportunities for preparing for them. Though taxable sales and taxable property values, Florida’s most important tax bases, have not shown much erosion over time, they have suffered greatly from the downward cyclical impact of the recession. Recovery has been slow. In Fiscal Year (FY) 2013, state revenues administered by the Florida Department of Revenue were 26 percent below their FY 2006 level and taxable sales and taxable property value were still well below their pre-boom trends. The gas tax has eroded significantly, largely due to improved fleet fuel efficiency, and the effective property tax rate is several times higher than the sales tax rate, increasing the economic cost of raising revenue.

We briefly consider a number of proposals that would improve matters, reducing the economic cost of taxation and improving the capacity to raise revenue when needed. While such structural changes would improve matters, at the levels of public spending likely to be seen in the next decade the state’s tax base remains adequate in the sense that the sales tax rate could be raised to generate enough revenue to cover likely expenditures without creating an unreasonable excess burden of taxation. However, a more general broadening of the tax base would, of course, allow lower tax rates and thereby reduce the excess burden of taxation further and would become more important to maintaining adequacy of the revenue system if the state were to engage in significantly increased investment in education and infrastructure, for example.

Thick *Tough Choices* was evenhanded, it emphasized expenditure needs because of our belief that when structural imbalances bite and spending cuts become unavoidable the cuts are likely to shortchange the future: children, education and infrastructure, for example. Our desire to call attention to the risk of sudden constraints on spending comes, in large part, from our concern that spending in these areas will be forced to bear the brunt of the adjustments.
Sections Four through Seven consider the Florida Retirement System (FRS); the impact of Medicaid on the state budget; education; and transportation infrastructure, with particular attention to Florida’s urban road network.

Actuarially, the FRS is sound – a model for other states of how to responsibly run a pension system that offers a defined benefit option. While there have been proposals to shift to a defined contribution-only plan rather than continuing to allow workers to choose either type of plan, we argue that would only raise the costs borne by taxpayers in the long run since taxpayers as a group are much better positioned to bear risk than are individual workers. While the FRS is well-run, there is a tendency for defined benefit plans to become too generous, partly because pension funds do not discount their liabilities at an appropriate rate, making them appear well-funded when they are not. We argue that using a discount rate based on the expected return on assets, but adjusting it for risk, would give the right signal of the full compensation cost of hiring new employees and the right trade-off between current pay and future benefits for those employees.

Medicaid surpassed education as the largest expenditure in the state budget in fiscal year 2012. The burden of funding Medicaid will continue to grow, placing more pressure on other services. Florida already spends much less per-resident than the national average, only two-thirds as much after adjusting for age, mostly due to being less generous in access to care. This means Florida will not be able to (humanely) adjust to increased budget pressure by further cutting spending. How much the burden will increase is not clear. The trends of labor market polarization, Baby Boomer retirements, and declining relative income per-capita and output per-worker suggest growing demands on Medicaid in the future. So does the trend of rising healthcare costs. However, growth in healthcare spending has slowed, though expert opinions differ as to whether this is a temporary consequence of the recession or a structural change. This slowdown in cost growth means the longer-term outlook, though still challenging, may not be as grim as was expected only a few years ago.

In K-12 education, renewed enrollment growth coupled with the Class Size Reduction Amendment (CSRA) means that more classrooms and teachers must be added each year per additional student. Funding per-student and teacher salaries in Florida lag behind not only the U.S., but the south as well. Among the states, Florida’s teacher salaries declined at the fourth fastest rate from the 2000-2001 to 2011-2012 school years. Accountability requirements will continue to place stress on schools, and in particular on teachers. Given the slow recovery of revenue sources and increasing demands of funding Medicaid, it will be difficult to support and improve the quality of our teaching workforce and schools without increasing tax rates, however unlikely that may be. Allowing districts that so choose to charge additional (unequalized) discretionary millage sufficient to bring per-student spending in their districts up to the national average would help. This would allow districts that want to fund education to do
so without having to convince the rest of the state that the investment is worthwhile—taking advantage of the fact that the distribution of in-migrant retirees, less supportive of tax increases to support investment in the state’s youth, will not be uniform across the state, and the possibility that people, in-migrant retirees included, may be more willing to pay higher taxes to support young people in their own neighborhoods than in other districts.

The “Squeeze Facing Higher Education” identified in Tough Choices has turned out worse than expected. State funding for higher education fell even further until the state was last in the nation in the sum of state funding and net tuition per FTE for the 2011-2012 school year. While being at the bottom means we can only go up, the prospects for additional funding for higher education seem bleak. The demands placed on state funding by Medicaid and K-12 education will grow, leaving less for higher education. We present compelling evidence that allowing universities to charge tuition more comparable to the schools with which they compete would have substantial benefits, including improving rankings and graduation rates. Recent studies have documented a dramatic decrease in the time students devote to their studies, less than one in five students reports spending more than 20 hours per week on combined class attendance and studying outside of class. Leading candidates for the cause of this decline are large classes and grade inflation. Finding creative ways to take advantage of universities’ most important, but largely untapped, educational resource – student study time – would help to make the most of limited resources in higher education.

A number of recent studies have emphasized the importance of transportation infrastructure to economic performance. Florida continues to lag behind the nation in lane miles, even when adjusted for density and for the fact that the state is a peninsula, with no roads passing through on their way to somewhere else. The state is particularly short on major urban roads, or arterials. Florida has fewer non-local urban lane miles per local urban lane mile than any other state in the nation. Statistically, this is most strongly associated with the share of the state’s population aged 65 or over. Perhaps this is because retirees, a strong voting block, need local roads to open up access to land, keeping house prices low, and to link them to local retail outlets and restaurants, but don’t need major urban roads to ease commutes as workers do. Whatever the cause, congestion in Florida’s urban areas is among the worst in the nation and it is unlikely to be addressed by raising additional revenues to build more urban arterials. Rail can help at the margin by diverting people and freight from Florida’s roads, but the scope for such help is limited by the state’s intermediate population density – dense enough to create severe congestion, but likely not dense enough to support high levels of ridership for passenger rail at present. Measures such as public transit and intelligent traffic systems may help a little as well. We argue that the best hope is to promote efficient use of the state’s transportation infrastructure through the large scale use of tolls and congestion fees, and that the time is ripe for wide implementation.
Surely, these are not the only state and local expenditure programs that merit attention: parks and recreation, justice and corrections, and other forms of infrastructure are other examples. But, tough choices were called for in allocating the resources available for this report as well. We chose the topics largely based on the share of state and local resources devoted to the programs, the primacy of their claims on those resources and their impact on the state’s economy. Certainly, much could be gained from devoting additional resources to a more in depth study of many of the topics we do cover. Nonetheless, we hope this report provides a useful perspective on where Florida stands, and the tougher choices it now faces in the aftermath of the housing boom and bust and the Great Recession.
2. Conditions and Trends Shaping Florida’s Fiscal Outlook

2.1 A Century of Growth

Florida’s population grew significantly and consistently over the past century. Estimated annual population growth was over one percent each year except 1945 and 1946, when Florida’s population declined during the demobilization following WWII, and 2008-2010 when growth was a bit slower due to the housing collapse and Great Recession. In 1930, one in 84 Americans lived in Florida; in 2013 it was 1 in 16. In a few years Florida will pass New York and become the third most populous state, assuming annual population growth continues near recent levels. Figure 2.1 shows how Florida’s share of the total U.S. population has grown over time, reaching six percent in 2005 (right axis).

Florida went from a small, poor, rural state early in the 20th century to a large state with dense urban areas and average incomes late in the 20th century. This transition is nowhere better illustrated than in the state’s relative per capita income. In the early 1950s, income per capita in Florida was only about 85 percent of the U.S. average. From 1978 to 2011, income per capita in Florida varied between 95 and 102 percent of the U.S. average. As Figure 2.1 notes, relative income per capita declined in the 1990s, spiked with the housing boom in 2005, and fell again with the housing collapse so that in 2012 income per capita was just under 95 percent of the national average – where it was in 1978.

An important question is whether the experience of the 1990s and 2000s represents only volatility and trend relative income per capita in Florida has remained about the same as it was in the 1980s, or whether the long run trend is down and the housing boom represents a temporary break in that downward trend. Income per capita in Florida is affected by things other than value added per worker, in particular the level of income from outside the state and the employment to population ratio. Income per capita might be high in an economy in which productivity was low if many residents receive income from out-of-state sources. Similarly, income per capita might be low in an economy in which those who work are very productive if there are few workers per capita. Retirees are particularly important to Florida and are associated with high income shares from out-of-state sources and low labor force participation.
Figure 2.2 measures productivity by depicting the ratio of Florida’s gross state product (GSP) per worker to U.S. gross domestic product (GDP) per worker. It shows that output per worker in Florida has declined from 94.6 percent of the national level in 1993 to 87.7 percent in 2011, with the fall interrupted by the boom in construction and finance-related output during the housing boom. While the magnitude of the Great Recession and the slow speed of recovery mean it is too early to conclude with certainty that output per worker and income per capita in Florida will not bounce back relative to their national levels, four structural trends suggest that this is a real and continuing downward trend. The four structural factors are: shifts in Florida’s employment structure towards relatively more low-skill jobs over the 2000s, agglomeration economies where high-skill workers are more productive and earn higher pay if they locate where there are already concentrations of high-skill workers, continuing labor market polarization, and baby boomer retirements. We consider each of these factors as we analyze the impact of the Great Recession, demographic trends, baby boom retirees, and labor market structure on Florida’s economy.

2.2 The Great Recession in Florida

As shown in Figure 2.3 (right axis), real Florida GSP experienced steady growth between 1997 and 2007. However, the 2008 crisis slowed Florida's economy dramatically. Real GSP fell from a 2007 peak of $821 billion in 2012 dollars to a 2009 low of $745 billion. Real GSP per capita peaked in 2006 at $44,804 and reached its low in 2010 at $39,742 – an 11.3 percent decline. There has been some recovery in recent years, but at a rather slow pace.

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1 Employment data in this section are from the U.S. Bureau of Labor Statistics (bls.gov) while income and gross state and domestic product data are from the U.S. Bureau of Economic Analysis (bea.gov).
The Great Recession hit Florida particularly hard for the same reason that the previous recession had so little impact: the 2003 to 2007 housing boom and subsequent collapse were particularly intense in Florida. As shown in Figure 2.3 (left axis), nominal house prices peaked in 2006 at an astonishing 228 percent of their 2000 level and then fell to 132 percent of their 2000 level by 2012. The housing bubble drove substantial new construction, providing ample, but ultimately temporary employment to thousands of Floridians between 2003 and 2007.

Following the housing collapse, annual average unemployment rose to a high of 11.3 percent in 2010 (left axis Figure 2.4). Compared to the rest of the U.S., Florida experienced more volatility: the U.S. only reached a low of 4.4 percent in 2006, but never experienced official unemployment above the 10.0 percent reached in October 2009. The Florida employment to population ratio (ages 16 and over), a broader measure of employment that reflects both the rate of unemployment and the labor force participation rate, fell from 61.6 percent in 2007 to 54.5 percent in 2010 (Figure 2.4, right axis).

After slowing down during the recession, population growth in Florida has picked up as shown in Figure 2.5. The fact that Florida grows rapidly means a high share of the state’s economy is related to construction, which means the economy is very sensitive to declines in population growth. After adding a record 400,000 new residents between 2004 and 2005, population growth slowed to about 100,000 per year between 2008 and 2011, but exceeded 150,000 from 2011 to 2012. While this is not as rapid as past growth, Florida is still growing quickly: between 2010 and 2012 Florida grew 2.7 percent compared to a national average of 1.7 percent.

In sum, economic recovery in Florida is proceeding, albeit slowly. Nominal housing prices in Florida appear to have bottomed, showing quarterly increases since the third quarter of 2012. Unemployment, which averaged 11.3 percent in 2010 declined to 7.1 percent in July.
2013. But Florida’s labor force participation rate had not recovered at all by 2012, when it was 3.6 percentage points below its 2007 level of 64.2 percent. As a result, Florida’s employment to population ratio recovered much less in 2011 and 2012 than did the unemployment rate, and remained at only 55.7 percent in July 2013. This may, in small part, reflect demographic changes and a time series on the prime age employment to population ratio (ages 25 - 54) is not readily available for Florida. Nationally, the prime age employment to population ratio improved only about 0.8 percentage points from 2010 through the second quarter of 2013, so there is no reason to think older workers retiring would explain much of the change in Florida’s employment to population ratio. Rather, it appears many discouraged workers who left the labor force because they could not find employment have yet to return. Real GSP bottomed out in 2009 and recovered to $772 billion by 2012, but was still nearly $50 billion below the 2007 high. Real GSP per capita had recovered only to $40,498, just 2.6 percent higher than its level in 2000. Per employed person, real GSP in Florida fell from $77,839 in 2006 to $75,883 in 2011, a decline of 2.5 percent.

2.3 Demographics

Five broad aspects of Florida’s demographics play an important role in shaping the state’s future:

- **Florida is disproportionately elderly.** In 2012, 18.2 percent of Floridians were 65 years of age or older, compared to 13.7 percent in the U.S. The age gap is not just retirees: only 20.7 percent of Floridians are under 18 compared to 23.5 percent of Americans. This leaves 61.1 percent of Floridians and 62.8 percent of Americans aged 18 through 64.

- **Minorities represent a slightly larger share of the population** in Florida than in the nation. Though 78.3 percent of Floridians are "white," only 57 percent are non-Hispanic white, as compared to 63 percent nationally. Hispanics constitute 23 percent of Floridians, compared to 17 percent of the U.S., and 16.6 percent of Floridians are black, compared to 13 percent of the U.S.\(^2\)

- **The generational gap is widened by an age-related divergence in the share minority.** A majority (54 percent) of Florida’s children under 18 are black or Hispanic (or both); only 24 percent of its seniors 65 and older are black or Hispanic. Demographers at the Bureau of Economic and Business Research at the University of Florida project that divergence to continue into 2030, when they estimate 62 percent of Florida’s children will be black or Hispanic compared to only 29 percent of its seniors.

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\(^2\) Demographic data are from the Bureau of Economic and Business Research at the University of Florida and the US Census Bureau.
• **Florida is internationally diverse.** Nearly one in five Floridians (19 percent) were born outside the U.S., compared to 12.8 percent for the U.S. as a whole. Some 27 percent of Floridians older than five speak a language other than English at home, compared to 20 percent of Americans overall.

• **Florida has a significant education gap.** Although the percentage of citizens with a high school diploma is about the same for Florida and the U.S. as a whole, fewer Floridians hold bachelor's degrees: 26 percent of those older than 25, compared to 28.2 percent nationally. Troublingly, data indicate this gap is larger among younger age cohorts in the state. According to data from the 2010 American Community Survey, only 21.6 percent of Florida’s men age 25 to 34 have college degrees, compared to 27.1 percent of all men nationally. This figure compares to 25.3 percent of Florida’s men aged 35 to 44, and to 27.9 percent of Florida’s men aged 45 to 64. Florida’s young women lag the nation as well, and slightly lag those ages 35 to 44 in Florida. That the gap is more pronounced among younger men and women suggests it will grow in the future.

Florida’s diversity brings advantages. Both location and cultural affinities give Florida an international trade advantage, for example, particularly with South and Central America and the Caribbean. But diversity also brings challenges. The compounded difficulties of generational, racial or ethnic and cultural divides may make it even more difficult to build agreement on priorities of state and local government and to move forward in addressing the needs of all Floridians (Colburn and Leverty, 2008).

The state’s skewed age distribution influences the structure of employment and the demand for public services. The education and skill gap could have significant effects for the future of the state. Falling educational attainment among young workers coincides with the arrival of a knowledge economy in which ideas have increasingly become the source of wealth. Recent research shows the share of workers with talent and high educational attainment is the major source of variation in economic growth across cities. College-educated workers not only earn more, but also increase the earnings of other workers in the city as well in a type of feedback effect. College graduates attract more college graduates and as a result cities that are knowledge centers are moving farther ahead of those that are not. The following sub-sections detail more expected impacts of Baby Boom retirees and changes in the labor market structure.

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3 See, for example, Glaser, Ponzetto and Tobio, 2012; Glaser and Gottlieb, 2009; Carlino, Carr, Hunt, and Smith, 2011; Abel, Gabe, Ross, and Stolarick, 2010; Abel, Dey, and Gabe, 2011; Abel and Deitz, 2009, Abel and Gabe 2010a and 2010b.
2.4 Baby Boom Retirees

As Baby Boomers retire, some of them will retire to Florida; it is projected that by 2020 20.4 percent of Florida residents will be older than 65 and by 2030 that portion will rise to about 24 percent (Florida Demographic Estimating Conference, 2013). These changes will have significant implications for state and local budgets. Elderly retirees demand a different set of services than their younger counterparts. Compared to today, the Florida of 2020 may need more hospital rooms than school rooms. The impacts of retirees may be thought of in three broad categories: housing patterns and costs, the labor market, and politics.

Housing Patterns and Costs: Where these new residents settle will affect property tax revenues. In particular, Florida has a hefty homeowner’s exemption on property taxes enshrined in the state constitution: the taxable value of houses assessed at values greater than $100,000 is reduced by up to $50,000. How much this exemption will matter depends on how average house prices change, which in turn will depend largely on per capita income growth and the affluence of seniors retiring to Florida. However, millage rates assessed for ad valorem taxes, while capped by the constitution, are set by local governments. Nearly all local tax authorities in Florida that assess ad valorem taxes are significantly below the constitutional maximums, leaving the possibility of increased tax rates.

Labor Market: The impact of retirees on the labor market is also significant. Retirees demand relatively high amounts of food service, accommodations, entertainment services and health services. While the demand for skilled doctors and nurses will increase with the number of retirees moving to Florida, so will the demand for a host of low-skilled workers. Dewey and Denslow (2012a) find higher numbers of retirees are associated with a reduction in the average skill level of jobs in the metropolitan statistical areas in which they live. There are likely two reasons for this association. First, retirees directly create additional demand for more relatively low skill service jobs. Second, the role of retirees in a local economy is properly viewed in the same way as firms that produce goods and services for sale beyond the boundaries of their local area because the income they spend does not come from employment in the area. Thus, they crowd out other firms who might employ high-skill workers by driving up housing costs and potentially by changing the nature of education, infrastructure and other local characteristics.

Politics: Finally, retirees have a significant impact on Florida's political landscape. The projection that the percentage of Floridians over age 65 will increase from about 18 percent to about 24 percent by 2030 is especially meaningful since retirees are significantly more likely to vote than younger citizens. Thus the share of voters who are over 65 is projected to increase almost twice as much – from about 29 percent today to about 40 percent in 2030 (Dewey and Denslow, 2012a). Retirees have different electoral interests than younger voters. They are more likely to emphasize, for example, health care, quality of life and cost of living over education.
and investment in infrastructure. Though many retirees may have altruistic concerns, retiree immigrants are less likely to feel connected to their new communities, potentially making them less willing to support funding for education and infrastructure (Fletcher and Kenny, 2008).

The political effects will differ at the state and local levels since the distribution of retirees is far from uniform across the state. Leon County is the youngest county with 9.4 percent of residents 65 and older; Sumter County is the oldest with 43.3 percent. Table 2.1 shows the counties in which the Floridians at or outside the 25th and 75th percentiles live. Less than 25 percent of the state’s residents live in counties with a smaller share aged 65+ than Seminole and less than 75 percent live in counties with a larger share 65+ than Seminole, placing the 25th percentile in Seminole, where the 65+ population is 12 percent. By comparison, under 25 percent of Floridians live in counties with a higher share 65+ than Pinellas, at 21.2 percent, and under 75 percent live in counties with a smaller share. Locally, in counties with higher percentages of older residents, it may be significantly more difficult to muster electoral support for increasing taxes, which will reduce the ability of communities to make additional investments in education and infrastructure – particularly if retirees don’t feel attached to and invested in their new communities.

<table>
<thead>
<tr>
<th>County</th>
<th>% 65+</th>
<th>% FL Pop in Counties with % 65+ Smaller Larger</th>
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<td>9.4</td>
<td>0.0 98.5</td>
<td>Pinellas</td>
<td>21.2</td>
<td>70.4 24.7</td>
</tr>
<tr>
<td>Orange</td>
<td>9.7</td>
<td>1.5 92.4</td>
<td>Glades</td>
<td>21.5</td>
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<td>Martin</td>
<td>27.3</td>
<td>94.6 4.6</td>
</tr>
<tr>
<td>Seminole</td>
<td>12.0</td>
<td>23.1 74.7</td>
<td>Sarasota</td>
<td>31.2</td>
<td>95.4 2.6</td>
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<tr>
<td>Citrus</td>
<td>31.9</td>
<td>97.4 1.9</td>
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<tr>
<td>Highlands</td>
<td>32.2</td>
<td>98.1 1.3</td>
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Finally, the structure of employment is important. Recent studies have documented polarization of the national labor market: a relative decrease in the number of middle-wage jobs and an increase in high-wage jobs. This is due to the disappearance of jobs that involved mainly routine tasks and tended to be in the middle of the wage distribution. At first, this affected mostly jobs that involved mainly routine manual tasks, for example in manufacturing. More recently information technology has led to the automation of jobs that involve mainly routine cognitive tasks, for example bookkeeping. As a result, many serving tourists and remaining jobs are increasingly in either relatively low-skill manual non-routine occupations, such as waiters and security guards, or relatively high-skill non-routine cognitive jobs, such as managers, doctors and engineers. The same pattern is observed in Florida.

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2.5 Labor Market Structure

Finally, the structure of employment is important. Recent studies have documented polarization of the national labor market: a relative decrease in the number of middle-wage jobs and a relative increase in the number of high-wage and low-wage jobs, together with wage growth strongest at the high end of the skill distribution and weakest in the middle (Autor, Katz, and Kearny 2006, Autor 2010, and Acemoglu and Autor 2011). This is due to the disappearance of jobs that involved mainly routine tasks and tended to be in the middle of the wage distribution. At first, this affected mostly jobs that involved mainly routine manual tasks, for example in manufacturing. More recently information technology has led to the automation of jobs that involve mainly routine cognitive tasks, for example bookkeeping. As a result, remaining jobs are increasingly in either relatively low-skill manual non-routine occupations, such as waiters and security guards, or relatively high-skill non-routine cognitive jobs, such as managers, doctors and engineers. The same pattern is observed in Florida.

Compared to the rest of the nation, Florida has relatively fewer high-skill high-wage jobs and relatively more low-skill low-wage jobs, many serving tourists and retirees. Further, this disparity between Florida and the nation has been growing, as shown in Figure 2.6. Measuring the relative skill of approximately 800 occupations by the ratio of the national average wage for the specific occupation to the overall national average wage including all occupations, to remove differences due not to skill but to local amenities, housing prices, or random shocks, Figure 2.6 shows the state and national employment shares in each third of the distribution of occupational wages for both 2001 and 2008. In 2008, over 35% of Florida’s workers were in the bottom third of jobs and under 31% were in the top third. Combining the information across the entire distribution, Florida’s average job-skill was 3% below the national average in 2008, down from 2% below in 2001. That is, Florida’s workers, if paid the national average salary for their jobs, would have earned 3% less than the national average worker overall in 2008, down from 2% less in 2001.4

4 Details regarding methods and data for calculations and the construction of figures in this section may be found in Dewey and Denslow (2012b).
Figure 2.7 shows (midpoint) percentage changes for occupation categories in Florida over a 10-year period. Employment in manual mid-skill jobs (sales, office and administration, production, craft and repair and operation, fabrication and laborers) was nearly flat from 2000 to 2010. The growth categories were at the higher end – managers, professionals and technicians – and lower end – protective services, food preparation, cleaning and personal care and services.

From 1980 to 2010, labor force participation rates in Florida fell much faster for men with a high school diploma or less than for men with a college degree. Despite the overall increase in labor force participation among women over this time, it was down for women with a high school diploma or less education (Dewey and Denslow, 2012b). This may reflect that workers displaced from occupations such as sales or bookkeeping can move into occupations such as personal or protective services more easily than they can move into professional or technical occupations, crowding out those with the least skill. A similar pattern may be seen in data on real wages (hourly, 2010$), as shown in Figure 2.8. Real wages for male high school dropouts declined from 1980 to 2010 and were stagnant for women. For men and women, real wages for those with high school diplomas or only some college showed little change. The only large real wage gains were for men with advanced degrees and for women with either four-year or advanced degrees.

2.6 Conclusion

Florida’s economy is slowly recovering from the aftermath of the housing boom and bust and the ensuing Great Recession. After slowing from 2005 to 2009, population growth is accelerating. Unemployment is on its way down, but the employment to population ratio has
recovered only modestly – the result of declines in labor force participation. Similarly, while real output in Florida is growing again, it is still below its peak in both total and per capita terms.

After a long period of population and income growth, by the late 1980s Florida was the fourth largest state in the U.S. and, despite being in the south and specializing in serving retirees and tourists, had an economy in which per capita income was in rough parity with the nation. While population continued to grow through the 1990s and 2000s, income per capita fell, then rose with the housing boom, and then fell with the bust. Similarly, output per worker fell from about 94% of the U.S. average in the first half of the 1990s to 88% in 2011 – a decline that was temporarily interrupted by construction and finance activity during the housing boom but which accelerated with the bust. Together, the decline in output per worker relative to the U.S., lagging educational attainment among young workers, and relative declines in the skill level of the state’s job structure in the 2000s constitute strongly suggestive evidence of a long-term downward trend in Florida’s economic productivity relative to the national average.

If the trend is downward, it will likely be strengthened by two megatrends: Baby Boom retirements and labor market polarization. Baby boom retirees will increase demand for many relatively low-skilled and low-paying occupations that do not require much education – though they will increase the demand for doctors and other health professionals as well. Retirees also drive up housing prices and thus crowd out firms that might employ higher skilled workers. Polarization means the jobs that used to make up the middle of the income distribution will be replaced by either lower or higher-skilled jobs, and the Baby Boomer retirements mean that in Florida those new jobs will disproportionately be low-skilled. Moreover, high-skill jobs tend to exhibit agglomeration economies, meaning workers in such jobs are more productive and therefore earn higher pay in denser cities where there are many other high-skill workers doing similar things – though these productivity increases spill over to help all workers in such cities. For Florida, which has few concentrations of such high-skill jobs, this means the deck is stacked even more in favor of continuing declines in output per worker and per capita income relative to the U.S. Thus, the interaction of these two trends – continuing labor market polarization and Baby Boomer retirements – along with Florida’s initial low job-skill level and young worker education gap, do not bode well for growth of high skill jobs in Florida’s economic future.

References
3. Florida’s Tax Base

3.1 Introduction

Not surprisingly, the housing market collapse and ensuing economic downturn hit Florida’s state and local government budgets particularly hard. The decline in real revenues was deep in Florida, due to the importance of construction to state sales tax collections, the importance of the property tax in overall state and local finance, and the magnitude of the real estate boom and bust in Florida. Since the housing collapse in Florida began a year before the recession (see Figure 2.3), general revenues peaked in Florida in the 2005-2006 fiscal year, before the official beginning of the Great Recession nationally in December 2007.

Table 3.1 compares Florida state receipts for the 2005-2006 and 2012-2013 fiscal years. While collections began to improve slowly after the end of the recession, in real terms general revenues – tax dollars not earmarked to specific programs – were a dramatic 20% lower in 2012-2013 than in 2005-2006. Even with increases in trust fund revenues and federal assistance, total real receipts were down 6.2% in FY 2012-2013. Transfers to local government also took a big hit - falling 19% over the time period. Revenues are projected to improve in FY 2013-2014 (Florida Office of Economic and Demographic Research, 2013), but with the slow pace of economic recovery it promises to be years before revenues come close to catching up to pre-recession, or even pre-housing boom, trends.

<table>
<thead>
<tr>
<th>Classification</th>
<th>FY 2005-2006</th>
<th>FY 2012-2013</th>
<th>% Change</th>
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<td>30.99</td>
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<td>-20.4%</td>
</tr>
<tr>
<td>Trust Funds</td>
<td>16.63</td>
<td>18.19</td>
<td>9.4%</td>
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<tr>
<td>Transfers to Local Government</td>
<td>4.98</td>
<td>4.01</td>
<td>-19.3%</td>
</tr>
<tr>
<td>Federal Assistance</td>
<td>20.66</td>
<td>21.85</td>
<td>5.8%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>73.25</strong></td>
<td><strong>68.73</strong></td>
<td><strong>-6.2%</strong></td>
</tr>
</tbody>
</table>


Like all states, Florida faces long term fiscal challenges that are structural in nature. The impact of growing health care costs in Medicaid, declining real teacher salaries and renewed enrollment growth under the constraint of Florida’s class size amendment in education, and the need to address long standing infrastructure needs are all examples of fiscal challenges. The level and pattern of expenditure in the face of these challenges depend on state citizens’ preferences, goals, and priorities. Our task is to evaluate the adequacy of the tax base to support whatever level of revenue Florida’s citizens and their representatives deem appropriate.
To be adequate structurally, the tax base must allow revenue sufficient to fund desired spending to be raised without incurring unreasonably high levels of excess burden. The excess burden of taxation arises from two sources. The first is the direct costs of enforcing or collecting taxes. The second is the impact of taxes on individual decisions. If a Floridian chooses to forgo or alter purchases when taxes are levied compared to the purchases they would have made absent the taxes, the loss in economic value is an excess burden. Containing the excess burden means the tax base must be sufficiently broad that tax rates need not be too high – the excess burden rises at an increasing rate with the tax rate. Estimates vary, but many place the typical excess burden at 20 cents or more per dollar of tax revenue raised.\(^1\)

Tax base erosion occurs when a tax base falls over time as a share of income, due, for example, to inflation, changes in the composition of spending, or other structural demographic or economic changes. If the tax base grows at the same rate as nominal income, so that it remains the same as a share of income, spending can rise proportionally with inflation, population, and real income without changing the tax rate. This is because nominal income is simply the product of population, real income per capita, and the current price level. Whether spending should rise in proportion to nominal income depends on preferences and on the technology of supplying public goods. As people become richer, do they want more or fewer public services relative to private spending? Does greater population density result in economies or diseconomies of scale in providing public services? Further, structural changes such as governments taking on entirely new functions or the transfer of responsibilities from the federal to the state level may change the desired ratio of spending to nominal income and require a corresponding change in tax rates. However, we leave those issues to other forums and simply assume that an adequate tax base that shows little sign of erosion relative to nominal income will remain adequate.

Even if the base for a given revenue source increases as fast as desired spending on average, it will fluctuate with the business cycle and potentially with other idiosyncratic shocks particular to it. This is tax base volatility. While volatility is nearly synonymous with cyclical fluctuations, structural aspects of policy impact the degree of volatility. When the tax base falls during an economic downturn, spending must be cut or tax rates raised. Neither is a good option. Raising tax rates exacerbates the economic downturn and increases the excess burden of taxation when it is least affordable to do so. Cutting spending exacerbates the economic downturn, leads to service reductions just when they are most valuable, and makes planning difficult. Volatility can be problematic on the rising side of a cycle as well due to the likelihood

\(^1\) See, for example, Ballard (1988), Browning (1987), Feldstein (1999), Fullerton (1991), and Stuart (1984).
that, rather than cutting tax rates or saving extra revenue for a rainy day, spending will be expanded, making the fall in the tax base on the downside of a cycle that much more painful.²

Assuming a large amount of revenue is not set aside during good years, state and local governments have limited options for coping with very bad years when they balance the annual budget, since their ability to borrow is limited. The federal government could borrow enough in bad years to increase aid to state and local governments enough to soften the impact of volatility, and then either pay off the debt through slightly higher taxes when conditions improve or eventually monetize it. Recent experience has shown this will not likely occur to a sufficient extent to prevent significant state and local cuts.

Figure 3.1 shows own-source U.S. state and local receipts (excluding aid), federal grants in aid, total state and local receipts (including federal aid) and the trend of the total. The trend is estimated using data from 1985 through 2003 so as to not be influenced by the housing boom and bust or the ensuing recession. Own-source receipts increased until 2008. Federal grants in aid increased in 2009 and 2010 thanks to funds from the State Fiscal Stabilization Fund (part of the American Recovery and Reinvestment Act). However, the federal stimulus was neither large enough nor long-lived enough to sustain state and local spending near trend levels. By 2012, total state and local receipts including federal aid were $436 billion below their pre-housing boom trend. Florida’s share of that annual gap (based on population) is almost $27 billion.

Tax base volatility is a real problem for state and local governments during serious economic downturns. This is especially true given the evidence that the federal government will not exercise its ability to substantially make up the shortfall, only to temporarily soften it. Nonetheless, it is not a problem Florida can do much about. Therefore, our major concern with volatility is to make sure we separate issues caused by it from structural issues, over which state policy has great influence.

² See, for example, Alm, Buschman, and Sjoquist (2011), Dewey and Kenny (2013), Doerner and Ihlanfeldt (2011) Lutz (2008), and Lutz, Molloy, and Shan (2011) for analysis related to the recent cycle. Some revenue accumulates in Florida’s Budget Stabilization Fund. Florida did accumulate a substantial reserve, by normal standards, during the boom. (Florida House of Representatives Tax and Finance Committee, 2011). This relatively large reserve was not sufficient to sustain spending near trend through the downturn.
One of the strengths of state-local revenue systems is the diversity in revenue sources and Florida is no exception. Table 3.2 shows state taxes collected by the Florida Department of Revenue (DOR) for FY 2005-2006 and FY 2012-2013 for four major sources of revenue, which constituted over 85% of total collections: the sales and use tax, the motor fuel tax, the corporate income tax, and the documentary stamp tax. Sales taxes made up about two-thirds of collections in these years – eclipsing the other three taxes. FY 2012-2013 revenue from all four sources remained below the FY 2005-2006 level, but sales and use taxes and motor fuel taxes fared better than the other two. Given their dependence on mortgage filings, it should come as no surprise documentary stamp tax collections have fallen the most in percentage terms – though documentary stamps are required for other documents as well. What is surprising is that the fall in documentary stamp tax collections was 70% as large as the fall in sales and use tax collections in absolute terms, despite being only one fifth as large in total in FY 2005-2006.

Table 3.2: Major Taxes Administered by the Florida Department of Revenue
(Billions of 2012 Dollars, Share in Parentheses)

<table>
<thead>
<tr>
<th>Tax Source</th>
<th>FY 2005-2006</th>
<th>FY 2012-2013</th>
<th>% Change</th>
</tr>
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<tbody>
<tr>
<td>Sales &amp; Use</td>
<td>23.99 (61.1)</td>
<td>19.51 (67.3)</td>
<td>-18.7%</td>
</tr>
<tr>
<td>Fuel</td>
<td>2.61 (6.7)</td>
<td>2.31 (8.0)</td>
<td>-11.4%</td>
</tr>
<tr>
<td>Corporate</td>
<td>2.78 (7.1)</td>
<td>2.06 (7.1)</td>
<td>-25.8%</td>
</tr>
<tr>
<td>Documentary Stamp</td>
<td>4.74 (12.1)</td>
<td>1.60 (5.5)</td>
<td>-66.2%</td>
</tr>
<tr>
<td><strong>Sub Total</strong></td>
<td>34.12 (86.9)</td>
<td>25.48 (87.9)</td>
<td>-25.3%</td>
</tr>
<tr>
<td><strong>DOR State Total</strong></td>
<td>39.27</td>
<td>28.99</td>
<td>-26.2%</td>
</tr>
</tbody>
</table>

Data from the Florida Department of Revenue at http://dor.myflorida.com/dor. Sales and use tax excludes communications services tax. Fuel taxes include SCETS Tax.

Local government finances are also complex (Florida Office of Economic and Demographic Research, 2012). Property taxes are the largest single own source of local government revenue and likely the one over which discretion is most easily exercised. Moreover, the state budget is linked to the property tax in important ways through the education budget. In Florida’s state and local system, the property tax is the second most important revenue source behind the sales tax. Therefore, the remainder of this section considers these five major taxes in turn: sales and use, property, motor fuels, corporate income, and documentary stamp. In most states a sixth tax, the personal income tax, would be added to this quintet, but for Florida it suffices to note that the state and its local governments do not have one and will not have one in the foreseeable future.

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3 A given revenue source may accrue in part to general revenue, in part to a trust fund, and be in part transferred to local governments.
3.2 The Sales Tax

Sales and use taxes are the single largest component of Florida tax collections. The state imposes a 6% sales tax and determines the class of taxable goods; local governments are able to impose up to an additional 1.5% sales tax. Often, local governments impose this surtax to finance specific projects or programs. Sales taxes are assessed on the retail sale of goods, repairs of property, rentals, leases, charges of admission, goods manufacturing, operating vending machines, and a very small set of services. Sales taxes are not charged on groceries, prescription medicine, most services, intangible property, or on many purchases made by an array of nonprofit organizations. In total, sales taxes are assessed on somewhat less than half of retail sales in the state. From the viewpoint of optimizing the efficiency of the sales tax, it would make sense to tax these exempt goods and services (Mankiw, Weinzierl, and Yagan, 2009). However, as the sales tax is seen as regressive, making it appear even more so by eliminating exemptions for perceived necessities is unlikely. Other items and services are not considered necessities but have proven politically untouchable. The Florida legislature did enact a sales and use tax on a broad range of services in 1987, only to feel the force of a fierce negative advertising campaign and repeal it in a special session a few months later.

Potential revenues are also lost in the form of uncollected taxes on online sales (and other similar purchases from out-of-state sellers). In 2008, collecting these taxes would have likely increased revenues by around $1.5 billion to $2.5 billion (Holt and Lotfinia, 2009). Another reason for taxing online sales is that not doing so distorts choices between purchases from brick-and-mortar establishments in the state and online (or catalogue) sales. For any given level of total tax revenue, the excess burden would be lower if taxes on these sales were collected. Therefore, passage of the federal “Marketplace Fairness Act,” which would make it much easier for states to collect sales taxes on these sales, would likely help improve efficiency. In *Tough Choices*, the LeRoy Collins Institute supported extension of the sales tax to Internet sales.

Figure 3.2 shows the relation of real taxable sales in Florida, the base for the sales tax, to both trend income and to variation in income around its trend. (The figure also shows real taxable property value, which will be discussed in the next subsection.) Annual values are divided by the (geometric) mean from 1985 through 2003 and multiplied by 100 so the series are expressed as indices with (geometric) means equal to 100 for the years 1985 through 2003. More than one year is used for the base comparison so the figure is not unduly influenced by the choice of the base year. Real income and its trend are shown for comparison. The income trend is estimated based on 1985 through 2003 only so it is not inflated by the most rapid part of the boom or impacted by the downturn.

Taxable sales tracked trend income closely until the Great Recession – though the bump as the boom inflated was significant as well. Taxable sales did fluctuate slightly more around trend income than did actual income. That is in large part because taxable sales get two bumps
from population growth aside from the impact of higher population in the long run – one occurs when materials are purchased to build a residence and the other when purchases are made in setting up housekeeping. Prior to 2008, had Florida had a personal income tax, revenues from it would have been only modestly less volatile than revenues from the sales tax.

Taxable sales volatility over the most recent business cycle, however, was much larger than income volatility due to the importance of construction in both Florida’s economy and in the magnitude of the boom and bust. It is worth noting that had all above-trend revenues in the early 2000s been set aside for a rainy day, they would not have come near covering the gap between actual and trend revenues after the bust. This may be seen from Figure 3.2 by comparing the cumulative negative gap from 2007 on. At least over this last cycle, sales tax volatility was a crushing problem in Florida.

There is no evidence of tax base erosion. But before we can draw a conclusion regarding the structural adequacy of the tax base, we must consider whether the excess burden arising from the tax is too large at the current tax rate, and whether the tax base could support higher spending if desired. Table 3.3 provides the results of a simple simulation of the impact of increasing the state sales tax rate from six percent. This is not intended to suggest that such an increase is desirable or recommended, but only to show that the tax base is adequate to raise considerably more revenue if desired. The results assume the local option sales tax rate is one percent and that taxable sales are $300 billion with a combined seven percent tax rate. These parameters are representative of the Florida economy from 2010 through 2012, rounded for simplicity and to avoid an undue appearance of precision.

These calculations also require allowing for the response of sales to increases in the tax rate. The price elasticity of demand is simply the ratio of the percentage change in the quantity

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**Figure 3.2: Indices of Real Income, Taxable Sales, and Taxable Property Value**

(Geometric Mean 1985 to 2003 = 100)

Income from the US Bureau of Economic Analysis. Taxable sales and taxable property value from the Florida Department of Revenue. Values deflated by the Consumer Price Index from the US Department of Labor at bls.gov. Exponential income trend fit from 1985 to 2003.
purchased by consumers to the percentage change in price that led to the change in purchases. The higher the average elasticity of demand for the goods that constitute taxable sales, the more purchases would fall if the tax rate were increased, and the higher therefore would be the excess burden of taxation. We present estimates assuming the price elasticity of demand is -1 and also assuming it is -2. We suspect the price elasticity of demand for the items constituting taxable sales is unlikely to be much smaller than 1 or much larger than 2 in absolute value, which is verified at least roughly by the experiences of states with lower and higher rates. The table also assumes perfectly elastic supply, which means the burden of the tax is passed on entirely to consumers and constitutes the worst case scenario for the excess burden of raising tax revenue.

Table 3.3: Simple Simulations of Raising the Sales Tax Rate

<table>
<thead>
<tr>
<th>Elasticity = -1</th>
<th>Elasticity = -2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tax Rate (%)</td>
<td>Taxable Sales ($B)</td>
</tr>
<tr>
<td>6</td>
<td>300.0</td>
</tr>
<tr>
<td>7</td>
<td>297.2</td>
</tr>
<tr>
<td>8</td>
<td>294.5</td>
</tr>
<tr>
<td>9</td>
<td>291.8</td>
</tr>
<tr>
<td>10</td>
<td>289.2</td>
</tr>
</tbody>
</table>

Raising the state sales tax to seven percent would reduce taxable sales by about $2.8 billion (300-297.2) and increase sales tax revenues by about $2.8 billion (20.8-18.0) if elasticity is assumed to equal -1. If elasticity is assumed to equal -2, the same change would lower taxable sales by about $5.5 billion and boost tax revenue by about $2.6 billion. If elasticity is -1, increasing the sales tax rate to 10% would increase revenue by $10.9 billion. Even if elasticity is -2, increasing the sales tax rate to 10% would increase revenue by $9.9 billion. Thus, the state can readily raise additional revenue from the sales tax base, should it want to.

Reaching a conclusion about the adequacy of the sales tax base, at least in the context of the rest of the tax system, requires more than showing that additional revenue could be raised. It also requires showing the excess burden associated with doing so would not be unreasonably high. The columns labeled IEB present the incremental excess burden as a percentage of the additional revenue raised. The interpretation of these numbers is subtle, but understanding them is important to our conclusion. Raising the tax rate causes consumers to forgo purchases (a distortionary effect). To the extent the value of those purchases to consumers exceeds the cost to suppliers to make those goods available, gains to trade to consumers, or what economists call consumer surplus, is reduced. Some of the reduction in consumer surplus simply represents a transfer from the consumer to whoever receives what is
purchased by the tax revenue raised. This is just a transfer, not a net loss. But, to the extent the loss of consumer surplus is greater than the tax revenue raised, a net loss occurs. The column labeled IEB is an estimate of this additional loss from each incremental percentage point increase in the tax rate as a percentage of additional revenue.

If elasticity is -1, for every additional dollar of revenue raised if the tax rate were increased from 6% to 7%, consumer surplus would fall by $1.077 – meaning the incremental excess burden is 7.7%. If elasticity is assumed to be -2, the incremental excess burden of raising the sales tax rate one percentage point from its current level is 16.8%. These are both below common estimates of the average excess burden of taxation. Even the 24.5% IEB that would result from increasing the sales tax rate from 9% to 10% if the elasticity is -2 is not unreasonably high relative to typical estimates of excess burden.

Even though our model is simple – in that allowing for other existing distortions might increase or decrease our estimates of the IEB and allowing for supply to be less than perfectly elastic would decrease them – we are confident that the potential of the sales tax base to raise desired revenue is adequate to Florida’s needs, assuming the state does not decide to pursue a large expansion of spending per capita. Further, the sales tax base has exhibited no sign of significant erosion, so we suspect the sales tax base will remain adequate to the state’s needs for the foreseeable future. Of course, increasing collections from online and catalogue sales would improve efficiency, as would extending the tax base to cover services, perhaps by a large amount, whether or not accompanied by a tax rate reduction to maintain revenue neutrality. At the current level of revenue up to about $5 billion higher at a tax rate of 8%, the only obvious problem with the sales tax base is its high degree of sensitivity to the business cycle, and in particular its sensitivity to shocks to the construction sector. Were Florida to decide to substantially increase its investments in public services, such as education, infrastructure, and parks and recreational opportunities, while reducing its reliance on the property tax for education and on corporate income taxes, all of which might be important components of a strategy to attract and retain more highly skilled jobs, a broadening of the tax base would become more important to contain the excess burden of the sales tax.

3.3 The Property Tax

Much of Florida’s combined state and local tax revenue comes from ad valorem property taxes. Although property taxes are imposed by municipal and county governments and school districts, local budgets are significantly entwined with the state’s budget. This is especially true for public schools. The required local effort operating millage for each district, the largest single school millage rate, is set by the legislature in the annual Florida Education Finance Program calculation (discussed in more detail in Section 6). At the margin, funding raised from required local effort offsets sales tax revenue devoted to education on a one-to-
one basis. Further, the state sets a cap on district discretionary operating millage low enough that it is typically reached by all districts. Thus, local school taxes for operating purposes are part of a state funding system that is not influenced by any local decision. Moreover, as shown in Figure 3.3, taxes levied by school districts typically constitute 40% to 50% of total property taxes. Thus, while a full treatment of the local revenue system is well beyond our purposes, consideration of the condition of the property tax base is a crucial component of any report that addresses Florida’s fiscal condition.

State constitutional amendments regarding the property tax have significantly reduced the tax base. The Save Our Homes (SOH) amendment, approved by voters in 1994, distorts the tax base in several ways. It limits the rate at which a property’s taxable value may increase from year to year to the consumer price index, or 3%, whichever is lower. As such, a property that followed the St. Louis Fed’s price index and was worth $100,000 in 1995, would have been worth $258,000 in 2008, but assessed at a value of $137,000, and taxed on a value of $87,000. Once a house is sold, however, the value limit no longer applies. SOH, including the portability component, reduced the tax base by about $74 billion in 2013 (Florida Department of Revenue, 2013), though its impact was higher before the fall in property values. SOH creates substantial inequities between otherwise similar homeowners (Dewey, Holt, and Lotfinia, 2008). In addition, it likely makes longtime homeowners more amenable to increases in total property tax revenues than they otherwise would have since it shifts the burden onto renters, business owners and new residents. Dewey and Kenny (2013) present suggestive, but not conclusive evidence that on balance SOH contributed to the rapid rise in property tax revenues during the housing boom, rather than restraining them.

In part due to the surge in property values accompanying the housing boom, in 2008 Florida voters passed a constitutional amendment increasing the homestead exemption to ad valorem property taxes for non-school taxes. Homeowners are exempt from non-school taxes on their home’s 50,000th through 75,000th dollar of value. While this constrains the tax base, high property values in Florida and the fact that it applies only to homestead properties mitigate the effect of this exemption. The homestead exemptions reduced the tax base by nearly $186 billion in 2013 (Florida Department of Revenue, 2013).
There are other exemptions as well, such as government property, property owned by not-for-profits, and widowers. All together SOH and exemptions reduced the tax base in Florida from a total just property value of $1.89 trillion to about $1.31 trillion in 2013, a reduction of about 30%. However, even though Save Our Homes and the second Homeowner’s Exemption are recent developments, taxing 70% of just property value is in line with historical norms. During booms in the 1980s and mid-2000s, taxable value as a percent of just values – the appraiser’s assessment of market value less an adjustment for transactions cost – reached levels as low as 63%, while in the 1990s the ratio was rarely more than 72%.

Returning to Figure 3.2, we see that there has been no evidence of erosion of taxable value – the property tax base – relative to trend income. From 1985 through the early 2000s, its volatility was not much greater than that of the sales tax base. However, during both the boom and bust phases of the recent cycle, it was more volatile than the sales tax base. In relative terms, it inflated faster during the boom, but took longer to fall below trend relative to income, and as of 2012 was not as far below the trend in income as were taxable sales. Since property tax rates tend not to fall enough to compensate for increases in taxable value (Lutz 2008, Dewey and Kenny 2013), the increase in the tax base during the boom contributed to higher spending over the boom, making the impact of the bust harder to deal with.

SOH reduced this tax base volatility – a clear example of interaction between structural and cyclical tax base effects. SOH constrained the rate of appreciation of taxable value as market values increased through 2006. As a result, by the peak of the boom, the taxable value of many owner-occupied homes was substantially below just value. As long as these homes continued to be occupied by the same owner, their assessed value continued to rise by the minimum of the change in the CPI or 3% as long as assessed value remained below just value, partially offsetting declines in the value of other properties. Thus, SOH has somewhat cushioned the volatility of the tax base, whatever its contribution to inequities or to incentives to increase spending during the boom.

While there are no apparent problems with the long run adequacy of the property tax base, the property tax rate may be too high relative to the sales tax rate for efficiency. Calculating the average ratio of ad valorem property taxes to total (county) taxable value from 1985 through 2012 gives an average annual effective rate of 22.4 mills (combining municipal, county, and school property taxes). While that is only 2.24% of taxable value, to compare it to the sales tax rate we have to convert it to the tax rate on the annual flow of services from property. From 1960 through 1999, the average gross annual rent to price ratio for housing was 5.2% (Davis, Lehnert, and Martin, 2008). Property taxes are deductible, so for purposes of illustration assume a marginal income tax rate of 25%, so the after (federal personal) income tax property tax rate is only 75% of what the rate would be if property taxes were not deductible. To allow for transactions costs associated with selling, just value is typically around
85% of actual market value. Putting this together implies the effective rate of tax on the flow of property services in Florida is approximately 27.5% (0.85 \times 0.75 \times 0.0224 / 0.052 = 0.275), four times the effective sales tax rate.

There are potential reasons why it may make sense to set the effective tax rate on property higher than the sales tax rate. One is to offset inefficiencies arising from the mortgage interest deduction, which might encourage over-investment in housing structures. Another is that both the supply of and demand for housing may be less elastic than the supply of and demand for goods and services. As noted earlier, when supply and demand are less sensitive to prices, taxes distort decisions less. However, it seems unlikely an effective property tax rate four times above the effective sales tax rate makes sense, suggesting a revenue neutral increase in sales taxes and decrease in the required local effort millage rate might be good policy. A more detailed study devoted to just this topic would be needed to say anything definitive, however.

3.4 The Gas Tax

Technically, Florida’s tax on motor fuels applies to more than just gasoline sales, but it is commonly called the “gas tax.” This tax generates state revenue, some of which is shared with local governments, and is available as a levy for local governments as well. Gas tax revenues support transportation, infrastructure, construction and maintenance. In that sense, they are simply a cost of driving, just like the cost of purchasing fuel or a car. In well-functioning markets, resources are allocated efficiently because prices reflect the costs of production, so consumers make purchases only when what they are buying is worth more than it costs to produce. Driving decisions will only be made wisely when drivers pay the full cost of their travel – including the cost of the roads on which they travel.

Suppose the average infrastructure cost, across all levels of government and including the cost of maintenance and also the potentially high cost of adding lanes, intersections, overpasses, and complex interchanges in dense urban areas, is 2.5¢ per mile driven. To make the travel market work efficiently, drivers must be charged 2.5¢ per mile driven (for simplicity, we assume average and marginal costs are equal in this illustrative example). If cars get 20 miles per gallon, an easy way to implement this is to charge drivers 50¢ per gallon of gas purchased. It could, of course, be implemented in other ways—for example setting up toll booths every few miles on all roads. Oregon is testing a plan to actually levy a mileage fee instead, which requires monitoring miles driven by each driver. But, it is hard to imagine a way to collect the mileage charge that would be as low cost and unobtrusive as the gas tax – albeit the gas tax must be set based on average, not individual, miles per gallon.

As typically implemented, the gas tax is subject to two sources of systematic erosion. First, gas taxes are typically implemented as excise taxes, rather than ad valorem taxes. Real gas
tax revenue falls over time if implemented via an excise tax that is not indexed for inflation. Florida’s gas tax is only partially indexed for inflation, and so is subject to erosion, but not as strongly as in many states in which the gas tax is not indexed to inflation at all. Second, as vehicle gas mileage improves, the infrastructure charge per gallon of gas required to fund infrastructure costs increases. To illustrate, suppose gas mileage improves from 20 to 24 miles per gallon. Now the gas tax must increase from 50¢ to 60¢ per gallon. If the gas tax does not increase but infrastructure is efficiently maintained, taxpayers are subsidizing drivers by approximately $42 for every 10,000 miles driven. It is important to note that, unlike other taxes, properly implemented the gas tax is not distortionary. Actually, it is just as distortionary to set the gas tax too low as it is to set it too high. Raising the gas tax when fuel efficiency improves reduces the excess burden of taxation.

Figure 3.4 shows an index of gallons sold in Florida – the gas tax base – from 1985 through 2012. For comparison, the figure also shows indices of real income and its trend, fit from 1985 through 2003 for the same reasons as in Figure 3.2. Florida’s state gas tax is largely indexed for inflation. But, improvements in fuel efficiency contributed to slower growth in gallons sold than in real income (which reflects population growth and growth in real income per capita) in recent decades. Thus, the gas tax base has eroded over time. The impact of the economic downturn is also apparent.

Across the nation, the erosion of the gas tax base is even more pronounced since many states and the federal government do not index the tax to inflation. This has led to various proposals for gas tax reform. Recently, former Virginia Governor Bob McDonnell proposed eliminating the gas tax and raising the sales tax to fund transportation needs (Bacon, 2013). The law actually enacted was somewhat less extreme, reducing the gas tax and increasing the sales tax and instituting other taxes or fees to fund transportation needs – including a $64 surcharge on hybrid vehicles (USA Today Editorial Board, 2013). As the discussion above shows, from the viewpoint of basic principles of economics and public finance, this is terrible policy.  

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4 The surcharge on hybrid cars has been criticized as punishing those who are trying to help the environment, but cars that don’t use gas should still be charged for road use—that is not the troubling aspect of the change.
would be simply indexing the gas tax to both annual inflation and annual changes in fuel efficiency.

It is worth noting that the 6% state sales tax on goods and services is not imposed on top of the gas tax, which is included in the price of gasoline posted at the pump. Presumably this is to avoid the appearance of double taxation. No one would argue sales tax should not be charged on television sets sold at Walmart because the price of those television sets already reflects the costs of the parking lot, building, and shelving needed to sell them, but this is exactly the same as not charging the sales tax on gasoline because the price already reflects the cost of providing the infrastructure needed to use that gasoline. Sales taxes are imposed on top of payments to cover production costs, and providing and maintaining roads is part of the cost of producing ground transportation. Efficient tax policy would impose the same sales tax on retail sales of gasoline as it does on television sets or furniture—to avoid altering choices between driving or refurnishing a living room and thus to raise a given level of revenue with minimum excess burden. This would also yield a significant amount of revenue—about $1.65 billion before subtracting sales to non-profits and other entities who do not pay sales taxes.  

3.5 The Corporate Income Tax

A corporate income tax rate of 5.5% is applied to net income earned in Florida by certain corporations. It is important to understand the narrow definition of which businesses are subject to the tax. Only “C corporations with a ‘nexus’ in Florida” are taxed. Of more than 1 million businesses in Florida, only 192,843 filed taxes in 2008, and of those only 30,880, or 16%, paid corporate income tax (Florida House of Representatives Finance and Tax Committee, 2011). Additionally, there are several programs that reduce corporate income tax rates for Florida businesses. Entertainment industry tax credits, enterprise zone tax credits, and other credits allow many businesses to reduce taxes paid.

Florida Governor Rick Scott during his campaign proposed eliminating the corporate income tax. Instead, the state increased the basic deduction from $5,000 to $25,000 in 2011 and then to $50,000 in 2012 (effective for filing years beginning January 1, 2013), which resulted in exempting about 12,000 additional businesses from the tax (Sanders, 2013). The impact of this erosion of the tax base on its own, however, is relatively modest because the vast majority of corporate income taxes are paid by a small number of corporations with very large net incomes.

Figure 3.5 shows indices of corporate taxes, (personal) income, and trend (personal) income (and documentary stamp taxes) from 1997 through 2012, expressed as an index with an

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5 Calculated using an average 2012 price of retail gasoline of $3.629/gallon in Florida (US Energy Information Administration, eia.doe.gov), 8.1 billion retail gallons sold in 2012 (Florida Department of Revenue, dor.myflorida.com), and a long run demand elasticity of -0.5.
(geometric) average of 100 from 1997 through 2003. Given the short time span and the fact that the figure presents tax revenues and not the tax base, we are unable to make strong statements about the degree of erosion of the corporate tax base. Over the time span depicted, however, there does appear to have been a modest decline relative to trend income. What is clearly apparent in the figure is considerable volatility. Revenues fluctuate more than personal income with business cycles, and also fluctuate when personal income itself is relatively stable.

Stepping back from the data and the details of recent changes, the corporate income tax is among the most contentious of taxes for a number of reasons. To the extent corporate income taxes apply to the accumulation and use of productive capital, they seem to go against the principle of taxing consumption, not production. While levied on corporations, the ultimate burden of the tax falls in part on stockholders, in part on workers, and in part on consumers. Studies agree a large share of the burden of the national corporate income tax falls on domestic labor when capital is mobile and that the excess burden of corporate taxes is high relative to the revenue raised, though the degree of pessimism about distributional and efficiency effects varies from modest (Gordon, 2003) to high (Mankiw, 2008). The current state of literature on optimum taxation indicates it may be optimal not to raise any revenue from this source, though that is not definitive (Mankiw, Weinzierl, and Yagan, 2009).

From that national point of view, it is not clear that corporate income should be taxed in addition to taxes on personal income, which corporate shareholders pay. The issue is even more complex from the point of view of a state, which competes with other states for firms in the industries to which it is best suited. Eliminating the corporate income tax would make Florida somewhat more competitive in this regard (Denslow and Dewey, 2011). Given the volatility of the corporate income tax, and the relatively low sales tax rate, eliminating the corporate income tax in Florida and replacing it with an increase in the sales tax rate, to keep the change revenue neutral, could be sound policy, at least in Florida – though a detailed study would be needed before drawing strong conclusions.
3.6 The Documentary Stamp Tax

Florida’s documentary stamp tax, as the name suggests, is a tax levied on documents such as deeds, bonds, notes, and mortgages. The tax rate is $0.35 per $100, or 0.35%, of the value outlined in the document for bonds issued in Florida, mortgages and liens originated in Florida, and notes and other obligations to pay money executed in Florida. For example, if a business chooses to issue bonds with a face value of $100,000, then a documentary stamp tax of $350 is due upon the original issuance. In the case of deeds that transfer an interest of real property, $0.70 per $100 of the total consideration paid, or 0.70%, is due in taxes.

Figure 3.5 shows documentary stamp tax collections from 1997 through 2012, expressed as an index with an (geometric) average of 100 from 1997 through 2003. While the time span of available consistent data is too short to say anything conclusive, the tax base does not appear to have suffered from erosion. Its volatility over the recent cycle, however, was extreme. This was because real estate related transactions constitute the major part of the base for this tax and were at the center of the boom and bust. At only 5.5% of DOR collections in FY 2012-2013, it is tempting to wonder whether the benefits of such a volatile revenue source outweigh its costs relative to replacing it with a revenue neutral increase in other tax rates. However, given the unique and extreme nature of this particular property boom and bust, it seems doubtful that volatility of this magnitude will be a regular occurrence. Even so, taking steps to protect against this potential for volatility would seem to make sense – for example transferring a higher share of documentary stamp revenues to trust funds intended to manage the flow of funds over time and reducing their allocation to general revenue.

3.7 Conclusion

No significant erosion is apparent in Florida’s two most important tax bases – taxable sales and property. These tax bases appear adequate to the state’s revenue needs, though it appears likely a revenue neutral increase in the sales tax rate and decrease in property tax rates would reduce the excess burden of taxation. In contrast, these two taxes were extraordinarily volatile during the housing boom and the tough economic times since its collapse.

Gas tax revenues, likely the next most important in Florida, have eroded because the tax is not fully indexed for inflation and because it is not indexed at all for changes in vehicle fuel efficiency. Since the gas tax is a very low cost and unobtrusive way to charge drivers for the infrastructure costs they create, and since they create higher costs per gallon of gas purchased the more miles they drive per gallon, economic principles support indexing the gas tax rate for fuel efficiency as good policy. Moreover, since the gas tax should be viewed as a charge for covering the cost of producing transportation service, not as a distortionary tax, economic principles also support minimizing the excess burden of taxation by collecting the sales tax on retail fuel sales on top of the gas tax.
The corporate income tax in Florida is a significant source of revenue, but not nearly as large a source as the sales tax or the property tax. Nor are corporate income tax collections as large as gas tax collections would be if the gas tax had been indexed for inflation and vehicle average fuel efficiency. Corporate tax revenues do appear to have suffered some erosion, and also are quite volatile. Moreover, reasonable arguments can be made that Florida would be better served by eliminating the corporate income tax and replacing the lost revenue with a one percentage point increase in the sales tax rate. Documentary stamp tax collections, while showing no evidence of erosion, are extremely volatile when the real estate market experiences large fluctuations as seen in the 2000s.

Taken all together, Florida’s tax bases are adequate to support whatever level of spending Floridians are likely to desire for the foreseeable future – assuming the state does not decide to undertake a substantial increase in investment in things like education and infrastructure. The possible changes mentioned above would likely reduce the excess burden of taxation, as well as modestly increase the capacity to raise revenue. Further study would be needed to quantify these claims more precisely. A broadening of the tax base, such as finding a way to efficiently tax most services and internet sales, would result in a lower excess burden of taxation, making Floridians better off and holding the level of revenue to be raised constant. If the state were to decide to significantly improve the level and quality of its investment in education, infrastructure, or other public services valued by the public or important for economic development, the conclusion that the tax base is adequate would need to be revisited. To efficiently sustain such a program of public investment at a reasonable level of excess burden, a broadening of the tax base would become much more important.

Obviously, problems can arise due to the volatility of the tax base – particularly volatility related to construction and property values. Unfortunately, federal efforts to reduce the impact of volatility during the downturn were sufficient only to soften its negative effects for a few years, and state and local policy options to deal with volatility are very limited. Real general revenue was still 20% below its FY 2005-2006 level in FY 2012-2013. Revenues are recovering, but slowly. Though the state’s tax base is adequate structurally for its current spending trajectory, and for moderately higher trajectories, this slow recovery means the fiscal environment will likely remain tight relative to service demands for several more years, even assuming there is no significant increase in demand for large investments to raise quality of education, infrastructure, or other public services.

References


4. The Florida Retirement System

4.1 Introduction

While the pension funds of states such as Illinois and New Jersey are garnering national attention for what appear to be crises of underfunding, the Florida Retirement System (FRS) is quietly getting praise for its soundness. A report by the Pew Center on the States (2010) cites Florida as one of four “Models for Success” among state pension funds.

State and local finance expert Alicia Munnell, in her 2012 Brookings book on public pensions, lauds Florida as the “poster child for a well-run pension system.”

From 2005 to 2010, Florida paid 106% of its Annual Required Contribution (ARC) compared to a national average of 85%. Even after the market crash of 2008 and in spite of the severity of the collapse of the housing boom in Florida, in 2010 the FRS pension system was 87% funded, compared to the 76% national average.

In spite of the praise for the FRS, Defined Benefit (DB) plans for public employees are under attack in Florida as elsewhere. A major reason is a sense that public retirees have an unfair advantage. Nationally only 24% of those private workers who have pension plans are in DB plans, compared to 97% of public employees (Munnell, 2012). Private sector employees whose pensions may have suffered during the stock market crash may resent either paying higher taxes or seeing public services cut back to maintain public retirees' pensions (Whitney, 2013). In response, some Florida legislators propose shifting FRS employees to a defined contribution program. Currently, the FRS offers both DC and DB programs but allows employees to choose between the plans.

Economists argue that many pension plans have become too generous, partly because pension funds do not discount their liabilities at an appropriate rate, making them appear well funded when they are not (Brown, Clark, and Rauh, 2011 and Gokhale, 2012). They would say that the FRS, which uses 7.75%, should discount liabilities at 5% instead. Taxpayers sometimes complain that pension assets have been invested too aggressively in risky assets and that the FRS should have far less than two-thirds of its portfolio in risky assets. Finally, why should Florida's public employees enjoy DB plans when workers in the private sector do not? We discuss each of these issues below, but first we place them in context by describing the Florida Retirement System and its funding status.

4.2 An Overview of the Florida Retirement System

The Florida Retirement System was created in 1970 to consolidate the management of assets for retirement, disability and survivor benefits for most public employees. Although the FRS accounts for only a small proportion of the state budget, in FY 2012 it had total assets 1

The other three states were Nebraska, Iowa and Georgia.


4. The Florida Retirement System

4.1 Introduction

While the pension funds of states such as Illinois and New Jersey are garnering national attention for what appear to be crises of underfunding, the Florida Retirement System (FRS) is quietly getting praise for its soundness. A report by the Pew Center on the States (2010) cites Florida as one of four “Models for Success” among state pension funds.1 State and local finance expert Alicia Munnell, in her 2012 Brookings book on public pensions, lauds Florida as the “poster child for a well-run pension system.” From 2005 to 2010, Florida paid 106% of its Annual Required Contribution (ARC) compared to a national average of 85%. Even after the market crash of 2008 and in spite of the severity of the collapse of the housing boom in Florida, in 2010 the FRS pension system was 87% funded, compared to the 76% national average.

In spite of the praise for the FRS, Defined Benefit (DB) plans for public employees are under attack in Florida as elsewhere. A major reason is a sense that public retirees have an unfair advantage. Nationally only 24% of those private workers who have pension plans are in DB plans, compared to 97% of public employees (Munnell, 2012). Private sector employees whose pensions may have suffered during the stock market crash may resent either paying higher taxes or seeing public services cut back to maintain public retirees’ pensions (Whitney, 2013). In response, some Florida legislators propose shifting FRS employees to a defined contribution program. Currently, the FRS offers both DC and DB programs but allows employees to choose between the plans.

Economists argue that many pension plans have become too generous, partly because pension funds do not discount their liabilities at an appropriate rate, making them appear well funded when they are not (Brown, Clark, and Rauh, 2011 and Gokhale, 2012). They would say that the FRS, which uses 7.75%, should discount liabilities at 5% instead. Taxpayers sometimes complain that pension assets have been invested too aggressively in risky assets and that the FRS should have far less than two-thirds of its portfolio in risky assets. Finally, why should Florida’s public employees enjoy DB plans when workers in the private sector do not? We discuss each of these issues below, but first we place them in context by describing the Florida Retirement System and its funding status.

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1 The other three states were Nebraska, Iowa and Georgia.
amounting to $143 billion. The assets are managed by the State Board of Administration (SBA), the trustees of which are the sitting governor, chief financial officer and attorney general.

The FRS is a cost sharing, multiple-employer, public-employee retirement system with two primary plans: the Pension Plan (a DB plan) and the Investment Plan (a Direct Contribution or DC plan). The DB plan, in which a retiree gets guaranteed monthly payments for life, has been offered for over 40 years. The amount of future benefits is determined by the retiree’s earnings, length of service and membership class (for example, Regular Class receives 1.6% and Special Risk receives 3% of average late-career salaries times years of service), and is raised by a 3% cost of living adjustment each year. Employees become eligible for a DB plan when they complete six years of service (if enrolled in the FRS prior to July 1, 2011) or eight years of service (if enrolled in the FRS after July 1, 2011). In the DC plan the ultimate benefit depends on the performance of the employee’s investment. The benefit is not based on a fixed formula but on the ending account balance, which consists of: the initial account balance, plus employer and employee contributions, plus investment earnings, minus any account expenses. Unlike the DB plan, the DC or investment plan has no fixed benefit level at retirement. Both plans are funded by employer and employee contributions that depend on employee salary and membership class. Employees are offered an opportunity to choose a retirement plan that is compatible with their interests and preferences. It is also important to note that most FRS benefits are relatively modest. The average annual benefit for a regular FRS pensioner is $18,066. About 220,000 retirees receive less than $2,000 per month (Florida Department of Management Services, 2011).

There are two main funding sources for the FRS: the FRS Trust Fund from employer and employee contributions and the General Revenue Fund from state tax revenue. The SBA invests these funds in a range of assets, accepting what it thinks is manageable risk in exchange for a higher expected rate of return. Costs of managing the system are funded by profits on investments.

Only 17% of FRS active members are from state government; nearly half (49%) are from school districts; some 23% are from counties; 4% are from the state university system; and 3% are from state colleges. Most municipalities have their own retirement funds but some are part of FRS (around 5% of the total comes from cities and special districts). All told, there are over 1.2 million current or former public employees in FRS. Among the total membership, 83% are members of the Defined Benefit Plan while 17% are in the Defined Contribution Plan (State Board of Administration of Florida, 2012).

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2 Plan details are from the MyFRS website, www.myfrs.com as of September 16, 2013.
Figure 4.1 shows trends in membership in the overall FRS, the DB plan and the DC plans since 2002. As we can see from this graph, although there are more active members in the DB plan than in the DC plan, the number of DB members decreased while the number of DC members increased over this period. Although members enrolled in DC and DB have similar average annual salaries, Figure 4.2 shows that the DC plan members represent a much smaller portion of the annual payroll than the DB plan members. This is because most newly hired employees must participate in the DC plan during their first eight years of service. In their eighth year they have one chance to switch over from DC to DB, and many of them do so. Thus, there are more enrollees and higher payrolls in the DB plan than in the DC plan. From Figure 4.3 we can see that the average salary of enrollees in the DC Plan is only slightly lower than the average for the DB Plan. Over time, since the introduction of the DC option, its payroll share has been rising gradually as more and more members choose DC. As Figure 4.4 shows, the ratio of annuitants to active members for both plans has increased steadily since 1996.
In 2011, Florida joined most other state pension systems by requiring employees to contribute to the pension trust fund – a controversial change. After July 1, 2011, all employees are required to contribute 3% of payroll into the FRS to get service credit for work performance in a regularly established position. Challenged legally, the change was upheld by the Florida Supreme Court. Table 4.1 presents the 2012 employee and employer contributions rates, which were set by the state legislature. Employer contribution rates (measured as percentage of salaries) may vary each year because of changes of the Health Insurance Subsidy (HIS) and the level of unfunded actuarial liability. During FY 2011-2012, the employee contribution rates remained the same while employer contribution rates increased 2% to 3% because of the HIS increase.

Retirement benefits are more generous for fire-fighters, police and state troopers who are members of the special risk class, than for teachers and most other employees who are members of the regular class. Members of the special risk class retire younger, with fewer years of service and often with higher ratios of pensions to final salaries. Table 4.1 shows that, on average, employers in 2012 paid 14.90% of payroll for the special risk class, versus only 5.18% for the regular class.

Table 4.1: Contribution Rate of Employee and Employer 2012

<table>
<thead>
<tr>
<th>Class</th>
<th>Regular</th>
<th>Special Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paid by Employee</td>
<td>3%</td>
<td>3%</td>
</tr>
<tr>
<td>Total Paid by Employer</td>
<td>5.18%</td>
<td>14.90%</td>
</tr>
<tr>
<td>Total Paid by Employer and Employee</td>
<td>8.18%</td>
<td>17.90%</td>
</tr>
</tbody>
</table>


4.3 Funded Status

As of June 30, 2013, the assets under the State Board of Administration (SBA) were $162 billion; the FRS Pension Plan had 81.8% of the total assets and the FRS Investment Plan had 4.9%. The fourth largest public retirement system in the nation, the FRS is better-funded than those of most other states. Table 4.2 compares the FY 2012 funded status of Florida, New York, Illinois, California, New Jersey, Texas and Virginia. The funded ratio – assets/liabilities – is a common way of comparing pensions. Many experts consider a funded ratio of about 80% or better to be sound for government pensions (GAO 2008). The retirement systems in the large states in Table 4.2 had ratios less than 100%, in part because of the 2008 recession. Compared with the other large states, Florida was the second best-funded with an 86% funded ratio in FY 2012, following New York’s 87%. Among these states, Florida has the lowest unfunded liability and the lowest unfunded liability per capita, $20 billion and $1,050.
Table 4.2: Major Retirement Systems Funded Status

<table>
<thead>
<tr>
<th>State and local government retirement system funded status ($billions)</th>
<th>Actuarial Liabilities</th>
<th>Market Value of Assets</th>
<th>Unfunded liability</th>
<th>Funded ratio (%)</th>
<th>Unfunded liability per capita</th>
</tr>
</thead>
<tbody>
<tr>
<td>US total (126 plans)</td>
<td>$3,443</td>
<td>$2,551</td>
<td>$892</td>
<td>74%</td>
<td>$2,882</td>
</tr>
<tr>
<td>Florida</td>
<td>$148</td>
<td>$128</td>
<td>$20</td>
<td>86%</td>
<td>$1,050</td>
</tr>
<tr>
<td>New York</td>
<td>$348</td>
<td>$301</td>
<td>$47</td>
<td>87%</td>
<td>$2,412</td>
</tr>
<tr>
<td>Illinois</td>
<td>$188</td>
<td>$95</td>
<td>$93</td>
<td>51%</td>
<td>$7,206</td>
</tr>
<tr>
<td>California</td>
<td>$597</td>
<td>$462</td>
<td>$136</td>
<td>77%</td>
<td>$3,636</td>
</tr>
<tr>
<td>New Jersey</td>
<td>$120</td>
<td>$78</td>
<td>$43</td>
<td>65%</td>
<td>$4,839</td>
</tr>
<tr>
<td>Texas</td>
<td>$214</td>
<td>$168</td>
<td>$46</td>
<td>78%</td>
<td>$1,835</td>
</tr>
<tr>
<td>Virginia</td>
<td>$75</td>
<td>$53</td>
<td>$22</td>
<td>70%</td>
<td>$2,770</td>
</tr>
</tbody>
</table>

Source: State Budget Crisis Task Force, 2012. Public Fund Survey (www.publicfundsurvey.org) for actuarial liabilities; market value of assets from the FRS Annual Reports.

Figure 4.5: The FRS Pension Plan Funded Ratios, 1985-2012

The FRS funded ratios over time are shown in Figure 4.5. In contrast to its 2009-2012 underfunded pension status, in 1998-2008 the FRS enjoyed an actuarial surplus with overfunded ratios from 106% (1998) to 118% (2000), ending at 107% in 2008. The FRS maintained a surplus prior to the financial crisis of 2008 thanks to the high investment income on risky assets such as domestic and foreign equities. For example, in FY 2007, the Pension Plan funded ratio was 107%, which resulted from an 18% 12-month net investment income including...
almost 20% returns on domestic equities and nearly 30% on foreign equities. However, after the 2008 financial crisis, the funded ratio dropped to 89% in FY 2009 and has continued to decrease, in part because of actuarial smoothing, even as investment returns recovered. Even at the 7.75% actuarial discount rate, the present value of the plan’s promised benefits exceeds its assets. The investment gains are important to the success of the FRS. During its history, approximately $2 of every $3 paid to a retiree has come from investment gains, not from taxpayers or participants (Florida Department of Management Services, 2012).

4.4 The Good and the Bad of Risky Assets

Figure 4.6 illustrates how the FRS assets were allocated in FY 2009. The largest category was domestic equities (35%). As Figure 4.7 illustrates, domestic equities took a big hit in 2008 and have only partially recovered. During FY 2009, equities plunged 51% but went up later by 20%, which still resulted in a $24 billion investment loss. Based on FRS Pension Plan asset returns, Figure 4.7 shows that $100 the FRS invested in domestic equities in June 2008 was worth only $73.66 a year later, including dividends. Meanwhile, international equities and real estate, which shared 35.2% and 7.8% of total assets, dropped to $70.51 and $74.59. The return on strategic investments was the worst with only $65.42 from a $100 initial investment. Among broad asset classes, only fixed income (20.5% of total assets) and inflation-protected securities experienced gains, but those were quite modest with only 2% and 0.2% rates of return.

Although the FRS suffered significantly from the domestic and international stock market, it still survived better than pension funds in most other states because of its initial overfunding which resulted from the gain on risky investment before 2008. This gain supports the argument that the FRS should continue to invest substantially in risky assets since they
allow the fund a chance to cover its unfunded obligation with less burden on future taxpayers, though not without risk.

Table 4.3 presents the actual and projected rates of return on investment predicted by the State Board of Administration (SBA). In contrast to the negative investment income (-19.7%) in 2008, the SBA generated 22.8% investment income during FY 2011 but gained only 0.2% in FY 2012. The main reason for the low return was a loss in global equities. Although the actual rate of return was only 0.2% in FY2012, the SBA still predicts the rate of return in FY2013 to be 7.75%, as it did for FY 2005-2011. It is important to recognize that investment assumptions reflect average returns over a 20 to 30 year period and that it is no wiser to lower assumptions based on a few down years than it is to increase assumptions after a few years of particularly high returns (LeRoy Collins Institute, 2013). Meanwhile, the projected rate of salary increases for regular classes rises to 5.85%, compared to the actual rates of 1.6% in FY 2012 and 0.7% in FY 2009. The high projected rate of salary increases leads to predictions of higher liabilities and larger contributions in coming years. In contrast to the FY 2013 prediction of a high rate of salary increase, in FY 2010 plan managers tended to underestimate long-run salary growth of covered employees and overestimate the long-run rate of return on their pension investments — actions that contribute to optimistic pension liabilities and can result in failing to contribute sufficient funds into retirement plans (LeRoy Collins Institute, 2012).

Table 4.3: Trust Fund Performance

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2013 Assumption</td>
<td>18.4%</td>
<td>(4.7%)</td>
<td>(19.7%)</td>
<td>15.0%</td>
<td>22.8%</td>
<td>0.2%</td>
</tr>
<tr>
<td>7.75%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Salary Increases for Regular Class Active Members (Actual)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>5.85%</td>
<td>7.6%</td>
<td>6.0%</td>
<td>2.3%</td>
<td>0.7%</td>
<td>3.7%</td>
<td>1.6%</td>
</tr>
</tbody>
</table>

State Board of Administration of Florida, Investment Reports.

Table 4.4: Employer Percentage Contributions

<table>
<thead>
<tr>
<th>Year</th>
<th>%</th>
<th>Year</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>111%</td>
<td>2007</td>
<td>111%</td>
</tr>
<tr>
<td>2001</td>
<td>110%</td>
<td>2008</td>
<td>107%</td>
</tr>
<tr>
<td>2002</td>
<td>97%</td>
<td>2009</td>
<td>111%</td>
</tr>
<tr>
<td>2003</td>
<td>98%</td>
<td>2010</td>
<td>111%</td>
</tr>
<tr>
<td>2004</td>
<td>92%</td>
<td>2011</td>
<td>83%</td>
</tr>
<tr>
<td>2005</td>
<td>102%</td>
<td>2012</td>
<td>60%</td>
</tr>
<tr>
<td>2006</td>
<td>96%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: 2012 FRS Annual Report

The second cause of underfunding is the underpayment of annual required contributions (ARCs). In Florida, contribution requirements for the main retirement systems are set by legislation. As Table 4.4 demonstrates, the contributions made by employers have dropped significantly since 2010. In addition, as shown in Table 4.5, FY 2012 total contributions ($2.3 billion) are $1.2 billion less than FY 2011 total contributions ($3.5 billion). Even though state employees started to share proportional pension contributions with employers after July 2011, the total contribution rates remain the same.
Thus, technically speaking, the total contribution should not differ from the previous year’s contribution. But, because of the recession and related collapse of revenue, employer contributions fell sharply, reducing total contributions. Unless investment returns are strong, employer contributions need to rise. Recognizing this, the legislature raised the rates employers must pay into Florida’s $135 billion pension fund, starting in July 2013, so that the state could more aggressively fund its retirement system. The new rates will force state, county and local employers to pay more. Miami-Dade County, for example, is required to contribute an additional $21 million toward the FRS.

### Table 4.5: Employers and Employees Pension Contribution ($billions)

<table>
<thead>
<tr>
<th></th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pension Contribution-State</td>
<td>$0.77</td>
<td>$0.32</td>
</tr>
<tr>
<td>Pension Contribution-Non-state</td>
<td>$2.70</td>
<td>$1.20</td>
</tr>
<tr>
<td>Pension Contribution-Employee</td>
<td>$0.03</td>
<td>$0.81</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$3.50</strong></td>
<td><strong>$2.33</strong></td>
</tr>
</tbody>
</table>

Source: 2011-2012 FRS Annual Report

#### 4.5 Pension Discount Rate

Considerable attention has been focused on the choice of discount rate used for determining the present value of future liabilities. For example, at a discount rate of 5%, the present value of $50,000 that will be owed a retiree in 20 years is $18,845. If you were to invest $18,845 at a rate of return of 5% you would have $50,000 after 20 years. At a discount rate of 7.75%, the present value would be only $11,236. The higher the discount rate a pension fund uses, the less it must have on hand today to be actuarially fully-funded. What that discount rate should be is a matter of contention depending on whether you ask an economist or an accountant.

Although the FRS is touted as one of the best-funded pension systems, a majority of pension economists would say that the 7.75% rate the trustees use to estimate the FRS plan’s present value of liabilities is too high. Most pension economists argue that the appropriate rate at which to discount liabilities depends on the risk and liquidity characteristics of the liabilities, not on the characteristics of the assets set aside to pay them. The FRS plan liabilities are neither at risk nor liquid. Pension liabilities are usually protected by contract law and thus almost certain to be paid, at least those already accumulated. Therefore, the argument goes, they should be discounted at the rate of nearly perfectly safe liabilities, such as AAA corporate bonds of similar duration. As an approximation, these economists currently use a discount rate of 5%.

If the FRS were to follow the advice of these economists using a 5% discount rate, its funding ratio would plunge from 87% to perhaps 60%. To illustrate, here is an example that is

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3 See, for example, Brown and Wilcox (2009), who write “Finance theory is unambiguous that the discount rate used to value future pension obligations should reflect the riskiness of the liabilities.”
close, though not correct in detail as we use the market value of assets, not the appropriate actuarial value. In June 2013, the FRS pension plan had assets with a market value of $132 billion. If it was 87% funded, that means that 100% funded would require assets of $152 billion ($132 billion / 0.87). The average duration of pension liabilities nationally is 15 years. Let’s suppose it’s the same for the FRS. Collapsing the entire range of liabilities into June 2028, we obtain a liability of $464 billion ($152 billion x 1.0775^{15}$) that $152 billion in assets in 2013 would cover in 2028 (State Board of Administration of Florida, 2013). If you discount that $464 billion at 5% instead of 7.75%, it would require assets in June 2013 of $224 billion, or 47% more. The funding ratio would be only 59% (= $132 billion/$224 billion). This example of the power of compounding, which we emphasize is only a rough-and-ready approximation, illustrates why discount rates can powerfully influence funding ratios.

Accountants and actuaries typically use a second standard for the discount rate. The FRS, along with all other state pension plans, has conformed to Statement No. 25 of the Government Accounting Standards Board (GASB), which says the discount rate applied to liabilities should equal the expected rate of return on the plan’s assets. For years, the FRS assumed a return of 8%, the most common value for state retirement systems which was recently lowered to 7.75%. The problem with the GASB standard is that by focusing on the expected return it takes no account of risk. In theory, a pension fund could reduce the GASB standard to absurdity by pretending to be an investment bank, leveraging into an extremely risky expected return of, say, 40%. In that case, $464 billion of liabilities due in 15 years could be covered by only $3 billion today (abstracting from the fact that at 40% the duration of the liability stream would be much shorter). Obviously, the GASB discount rate is to be applied only to a prudent portfolio.

Budget expert Alicia Munnell, who calls the FRS a poster child, proposes a compromise between pension economists and the GASB: the risk-free rate should be used for reporting the plan’s funded ratio and the expected market return for calculating the annual required contribution (Munnell, 2012). This, she says, would result in low funding ratios that would quash the temptation to boost benefits or skip the actuarially required contribution during good years. At the same time, it would result in a reasonable long-run funding schedule.

There is an argument that all three—economists, the GASB, and Munnell—are wrong. The economists are wrong because they assume that the liabilities of pension plans are owed directly to future beneficiaries, when in fact they are owed directly to future taxpayers, the people who will have to make good on the promises. Future taxpayers are in effect intermediaries between current taxpayers and future retirees. Future taxpayers should be willing to bear some risk. If a group of 2028 taxpayers could come back to 2013 and give

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4 In 2012 the GASB modified its discounting rules, making them more complex than we wish to detail here. The changes will affect most other states more than Florida.
$1 billion to the FRS to invest for them, they wouldn’t want all of it placed in AAA corporate bonds. They’d be willing to bear the risk of higher taxes in exchange for the higher expected return on stocks. The median return on state pension funds over the past twenty years has been 8%. At 8%, in 15 years, $1 billion becomes $3.17 billion compared to only $2.08 billion at 5%. The economists are too conservative. The GASB standard, on the other hand, does not adequately consider risk. Future taxpayers having to meet a $3.17 billion obligation on behalf of current taxpayers might not be satisfied if the plan managers set aside only a billion dollars to cover it. But they might be happy with plan managers setting aside $1.15 billion. That would give them $3.65 billion if the return, in fact, averages 8% which compensates them with an extra half billion of expected value for assuming the risk. That trade-off implies that the risk-adjusted projected rate of return should be about 7% ($1.15 billion \times 1.07^{15} = $3.17 billion).

A different compromise than Munnell’s might help: using a discount rate based on the expected return on assets, in accordance with the GASB statement, adjusting it for risk. The riskier the portfolio, the larger the adjustment. The result will lie between the economists’ safe rate and the simple GASB expected return. Just what it would be requires a complicated calculation, though a good guess is that 7% would be about right for the FRS. Why not use the safe rate for reporting and the expected return for calculating the ARC? If the reported funding ratio has no implication for policy, who will pay attention to it? It would become just an ignored number in actuarial reports. A risk-adjusted expected return should be used both for reporting and for calculating the ARC, phased in during several years of transition. The advantages of doing this could be substantial. Using the risk-adjusted rate to calculate the normal cost would give the right signal of the full compensation cost of hiring new employees and also the right trade-off between current pay and future benefits for those employees. As noted earlier, the present value of a $50,000 annual retirement deposit to be paid in twenty years is $18,845 at 5%, $12,921 at 7%, and only $11,236 at 7.75%. If the appropriate risk-adjusted interest rate is in fact 5%, or even 7%, then the 7.75% used by the FRS causes the state and local governments to employ a full cost of compensation that is too low and gives them an incentive to add more to retirement benefits relative to current pay. If the correct discount rate is the 5% advocated by economists, the pain of switching to the correct rate could be a reason for side-stepping the issue in the (distant) future by moving to a completely Defined Contribution (DC) system. If the correct rate is the risk-adjusted expected return rate of perhaps 7%, then the FRS is not that far off and the difference is too small to matter practically. In that case, the argument over whether Florida should close its defined benefit (DB) plan, as is under consideration in the legislature, should be resolved on other grounds.

4.6 Hybrid Pension Plan

There are good reasons both for retaining DB and for switching to DC. If the FRS retains DB, it can share investment risk across generations and stay continuously invested in riskier but
higher-return assets than would most individuals over a life cycle. Individuals have an incentive to switch to safety as they age. In addition, the FRS can insure against the risk of longevity, at a cost perhaps 18% lower than the cost of annuities for individuals. Further, the FRS invests better and at lower cost than would the majority of individuals. Finally, some argue that defined benefit pensions help the public sector hire and retain the most skilled workers. Generally speaking, highly skilled professionals and technical workers are paid much more by private firms than by state and local governments and providing defined benefits pensions helps overcome the pay disparity and makes government sector employment more appealing.

Arguments for switching to DC include the bias against younger workers under DB, especially against those who leave before they vest. Even if workers leave after they vest, their years of service are applied to what is probably a lower salary than they would have averaged in their last five years had they stayed on. This encourages employment stability, but the flip side of the coin is that it discourages mobility, which often improves labor market matches. Another argument for DC is that it avoids the temptation to underfund DB plans, a problem with some local retirement plans in Florida but not with the FRS. Another temptation is to ratchet up promised pension benefits after a year or two of good investment returns. DC plans not only allow for more stable employer budgeting, but for governments that lack fiscal discipline they lower costs. Local governments which lack the fiscal discipline to fund their plans adequately would be well advised to switch to DC.

The State of Florida, however, with its record of responsible funding and legislation backing fiscal discipline, would likely be able to attract talented workers at the lowest cost with a hybrid plan, mixing DC and DB, as a number of states are now doing. The hybrid plan could be parallel or stacked. In a parallel plan, 50% goes into DC and 50% into DB – or the split could be any other partition. In a stacked plan, the first $40,000 of salary is covered by DB and amounts above that (or any other dividing line) are placed into DC.

In 2012, the Florida Retirement System paid out about $6.7 billion in retirement payments (Department of Retirement Services, 2012). Municipal government retirement systems paid out almost $2 billion more (Florida Department of Management Services, 2012). To take care of themselves, Florida public retirees rely on pension payments to enjoy a relatively steady income. During recessions, public retirees provide important support to the state and local economy by spending money on food, clothing, housing and other necessities. By one estimate, every dollar paid into the retirement plan creates $1.64 in total economic activity in Florida and every tax dollar invested in these plans supports $4.47 in total economic output (National Institute on Retirement Security, 2012). Whatever the true number, the assured payments received by the state’s recipients of safe defined benefits are a source of economic stability when times are rough.
The Florida Retirement System is indeed a poster child, a lesson in the advantages of public policy that balances the claims of present and future. It is an example not just for public pensions but also for other areas that require looking ahead such as child care, education, infrastructure and conservation.

References
5. Medicaid and Florida’s Budget

5.1 Overview

Generally, Medicaid spending is a large component of state budgets, and Florida is no exception. In addition to the importance of Medicaid to Florida’s budget, Medicaid is a particularly important topic because of the ramifications of the Patient Protection and Affordable Care Act (PPACA). Nevertheless, this section considers Medicaid in the context of the state budget, with only brief consideration of the potential bottom line impact on Florida’s budget if the state were to reverse its current position and elect to participate in the expansion provision of the PPACA. The LeRoy Collins Institute plans to further analyze Medicaid in a future report.

In FY 2012, Medicaid surpassed education as the largest expenditure in Florida’s state budget, as shown in Figure 5.1. Although part of this phenomenon can be explained by recent cuts in education, growth in the Medicaid program was also important. As shown in Figure 5.2, since 1990 the state has experienced faster growth in spending than the nation as a whole, except during Federal Fiscal Years (FFY) 2004-2007, when construction and real estate boomed in Florida.

According to a study conducted by researchers at Georgetown University, while per-person spending on healthcare between 2006 and 2011 grew by more than 20% nationally, per-person Medicaid spending in Florida fell nearly 5%. Per-person spending fell in Florida primarily due to low provider rates (Alker, Summer, & Hoadley, 2011). Thus, Florida’s relative spending growth was due to an increasing number of beneficiaries. From June 2004 to June 2013, monthly enrollment in Florida’s Medicaid program grew from
2.09 million individuals to 3.14 million—a roughly 50% increase. To put this in perspective, during this same timeframe Florida’s population grew by less than 10%. As seen in Table 5.1, this increase is mostly due to a more rapid rise in the number of residents eligible for Medicaid after 2007, which marked the start of the Great Recession.

Although Florida faces many of the same challenges as all states, the Florida Medicaid program does spend less than most. In FFY 2010, Florida ranked fifth lowest in the nation in terms of Medicaid spending per enrollee including state and federal spending. At $4,436 per enrollee, the sunshine state is $1,156—or nearly 21%—below the national average. Breaking these numbers down further shows that Florida’s spending per enrollee is also lower than the national average in each major eligibility group: aged, disabled, adults and children (see Table 5.2). Moreover, although Florida is the fifth largest state by total Medicaid spending, its spending per resident is the tenth lowest in the nation. In the next sub-section, we consider Florida’s low spending in more detail.

### Table 5.1: Annual Changes in Medicaid in Florida

<table>
<thead>
<tr>
<th>Year</th>
<th>ELIGIBLES</th>
<th>Change</th>
<th>BENEFICIARIES¹</th>
<th>PAYMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>9.31%</td>
<td>8.27%</td>
<td>14.43%</td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td>5.57%</td>
<td>2.51%</td>
<td>13.00%</td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td>0.92%</td>
<td>7.62%</td>
<td>15.58%</td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td>4.52%</td>
<td>7.24%</td>
<td>2.49%</td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>1.16%</td>
<td>-1.35%</td>
<td>-4.45%</td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td>-6.19%</td>
<td>-6.98%</td>
<td>4.69%</td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>6.29%</td>
<td>-1.18%</td>
<td>0.50%</td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td>13.20%</td>
<td>13.59%</td>
<td>6.28%</td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>8.26%</td>
<td>12.12%</td>
<td>14.78%</td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>7.58%</td>
<td>4.73%</td>
<td>6.99%</td>
<td></td>
</tr>
</tbody>
</table>

Source: Medicaid Statistical Information System (MSIS), provided by Centers for Medicare and Medicaid Service (CMS)

### Table 5.2: Spending per Enrollee and Resident, Including Federal Support, FFY 2010

<table>
<thead>
<tr>
<th>Location</th>
<th>Aged</th>
<th>Disabled</th>
<th>Adult</th>
<th>Children</th>
<th>All</th>
<th>Resident</th>
</tr>
</thead>
<tbody>
<tr>
<td>Florida</td>
<td>$8,532</td>
<td>$12,136</td>
<td>$2,882</td>
<td>$1,717</td>
<td>$4,436</td>
<td>$960</td>
</tr>
<tr>
<td>New York</td>
<td>$21,938</td>
<td>$30,296</td>
<td>$4,466</td>
<td>$2,580</td>
<td>$8,913</td>
<td>$2,768</td>
</tr>
<tr>
<td>Texas</td>
<td>$9,759</td>
<td>$15,385</td>
<td>$3,278</td>
<td>$3,036</td>
<td>$5,310</td>
<td>$1,113</td>
</tr>
<tr>
<td>California</td>
<td>$9,858</td>
<td>$15,940</td>
<td>$1,141</td>
<td>$1,592</td>
<td>$3,451</td>
<td>$1,457</td>
</tr>
<tr>
<td>United States</td>
<td>$12,995</td>
<td>$16,292</td>
<td>$3,039</td>
<td>$2,378</td>
<td>$5,592</td>
<td>$1,328</td>
</tr>
</tbody>
</table>

Source: Kaiser Foundation and Census Population Estimates

### 5.2. Florida’s Low Medicaid Spending

In FFY 2012 Florida spent, excluding federal support, $407 per resident on Medicaid, placing the state at 72% of the $568 national average. Since the share of Floridians 65 and

¹ A beneficiary is a person for whom a claim having a positive paid amount was adjudicated during the specified period. A person can be eligible without being an enrollee and can be an enrollee without being a beneficiary.

² FFY runs from October 1 to September 30. Florida’s SFY runs from July 1 to June 30.

³ Calculated from Kaiser Family Foundation data, kff.org/state-indicators/total-medicaid-spending/. To obtain state spending we used the FMAP, or Federal Medical Assistance Percentage, for 2012 at asp.hhs.gov/health/fmap12.htm. Florida’s FMAP was 55.45%.
older exceeds the national share (17.7% to 13.2%), and Medicaid spending per over-64 residents is six times that per child and five times that per non-senior adult, we calculated spending adjusting for age distribution in the states.\textsuperscript{4} If the national age structure had been the same as Florida’s, the population-weighted average for other states would have been $611 per resident, lowering Florida’s age-adjusted spending to 67% of the national average.

Does Florida's low spending result from good fortune, from efficiency or from stringency? Spending might be low if the state had the good fortune to have 1) a smaller share of low-income residents eligible for Medicaid under given income cutoffs, 2) healthier residents who need less medical service of the sort provided by Medicaid, 3) more private insurance taking the place of Medicaid, or 4) lower overall prices for medical care (as opposed to fees specific to Medicaid). Unfortunately, relative to Florida’s 33% gap in age-adjusted per capita spending, none of these differences matter much. Florida individuals are much the same as their national counterparts in the likelihood of living in a household below 138% of the federal poverty line, 29% versus 28%.\textsuperscript{5} Regarding health measures, adjusted for age Floridians are not very different from the rest of the country. They are slightly more likely to be obese and slightly more likely to smoke.\textsuperscript{6} Florida’s residents are 19% more likely to have diabetes and 20% more likely to have a mental illness, but 3% less likely to have cancer and 5% less likely to have a disability. Floridians are more likely to be insured through Medicare, 16.5% to 13.0%. That is more than offset, however, by the fact that they are less likely to have private health insurance, 47% to 54%. The uninsured share in Florida exceeds the nation’s, 20% to 16%.

Comparing prices of medical care is difficult. Overall, medical spending in Florida is $7,156 per person, a bit higher than the U.S. $6,815. We do not know; however, what that implies about prices as opposed to the quality of care, though it suggests that prices are unlikely to be substantially lower here. Medicare spending per enrollee is 14% higher in Florida, reflecting mainly more services rendered since Medicare reimbursement rates are approximately the same. Average medical insurance cost for a family is 2% lower than the national average. The pay for health care workers in Florida is lower than the national average, but not by a lot. Using data from the Occupational Employment Statistics survey conducted by the Bureau of Labor Statistics and released in May 2013, we calculate that wages for health

\textsuperscript{4} The latest data we found for national Medicaid spending by age are for 2004, from the Department of Health and Human Services, CMS. They are $111 per child, $137 per non-senior adult, and $663 per senior.
\textsuperscript{5} Most data in this paragraph and the next come from the Kaiser Family Foundation website.
\textsuperscript{6} Florida’s overall smoking incidence, not adjusted for age, is slightly lower. That is because as a result of survival selection, medical instructions, female predominance, and perhaps preferences, seniors are about one-third as likely to smoke as are other adults.
care workers in Florida are around 96% of the national average.\textsuperscript{7} All in all, overall medical prices and costs in Florida seem to be close to the national average.

That brings us to efficiency. Attributing Florida’s 33% gap in age-adjusted Medicaid spending per resident to greater efficiency is not \textit{a priori} implausible. Other rich nations spend smaller shares of their GDP on medical care than does the U.S., many more than a third less, and yet most of them have better health outcomes. It could be that Florida’s Medicaid efficiency matches that of the medical systems of those countries. There appears to be room for Florida to beat the national average. Structurally, however, Florida’s provision of Medicaid resembles the nation’s.\textsuperscript{8} The share of enrollees in managed care is around two-thirds in both. Florida has 34% of its long-term care recipients in community settings compared to 45% nationally, which may reduce costs somewhat since community care appears to add to more than replace institutional care. However, in comparison to other countries, Florida’s medical care providers deal with the same problems of defensive medicine, claims denial and denial management, and fragmented care as do those in other states. In fact, for Medicare, some of the higher-cost hospital service regions are in Florida.\textsuperscript{9} Florida has been active in seeking to implement reforms aimed at improving efficiency. Indeed, Florida’s recent and ongoing reform is considered in the next section. In sum, while Florida’s being a third more efficient overall than the nation is not impossible, we are not aware of evidence that it is.

As to stringency, the evidence is more persuasive.\textsuperscript{10} Florida appears to be more stringent than the nation in its fee schedule (payments to providers such as physicians, hospitals and nursing homes), eligibility requirements and range of services covered. Florida imposes low fees for medical care and restricts eligibility for Medicaid severely. An index of the ratio of Medicaid fees to Medicare fees is 62.7% for Florida, 13% below the U.S. index.\textsuperscript{11} Eligibility measures show similar patterns. Working adults with children can earn up to 58% of the poverty rate in Florida and qualify for Medicaid, compared to 63% nationally. There is an even wider gap in the eligibility of children in Florida (eligible if their families are at 200% of the poverty line or below), compared to the national average (250%). The range of services can be measured by the choices the state makes in the optional services it provides for recipients. In Florida, 53% of Medicaid spending is on optional services, lower than the 60% nationally. This indicates, although not decisively, that the cost-weighted services the state covers fall short of the national average. The weight of this suggestive evidence is that Florida’s low spending is

\begin{itemize}
  \item[7] We constructed indexes using 68 health care occupations. Using four different sets of occupational weights, all reasonable, we find a range of 95% to 97%. Data at \url{http://www.bls.gov/oes/tables.htm}.
  \item[8] Based on data from the Kaufman Family Foundation website.
  \item[9] See the most recent Dartmouth Atlas of Health Care at \url{http://www.dartmouthatlas.org/}.
  \item[10] Data in this paragraph are from the Kaufman Family Foundation website. We have calculated national averages using population-weighted state figures.
  \item[11] We use Medicaid/Medicare reimbursement indexes prepared by the Urban Institute. Though limited, they are the best recent indexes available.
\end{itemize}
due much more to stringency than efficiency, though we cannot rule out the possibility that a thorough analysis would assign a larger role to efficiency.

5.3 Spending Growth

All states face continued growth in medical costs and therefore in Medicaid costs per enrollee. Figures 5.3 and 5.4 illustrate three factors that will affect Medicaid’s future fiscal burden on Florida in important ways: the poverty rate, real income per capita and real medical spending per capita. All three are adjusted for inflation (The Federal Poverty Line is an absolute measure, set in 1965 as three times the cost of a reasonable diet and adjusted since only for inflation). If Medicaid spending goes up 10% because all prices rise by 10%, both for medical care and for other goods, in real terms that’s a wash. In addition, all three measures are adjusted for population. If Florida’s spending rises 10% because population rises 10%, the situation per person is little changed, other than by potential second order impacts due to factors such as economies of scale.

The poverty rate positively affects Medicaid spending. The higher the poverty rate the larger the number of people eligible. Poverty tends to fall when incomes and employment rise over the business cycle and rise when incomes and employment fall over a business cycle. The link between income and poverty over the long run, though also inverse, tends to be weaker. So, as per capita income rises, the poverty rate declines and the per capita cost of Medicaid falls at the same time the state’s tax base expands and revenue rises—with a crucial caveat. The caveat is that this applies only if the distribution of income stays the same (or if the share of income captured by the poor increases). Florida’s real income per capita was 65% higher in 2012 than in 1982. The poverty rate; however, was the same as three decades before, while incomes have increased for those in the upper portion of the income distribution, they have risen much less for those at the bottom. If that pattern continues, holding constant the range of services covered and eligibility requirements, as population grows the number of Medicaid beneficiaries will likely rise.
The third variable, U.S. real medical spending per capita, has tripled since 1980, driven up by technology, incentives and other pressures. That tripling is a major reason the U.S. now spends 18% of its GDP on medical care. Will the Patient Protection and Affordable Care Act (PPACA) and other policy changes succeed in flattening the growth or bending the curve, or are we destined to see the medical spending share of GDP continue to rise? The Obama administration is confident that a recent slowing of the growth of medical spending foretells a bending curve (Council of Economic Advisors, 2013, Chapter 5). Others, such as Stanford economist Victor Fuchs (2013) who is often credited with launching the field of health economics four decades ago, are less confident, attributing the slowdown in the rise of spending to the great recession.

We present these variables to illustrate why we think there is often too much attention to projecting Medicaid details, such as enrollment rates, at the expense of the larger context. If poverty rates decline, real personal income rises rapidly and health costs come under control, both the nation and Florida will be fine. If the opposite occurs, nation and state are both in trouble. Though Florida will differ somewhat from the nation, the state’s paths of poverty, income and health costs will be largely the same. Projecting expenditures for detailed age, income and gender categories, useful for short-term budgeting, runs into diminishing returns for long-run estimates. As noted by Victor Fuchs (2013), “Unfortunately, forecasting health care spending is extremely difficult.” All else equal, increases in the cost of medical services are almost certain to place additional demands on the state budget, but the degree of the increase is uncertain.

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12 Gokhale (2011) is a good example. In his CATO report he uses the Current Population Survey (CPS) to estimate historical data for Medicaid eligibility for three income levels as well as household and age categories, then projects those forward using trend lines fit to 2000 to 2009 to project Medicaid costs in 2020 and 2030. Figure 5.3 suggests such a trend would be of little use for projecting 2020 and 2030. Second, consider that the overall poverty rate for Florida is estimated from the CPS with error—the confidence interval is usually about 1.4 percentage points wide. The confidence intervals are much wider for subcategories, and then much wider still for forecasts.
Implementation of the PPACA is highly debated. Here, we briefly note two aspects of the PPACA and potential expansion with important implications for Florida's budget. First, the PPACA requires all states to temporarily pay primary care providers the same fees as does Medicare. Second, for now Florida has declined to participate in the expansion provision of the PPACA, but that could change. If Florida were to decide to participate in expansion, the federal government has pledged to cover 100% of the (non-administrative) cost for the first three years and 90% thereafter. Assuming the federal government lives up to that pledge, Florida would ultimately need to cover 10% of the cost of the expansion. The State of Florida Social Services Estimating Conference (2012) estimated expansion would cost about $300 million annually, on average, from 2014 through 2023. While that is far from trivial in absolute terms, it is small relative to current total Medicaid spending and the federal money that would be received.

Even if Florida does not eventually participate in Medicaid expansion, both enrollment and cost per beneficiary are likely to rise, placing greater demands on the budget while holding stringency and efficiency constant. Since, on an age-adjusted basis, Florida already spends only two-thirds of the national average per resident, it is difficult to see how expenses can be significantly reduced by either greater stringency or efficiency. Thus, Medicaid costs will likely continue to place increased pressure on the state budget – with a decision to participate in expansion representing only a modest potential proportional addition to the total cost. However, whether the increase will be substantial, but manageable without major impact to other programs, or very large and thus disruptive to other programs depends on the details of changes in the income distribution and medical costs – which cannot be predicted years into the future.

5.4 Reform

In 2005, Florida was granted a research and demonstration waiver under Section 1115 of the Social Security Act. This waiver permitted officials to create a pilot program to use Managed Care Organizations (MCOs), such as HMOs, to provide these Medicaid services to enrollees on a per capita basis (often called “capitated rates”). The pilot began in Duval and Broward Counties in 2006, and expanded to Nassau, Baker and Clay Counties in 2007 (AHCA, 2012). In July 2013, more than 318,000 enrollees were in the pilot program (AHCA, 2013). Enrollment in the Reform Pilot is not mandatory for all beneficiaries in the five Reform counties (see Table 5.3).
In theory, the benefits of Florida’s Medicaid Reform program could be extensive. Not only do the capitated rates create the possibility for cost savings for the state and federal government, they also carry with them the possibility of greater accuracy in projecting Medicaid costs each year. With Medicaid now the largest budget item, improved accuracy is of greater importance for overall planning. Another benefit, likely of high importance to taxpayers, is the transfer of risk of fraud from the state to the health providers. While some fraud cost will likely be built into the capitated rate, if providers are in a better position to police and eliminate fraud the average annual cost should be lower, especially given the competitive bid process and the required 85% Medical Loss Ratio (MLR).\(^{13}\)

There are also intended benefits for enrollees. The goals of Florida’s Medicaid Reform Pilot include increasing the number of plans an enrollee has to choose from, providing access to services not previously covered and improving access to specialists. The idea is to improve health outcomes for enrollees, in turn, decreasing Medicaid costs in the future. Each provider can create several plans that specialize in different services so they can provide the lowest costs while still meeting enrollee needs. An evaluation of the pilot found that 70% to 80% of enrollees in the Reform Pilot voluntarily select their plans, as opposed to voluntary selection of around 60% in non-Reform managed care plans (Bragdon, 2011).

\(^{13}\) MLR is the proportion of premium revenues spent on clinical services and quality improvement. It therefore allows governments to ensure that private insurers retain no more than 15% of revenue for administrative costs and profits.

### Table 5.3: Mandatory and Voluntary Requirements for Reform Pilot

<table>
<thead>
<tr>
<th>Mandatory Population</th>
<th>Voluntary Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. TANF and TANF-Related Group - 1931 Eligibles:</td>
<td>• Individuals residing in an institution such as a nursing home, sub-acute inpatient</td>
</tr>
<tr>
<td>• Families whose income is below the TANF limit (23% of the FPL or $303 per month for a family of 3) with assets less than $2,000.</td>
<td>psychiatric facility for individuals under the age of 21, or an ICF-DD;</td>
</tr>
<tr>
<td>• Poverty-related children whose family income exceeds the TANF limit as follows:</td>
<td>• Children with chronic conditions who participate in Children’s Medical Services;</td>
</tr>
<tr>
<td>up to age one, family income up to 200% FPL</td>
<td>• Foster care children;</td>
</tr>
<tr>
<td>up to age 6, family income up to 133% of FPL</td>
<td>• Individuals diagnosed with developmental disabilities;</td>
</tr>
<tr>
<td>up to age 21, family income up to 100% FPL</td>
<td>• Individuals eligible under a hospice-related eligibility group;</td>
</tr>
<tr>
<td>b. Aged and Disabled Group:</td>
<td>• Pregnant women with incomes above the 1931 poverty level; and dual eligible individuals</td>
</tr>
<tr>
<td>• The aged and disabled, comprising persons receiving SSI cash assistance whose eligibility is determined by SSA (income limit approximately 75% of the FPL; asset limit for an individual is $2,000).</td>
<td></td>
</tr>
<tr>
<td>• Children eligible under SSI.</td>
<td></td>
</tr>
</tbody>
</table>

Source: Agency For Health Care Administration
Table 5.4 shows that Medicaid spending per enrollee has been less in the Reform population than in the non-Reform each year through 2011. Note that 2007 has been omitted because of skewed numbers during the first quarter of the Reform Pilot (indeed, Reform enrollment did not begin until September 2007 and Reform spending was light during this time as well). In particular, Reform spending on the eligibility categories of adults and children is almost half of non-Reform spending per enrollee in the first three years. In addition, in the most recent fiscal year there were no grievances submitted to the Beneficiary Assistance Program (BAP) or the Subscriber Assistance Program (SAP), indicating that any grievances were being handled by health plans successfully. Bragdon (2011) found similar differences.

One possible explanation for the differences reported in Table 5.4 has little to do with the efficiency of managed care. Under a Fee-For-Service (FFS) Medicaid plan, beneficiaries are only considered to be those who required some kind of healthcare during the given timeframe while population data on the Medicaid Reform Pilot comes from enrollment reports. The difference is that an enrollee of a managed care plan is still counted – and paid for – in a month for which no service was rendered. Although this consideration is built into the capitated rate paid for each enrollee, it still suggests that the number of beneficiaries used to create the spending per enrollee for the total Medicaid population would be underestimated.

There are other factors that could affect these figures as well. Since enrollment in the Reform Pilot is not mandatory for every recipient in a county, the Reform population demographics and cost profile may well differ from the general beneficiary population, making cross county comparisons more difficult. Moreover, spending varies widely by county – in FY 2012 the minimum average spending per enrollee by county was $3,710 while the maximum was $9,565. Although the extension of Reform to three rural counties in 2007 could be viewed as a solution to this issue, these three counties are located near each other and all border Duval County.

To interpret the limited evidence from Table 5.4 as supporting the hypothesis that reform lowers costs, some indication is needed that typical costs per enrollee are not lower in reform counties regardless of the Reform. Table 5.5 shows that in FY 2012 overall average spending per enrollee was slightly higher in reform than non-reform counties. This at least shows that the Reform Pilot isn’t simply taking place in counties with low costs. Better would be

<table>
<thead>
<tr>
<th>Year</th>
<th>All Aged &amp; Disabled</th>
<th>Adults &amp; Children</th>
<th>Reform Aged &amp; Disabled</th>
<th>Adults &amp; Children</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>$11,869</td>
<td>$1,926</td>
<td>$11,193</td>
<td>$1,056</td>
</tr>
<tr>
<td>2009</td>
<td>$12,577</td>
<td>$1,989</td>
<td>$10,875</td>
<td>$1,039</td>
</tr>
<tr>
<td>2010</td>
<td>$12,722</td>
<td>$1,993</td>
<td>$12,141</td>
<td>$1,157</td>
</tr>
<tr>
<td>2011</td>
<td>$11,628</td>
<td>$1,772</td>
<td>$11,518</td>
<td>$1,099</td>
</tr>
</tbody>
</table>

Source: Centers for Medicare and Medicaid Service and the Agency for Health Care Administration
to compare costs per enrollee before and after reform in both reform and non-reform counties, called a difference-in-difference analysis.

From July 1, 2006 – when the Reform Pilot began – through June 30, 2010 the Department of Health Service Research, Management and Policy at the University of Florida was contracted by AHCA to perform an evaluation of the first five years of the Reform. Although this evaluation considered many aspects of Medicaid Reform in Florida, one report involved such a difference-in-difference analysis of costs. This analysis involved using pre-Reform expenditures from FY 2005 and 2006 for enrollees in Broward and Duval counties who would have been eligible to participate in Reform had it existed then and comparing them to expenditures from FY 2007 and 2008. In addition, costs were also obtained for enrollees in these same eligibility groups and for the same years from Orange and Hillsborough Counties. Orange and Hillsborough Counties were chosen as comparison counties because urbanization, population, size, and demographics were similar and because their Medicaid programs and enrollment characteristics matched Duval and Broward (Duncan, 2009).

Costs were evaluated as Per-member Per-month (PMPM), meaning the total costs in a given month were divided by the total number of enrollees in the program. Then the differences in PMPM costs were taken between post- and pre-Reform periods and, finally, the difference-in-this-difference was taken between the Reform counties and the non-Reform counties. These results, found in Table 5.6, show that the Reform counties had lower PMPM costs, at least in the first two years of the Pilot. Moreover, the differences in percentage terms were approximately 24% for the SSI population and 5% for the TANF population.

### Table 5.6: Difference-in-Difference of Medicaid Reform and non-Reform Costs

<table>
<thead>
<tr>
<th></th>
<th>Reform Counties</th>
<th>Non-Reform Counties</th>
<th>Difference-in-Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SSI</td>
<td>TANF</td>
<td>SSI</td>
</tr>
<tr>
<td>Pre-Reform Period</td>
<td>809</td>
<td>127</td>
<td>683</td>
</tr>
<tr>
<td>Reform Period</td>
<td>783</td>
<td>131</td>
<td>833</td>
</tr>
<tr>
<td>Reform minus Pre-Reform</td>
<td>-26</td>
<td>4</td>
<td>150</td>
</tr>
</tbody>
</table>

Source: University of Florida Medicaid Reform Evaluation

Florida recently received final approval from CMS to extend the managed care Medicaid Reform program to all counties in Florida (Governor’s Office, 2013). In anticipation of this expansion, the state received a waiver to move long-term care Medicaid beneficiaries into Medicaid Reform. Long-term care services help those either over 65 or those with disabilities with indispensable tasks of daily life (Summer & Alker, 2012). As of August 1, 2013, more than
9,000 individuals were enrolled into long-term care plans in Orange, Osceola, Seminole and Brevard Counties (AHCA Press Release, 2013). Although it is too early to analyze any data from this part of the Reform, it will be of interest to see if managed care can solve issues associated with Medicaid long-term care that drive up costs, such as high hospitalization rates (Perry et al., 2010). Even if reform is reducing costs in the pilot study, there is still uncertainty as to what would happen under full implementation. For example, the Reform Pilot has been closely monitored and still makes up a relatively small portion of overall Medicaid – although the Reform enrollees, on average, make up 65% of the total Medicaid population in the five Reform counties (AHCA, 2013). As the program is implemented across the state, it is possible that MCO’s could lower the quality and affordability of their services as they come under less scrutiny and carry more weight.

The countercyclical nature of Medicaid spending (it expands during economic downturns when government budgets are most constrained) means that as the recovery progresses jobs are created and incomes rise, while the number of enrollees declines, easing demands on the program. While efforts to improve the efficiency of government programs are always welcome, Medicaid’s countercyclical nature, the size of the program, and its importance to the health and wellbeing of our most vulnerable citizens make genuine efforts to improve its efficiency especially meaningful and laudable. Whatever the final outcome of this particular reform initiative, Florida is among the leaders in making sustained efforts in this regard.

5.5 Conclusion

Considerable uncertainty is associated with the future impact of Medicaid on the state budget. The burden of funding Medicaid will continue to grow and, as a result, places pressure on other services, such as education. But how much the burden will increase is not clear.

First, the state’s major tax bases have still not recovered from the Great Recession. Nor has employment, especially among those citizens most likely to need Medicaid. While the recovery is ongoing, how long the recovery will take is still unknown. The trends of labor market polarization and Baby Boomer retirements discussed in Section 2 both suggest growing demands on Medicaid in the future, but again there is no way to guess precisely at the magnitude of these impacts.

Second, the PPACA challenges the structure of the entire healthcare system, which has been heavily driven by the private-sector employers and government-sponsored programs (Reinhardt, 2013). At this point, there is no way to fully anticipate how large those changes will be. While Florida has presently elected not to participate in Medicaid expansion, that may change, and add greater uncertainty.

Third, as Florida’s population grows the total demand on Medicaid will grow, though not necessarily the demand per capita. However, if Florida’s per capita income continues to fall
relative to the nation, in part due to continuing labor market polarization and the demand for
low-skill jobs created by retiring Baby Boomers and tourists, as seems likely, the burden will
grow in per capita terms as well. Further, increases in income continue to be concentrated in
the upper part of the distribution so that real income among the poor does not rise
substantially. If that continues, the per capita burden will rise further.

Finally, rising health care costs are of concern. Cutler and Sahni (2013) calculate that
real per capita spending on healthcare has grown between 2% and 7% annually since 1970,
with considerable variance from year to year. However, growth in healthcare spending has
slowed in the past decade. Baicker et al. (2013) suggest only about 45% of this deceleration can
be attributed to the recession, changes in the insurance mix (i.e. the number of individuals with
employer-sponsored, government-sponsored or self-funded health insurance) and changes in
the Medicare payment rate, surmising the remaining 55% can be explained by changes in the
technological landscape of the health care sector, increased cost sharing with employers, and
greater provider efficiency. In fact, in 2012 the Center for Medicare and Medicaid Services
(CMS) Office of the Actuary lowered its forecast of health care spending as a share of Gross
Domestic Product (GDP) for 2018, while in 2013 the Congressional Budget Office (CBO) lowered
its forecast of Medicaid spending for 2020. This evidence, combined with Florida’s active
pursuit of reform aimed at improving the efficiency and quality of Medicaid, means that the
longer-term outlook, though still challenging, may not be as grim as was expected only a few
years ago.

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6. Education

6.1 Introduction

Both K-12 and higher education in Florida face substantial challenges. Cuts in funding, mounting federal and state accountability standards, and the Class Size Reduction Amendment (CSRA) have buffeted K-12 education. In K-12 education, resources per student in Florida lag not just the U.S., but the rest of the South as well. State funding for higher education, shown to be low even in the boom years of the early 2000s in *Tough Choices*, fell even further until the state was last in the nation in the sum of state funding and net tuition per FTE for the 2011-2012 school year. Given the very slow pace of economic recovery, the demands that will be placed on scarce state funds by Medicaid, and the state’s reluctance to raise tuition, it is difficult to see any way Florida can achieve a reasonable quality in education. Add in the potential impacts of Baby Boomer retirements, continuing labor market polarization, and the scope of the challenges seems even more daunting.

The Class Size Reduction Amendment (CSRA), adopted by voters in 2002 with implementation phased in though Fall 2010, was intended to improve the quality of education in the state. It has not done so, at least relative to what might have otherwise been achieved with the same resources. It has stretched budgets and reduced teacher salaries. From the 2000-2001 school year to the 2011-2012 school year, real teacher salaries in Florida plummeted faster than in all but four other states. Mounting federal and state accountability standards continue to increase demands on teachers. If salaries do not make up for past declines and increase to reflect these demands, teacher quality will continue to suffer. Ironically, the Baby Boom echo that caused the classroom crowding that spurred the CSRA had largely passed through the grades by the 2003-2004 school year. As a result, a period of sustained flat enrollment corresponded almost exactly with the years of CRSA implementation, making the costs of implementation easier to absorb. However, as newly hired teachers move up the salary scale and enrollment growth resumes, the annual cost of the CSRA will grow. Finally, interaction between restricted state funding and the 90% cap on required local effort (RLE) taxes in the Florida Education Finance Program (FEFP) has resulted in placing significant portions of the property tax base in the districts with the most property wealth per student out of the reach of the RLE taxes set annually by the legislature, utilizing Florida’s property tax base in an inequitable and inefficient manner.

In higher education, things are even less rosy. Florida reached rock bottom in the 2012 fiscal year—last in the nation in the sum of state appropriations and net tuition per FTE. Graduation rates for women are mediocre, and even worse for men, and students put very little effort into their studies. Recently, there was hope that constraints on tuition would be relaxed, at least for the University of Florida (UF) and Florida State University (FSU), relative to other
high quality public universities. But, the bill that would have made that possible was vetoed, leaving our universities with state constraints but little state support and little room to make up for it elsewhere. Another measure passed in 2013 and signed by the governor, set up the metric for recognizing preeminent universities and provided $15 million of additional funding for UF and FSU, the two universities achieving the specified standard. In addition, some state funding cut during the worst of the downturn was restored for the 2014 fiscal year. But there remains a long way to go to close the gap with other states.

In this section we discuss the trends in funding for K-12 education and the Florida Education Finance Program and the impact of the class size reduction on teachers’ salaries and teacher quality. In examining higher education, we again examine trends in funding, analyze tuition as a component of higher education spending and discuss student effort, graduation rates and the desire to increase STEM majors.

6.2 K-12 Education

6.2.1 Overview

After rising to nearly match the national average by the 1990-1991 school year, real current expenditures per student in Florida’s public schools (measured in 2012$, all sources) fell to approximately $2,000 below the national average in the early 2000s, as shown in Figure 6.1. While some of the gap was closed during the housing boom years as the property tax base expanded and more new teachers were hired to comply with the CSRA, it was back to about $2,000 by the 2009-2010 school year.

One can argue that the national average is not the best comparison. For example, it tends to cost less to hire a worker with given qualifications for a given job in Florida (Denslow and Dewey 2012). Figure 6.1 also shows real spending in the rest of the South, defined as the U.S. Census southern division excluding Florida. While expenditures per student were higher in Florida than in the rest of the South at the beginning of the 1990s, the financial commitment to education in the rest of the South grew steadily until the

\[\text{Figure 6.1: Current Expenditure per Student (2012$)}\]

Data from the National Center for Education Statistics Common Core of Data (nces.ed.gov/ccd) deflated by the Consumer Price Index (bls.gov).

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1 The Census southern division is: AL, AR, DE, DC, FL, GA, KY, LA, MD, MS, NC, OK, TN, TX, SC, VI, and WV.
Great Recession, while Florida’s spending was relatively flat until the 2004-2005 school year, so that in the early 2000s real expenditure per student in Florida was nearly $1,000 below the rest of the South. Likely driven in part by the housing boom and in part by spending to comply with Florida’s CSRA, that deficit was eliminated by the start of the Great Recession. However, by the 2008-2009 school year, Florida had begun to fall again relative to the rest of the South.

While the data source used for Figure 6.1 has not been updated for the 2010-2011 school year or later, alternative data from the National Education Association (NEA) suggest the picture remained similar, with the gap between the Florida and the U.S. growing slightly. It is an open question how Florida’s investment in K-12 education will change relative to other states as we continue to recover from the recession. Of course, that will be determined in large part by political decisions. Gaining insight into how the structure of the tax base and current conditions and trends will shape those decisions requires some knowledge of the interaction between the Florida Education Finance Program (FEFP) and the housing boom and bust over the recent cycle, the impact of the CSRA, and the impact of accountability and related initiatives.

6.2.2 The Housing Boom and the FEFP

Understanding education funding in Florida requires understanding the FEFP. The legislature sets the statewide required local effort (RLE) operating millage rate. The rate each district is required to levy is adjusted for variability in the ratio of the just value to actual market value based on arm’s length sales. The difference between revenues collected through school property taxes for operating purposes and how much comes from state sources, mainly the property tax, zoomed in Florida during the housing boom.

Figure 6.2 shows the local share of combined state and local school revenue

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2 Based on the NEA’s Rankings of States and Estimates of School Statistics, various years, available at http://www.nea.org/home/44479.htm

Data from the National Center for Education Statistics Common Core of Data, nces.ed.gov/ccd.
in Florida, the U.S., and the South excluding Florida (federal funding is excluded). Through the 1990s, the local share in Florida was generally below that in the nation as a whole and was more or less equal to the share in the remainder of the South. During this time, slightly more funding for K-12 education came from state sources than from local sources. However, beginning in the 2000s, the share of school revenue raised from nominally local sources, mainly the property tax, zoomed in Florida—from 46% in the 1999-2000 school year to 62% in the 2009-2010 school year. Over the same period the local share of funding for the U.S. and the South increased more slowly—rising to around 50% in FY 2010.

The Florida Education Finance Program

Florida equalizes education funding across districts through the Florida Education Finance Program (FEFP). Each district’s base funding is determined by the product of a base per student allocation and the number of students, adjusted for cost differences. Other additions and adjustments are made to arrive at total FEFP funding; e.g. adding funding for transportation.

The legislature sets a statewide required local effort (RLE) millage rate. The rate each district is required to levy is adjusted for variability in the ratio of the just value—the county property appraiser’s estimate of market value adjusted for transactions costs—to actual market values based on arm’s length sales. The difference between revenues collected through RLE and total district FEFP funding is covered from state funds. Districts have no discretion over RLE and a district’s property tax base has no direct impact on its FEFP funding.

No participating district is required to collect over 90% of its FEFP funding from RLE. Where this would occur, RLE is reduced accordingly. Thus, in districts with high property value per student RLE millage rates may be lower than in other districts. When RLE is a small share of FEFP funding, few districts are impacted by this 90% cap on RLE. When RLE is a large share of FEFP funding, many may be at the cap due to wide variation in property value per student. For example, as shown in Table 6.1, the local share of funding rose from 40% to over 60% from 2000-2001 to 2008-2009, and the number of counties effected by the cap rose from 3 to 12. The RLE millage rate in Monroe County is consistently capped, due to the high property value in the Florida Keys relative to the number of students. In 2000-2001, the RLE millage rate was 5.94, but it was reduced to 4.027 in Monroe County. With the increase in the local share, the RLE millage rate in 2008-2009 fell to 5.136, and it was reduced all the way to 1.394 in Monroe County.

Districts also levy a discretionary operating millage. However, the legislature effectively sets this levy by setting a cap on it low enough that districts almost always levy the full amount. Thus, property taxes for current school expenditures are essentially state taxes, albeit levied by school districts. For more details, see Funding for Florida School Districts (Florida Department of Education, 2013).

This growth in the local share in Florida was driven by rapidly growing property values during the housing boom. Lutz (2008), among others, shows that millage rates do not usually fall enough to offset increases in property values. But, why did the local share
continue to climb after the housing bubble burst? That is likely due to two factors. First is the volatility of the sales tax base. The drop in construction hurt sales tax revenues even before the recession officially started. While it would have been technically possible to maintain the state contribution by raising the sales tax rate, that rate has not changed for a quarter century, and raising it during a recession would seem to make little sense economically or politically.

The second factor is the role of the Save Our Homes (SOH) amendment, approved by voters in 1992. SOH limits the increase in the value of homestead property assessed for purposes of property taxation to the smaller of the rate of inflation as measured by the Consumer Price Index or 3%. Taxable value, to which the millage rate is applied, is this assessed value less exemptions. SOH created a substantial gap between the just value — estimated market value less transactions costs — and taxable value of many homestead properties during the boom. The taxable value of such properties continued to increase slowly during the bust, even as their market values fell, because assessed values were so far below market values at the peak of the boom. Since the legislature sets RLE millage each year, it was easier to maintain property tax revenue than sales tax revenue during the recession. While not its intent, SOH thus softened the volatility of school funding during the recession.

When the local share in the FEFP is small, the 90% cap on RLE impacts few districts. However, when it is large, it constrains many, due to wide variation in property values per student. Figure 6.3 shows changes in the local share of FEFP funding over time. After peaking at 63% in 2008-2009, the local share fell back to 48% for the 2013-2014 academic year as state revenues began to recover. Figure 6.3 contains more recent data than figure 6.2, and suggests the difference in the local share between Florida and the U.S. and the South may have narrowed since the 2009-2010 school year.

**Tough Choices** pointed out that heavy reliance on increases in the property tax base to fund educational spending would produce a situation in which more districts were at the 90% cap. This erodes the ability to raise money through the property tax base and creates inefficiencies and inequities. One way in which districts may have large taxable

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### Table 6.1: Districts at the 90% Required Local Effort Cap

<table>
<thead>
<tr>
<th>Year</th>
<th>Avg RLE</th>
<th>Millage</th>
<th># Districts</th>
<th>at Cap</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>5.295</td>
<td>5.136</td>
<td>12</td>
<td>7</td>
</tr>
<tr>
<td>1998</td>
<td>5.136</td>
<td>5.082</td>
<td>12</td>
<td>7</td>
</tr>
<tr>
<td>1999</td>
<td>4.947</td>
<td>4.903</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td>2000</td>
<td>4.77</td>
<td>4.78</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td>2001</td>
<td>4.647</td>
<td>4.736</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td>2002</td>
<td>4.542</td>
<td>4.436</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td>2003</td>
<td>4.442</td>
<td>4.436</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td>2004</td>
<td>4.342</td>
<td>4.436</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td>2005</td>
<td>4.242</td>
<td>4.436</td>
<td>11</td>
<td>6</td>
</tr>
</tbody>
</table>

value per student is if they have large retiree or empty-nester populations, particularly if those populations are affluent. An affluent retiree who moves to a capped county, however, does not increase the ability to raise funding through RLE at all. Moreover, the reduction in the millage rate brought about by the cap likely attracts affluent retirees to such counties. This distortion of location decisions is an example of a resulting inefficiency.

Table 6.1 illustrates inequities caused by the 90% cap. In the 2000-2001 school year, with a relatively low local share, only three counties were capped. By the 2004-2005 school year, that had risen to six. As the share of local FEFP funding grew, the portion of the tax base at the cap grew with it, so that in the 2008-2009 school year twelve districts were at the cap. The difference was particularly large in Collier, Franklin, Monroe, and Walton counties, where property was taxed at about half or less of the state average RLE millage rate.

Table 6.1: Districts at the 90% Required Local Effort Cap

<table>
<thead>
<tr>
<th>Year</th>
<th>Avg RLE Millage</th>
<th># Districts at Cap</th>
<th>Districts at 90% Cap and RLE Millage Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-01</td>
<td>5.94</td>
<td>3</td>
<td>Collier (5.149), Monroe (4.027), Walton (5.599 mills)</td>
</tr>
<tr>
<td>2004-05</td>
<td>5.472</td>
<td>6</td>
<td>Collier (3.789), Franklin (2.744), Martin (5.022), Monroe (2.395), Sarasota (4.801), Walton (3.124)</td>
</tr>
<tr>
<td>2008-09</td>
<td>5.136</td>
<td>12</td>
<td>Charlotte (4.021), Collier (2.607), Flagler (4.947), Franklin (1.483), Gulf (3.697), Indian River (4.410), Lee (4.523), Martin (3.918), Monroe (1.394), Palm Beach (4.898), Sarasota (3.717), Walton (1.782)</td>
</tr>
<tr>
<td>2012-13</td>
<td>5.295</td>
<td>7</td>
<td>Collier (3.317), Franklin (3.135), Martin (4.622), Monroe (1.893), Sarasota (4.558), Sumter (4.226), Walton (2.863)</td>
</tr>
</tbody>
</table>

Source: Florida Department of Education, *Funding for Florida School Districts*, various academic years.

Even with SOH softening the blow to the property tax base, both the property tax base and the sales tax base declined substantially in real terms during the recession. Absent changes in tax rates, combined state and local school revenues would have fallen much faster than the drop in expenditures shown in Figure 6.1. The difference was made up in part by an increase in federal funding, chiefly through the State Fiscal Stabilization Fund, a component of the American Reinvestment and Recovery Act of 2009, which provided funding for three years ending in FY 2010-2011. The ability to draw efficiently on the property tax base became even more important for FY 2011-2012 and after, since neither the sales tax base nor the property tax base has returned to its pre-recession level. For the 2012-2013 school year, however, seven districts remained at the 90% cap.

Increasing state FEFP funding would allow more efficient use of the property tax base. An alternative would be to classify state funds now considered outside the FEFP (the
Class Size Reduction Allocation and Discretionary Lottery and School Recognition funds) as FEFP funds. In the 2010-2011 through 2013-2014 school years, that reclassification alone would have increased state FEFP dollars about 50%.

6.2.3 Class Size Reduction, Teacher Salaries, and Teacher Quality

Spending in Florida’s schools over the past decade has been shaped by the need to comply with the CSRA, which passed with 52% of the popular vote. Effective beginning with the 2010-2011 school year, the CSRA set limits on class sizes for individual core classes (non-elective classes): 18 students maximum for grades K-3, 22 for grades 4-8, and 25 for grades 9-12. To provide some context, Figure 6.4 shows enrollment (millions, left axis) and teachers per 100 students (right axis) every five years from Fall 1965 through Fall 2010 and projected enrollment in Fall 2015 and Fall 2020. The twenty years of rapid enrollment growth from the mid-1980s through the mid-2000s associated with the Baby Boom echo was marked first by a slowdown in the rate of increase in teachers per student and then a decline. This was, in large part, the impetus for passage of the CSRA.

As anticipated in Tough Choices, the CSRA has caused problems. Most obvious is the extra cost of hiring additional public school teachers and building additional classrooms during austere budget years. The additional legislative allocation for class size reduction from 2003-2004 to 2012-2013 totaled $24.6 billion (not adjusted for inflation).3 The extra expense was particularly burdensome as revenues fell due to the Great Recession and its aftermath. As the CSRA was being implemented, there was a lull in student enrollment as the Baby Boom echo finished passing through the grades, as shown in Figure 6.4, or the cost would have been higher and the squeeze tighter. Florida had to provide more teachers and classrooms for existing students but not for new students. From fall 2010 to fall 2020, national enrollment is projected to grow 6.5%, and enrollment in Florida is projected to grow 9.3%, not as fast as it grew when the Baby Boom echo was entering school, but enough to place additional strain on

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3 Details on the annual allocations are at http://www.fldoe.org/classsize/.
the budget. The CSRA means that while growth will be slower than in the 1990s, more classrooms and teachers will have to be added each year than would have otherwise, increasing its cost.

While the legislative allocation for class size reduction is readily available, the actual incremental cost is difficult to estimate for a number of reasons. First, there is no way to know just how much of the increase in teachers per student from 2000 through 2010 would have occurred absent the CSRA, as the continuation of a generally upward trend interrupted by the Baby Boom echo. Presumably the number of teachers per student would have recovered during the flat spot in enrollment in the late 2000s, had the recession not prevented it. Second, the incremental cost of classroom and other space is harder to calculate than the current average cost—for example additional cafeteria and playground space will not be needed since there will not be more students, only a division of the same students into more classrooms. Third, other incremental costs are also hard to know, for example, another principal will not be hired at any given school, nor will another guidance counselor, but additional teacher’s aides will be needed, and utility costs are likely to increase. Fourth, the cost of associated teacher salaries will grow as teachers move up the salary schedule.

To provide an approximation, we assume the CSRA is responsible for an increase of 8 teachers per 1,000 students, and the remaining increase of 4 teachers per 1,000 students from 2000 to 2010 would have occurred anyway. While CEPRI (2002) estimates only 95 new classrooms were needed per 100 new teachers, for simplicity we assume the ratio is 1:1. While many new teachers will be employed initially, their salary will rise over time, so we use the average teacher salary from the 2010-2011 school year, rounded to $48,000. The cost estimate produced by the Revenue Estimating Conference (REC) in 2002 (discussed in some detail in CEPRI, 2002) indicated that non-salary instructional labor costs such as benefits were 27% of salary, which we apply. The REC report indicated that on average across all schools in Florida, “other” operating costs associated with relocatable classrooms were on average 24% of teacher labor costs, while those associated with new permanent classrooms were 57% of teacher labor costs. Since the number of students does not increase, just the number of teachers and rooms, the costs associated with the CSRA should be considerably less than the overall average for new construction, so we split the difference and use 40%. Per additional teacher, this brings annual operating costs to approximately $85,000.

The REC report forecast the average cost of construction at just over $320,000 per classroom in 2010, though the cost of a relocatable classroom was only $75,000 in 2002. The new construction cost includes a great deal of non-classroom space, much of which will not be needed since the number of students is not increasing. Therefore, we again split the difference, and assume construction costs of $200,000 per classroom. Though the REC report and other estimates include the cost of purchasing new land, these costs are small relative to the
structure cost on average and, while land must be purchased for new school construction, most schools in Florida have open space available on the existing campus to which additional classrooms may be added, so we ignore land costs. Finally, to convert the lump sum costs of construction, and eventual remodeling or reconstruction, into an annual flow, we assume the sum of the annual depreciation rate and the real interest rate at which school districts can borrow is 5%, so that the annualized capital cost is $10,000 (5% of $200,000).

With 8 additional teachers and classrooms per 1,000 students, operating costs of $85,000 per additional teacher, and annualized capital costs of $10,000 per additional classroom, we estimate the annual cost of the CSRA was approximately $2 billion in 2010, when approximately 21,000 additional teachers were needed. Since implementation was gradual, the cost would have been less in earlier years. As enrollment grows, so will the annual cost of the CSRA, reaching $2.1 billion in 2015 and $2.2 billion in 2020. Initially, this is a slight overestimate, because it assumes teacher salaries equal the average, while the salaries of the additional teachers will reach this level only over time. However, it leaves out the cost of additional pensions, and so is an underestimate in later years.

The CSRA has also contributed to declining real teacher salaries in Florida. Figure 6.5 shows real average teacher salaries over time for Florida, the remainder of the South, and the U.S. Even when Florida’s current spending was nearly equal to the national average in the late 1980s and early 1990s, teacher salaries were about 10% below the national average. Much of that is probably explained by the fact that people are willing to accept lower pay to live in Florida, as what economists call a compensating differential for things like nice beaches and mild winters, and also due to the fact that at that time the cost of housing was below the national average. However, while real teacher salaries fell in the South and in the U.S. on average in the 1990s, they fell faster in Florida. By the early 2000s real average teacher pay in Florida was below the rest of the South as well, and it remained so through the boom. Among states, Florida’s real salaries declined at the 4th fastest rate from the 2000-2001 to 2011-2012 school years, and since 2007-2008 salaries plunged faster in only Mississippi and North Carolina.
In 2013 Governor Scott proposed an across the board teacher salary increase of $2,500. The measure that passed the legislature allowed the appropriated funds to be allocated to non-instructional staff as well as teachers and left details regarding the distribution of the funds up to districts. Most teachers will likely receive considerably less than the $2,500 (Valentine, Sokol, and Fitzpatrick, 2013). While this may be enough temporarily stop the plunge, it is not enough to close the gap with the South or with where teacher salaries would be if they had kept pace with inflation since the early 1990’s.

Since teacher salaries account for a large share of education spending, one may wonder how to square relatively stagnant salaries with the increase in spending per student between the 2002-2003 and 2007-2008 school years. In part, the answer has to do with the interaction of the CSRA with typical teacher salary schedules. During the 2011-2012 school year the maximum salary in a Florida Public School district was anywhere from 35% to 97% higher than the minimum salary, with the average being 62%. As pointed out in *Tough Choices*, teachers’ pay is more back loaded over their career than in most private sector occupations. Increasing the number of teachers means on average hiring less experienced teachers, who are paid less initially. In addition, with limited resources, the need to hire new teachers exerted downward pressure on the entire salary schedule, likely preventing it from rising in nominal terms as fast as it otherwise would have.

The downward pressure on teacher pay created by the CRSA may have reduced teacher quality enough to undo any positive effects of the class size reduction, and perhaps enough to outweigh them. How to reliably identify good teachers, to say nothing of producing them, remains an open question. But there is broad agreement that teacher quality is extremely important—for example variation in teacher quality is associated with much more variation in student achievement than is variation in class size. (Whitehurst and Chingos, 2011) Available evidence suggests lower teacher salaries hurt student performance, in part by reducing average teacher quality all else equal. For example, using data from the Florida Education Data Warehouse (FEDW), Chingos and West (2012) find higher quality teachers receive higher pay when they leave public education for outside employment—compelling evidence that higher salaries would result in higher average teacher quality.4

There is no evidence the CSRA improved educational achievement, especially as compared to what could have been achieved using the same resources other ways. The balance of evidence suggests providing sufficient additional resources to lower class size a large amount (e.g. from 22 to 15 students) results in small improvements in test scores in lower grades, but

4 Dewey et al (1999) found no studies of the effect of teacher pay on educational outcomes that met reasonable credibility requirements—though the studies they found and their own original analysis found a positive effect. Ballou (1996) found public schools are prone to failing to select higher quality applicants, but if raising teacher pay increases the quality of the applicant pool higher pay results in higher quality even with random hiring. Dolton and van der Klaauw (1995, 1999) and Hoxby and Leigh (2004), for example, provide additional supporting evidence.
there is no reason to think it would be as large as allowing schools to deploy those resources as they thought best (Whitehurst and Chingos, 2011). There is evidence alternative investments in improving outcomes are more cost effective (Harris, 2009). Jepsen and Rivkin (2009), in their study of California's class size reduction policy, conclude the gains from smaller classes were undone by the reduction in teacher quality due to hiring more teachers with limited resources.

Chingos (2012) undertakes a careful analysis of the impact of Florida’s CSRA. He presents compelling evidence that the CSRA did not produce better results than would have been achieved by allocating the same resources and allowing schools to spend them as they thought best. He finds statistical evidence to confirm the common sense observation that with limited resources class size reduction would be associated with declining teacher pay. This could explain the negative association he finds between elementary achievement and reducing class size in response to the CSRA at the school level—any modest positive effects of class size reduction were offset at least in part by declining teacher pay and associated declines in teacher quality, and were perhaps outweighed by this negative effect. These findings, taken all together, suggest Florida’s CSRA cost billions of dollars, reduced real teacher salaries, had no discernable positive impact on achievement, and likely reduced achievement relative to what would have occurred had schools been allowed to use the resources they were given as they saw fit.

The requirements of the federal No Child Left Behind Act (NCLB) and its mandates of accountability have likely exacerbated the impact of declining real teacher salaries. NCLB nominally requires 100% of students to be proficient for their grade level by 2014. Moreover, Florida has been a leader in school accountability and continues to push the frontier in efforts to hold schools and teachers accountable. Florida’s 2011 Student Success Act requires teacher evaluations and teacher pay to be determined 50% by student growth on state assessments (value added) where applicable. How well this will work in practice when it comes to identifying and rewarding the best teachers is yet to be seen, and even just how it will be done at all is still an open question. (O'Connor, 2013). Whether for better or worse, this accountability places stress on schools and in particular on teachers. Such stress increases the compensation required to attract and retain teachers, holding constant the number and average quality employed. Further, use of statistical growth measures will increase risk and uncertainty in teacher pay, and risk and uncertainty also increase the compensation required to attract and retain teachers, holding constant the number and average quality employed. Thus, the need to hire more teachers due to the CSRA, the pressure created by accountability, and risk and uncertainty in teacher pay introduced by making pay dependent on statistically variable measures of student growth will together reduce teacher quality absent substantial increases in teacher salaries.
6.3 Higher Education

6.3.1 In Higher Education Funding Florida Led the Nation—Downward

The Great Recession hit public higher education in the United States hard. Adjusted for inflation, total revenue per full-time equivalent student (FTE) nationally dropped 8% from FY 2007 to FY 2012, with a 23% decline in state appropriations that was only partially offset by a 19% increase in net tuition revenue. In Florida, the overall decline in revenue was 26%, the largest among the fifty states. Since tuition was already low, the 16% increase in net tuition did little to counter a 41% plunge in state appropriations. The combination left Florida’s public higher education with the lowest revenue per FTE from state appropriations plus net tuition among the fifty states, as shown in Table 6.2.

Table 6.2: State Appropriations and Net Tuition Revenue, Florida and the United States, FY2007 and FY2012 a

<table>
<thead>
<tr>
<th></th>
<th>State Appropriations per FTE</th>
<th>Net Tuition Revenue per FTE</th>
<th>Appropriations plus Net Tuition per FTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>7,667</td>
<td>5,905</td>
<td>4,395</td>
</tr>
<tr>
<td>Florida</td>
<td>8,147</td>
<td>4,832</td>
<td>2,301</td>
</tr>
<tr>
<td>FL/U.S.</td>
<td></td>
<td></td>
<td>106%</td>
</tr>
<tr>
<td>FL Rank</td>
<td>15</td>
<td>37</td>
<td>53%</td>
</tr>
<tr>
<td>FL Percentile</td>
<td>58</td>
<td>22</td>
<td>78%</td>
</tr>
<tr>
<td>(population weighted)</td>
<td>58</td>
<td>22</td>
<td>16</td>
</tr>
<tr>
<td>FL Percentile</td>
<td>8</td>
<td>50</td>
<td>8</td>
</tr>
</tbody>
</table>

a Data from: the Chronicle of Higher Education, August 2008 and 2013 Almanac Issues; State Higher Education Executive Officers (SHEOO), State Higher Education Finance FY 2012; and Grapevine, an online source maintained by Illinois State University, Table 6. Dollar amounts in constant FY 2012 dollars. SHEEO adjusts numbers for differences across states in educational mix and cost of living. We reverse engineered the numbers back to the raw figures.

In 2007, for example, Florida ranked 15th in state appropriations per FTE in public higher education; by 2012, it has fallen to 37th. The state comes in lower on net tuition per FTE—46th in 2007 and 47th in 2012. In 2007, 58% of the population of the U.S. lived in states with lower state appropriations per FTE. By 2012, only 22% of the U.S. population lived in states with lower state appropriations. The most important numbers in the table reflect appropriations plus net tuition. Florida fell from 43rd to 50th on this measure over five years, from 87% of the national average in FY 2007 to 70% in FY 2012.

Why did Florida fall harder than any other state and wind up last? Three reasons are obvious: (1) The recession reduced state appropriations, not tuition. Florida in 2007 relied on appropriations for 78% of the total of appropriations plus net tuition, compared to 64% nationally, leaving the state more vulnerable to reduced appropriations. (2) The recession hit Florida harder than it did most other states. Florida’s recovery in per capita income by 2012
from 2007 was five percentage points less than average. (3) Perhaps because of the recession’s severity in Florida, it pushed more young people into public higher education. The number of FTE’s rose 23% in Florida, versus 16% nationally. Indeed, the percentage change in real income per resident, the share of appropriations in revenue in 2007, and the change in public higher education FTE’s explains about half of Florida’s difference from the nation in the percentage change in appropriations plus tuition revenue. The remaining difference seems to indicate a relatively unfriendly environment for funding higher education in Florida.

If the Florida environment is relatively hostile, funding may not bounce back as strongly as it did after earlier recessions, especially after 1973-74 and 1981-82. If that is the case, higher education in Florida will be forced into a role its faculty may not relish, pioneering the way into an American system of state public higher education with very little state funding and also very low net tuition. Florida will have to do this while facing a number of challenges in teaching undergraduates, challenges that will be much tougher with lower resources. The structure of public higher education is likely to be transformed over the next twenty years.

6.3.2 Tuition: Unlocking Pent Up Demand for Quality and Strengthening Competition

Florida is one of only four states where the legislature establishes tuition (OPPAGA, 2004). A 2013 Florida Supreme Court decision confirmed that the legislature, not the Board of Governors, has the power to set tuition rates and fees at public universities (Larrabee, 2013). Understandably the state legislature (and the governor) want to keep tuition low to keep their constituents happy. Yet the result is that Florida’s state universities cannot charge in-state tuition close to that charged by universities in most of the rest of the nation. In 2012, the legislature passed a “Market Tuition Bill”, intended to allow UF and FSU to raise tuition to levels closer to, but still below, the other high quality universities with whom they compete. This bill was vetoed by Governor Scott. Yet in 2013 Governor Scott signed into law a bill designating UF and FSU as preeminent Florida universities and providing each school with an additional $15 million a year for five years to hire faculty members and escalate research. He further called for UF to become a top 10 university. This a laudable goal, and the $15 million in funding is, no doubt, welcome. But, $15 million is well under 1% of UF’s typical operating expenses, to say nothing of capital expenditures, and does not come close to making up for austere budgets in recent years, or enabling UF and FSU to chase higher ranked schools.

One feasible option to get the resources needed to support a quality system of higher education in Florida, and for UF to become a top 10 and FSU to rise significantly in the national rankings, is to allow the state’s universities much more flexibility in raising tuition. There are compelling reasons to think this will result in serving students much better, filling an unmet demand for quality, and stimulating competition between UF and FSU and other state schools and also between UF and FSU and out of state schools.
Most service providers compete on both price and quality. Examples include accountants, attorneys, financial advisers, restaurants, and stores. Firms that provide a higher quality charge a higher price. Competition ensures that the higher price reflects to a large extent the extra costs of the increased quality, so that the higher quality could not exist without the ability to charge higher prices. Consumers face a wide variety of prices and qualities, and benefit from being able to pick and choose as best suits their individual tastes and budgets.

This is not the case for Florida’s universities. For example, UF and FSU compete for high-quality undergraduate applicants from Florida with both in-state and out-of-state institutions on price and quality. The strength of that competition is greatly reduced, however, by the severity of the restriction on tuition. On one hand, to the extent quality is higher at UF and FSU than other state schools, but tuition is not, other state schools are at a competitive disadvantage. On the other hand, since UF and FSU cannot raise quality further by raising resources to support that effort through higher tuition, they are at a competitive disadvantage relative to the best universities in other states.

Table 6.3: Tuition and SAT Scores Across Universities

<table>
<thead>
<tr>
<th>University</th>
<th>Tuition</th>
<th>SAT Range</th>
<th>U.S. News Rank</th>
<th>U.S. News Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virginia</td>
<td>$36,570</td>
<td>1220-1450</td>
<td>25</td>
<td>78</td>
</tr>
<tr>
<td>Michigan</td>
<td>$37,265</td>
<td>1220-1380</td>
<td>28</td>
<td>75</td>
</tr>
<tr>
<td>North Carolina</td>
<td>$26,834</td>
<td>1200-1410</td>
<td>29</td>
<td>74</td>
</tr>
<tr>
<td>Georgia Tech</td>
<td>$27,862</td>
<td>1240-1430</td>
<td>36</td>
<td>67</td>
</tr>
<tr>
<td>Miami</td>
<td>$39,654</td>
<td>1210-1380</td>
<td>38</td>
<td>65</td>
</tr>
<tr>
<td>UT Austin</td>
<td>$32,506</td>
<td>1110-1370</td>
<td>45</td>
<td>63</td>
</tr>
<tr>
<td>Tulane</td>
<td>$43,434</td>
<td>1230-1400</td>
<td>50</td>
<td>62</td>
</tr>
<tr>
<td>Ohio State</td>
<td>$42,082</td>
<td>1190-1340</td>
<td>55</td>
<td>59</td>
</tr>
<tr>
<td>Texas A&amp;M</td>
<td>$22,817</td>
<td>1130-1330</td>
<td>58</td>
<td>58</td>
</tr>
<tr>
<td>UF</td>
<td>$ 5,656</td>
<td>1170-1370</td>
<td>58</td>
<td>58</td>
</tr>
<tr>
<td>FSU</td>
<td>$ 5,825</td>
<td>1110-1260</td>
<td>101</td>
<td>47</td>
</tr>
<tr>
<td>UCF</td>
<td>$ 5,584</td>
<td>1080-1280</td>
<td>177</td>
<td>32</td>
</tr>
<tr>
<td>USF</td>
<td>$ 5,600 (approx.)</td>
<td>1030-1230</td>
<td>181</td>
<td>31</td>
</tr>
<tr>
<td>FAU</td>
<td>$ 5,600 (approx.)</td>
<td>990-1150</td>
<td>&gt;200</td>
<td>&lt;30</td>
</tr>
<tr>
<td>FIU</td>
<td>$ 5,600 (approx.)</td>
<td>1060-1210</td>
<td>&gt;200</td>
<td>&lt;30</td>
</tr>
</tbody>
</table>


The choice facing Florida students and their families is illustrated in Table 6.3 with information from the 2012 U.S. News Ranking. Though the U.S. News ranks and scores are imperfect, they are widely reported and give an approximate idea of the choices available for Florida’s families. Being more selective and more highly ranked, UF and FSU are protected from within-state competition by being required to charge similarly low tuition in spite of the gap between their perceived quality and that of the other public universities, and from out of state...
competition from higher ranked schools by the extremely large gap in tuition. Though some students choose another state university because living at home saves money, many prefer UF or FSU.

Suppose, however, that a Florida student and their family want to step up in selectivity and the rankings, say to Georgia Tech or the University of North Carolina. The gap in cost is enormous. North Carolina, for example, is 40 points more selective on the SAT than UF and 29 places more highly ranked. But the extra yearly tuition, without even considering Bright Futures, would be $21,178. Not surprisingly, roughly 85% of the college students from Florida stay in the state. Having an option at $10,000 tuition and rank 36 (assuming Florida could improve to the rank of Georgia Tech with the additional funding) and one at $8,000 tuition and rank 50 (assuming Florida State could improve to the rank of Tulane with the additional funding) would do a lot to fill the gap. Thus, there is substantial potential to make Florida’s students and their families better off by charging higher tuition—though still less than out of state competitors—and using the additional revenue to reduce the gap in quality between Florida’s best universities and their out of state competitors, providing a better range of options from which to choose and increasing the degree of competition between universities.

There may be concern that raising tuition would reduce the quality of the students. Because of the higher tuition, highly qualified students might go elsewhere. However, this seems unlikely, for two reasons: (1) Tuition is only a fraction of the full cost of a university education, including foregone earnings. (2) Higher tuition could help improve the quality of education provided, attracting abler students. We explore this by examining the relationship between tuition and SAT scores for 48 flagship universities in the same number of states, shown in the first panel of Figure 6.5.

**Figure 6.5: Selectivity and Tuition at Flagship Universities**

![Figure 6.5](image-url)
Looking at the simple correlations between (the natural log of) tuition and SAT scores, you would predict that raising UF’s tuition by, say, $3,000 would lift average SAT scores by 3% to 6%, a small but positive effect. Conditioning on various sets of other variables—number of students in the flagship university, state population 18 to 24 years old, and median household income, all logged—gives similar results: higher tuition is associated with higher SAT scores up to an in-state tuition level of approximately $12,000. We also checked this by examining the relationship between tuition and the share of students from the top 10% of their high school class and found similar results. To the extent there is a relation between tuition and selectivity, it is positive up to $12,000 when the effect attenuates. Clearly tuition in Florida could increase substantially without lowering the quality of students.

There might also be concern that higher tuition would reduce graduation rates at preeminent schools. Some might fear this would happen because those attending will be selected more by affluence and less by talent and effort. Or, that students and their families will be more likely to conclude that the value of the education they are receiving is not worth the costs. We think the stronger argument is that higher tuition would boost graduation rates, for two reasons. First, higher tuition at preeminent universities will encourage students and their families to take studying more seriously (below, we document a chronic shortfall of the most critical input in college education—student effort). If they are putting more money into their education, they are likely to put more time and effort into it as well, raising graduation rates. Second, higher tuition, by funding more and better faculty or otherwise improving the academic environment at preeminent universities, will result in higher graduation rates.

We examine the relationship between graduation rates and freshmen retention rates and tuition at the 48 flagship universities. Both graduation and retention rates rise with tuition up to $13,000—over twice that charged at UF and FSU. This is shown in the first two panels of Figure 6.6. Further, as shown in the third panel of Figure 6.6, the reputations of flagship undergraduate programs are positively associated with tuition up to around $12,000 a year, suggesting that institutions with more resources serve their students better. These findings are robust to the inclusion of a number of control variables.

Thus, there are strong arguments that the state of Florida would gain substantially from allowing universities much greater flexibility in setting tuition, especially UF and FSU. First, tuition at UF and FSU is far below the roughly $12,000 a year associated with maximum selectivity. Second, students who did not go to UF or FSU because of higher tuition would likely remain in Florida, meaning other state schools could likely meet some of their growing revenue needs and would benefit from the availability of high quality students. Third, for some students, federal grants would cover the higher tuition. For others, universities would almost certainly use part of the extra revenue to increase scholarships. Fourth, some very able students who now leave Florida for Duke or Emory or other out-of-state competitors would choose UF or FSU.
instead because the higher tuition would enable higher quality. To the extent higher tuition raises quality and causes UF and FSU to become more selective, there will be some sorting into UF and FSU of students who prefer a more challenging academic environment. Finally, graduation rates vary positively with flagship tuition, at least up to $12,000 a year.

Figure 6.6: Graduation, Retention, Reputation, and Tuition at Flagship Universities

A word of caution: While these findings are apparently robust, we have not developed a full model of these interrelationships or identified causality with a high degree of certainty. But, these findings clearly support allowing Florida’s universities much greater freedom in setting tuition—especially its preeminent universities.

Finally, there is the important issue of university research and its ties to economic development. In 2011 Florida ranked 44th, or at the 10th percentile population-weighted, among the states in higher education research spending per resident. From 2006 to 2011, Florida rose on that measure from 54% to 59% of the national average. The challenge to universities is to continue to attract more research support even in the face of cutbacks in federal research opportunities. Raising tuition could be a big help in attracting the kind of faculty that, in turn, can attract external research support. It simply is not clear where the
funding needed to run a world class system of state universities with little state funding will come from if not from increased tuition.

As pointed out in *Tough Choices*, the relatively large number of students who qualified for Bright Futures scholarships together with the tying of the scholarship payments to tuition constrained the ability of the legislature to allow higher tuition. This was because, to an extent, higher tuition led to higher Bright Futures payments which had to be paid by the state rather than by students or their families. Since then, however, the scholarship and tuition have been decoupled and standards to qualify have increased. Thus, this impediment to allowing higher tuition has been removed (Hayes, 2013; Jordan, 2012).

### 6.3.3 Student Effort, Graduation Rates, and STEM Majors

A major challenge facing undergraduate teaching, and also an opportunity to greatly enhance quality at low cost to taxpayers, arises from low student study time. The public is gradually becoming aware of something that faculty have noticed for a couple of decades: most students, even at many of the more selective universities, do not study much. One recent analysis reports that in 1961, 67% of full-time students at four-year postsecondary institutions studied more than 20 hours per week. Surveys in 2003 and 2004, in contrast, reported only 20% and 13% studied more than 20 hours per week. (Babcock and Marks, 2011) Derek Bok, former president of Harvard, says the decline cannot be explained by the changing composition of students or by more students working either for pay or as volunteers. He cites a University of California survey showing that students averaged 13 hours per week studying and attending class. Most of their spare time was spent socializing, exercising, watching TV, and playing video games (Bok, 2013, chapter 9).

Students will tell you a number of reasons they study so little. One is large classes, which are often a common student experience (due to scarce funding relative to the cost of attracting quality faculty). The *U.S. News* ranking of colleges uses as one component the percentage of classes with fewer than 20 students. For the University of Central Florida, for example, *U.S. News* reports that 26% of the classes have under 20 students, 50% have 20 to 49, and 24% have 50 or more. That sounds quite positive until we also see that UCF’s student to faculty ratio is an astounding 32:1. A number of those classes with more than 50 students have a thousand or more. To reflect the true undergraduate experience, class size should be looked at across the typical student’s enrollment, not across classes. Most students spend a large share of their time in very large classes in which they often fail to relate to teachers, to other students, or to course content. Such courses seldom assign term papers and tests are largely multiple choice. Even with exceptional teachers, it is hard for such courses to motivate students to study.

Grade inflation is a likely second reason students study so little—they simply don’t have to. Informally, this is the most frequent response students give when asked (by the authors)
why they study little. Even motivated students wanting to go on to professional school or a
doctorate will take large, easy classes for competitive reasons. They have to take one or two
easy classes each semester in order to maintain the near-perfect grades required for admission
to advanced study in a grade-inflated environment. Faculty, in turn, want to obtain favorable
evaluations from their students, who—perhaps unintentionally—reward easy courses and high
grades. Deans reward faculty who attract a thousand students to a course by making it easy
because the extra FTE’s add to the college’s funding. Moreover, faculty who teach easy courses
and give good grades need not devote as much time to their students.

A straightforward way to increase student effort would be to have smaller classes, with
more carefully graded written assignments, more oral reports, and more essay tests. With little
state funding and low tuition, however, smaller classes are just not affordable. The next best
way is to reverse grade inflation. That will be hard to do because faculty treasure the right to
give the grades they please. Once a faculty committee at UF discovered a class in which all
athletes received A’s. To its relief, the committee found that in that class, with 600 students a
semester, 96% of all grades were A’s. Asked about it, the instructor said that there was no good
way to assign grades in his class nor did he think pass-fail was appropriate.

One option to reduce grade inflation is to report on student transcripts both their
individual grades in each course and the average grade in the course. A “B+” looks less
impressive if the average grade for the course is “A−”. Naturally, some courses attract better
students than others, but it would be feasible for the state or university to develop software
that adjusts for this and makes other refinements. Another way to reduce grade inflation would
be to require faculty to become more heavily involved in evaluating undergraduate instruction,
perhaps across colleges in order to reduce mutual back-scratching, and reduce the reliance on
questionnaires filled out by students. These reforms will not be easy, but the prize is large. If
students studied forty hours a week instead of twenty, they could readily learn at least 50%
more than they do now, at little extra cost to the state.

Another major challenge in undergraduate education is graduation rates. Unlike other
higher education measures, on this one, Florida falls near the U.S. average. Some 58.3% of
students entering a Florida four-year college or university in 2005 graduated within six years.
This puts Florida near the middle of the states at 99% of the U.S. average and ranked 21st.
Moreover, Florida is almost exactly where a regression analysis predicts it would be. Graduation
rates vary positively with income per capita, negatively with the share of students in public
universities, and positively with average tuition. Income per capita is a proxy for family
backgrounds, students in private universities tend to have smaller classes and to be more
affluent, and higher tuition encourages students to devote more time to their studies.5

5 See, for example, Garibaldi, Giavazzi, Ichino, and Rettore (2012).
As is true in all states, graduation rates in Florida are higher for women than for men, 60.9% versus 56.3%. Couple that with the fact that 58% of college students in Florida are women (compared to 57% for the U.S) and you find that there are roughly three women graduating from college for every two men. If we assume that women and men are roughly equally competent, and that in a post-industrial nation the payoff from college is just as high for men as for women (as is the case, see Becker, Hubbard, and Murphy, 2010), this suggests there is a large waste of human resources to be overcome. Higher tuition could raise graduation rates if the funds were used to reduce average class size, perhaps differentially for young men. Given that undergraduate class sizes in Florida are likely to rise, however, the challenge is to find ways to use technology to keep students engaged in their studies through graduation.

One likely boost to Florida’s graduation rate is that more young people aim for a two-year associate’s degree and then decide whether or not to enter a four-year college or university. As shown in Table 6.4, Florida ranks high in the share of its young people ages 16 through 24 earning an associate’s degree and low in the share earning a bachelor’s degree. Florida is also low in master’s degrees awarded and average in doctorates.

Table 6.4: Degrees Awarded, Academic Year 2010-2011, per 1000 Population 16 through 24, U.S. and Florida

<table>
<thead>
<tr>
<th>Degree</th>
<th>Associate</th>
<th>Bachelor</th>
<th>Master</th>
<th>Ph.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. per 1000</td>
<td>21.9</td>
<td>39.0</td>
<td>16.6</td>
<td>3.7</td>
</tr>
<tr>
<td>Florida per 1000</td>
<td>34.6</td>
<td>34.6</td>
<td>12.7</td>
<td>3.7</td>
</tr>
<tr>
<td>FL/US Ratio</td>
<td>158%</td>
<td>89%</td>
<td>77%</td>
<td>100%</td>
</tr>
<tr>
<td>Florida Rank</td>
<td>5</td>
<td>37</td>
<td>29</td>
<td>18</td>
</tr>
<tr>
<td>Florida Percentile</td>
<td>11</td>
<td>65</td>
<td>56</td>
<td>40</td>
</tr>
</tbody>
</table>

Sources and row definitions are the same as in Table 6.2.

Increasingly, Florida’s state colleges are offering bachelor’s degrees to fill community related needs (Moltz, 2010). It is possible that this will allow some students to select into programs they are more comfortable with, improving graduation rates. The ability of state colleges to operate at a lower cost per degree awarded, at least in some areas, may help the state keep down the cost of undergraduate education (Lewin, 2013). This, in turn may make it easier to channel funding to research universities—on which per student enrolled Florida was 16% behind the nation in 2010 (National Science Foundation, 2012, Chapter 8). Of course, that would happen only if the state decides to invest the savings in research universities. If that is not done, growth in degrees offered by state colleges may simply drain students, and resources, from universities.

Recently, the governor and legislature have sought to increase the number of students graduating from Florida’s universities in Science, Technology, Engineering, and Mathematics (STEM) fields, largely for economic development related reasons (Koebler, 2011). As discussed in section 2, pay increases in recent decades have been
disproportionately concentrated in higher skilled areas, including certain STEM occupations, and as mid-level, routine jobs continue to disappear this is likely to continue. Workers with STEM degrees tend to earn more than workers with degrees in other fields even if they do not end up in a STEM career (Carnevale, Smith, and Melton, 2011). In part, this may be because knowing engineering or science has applicability to the practice of certain kinds of law or certain areas of business. It is also likely in part because those with STEM training possess cognitive skills and abilities that are highly useful in many forms of employment—for example critical thinking skills, logical reasoning abilities, problem sensitivity, and numeracy. Since such skills and abilities are developed and honed through practice, it is likely that higher levels of study time in STEM disciplines contribute to their development. In turn, students study harder in STEM fields partly because those fields have been more resistant to grade inflation. (Rojstaczer and Healy, 2012) This is likely partly because the material is more objective and partly due to a different academic culture. Whatever the case, STEM fields are perceived as hard, and higher grades for less time studying in other disciplines push students out of STEM majors (Drew, 2011).

There is reason for concern that by creating STEM financial incentives, students who are not happy as STEM majors will remain in STEM, or STEM departments will attract students from other areas, leading to increased pressure for grade inflation in STEM fields. In turn this would likely reduce standards and study time in STEM disciplines and thereby diminish the return to STEM training in Florida. Students with higher aptitude in STEM-related skills may be differentially attracted to STEM disciplines as well. To the extent this drives better economic outcomes for STEM majors, providing financial incentives to induce more students to enter STEM fields may result in a poorer match between innate skills and training. There may indeed be benefits to boosting the number of STEM graduates provided training and standards remain rigorous and students who are better suited to other majors are not wrongly incentivized to pursue STEM training. However, determining what policies might help achieve that end will take very careful thought and considerable study. It is not clear that simple financial incentives for attracting students is the best approach—it may even be counter-productive. For the same reasons, it seems likely that measures to reverse the effects of grade inflation would both boost the number of STEM graduates and increase the extent to which study in other disciplines would encourage the development of some of the same skills.

6.4 Conclusion

In 2005, the LeRoy Collins Institute expressed its concern about the possible negative impact of the CSRA and urged its modification with a concurrent commitment to productive state spending on preK-12 improvement. While there have been some modifications in the CSRA, there has not been increased spending on educational
improvement and the amendment’s impact on education has been substantial. In K-12 education, renewed enrollment growth coupled with the CSRA means that while growth will be slower than in the 1990s, more classrooms and teachers will have to be added each year per additional student. Increased accountability requirements will continue to place stress on schools and in particular on teachers. It is very difficult to see how quality in the teaching workforce will be maintained in the face of this pressure without increases in real teacher salaries. Maintaining smaller class sizes with growing enrollment in the face of a tax base that is still in the process of recovering from the Great Recession will place pressure on the state budget and continue to make it difficult to raise teacher pay, and thus to attract and retain quality teachers.

All together, the CSRA, renewed enrollment growth, pressures to increase teacher salaries, and the (structural) inefficiency of increasing reliance on the property tax base without additional state funding promise to intensify the pressure on the education budget in the next decade. Making more efficient use of the property tax base by counting all state finding for purposes of the 90% cap could help at the margin. But given the slow (cyclical) recovery of revenue sources and increasing demands of funding Medicaid (structural), it will be difficult to support and improve the quality of our teaching workforce and schools without increasing tax rates. A small increase in the tax rate could make a very large difference, however unlikely it may be. The expected bump in the number of Baby Boom retirees and the likely increase in the share of relatively low skill jobs will likely further weaken support for raising additional revenues for education. Absent unforeseen events which increase the willingness of politicians to seek increases in tax revenues to invest in education and public support for such measures, the outlook does not seem rosy.

It is possible that technological progress might improve matters. The Florida Virtual School System (FLVS) costs 21% less in public funding to deliver a given educational unit, on average. Thus, the savings in resources needed to fund brick and mortar schools (at any particular level per student credit) created when students take courses through FLVS outweigh the additional cost of the FLVS program, resulting in a net savings. From the 2002/03 school year through the 2011/12 school year, FLVS enrollment increased from 12,762 to 314,359 students (students can be enrolled in a regular public school and use FLVS for some courses). As of 2008/2009, FLVS is the largest statewide virtual education program in the country. It has been effective in educating Florida’s students as well, as students who are educated in FLVS full time perform as well as if not better than students who receive a standard education—though of course that may not be true for the typical student.
Turning to higher education, it is difficult to find much reason for optimism regarding state funding. While being at the bottom of the 50 states means we can only go up, the prospects for additional funding for higher education seem bleak. The demands placed on state funding by Medicaid and K-12 education will grow, leaving less left over for higher education. Again, technology may help in ways we don’t yet fully grasp, or some other unforeseen event may occur. Universities may be granted the freedom to set their own tuition and compete as they see fit. Finding creative ways to take advantage of perhaps universities’ most important but largely untapped educational resource—student study time—might help as well. But, absent such developments, the coming decade looks to be bleak for higher education in Florida. The “Squeeze Facing Higher Education” identified in Tough Choices has been worse than we expected. A leaner higher education system seems likely, at least for the identifiable future.

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7. Florida’s Transportation Infrastructure

7.1. Introduction

Over the past three decades, workers in Florida’s large urban areas, along with those in other states, have experienced greater and greater congestion. Over the same decades average wages have risen, raising the opportunity cost of wasting time in traffic. Importantly, at the same time congestion is trending up, access to dense job centers is becoming more and more crucial to the innovation economy. Large urban areas with high shares of college graduates and other talented people are now the main sites for the exchange of ideas that drives modern productivity growth. Though many creative workers, especially younger ones, enjoy living downtown and do not need to drive to work, most urban workers are likely to continue to commute, chiefly by automobile. Reducing congestion will make Florida’s cities both more enjoyable and more productive. One way to do this is for the state to encourage widespread use of tolls and congestion fees.

In Florida’s large cities, a major cause of congestion is the low ratio of arterial roads, including interstates, to local roads and collectors. The question then becomes what to do about it. An obvious solution would seem to be to build more arterials, but we consider that unrealistic. Though the state and its urban areas have the capacity to raise the revenue to fund more arterials, current sources of revenue for roads are dwindling and taxpayers are unlikely to replace them, let alone increase them in a substantial way. To drive home this point, we present a short history of efforts to fund arterials from the 1980s to the present. The heavily indebted and seemingly dysfunctional federal government is unlikely to increase its assistance. Even if voters in urban areas were to support large increases in road funding, long-delayed maintenance is likely a higher priority than building new arterials.

Next we consider public transit, railroads, airports, and seaports. Like urban arterials, airports are another example of how more targeted congestion fees could encourage more efficient use of scarce infrastructure. Boosting public transit has virtues including making it easier for many low-income residents to find jobs and get to work as well as easing congestion. Not only should there be more funding for public transit, but more use of private automobile congestion fees to increase its use, bringing the advantages of economies of scale. But public transit is not likely to play more than a supporting role in reducing congestion. Railroads have

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1 An arterial road is usually a thoroughfare with high capacity and often with limited access. Collectors link local roads to arterials.
2 Adding to arterial lane miles might relieve congestion only temporarily, since more people would be attracted to the area and more residents induced to drive during rush hour by the improvement. This does not mean the benefits of such construction would not be large. Floridians who owned newly developed land would gain. More importantly, the road network would support a larger, likely more dense, urban population, in turn supporting a thicker, and likely therefore more productive and higher paying, urban labor market.
potential for diverting people and freight from congested roads. A final subsection sums up the case for tolls and congestion fees.

7.2. Florida’s Lagging Road Miles

In 2011 Floridians drove an estimated 10,200 vehicle miles traveled (VMT) per person, or eight percent more than the average for the rest of the nation.\(^3\) They did this on approximately 14 lane-miles per 1,000 people, just over half the national figure. Florida ranks 42\(^{\text{nd}}\) among the states in lane-miles per capita, ranking ahead of states with only 27% percent of the U.S. population. Florida is third from last in lane-miles per million VMT, beating only California and Texas.

Florida has half its national per capita share of lane miles for three main reasons: (a) Roads are built to connect distant places as well as for access to work, shopping, and recreation. With 6% of the U.S. population, Florida has less than 2% of its area. (b) Roads last a long time and were constructed in past years partly in proportion to population in those past years. Since 1950 Florida’s population has grown twice as much as the national average. (c) Roads are constrained by coasts and do not pass through coastal cities the way they do inland cities. With Florida’s peninsular shape, 84% of its people live in coastal counties, versus 42% nationally. To parse out the relationship of the three causes, we analyze data for all the states (and D.C.) except Alaska. The results are shown below:

\[
(1) \quad \text{LANE MILES} = 2.87 - 0.47 \text{DENSITY} - 0.61 \text{GROWTH} - 0.49 \text{COAST}
\]

\[
R^2 = 0.90 \quad \text{Observations: 49 states (Alaska excluded) and DC}
\]

Here LANE MILES is the logarithm of lane miles per 1,000 residents, DENSITY is the logarithm of population per square mile, GROWTH is the percentage growth in population since 1950, and COAST is the percentage of the population living in coastal counties.\(^4\) The equation explains 90% of the variance across states. Estimated standard errors are in parentheses. Including frozen and remote Alaska does not change the results meaningfully. Roughly, Florida’s shortfall of lane miles compared to other states is about half due to its higher-than-average growth, a fourth due to its greater-than-average density, and a fourth due to its peninsular shape.\(^5\)

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\(^4\) Lane miles is the product of the length of a road and its number of lanes, so a ten-mile stretch of four-lane road would be forth lane miles.

\(^5\) We estimate those shares by plugging differences between values for Florida and for the U.S. into equation (1).
Since equation (1) has not been carefully designed to demonstrate that growth causes lower lane miles—it merely shows a negative correlation—we need to confirm the result with a different approach. We do this by regressing the log of total state and local spending on highways (SPENDING) in 2008, the most recent year available, on the log of area in square miles (AREA), the log of population in 2007 (POP2007), the log of per-capita income in 2007 (INCOME), and the percentage growth in population from 2000 to 2010 (GROWTH2000). The equation is:

\[
\text{(2) } \text{SPENDING} = -11.66 + 0.19 \text{ AREA} + 0.77 \text{ POP2007} + 1.05 \text{ INCOME} - 0.76 \text{ GROWTH2000}
\]

\[
(2.37) \quad (0.03) \quad (0.03) \quad (0.21) \quad (0.29)
\]

\[R^2 = 0.96 \quad \text{Observations: } 49 \text{ states (Alaska excluded) and D.C.}\]

Again, estimated standard errors are in parentheses and all variables are statistically and economically significant. The implied unitary income elasticity of demand for road spending is plausible. Results for the same equation with the dependent variable replaced by the log of 2005 highway spending, the second most recent year available, are similar except that the magnitude of the negative coefficient on growth is almost twice as large. Though we have not proved causation, the evidence is clear that rapid population growth is associated with both significantly lower lane miles and significantly lower spending on roads. This finding seems counter-intuitive since one would expect to see growth associated with more spending and more lane miles. The fact that Florida’s lane-miles per capita fit the national pattern does not imply that the state’s investment in roads is optimal. There is no reason to think spending less in faster growing states is the best way to invest in transportation.

Florida is a true outlier in another way, the structure of its urban roads. In Florida, as in other states, many people going to work or to shop turn from their driveways onto local roads that feed into collectors. The collectors feed into arterials, roads with more limited access. In 1990 Richard Stasiak, then an analyst with the Florida Department of Transportation, noted that Florida had a shortage of urban arterials. Using data for 1980 and controlling for population, area, and share urban, Stasiak et al (1990) estimated that compared to other states Florida fell 2,400 centerline miles short. By 1988, they estimated, Florida’s shortfall had risen to 2,950 miles. In 1988 urban local roads, in contrast, compared to their expected value relative to other states were 5,400 miles over. Too many local roads fed into too few arterials.

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6 We also confirm equation (1) by using being a right-to-work state and average January temperature as instruments for GROWTH. The results are quite similar.

7 We also confirmed equation (2) using instrumental variables (instrumenting GROWTH2000 with being a right-to-work state, January temperature, and COAST), with the results being quite similar with the important exception that the coefficient on GROWTH2000 though still negative was statistically insignificant. Using the same IV approach but with the log of 2005 spending as the dependent variable, GROWTH00 was strongly negative and highly significant.

8 Centerline miles measure the length of a road. A four-lane road ten miles long has twice the lane miles of a ten-mile two-lane road, but the same ten center-line miles.
The gist of Stasiak’s finding remains true today. Using similar methods and data from the Federal Highway Administration (FHWA) for 2011, we have updated his study to 2011 in two ways. First we use 2011 data for 49 states (other than Alaska) and D.C. Second, we use 2011 data for 431 metropolitan areas. Using logarithmic variables for population and area we estimate Florida’s expected values based on the other states and then calculate Florida’s log point (roughly percentage) surplus or shortfall for vehicle miles traveled and centerline miles (CLM) for urban interstates, arterials, collectors, local roads, and total roads. We emphasize that these results, following Stasiak, are for centerline miles, a measure by which Florida does not fall as short as it does for lane miles. The results are shown in Table 7.1.

Compared to other states, controlling for population and area, Florida in 2011 was 17% below its expected total centerline miles but 13% above in vehicle miles traveled. The state had less than half the total miles of collectors expected and 80% of the arterial miles. That suggests both a relative shortage of roads and a shortfall of collectors and arterials relative to local roads. In fact, among the states in both 2001 and 2011, in the arterial share of centerline miles in urban areas, where the worst congestion problems exist, Florida ranked last. Our separate analysis based on 431 U.S. cities, again controlling for population and area, found that on average Florida cities had 15% more vehicle miles traveled but also 19% more total road miles, suggesting at first glance that congestion should be no worse than average. The urban imbalance, however, remains. Florida cities have 13% more local roads and are essentially even on collectors. The shortfall is still urban arterials. Controlling for population and area, the typical Florida city has only 60% of its expected centerline miles of arterials.

Florida was also last among the states in the ratio of non-local urban lane miles to local urban lane miles (as opposed to centerline ratios), as illustrated by Figure 7.1. Although the graph shows only the 30 most populous states, Florida had the lowest ratio of any state. A word of caution about these results is in order. Though the FHWA tries to standardize road classifications across states, the categories can be a bit fuzzy. The Federal Highway Administration warns that “The functional classification process is not an exact science.”

Table 7.1: Actual and Predicted Florida VMT and CLM

<table>
<thead>
<tr>
<th>Category</th>
<th>Cross State</th>
<th>Cross City</th>
</tr>
</thead>
<tbody>
<tr>
<td>VMT</td>
<td>+13%</td>
<td>+15%</td>
</tr>
<tr>
<td>Interstate (CLM)</td>
<td>-11%</td>
<td>NA</td>
</tr>
<tr>
<td>Arterials (CLM)</td>
<td>-22%</td>
<td>-40%</td>
</tr>
<tr>
<td>Collectors (CLM)</td>
<td>-54%</td>
<td>+1%</td>
</tr>
<tr>
<td>Local Roads (CLM)</td>
<td>-9%</td>
<td>+13%</td>
</tr>
<tr>
<td>Total Roads (CLM)</td>
<td>-17%</td>
<td>+19%</td>
</tr>
</tbody>
</table>

Source: BEBR calculations from data in Federal Highway Administration Online Tables for 2011 and the 2012 U.S. Statistical Abstract. Because many cities do not have interstates, for the cross-city regressions we added interstates to arterials.

9 http://www.fhwa.dot.gov/environment/publications/flexibility/ch4
Arizona and Nevada have similar imbalances, though less severe than Florida’s. Another classification problem is the uncertain dividing line between rural and urban. In 2001 Florida had a jump in urban miles and a corresponding drop in rural miles following the reclassification of areas from rural to urban after the 2000 census.

Nonetheless Florida has a genuine shortfall in urban arterials relative to local roads, and Stasiak had an explanation for it. In Florida, the absence of an income tax results in heavier reliance on the property tax for funding total state and local spending. At the same time, rapid growth has occurred in unincorporated areas that are provided with urban services and in other respects are urban. But they escape urban property taxes. As subdivisions are built, developers put in local roads but contributed little to the regional road network.

Much of Florida’s growth is in the form of in-migrant retirees, or empty nesters soon to become retirees. Building on Stasiak’s proposed explanation, perhaps these retirees or empty nesters need local roads to open up access to land to keep house prices down and to take them back and forth to local retail outlets and restaurants. Since they do not commute to work, they do not care about having many arterials. Thus, retirees and empty nesters benefit from a system where they pay no income tax and escape urban property taxes because they don’t suffer much from the relative lack of arterials. Lacking the support of such an important political group, this problem with funding urban arterials identified by Stasiak over two decades ago is harder to address. Statistical analysis of variation in the share of arterials in urban roads,
or slightly more broadly of the share of all non-local roads in urban roads,\textsuperscript{10} finds retirees account for most of Florida’s difference from the nation, approximately 50% to 70% depending on the specification and just what is controlled for. Rapid growth is second in importance, but the results vary more with specification and account for less of the difference.

7.3. Urban Congestion

Each year the Texas A&M Transportation Institute (TTI) reports on urban traffic congestion. Their December 2012 report, covering calendar year 2011, had a stronger data base than those for previous years for two reasons. (TTI, 2012). First TTI used detailed information gathered from cell phones and other sources by Inrix Traffic. Second, TTI received support from the National Center for Freight and Infrastructure Research and Education at the University of Wisconsin to estimate the cost of commercial truck congestion. The results for major urban areas in Florida in 2011, plus extrapolations by us for the state, are in Table 7.2.

<table>
<thead>
<tr>
<th>Urban Area</th>
<th>Hours per Commuter</th>
<th>Travel Delay 1000 Hours</th>
<th>Travel Time Index</th>
<th>Planning Time Index</th>
<th>Truck Congestion Cost ($million)</th>
<th>Total Congestion Cost ($million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Miami</td>
<td>47</td>
<td>174,612</td>
<td>1.25</td>
<td>1.72</td>
<td>739</td>
<td>3,749</td>
</tr>
<tr>
<td>Tampa</td>
<td>38</td>
<td>62,876</td>
<td>1.20</td>
<td>1.54</td>
<td>246</td>
<td>1,325</td>
</tr>
<tr>
<td>Orlando</td>
<td>45</td>
<td>46,607</td>
<td>1.20</td>
<td>1.42</td>
<td>248</td>
<td>1,031</td>
</tr>
<tr>
<td>Jacksonville</td>
<td>30</td>
<td>22,629</td>
<td>1.14</td>
<td>1.35</td>
<td>103</td>
<td>486</td>
</tr>
<tr>
<td>Sarasota</td>
<td>21</td>
<td>10,523</td>
<td>1.12</td>
<td>1.05</td>
<td>41</td>
<td>222</td>
</tr>
<tr>
<td>Cape Coral</td>
<td>30</td>
<td>9,964</td>
<td>1.14</td>
<td>1.13</td>
<td>53</td>
<td>220</td>
</tr>
<tr>
<td>Pensacola</td>
<td>22</td>
<td>5,635</td>
<td>1.11</td>
<td>1.09</td>
<td>22</td>
<td>119</td>
</tr>
<tr>
<td>TOTAL</td>
<td>NA</td>
<td>332,866</td>
<td>NA</td>
<td>NA</td>
<td>1,452</td>
<td>7,152</td>
</tr>
<tr>
<td>Florida (est.)</td>
<td>NA</td>
<td>384,816</td>
<td>NA</td>
<td>NA</td>
<td>1,702</td>
<td>8,384</td>
</tr>
</tbody>
</table>

Source: TTI (2012), Tables 1, 2, and 3. NA means not applicable. Columns: Urban Area is the largest urban area containing the city listed. Miami includes Miami-Dade and Broward counties. Hours per Commuter is annual hours of congestion delay per automobile commuter. Travel Delay is total delay caused by congestion, Travel Time Index is the ratio of rush hour to free-flow travel time. The Planning Time Index denotes the extra time a driver should devote to a trip to avoid being late more than once a week, e.g. an average Miami commuter needs to schedule 17 minutes for a normal 10-minute trip to avoid being late more than once a week. Truck congestion cost estimated at $86.81 per hour of delay. Auto passenger congestion cost estimated at $16.79 per hour of delay.

The Florida estimate is our extrapolation of the table to include the rest of Florida. The row should be read as “Total hours of congestion delay was probably less than 400 million, the truck delay cost was likely around $1.7 billion, and the auto delay cost was around $8.4 billion, assuming the TTI costs per hour are correct.” For comparison, Florida’s gross state product in 2011 was $746 billion.\textsuperscript{11} Congestion delay, then, may be on the order of 1% of GSP. As another

\textsuperscript{10} Non-local roads are all roads not classified as local roads, that is roads classified as collectors or arterials.

\textsuperscript{11} From the Federal Reserve Economic Data (FRED), [http://research.stlouisfed.org/fred2/series/FLRGSP?cid=27291](http://research.stlouisfed.org/fred2/series/FLRGSP?cid=27291)
comparison, Florida’s state and local spending on roads in 2007 was $9.8 billion, a bit more than TTI’s estimate of 2011 congestion cost.\(^\text{12}\)

A recent rival to the TTI measures has been developed by three Canadian economists (Couture, Duranton, and Turner, 2012). Their innovations are (1) to construct an average speed index that adjusts across urban areas for trip length (speed is greater on longer trips), type of trip (e.g., commuting and shopping), and type of driver (e.g., older drivers are slower than younger ones) and (2) to recognize that vehicle miles traveled and congestion depend on each other. For a given road network, more VMT causes more congestion but more congestion in turn causes people to drive less. Using data from the US Department of Transportation’s National Household Transportation Surveys, after noting that the average driver spends 72 minutes a day driving and that the median household spends 18% of its budget on road travel, they estimate speed indexes for five Florida metropolitan statistical areas in Table 7.3.

The row for Miami-Ft. Lauderdale, which the Canadians estimate to be the most congested MSA among the fifty largest in the United States, shows that its speed index fell from 91% of the average in 1995 to 88% in 2001, and remained there through 2008. Since average speed in the fifty MSAs fell by 11% over those years, that suggests that speed in Miami-Ft. Lauderdale fell by about 14%. Of the five MSAs, the largest increase in congestion was Tampa-St. Pete-Clearwater. The 11-point drop in the index corresponds to a 23% decrease in average speed. West Palm Beach-Boca Raton, in contrast, gained both against other cities by 14 percentage points and even three percent or so in absolute speed. Though data are not yet available, it is likely that average speed increased slightly during the recession, as vehicle miles traveled fell.

These congestion measures do not tell us how much should be spent on adding and maintaining roads, which depends on how much travel costs can be reduced per dollar spent. For a rough idea of what may be at stake, a back-of-the-envelope calculation suggests that Floridians in the aggregate spend on the order of $50 billion a year of on road travel and 5.6 billion hours a year driving.\(^\text{13}\) If on average the time spent driving is valued at $9 an hour, then that time is worth $50 billion. Summing, the aggregate cost of driving in Florida is on the order of $100 billion a year. State and local government spending on roads, as noted, is on the order of $10 billion a year. For a given amount of driving, would increasing that amount by 20% or $2 billion by speeding traffic flow, reducing potholes, reducing gasoline burned in heavy traffic,

\[^{12}\) Road spending from *U.S. Statistical Abstract 2012*

\[^{13}\) Spending: Median household income in 2011 of $44,299 times 18% times 6.3 million households. Hours : 72 minutes per day times 365 days times 12.9 million drivers.
and avoiding higher maintenance costs caused by delay reduce total cost by more than, say, 6%? Would $2 billion a year get you more than $3 billion a year? Given the durability of road maintenance and construction, that seems likely in present value, though we cannot be certain.

So far our crude calculations have not accounted for commercial truck traffic, which carries over $500 billion worth of goods a year in Florida and which accounts for 20% of TTI’s estimate of congestion cost in Florida’s largest urban areas. Truck traffic is also a major component of congestion on Florida’s interstates, which congestion is likely to increase in coming years. It is possible that improving traffic flow for trucks will increase manufacturing and other middle-class jobs for Floridians, especially if it is linked by improved intermodal facilities to seaports.

As a practical matter, the way for Florida to reduce congestion will have to include more user fees, including HOT (high-occupancy or toll) lanes, such as those in Miami; congestion pricing; and charges by public-private partnerships (PPPs). Fortunately, public-private partnerships are finding it easier to find capital, as large investment funds are creating specialized offices for analyzing them (Marriage, 2013). When well-structured, tolls have the additional advantage of reducing congestion directly.

7.4. Attempts to Fund More Arterial Roads from the 1980s to the Present

There have been various attempts in Florida to alleviate urban congestion and to boost funding for a rational road network. One was the 1985 Growth Management Act (GMA) requiring that local development be accompanied by concurrency for several types of infrastructure, including roads. Though the GMA led many counties to impose impact fees on new development to fund infrastructure, the fees were seldom substantial and the GMA appears to have had limited success in general, including funding arterials. (Burge and Ihlanfeldt, 2006) John DeGrove (2001) concluded that growth management lost clout with respect to transportation infrastructure because of underfunding by the state.14

This failure was not for lack of information. In February 1987 after more than a year of investigation, a group of 21 business people and elected officials issued an influential document, known as the Zwick report, estimating the minimum infrastructure investment required to make Florida competitive.15 The figure was $54 billion. Adjusted to 2013 dollars that is $111 billion. If also adjusted from 12 million people in 1987 to 19 million now, it becomes $176 billion. It amounted to 27% of Florida’s $200 billion a year personal income at the time.

The state legislature considered raising the gas tax a nickel a gallon, half of what the Zwick report urged, but Governor Martinez pledged to veto any hike (Hirth, 1989). There was,

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14 For more on growth management see deHaven-Smith (1988) and Brumback and Marvin, 1989.
however, an alternative. A seemingly reasonable prospect for funding Zwick’s large sum over a period of years was available, extending the base of the sales tax to include services. Besides reducing the inefficiency and regressivity caused by taxing goods only, including services in the base would have allowed the sales tax rate to be cut while helping fund the state’s share of growth management and in particular the provision of infrastructure concurrent with development. With the support of Governor Martinez, legislative leaders, and many business leaders, in 1987 the service tax passed. The Department of Revenue, however, was unprepared to collect the tax. More importantly, the law prompted a fire storm of anti-tax campaigns, fueled by out-of-state companies, the advertising industry and other service-providing firms. Legislative leaders thought a compromise could work: delay implementation of the service tax and exempt advertising. But Martinez turned against the tax and before the year was out, the state rescinded it (MacKay, 2010). In spite of an increase in the sales tax and later, an increase in and partial indexation of the gas tax in the early 1990s, the result was that the state share of transportation growth management remained seriously underfunded. Developers provided the local roads their new areas needed but not the arterials. (Nicholas and Steiner, 2000) We can speculate about whether Florida would now have better infrastructure, better schools, more college graduates, and first-tier innovative cities had the service tax remained in place. But there is no way to know.

A second chance to boost road funding came during the housing boom years from 1999 through 2007, when state and local revenues soared. So too did vehicle miles traveled, lifted by rising population and income and by sprawling residential development fed by easy finance. During those eight years, as illustrated in Figure 7.2, VMT rose by 45%; lane miles, only 10%, as the state’s windfall went instead to tax cuts. Figure 7.2 also shows how both the lane-mile index and especially the VMT index have risen far more than in the U.S. overall. Florida and the nation have both become more congested.

A third missed opportunity came during the recession years after the collapse of the housing boom. The unemployment rate jumped, with construction labor abundantly available.
The state entered its usual recessionary bind—more severely than usual—as revenue declined while the demand for services rose. But low interest rates made funding through high-grade municipal bonds cheap. With so much of the work force idle, each million dollars a year of highway spending, by a conservative estimate, would have created ten jobs. The state could have bonded $5 billion a year in highway construction, resulting in employment for 50,000 people. Yet from 2007 to 2011, lane miles increased less than one percent, even less than the three percent increase in population during those depressed years. Part of the problem was the Hurricane Catastrophe Fund. The threat it posed to Florida’s access to bond markets at low interest rates spooked legislative leaders, making them unwilling to borrow heavily to build or repair roads. VMT edged down as fewer people drove to work and households were too strapped for cash to shop and dine out as often, but even so VMT remained out of balance with roads. Congestion eased slightly, but continued to be worse than in the 1990s.

7.5. Funding a Large Increase in Urban Arterial Lane-Miles Is Unlikely

Although efforts over the past quarter-century to fund transportation infrastructure adequately have been only partially successful, that does not mean that they will remain so in the future. For one thing, congestion has become worse than ever. While wasting time in traffic jams, voters might rethink their aversion to higher transportation taxes. Moreover, widespread use of tolls and, especially, congestion fees, which have proved unpopular in the past may be more appealing now. We argue that times have changed. But first we look at standard sources of revenue for Florida’s transportation infrastructure: federal funding, state and local motor fuel taxes, impact fees, and local sales taxes.

Federal funding of Florida’s highway system, which comes from the Federal Highway Trust Fund, is projected to remain at its current level of around $2 billion a year through at least 2019 (FDOT, 2013). Funding is allocated to states via complex funding formulas—similar to the allocation of other types of transportation funding—outlined in the Federal Authorization Act. Such authorizing legislation has been implemented since 1916 and is renewed regularly either through multi-year authorization acts or through more flexible surface transportation acts (FHWA, 2013). Though various highway related taxes contribute to the Federal Highway Trust Fund, such as the federal excise tax on tires, its primary revenue source is the federal motor fuel tax. The federal tax was raised from 14 cents per gallon to 18.3 cents in 1993 and has remained there since. Unlike Florida’s state gas tax, it is not indexed for inflation. If it had been indexed, it would now be 29.6 cents per gallon. Florida’s share would be more than $3 billion.

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16 James Feyre and Bruce Sacerdote (2012) estimate that an extra $100,000 of state road spending during the recession created 2.8 jobs. Jeffrey Clemens and Stephen Miran (2010) estimate $25,000 spent created one job. Daniel Shoag (2010) estimates $35,000 spent created one job.
If, as is likely, inflation continues, the Trust Fund’s revenue will decline in real terms as vehicles become more fuel efficient. As is well known, the federal political and financial situation is not such that there is likely to be a gasoline tax hike, any other tax increase, or, increased federal borrowing to fund added federal road assistance. As of May 2012 the additional federal support for highways that came from stimulus funds known as Highway Infrastructure Investment Grants had nearly all been obligated. (Hartgen et al, 2013) Florida will have to rely more on its own resources.

Of those own resources, both state and local, the most important are once again motor fuel taxes (see earlier discussion in section 3 of the gas tax). Here we provide a brief complementary perspective, explaining why Florida is unlikely to see much increase in per capita gasoline tax revenues. Figure 7.3 shows Florida’s revenue from the motor fuels tax for fiscal years 1990 to 2013 and projections from the August 2, 2013 transportation revenue estimating conference through fiscal year 2022, all in constant 2013 dollars. The projections call for vehicle miles traveled per resident to rise by 18%, close to the projected 17% increase in real income. The projected increase in VMT seems reasonable, in spite of Florida’s aging population (older residents drive less than other adults). As the state’s economy continues to grow, we can expect a larger share of the population to drive to work, to go shopping more often, and to go out more often.

How is it, then, that the Revenue Estimating Conference expects real per capita revenue from the motor fuels tax to be basically flat, rising by only 3% over the nine years? There are two reasons. First, though the state gasoline tax is indexed to the consumer price index, rising automatically with inflation, a portion of the local option taxes are not, and will fall in real terms as prices rise, by an estimated 17% over the nine years. Second, and more important, the Revenue Estimating Conference projects that Florida’s vehicle fleet fuel efficiency will rise from

![Figure 7.3](image-url)

Sources: Calculated from data in Florida Revenue Estimating Conference: Long-Term Revenue Analysis, Volume 28, Fall 2012 and Florida Revenue Estimating Conference, Transportation Revenues, August 2, 2013. Values to the right of the vertical line are Conference projections.
20.53 to 23.93 mpg, a 17% increase. Thus the increase in VMT will require little extra fuel per capita.

Of course state and local gasoline taxes could be raised or other revenue sources could be dedicated to transportation. Aside from scattered increases in local option taxes, however, that appears to be unlikely for the foreseeable future. Two counties with enhanced self-governance, Miami-Dade and Duval, have enacted one-cent general sales taxes for transportation. The legislature may grant that option to one or two more counties but, again, a widespread authorization and implementation of such a tax appears unlikely. Many counties also use impact fees on new development to fund arterial lane-miles. Relative to needs, however, those revenues are of limited significance and are likely to remain so. First new development is likely to remain a smaller share of Florida’s economic activity than it was in previous decades. Second, the state legislature has restricted impact fees. Third, impact fees are supposed to pay a fair share of the cost of joining a local jurisdiction as if it were a club. In the courts, equity is a concern. More and more, developers are coming to realize that in joining a local jurisdiction the new developments will share the jurisdiction’s unfunded pension obligations and backlogged road repairs along with its existing infrastructure. Also realizing that, local governments will be more likely to avoid high impact fee levels that might discourage new development.

7.6. Public Transit

In FY 2010, Florida’s state and local spending on public transit was about $77 per resident, ranking it 22nd among the 50 states.17 This spending per capita rank is rather low when considering that Florida ranked 8th in terms of population density in the 2010 Census. In addition to those who rely on public transportation as a means of going to work and shopping, the importance of public transportation in Florida ties in with congestion issues. In 2011, residents of Florida’s four largest urban areas were saved over 15 million hours and $323 million due to congestion alleviation from public transit (TTI, 2012). Perhaps these savings could have been greater given Florida’s annual urban transit ridership—just over 268,000 in 2011—ranked 8th among all states (not including D.C.) while Florida was the 4th most populous. (RITA, 2013)

The ratio of revenue to expenditures tends to be low for public transportation, and Florida at 18% in 2010 is a bit below the U.S. average of 21.5%. (RITA, 2013) However, the congestion relief from public transit represents significant benefits to residents who do not use it themselves. Equally importantly, many low-income individuals rely on low-cost public transit.

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According to the Florida Public Transportation Association, a household can save more than $9,000 annually by using public transit and living with one less car.18

Public transit receives federal, state, and local assistance. For most fuel types, $0.0286 per gallon of the federal fuel tax is earmarked for the Mass Transit Account (FDOT, 2013). These funds are distributed through formula grants and discretionary allocations, which amounted to $389 million for Florida in 2009. The state government provided $181 million in the same year, less than half of what the federal government put forward (AASHTO, 2012). Of the $184 million spent by the state in 2010, only 7.4% was used for capital expenditures while 19.9% went to operations. The majority of the funds—72.7%—were used for planning and grant funding. Only $32 million of the state funds, or 17.3%, were dedicated. State law requires that 15% of the funds from the state transportation trust fund be spent on public transportation. However, this includes rail, aviation, seaports, and intermodal facilities in addition to transit. In 2010 only 5% of state transportation expenditures went to public transit. Table 7.4 shows an additional breakdown of state spending on public transit along with revenue sources.

Table 7.4: State Funding of Public Transit in Florida, (Thousands of Dollars)

<table>
<thead>
<tr>
<th>Source: American Association of State Highway and Transportation Officials</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Transit Block Grants and State Match to Federal Grants</td>
</tr>
<tr>
<td>Discretionary State Grants to Transit Systems</td>
</tr>
<tr>
<td>Transit Technical Assistance, Studies, and Planning Support</td>
</tr>
<tr>
<td>State New Starts</td>
</tr>
<tr>
<td>Gas Tax</td>
</tr>
<tr>
<td>Reg/Lic/Title Fees</td>
</tr>
<tr>
<td>Interest</td>
</tr>
<tr>
<td>Rental Car Surcharge</td>
</tr>
<tr>
<td>Interest</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

The American Society of Civil Engineers gave Florida a “C” rating for its public transit systems in 2012, citing decreased ridership due to reduced funding and fewer routes. Although the state government does provide funding for all major types of transit needs—capital improvements, operations, and planning—the state per capita funding of $9.88 for transit in FY 2010 is low in comparison to most other urban states. Moreover, the state has several untapped options for increasing mass transit funding. For example, from 2007 through 2010 Florida’s state government, in contrast to many other states, did not use any bond proceeds to fund mass transit. Although this would help with short-term capital improvements, a long-term solution would be to procure new, dedicated revenue sources. In any case, Florida’s Transit Office stated in 2011 that transit service for most Floridians was inadequate, and that existing

18 This estimate is from “The Economic Benefits of Public Transportation for Florida” at www.floridatransit.org/transitfacts.html. We have not looked at this estimate carefully—but clearly a low income family near a good public transit system can save expenses associated with a vehicle.
levels of transit service made it unattractive—84.4% of Florida’s urban transit ridership was transported by bus in 2009 (Florida Senate, 2011). Statewide, fare revenues accounted for only 24% of all revenue as of 2011, as seen in Table 7.5. Perhaps more contemporary transit modes could increase fare revenue, which would justify the use of bond proceeds.

In relieving traffic congestion caused by cars using arterials during rush hours, public transit is aided by economies of scale. By increasing the number of routes and reducing headway, additional spending boosts revenue, which in turn funds more routes and further reduces headway.\(^\text{19}\) Whether funding more transit is cheaper than adding lanes has to be assessed case by case. In many urban areas, Florida has an intermediate level of density that results in traffic congestion but is too low to support fixed-rail transit. A potentially important caveat is that in the long run density is likely impacted by the presence of an efficient and dense public transit system including rail—so that Florida might become dense enough to better support rail over the next few decades if rail were put in place, but not if it is not. Busses are often an incomplete but helpful partial solution.

### 7.7 Railroads

A century ago, in 1912, Henry Flagler completed “153 oceangoing miles of Florida East Coast Railway track,” reaching Key West from Miami. One of several eighth wonders of the world, it lasted until destroyed by a 1935 hurricane that then was anonymous but today would be named and classified category five (Standiford, 2002). Whether Flagler expected his investment to have a positive net present value or could simply afford a larger train set than other people is not known. Symbolically, after the hurricane the remaining tracks were taken up and the roadbed became a highway to Key West.

Railway mileage in Florida peaked in the 1920s at close to 6,000 miles (Turner, 2008), including many scattered short lines. The fully connected railway network peaked at a bit under 4,000 miles and by 2010 was down to 2,786 miles of track (FDOT and CUTR, 2013). Consolidation was especially rapid after the Staggers Act of 1980 sharply reduced federal regulation. The seemingly paradoxical result nationally was shrinking railway mileage as unprofitable routes were abandoned and an increase in freight. In November 1980, as part of the post-Staggers merger wave, the Seaboard Coast Line and the Chessie System formed CSX: C for Chessie, S for Seaboard, and X for expected growth. This is the national railroad that now owns over half the rail in Florida (Turner, 2008, Introduction and p. 223). After the merger, CSX

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\(^{19}\) Headway is the time between two busses traveling the same route.

### Table 7.5: Funding Sources of Public Transit, 2011 ($Millions)

<table>
<thead>
<tr>
<th>Source</th>
<th>Operating</th>
<th>Capital</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fare Revenue</td>
<td>347.9</td>
<td>5.5</td>
<td>353.4</td>
</tr>
<tr>
<td>Federal</td>
<td>194.2</td>
<td>172.1</td>
<td>366.3</td>
</tr>
<tr>
<td>State</td>
<td>132.1</td>
<td>37.6</td>
<td>169.7</td>
</tr>
<tr>
<td>Local</td>
<td>562.1</td>
<td>21.4</td>
<td>583.5</td>
</tr>
<tr>
<td>Total</td>
<td>1,236.3</td>
<td>236.6</td>
<td>1,472.9</td>
</tr>
</tbody>
</table>

Source: National Transit Database
(now a subsidiary of CSXT) became highly profitable by shutting down unprofitable facilities and lines.

Florida now has only a third of the railroad mileage per million people as the rest of the country: 152 miles versus 464. But asking why Florida’s per capita mileage is low is the wrong question. In contrast to highways, area is a stronger correlate of railroad mileage, and Florida has about the national average railway tracks per square mile. Better would be, “Since Florida has three times the national average population density, why doesn’t the state have more mileage per square mile?” The answer to that is easy, as it turns out. As a result of its peninsular geography, only 2% of Florida’s rail tonnage passes through the state, neither originating nor terminating inside its borders.

The regression results below show that, controlling for population and area, being coastal is correlated across states with low railroad mileage:20

\[
(3) \quad RR\_MILES = -1.77 + 0.45 \times POP + 0.55 \times AREA - 0.64 \times COAST \\
(0.23) \quad (0.07) \quad (0.07) \quad (0.22) \\
R^2 = 0.91 \quad Observations = 48 \text{ States (Alaska and Hawaii omitted) and DC}
\]

In equation (3) RR\_MILES is the logarithm of miles of railroad right-of-way, POP is the logarithm of 2011 population, AREA is the logarithm of AREA, and COAST is the share of the population living in coastal counties. The coefficients of POP and AREA are constrained to sum to one. The idea is that if you split a state in two, or alternatively joined two states, that should not affect the miles of railroad in the area covered. A statistical test readily accepts the constraint. Estimated standard errors are in parentheses. The equation explains 91% of the variance in mileage. The results may be read as a 10% increase in population is associated with 4.5% more mileage, a 10% increase in area with 5.5% more mileage, and a ten-point increase in the share living in coastal counties with 6.4% less mileage.

Even allowing for its coastal population, Florida has around 15% less mileage than expected from equation (3), probably because the variable COAST does not fully adjust for its isolation from other states. Even with the mileage shortfall, by simple measures rail capacity does not appear to be strained. Per mile of track, Florida’s railroads carry only 45% of the tonnage and haul only 47% as many carloads as those in the rest of the United States. Moreover, even though the state’s population continues to rise and its economy is once more expanding, that does not necessarily imply that there will be strong growth in freight tonnage. Historically, the service share of the economy has risen relative to goods, and the weight of goods has fallen relative to their value.

20 The data in this subsection are from the Association of American Railroads and based on the Surface Transportation Board, 2011 Waybill Sample. Calculations are by BEBR.
Is there then, any reason to invest in rails, beyond the usual maintenance and taking advantage of new technologies? The answer is yes, because doing so can alleviate the increasing congestion on highways as more and more people crowd them. One way to relieve the pressure on highways is to move people by rail instead. Florida faces a dilemma in that though most of the state is dense enough to cause highway congestion, it is not dense enough to support fixed rail. The intermediate density is just wrong, not just right. Floridians will argue for years over whether the federal dollars for high-speed rail between Tampa and Orlando that Governor Scott rejected would have had positive net social value or have been simply a large train set the state could not afford. Whichever the case, as the state grows and roads become more crowded, fixed passenger rail in some locations will become more and more attractive. In the longer run fixed passenger rail in turn allows more dense development, making the passenger rail more self-supporting.

In addition to moving people, railroads have an important role to play in shifting freight off the highways. This requires investment in intermodal facilities, more passing sidings, rebuilding of some of the state’s 5,000 plus at-grade crossings, and preservation of abandoned right-of-ways for future use.\(^21\) Whether rail freight should be subsidized in order to alleviate highway congestion is a more difficult issue.

7.8. Airports

In 2012, more than 69 million passengers boarded a plane in Florida, which was the second highest figure of any state in the nation, surpassed only by California.\(^22\) Over half of the air travel in Florida is tied to its tourism industry. The year 2012 saw the highest number of visitors to the state in history—an estimated 91.4 million, generating $4.3 billion in sales tax revenue and over 1 million jobs—with just over 50% of those visitors arriving by air.\(^23\)

In general, Florida’s state and local spending on air travel is reasonable in comparison to its dependence on airports. In SFY 2010, Florida ranked 7th in air transportation spending per capita, at just over $124 per resident, and 6th in air transportation spending as a percentage of total transportation spending, at 17%.\(^24\) In most states the majority of government spending for airports comes from local trust funds, and Florida is no exception, although the state government did transfer almost $200 million in funds to local governments for air transportation expenditures (U.S. Census Bureau, 2013). The majority of this funding is targeted in the state budget as aviation development grants, and comes from the state transportation

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21 Details about possible railroad investments are in Cambridge Systematics, 2009 and 2010.
22 Taken from enplanement data maintained by the Federal Aviation Administration at http://www.faa.gov/airports/planning_capacity/passenger_allcargo_stats/passenger/
23 Data from FDOT’s “Florida Transportation Indicators” at http://www.floridatransportationindicators.org/detail.php?chart=11b
24 Based on data from USDOT Research and Innovation Technology Administration and the 2010 U.S. Census.
trust fund.25 In 2011, this funding was greater than that from federal sources, which contributed about $131 million directly to local governments in Florida. The Florida Department of Transportation is authorized to receive federal grants for statewide projects only when no local sponsor is available, hence federal funds generally do not flow through the state government (Florida Statutes 332.007).

Essentially, between local support, the federal Airport and Airway Trust Fund—which is generated from excise taxes on air travel—and the fact that public airport revenue must be spent on activities for the airport, little state support is needed. Still, the state government provides a substantial amount of funding for continued development of Florida’s public airports, and it shows. In 2012, the state received a “B -” grade in the aviation category from the ASCE. To put this in perspective, the only category for which Florida received a higher grade was its bridge assessment, for which it garnered a “B,” and the overall U.S. aviation grade was a “D,” as seen in Table 7.6.

As a policy change, more and better use of congestion pricing for Florida’s airports seems warranted. First, as standard peak-load pricing at congested airports, planes should be charged more at peak times for landing and taking off. Second, charges should be based on how much congestion a plane causes, not how many passengers it carries. A Boeing 747-400 carrying over 500 passengers does not cause ten times the congestion of a Bombardier CRJ 200 with 50 seats. Third, and a bit novel, smaller airports should be subsidized, in some cases to the point that they do not have to charge landing fees. That will benefit the congested airports by drawing passengers away to the now-lower fares at smaller airports. Also, there are strong economies of scale at smaller airports. As more passengers enplane, the small airport offers more destinations, more frequent flights, and lower fares, which attracts still more passengers. Empirical work we have done shows these feedback effects are strong (Dewey and Denslow, 2012). Low charges for landing fees coupled with low-cost carriers have resulted in point-to-point flights among many small European airports.

### 7.9. Seaports

Florida’s seaports served nearly 385,000 one-day and a record-breaking 13.6 million multi-day cruise passengers in FY 2012 (FSTEDC, 2013). To put this in perspective, Florida

<table>
<thead>
<tr>
<th>Table 7.6: ASCE 2012 Report Card Grades</th>
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<tbody>
<tr>
<td>Transportation</td>
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<tr>
<td>----------------</td>
</tr>
<tr>
<td>Aviation</td>
</tr>
<tr>
<td>Bridges</td>
</tr>
<tr>
<td>Inland Waterways</td>
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<tr>
<td>Ports</td>
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<tr>
<td>Rail</td>
</tr>
<tr>
<td>Roads</td>
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<tr>
<td>Transit</td>
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</tbody>
</table>

Source: American Society of Civil Engineers

25 According to data from the Florida Fiscal Portal.
represents about 60% of all cruise embarkations in the U.S and a recent study by the Cruise Lines International Association (2013) claims its North American member lines contributed more than $42 billion to the U.S. economy in 2012, along with $17.4 billion in wages. If that estimate is accurate, it suggests that the cruise industry accounts for up to 3% of Florida’s economic activity.

The role of Florida’s seaports in handling exports and imports of goods is also large. Despite the economic role of seaports in Florida, state funding for these facilities is but a fraction of that for airports. According to the Census Bureau, state and local funding for seaports in Florida totaled just over $491 million in SFY 2011, which includes any federal transfers to local governments—no federal funds intended for seaports flow through FDOT. However, there is a reason for this lack of funding. While airports help to directly fund the U.S. and Florida departments of transportation—aviation fuel tax for the state and ticket, air cargo, international departure/arrival, and fuel taxes for the nation—seaports do not generate revenue earmarked directly for transportation use (FDOT, 2011). Although seaport activities generate economic activity that ultimately contributes to revenue sources such as sales and income taxes, general revenue sources are less transparent and typically give legislative bodies more discretion over spending.

Still, despite the call for more funding for capital improvements by the Florida Seaports Transportation and Economic Development Council, new revenue sources seem unlikely. For example, when Florida’s state government implemented an aviation fuel tax in 1983, most major airlines serving the state filed lawsuits challenging the legality of the tax. This raises an important issue for policy analysts—does a state rely on public revenue-generating entities to properly retain and invest capital in their own future, or does the state do it for them by collecting and earmarking funds? Projects for facilities such as airports and seaports are often massive; for example, capital improvement projects identified by Florida’s seaports each year usually total around $500 million. (FDOT, 2010) Should the state allocate additional funds, possibly from general revenue, to this cause? Despite not having a dedicated revenue source from seaports, FDOT did allocate at least $125 million to Florida’s seaports in fiscal year 2013 (Florida Families First, 2013). Often these funds require some sort of matching from the port itself; for example, the annual deposit of $15 million into the FDOT primary trust fund for economic development—which comes from motor vehicle registration fees—requires 50/50 matching from the port that receives any of the funds. Additionally, bonds subsidized by state and federal assistance are often employed for capital improvement projects, such as the State Infrastructure Bank (SIB) system.

These funding issues are of increased importance for Florida’s seaports under current conditions. The world fleet of water vessels is shifting towards ships with increased carrying capacity—half the world’s container vessels on order exceed 8,000 TEU capacity, requiring
nearly 50 feet of draft—and water passageways are expanding to accommodate these larger ships—such as the expansions on the Panama and Suez Canals. So far, Port Miami is the only port in Florida to have a deadline to meet these new standards, with plans to be dredged to 50 feet by the summer of 2015 (FSTEDC, 2013). Although Miami is by many measures the largest seaport in the state, others may also be geographically poised to compete with seaports in other states. Almost half of goods imported through U.S. seaports that wind up in Florida enter non-Florida ports. There is hope that the redeveloped Panama Canal will carry more containers from Asia through to Miami and other Florida ports, without having to be unloaded in Long Beach or Los Angeles and trucked across the country.

7.10. Tolls and Congestion Fees

The case for using fees to reduce congestion on arterials is well known.\(^{26}\) Road fees have long been unpopular with drivers, who feel entitled to free roads. The time, however, may be now ripe for them. Drivers are becoming impatient with frequent delays. Technology makes collecting road charges cheap and efficient. Floridians have become familiar with toll roads, the major example being the Florida Turnpike, and what started in major urban areas as high-occupancy-vehicle (HOV) lanes morphed into high-occupancy-toll (HOT) lanes. Drivers in Miami-Dade have accepted HOT lanes.

The state collects tolls not just on its 320-mile turnpike but also on seven other toll highways, giving experience of tolls to Floridians around the state. Florida’s Turnpike System operates as a separate unit of the Florida Department of Transportation and is responsible for all operations on every FDOT-owned and operated toll road and bridge (Florida’s Turnpike Enterprise, 2013). The System serves as a good example of how tolls can be used to fund roads. The operating and non-operating revenues and expenditures for the Turnpike are budgeted from an enterprise fund and therefore appear on a separate financial statement rather than being commingled with other government activities. In FY 2012, total revenues of the enterprise fund were just over $650 million, $608 million of which were from toll facilities. Meanwhile, total expenses were only $378 million, most of which went to operation and maintenance and interest expense. (Florida’s Turnpike Enterprise, 2012). In addition, total revenue bonds outstanding backed by toll facility revenues were $2.78 billion in the same year. Capital projects can be funded by toll revenues, existing cash, bond proceeds, or state and local funds—nearly $1 billion of the state budget went towards highway construction of the Turnpike System in SFY 2013.

In sum, the time has come for Florida and its local governments to become more serious about reducing congestion. There will be too little funding forthcoming to bring congestion

back to reasonable levels, say that of a quarter-century ago. Such things as public transit, intelligent traffic systems, and non-price demand management can help, but only a little. The effective prescription is large-scale use of congestion pricing.

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8. Summary and Conclusion

**Touch Choices** pointed out that the boom in state and local revenues during the mid-2000s would not last and that when the boom was over Florida would face an uncomfortable squeeze between pressing demands in Medicaid, education, infrastructure and other areas. This was inevitable due to various structural aspects of Florida’s revenue system, economy and demographics. The squeeze, however, has turned out to be worse than anticipated.

Florida’s state and local revenues suffered greatly due to the Great Recession and its aftermath. Federal aid from the State Fiscal Stabilization Fund helped when things were at their worst, but that aid expired in FY 2011. Recovery has been slow. In FY 2013, state revenue sources administered by the Department of Revenue were 26% below their FY 2006 level, for example. Moreover, taxable sales and taxable property values are still well below their pre-boom trends.

While cyclically state and local revenues are still down, structurally the major tax bases do not appear to have exhibited much erosion. When the recovery is eventually complete, the sales and property tax bases are adequate to support likely levels of spending, and even spending moderately above trend, without creating an unreasonable excess burden. Little economic inefficiency, for example, would result from increasing the sales tax rate per dollar by a penny, or even two, raising up to another $5 billion in revenue.

The gas tax, however, has eroded significantly. This is partly because combined state and local motor fuels taxes are only partially indexed for inflation. More importantly, improving fleet fuel efficiency reduces the tax collected per mile driven. This is particularly problematic since the gas tax is intended as a usage charge for driving on the road system. This could be easily corrected by indexing motor fuel taxes to average fleet fuel efficiency.

Heavy reliance on the property tax means the effective tax rate on property is much higher than the sales tax rate – we estimate it to be in the neighborhood of four times the sales tax rate. Reducing the required local effort property tax rate in the Florida Education Finance Program and replacing the lost revenue with a corresponding increase in the sales tax rate would, accordingly, reduce the excess burden of taxation. Moreover, broadening the sales tax base would help as well. One marginal but important broadening would be to improve collections on internet sales. Another would be to charge the sales tax on retail fuel sales in addition to the gas tax. Since the gas tax reflects a cost of providing transportation, not a tax to support general public expenditures, not charging the sales tax on top of motor fuel taxes raises the economic costs of taxation for any level of revenue collected. If the state were to decide to undertake significant expansion of investment in publically provided services and infrastructure, additional broadening of the sales tax base, for example finding an efficient way to tax many services, would become more important.
The status of the Florida Retirement System is another piece of good news. The FRS is a model of how it is possible to maintain an adequately funded defined benefit pension plan. Recent attention has focused on potential gains from transitioning to defined contribution plans only, as opposed to the current system in which employees are allowed to choose defined benefit or defined contribution. One perceived advantage is that this would make the expense to the state more predictable, pushing the risk and uncertainty regarding the future onto state employees. This is misleading since the costs of uncertainty are ultimately borne by either taxpayers or by state workers. Taxpayers are in a much better position to diversify, and thus bear that risk, than are individual workers. As a result, taxpayers are able to hire workers at a lower cost in the long run if workers are offered defined benefit plans. Switching to defined contribution only would be a bad deal for Florida’s taxpayers, relative to a responsibly managed hybrid system like the current FRS. Defined benefit plans may become too generous when pension funds do not discount their liabilities at an appropriate rate, making them appear well funded when they are not. Using a discount rate based on the expected return on assets adjusted for risk would give the right signal of the full compensation cost of hiring new employees and also the right trade-off between current pay and future benefits for those employees.

In 2012, Medicaid became the largest component of state spending, surpassing education. The per capita burden of Medicaid to Florida's taxpayers is likely to grow due to the interaction of two factors. First is the general increase in the cost of healthcare. Second, while incomes have risen on average over recent decades, they have not risen for the poor, keeping eligibility rates from falling. The continuing loss of routine jobs resulting in labor market polarization, increased demand for low-skill jobs created by Baby Boom retirees, and a general downward trend in output per worker in Florida relative to the rest of the nation mean the eligibility may continue to rise, or at least not fall, holding stringency constant. Since Florida is already more stringent than the national average, there is little room to (humanely) reduce the financial burden by further tightening access to care. Regarding healthcare costs, there is a bit of good news. Their rate of increase has slowed. Opinions differ on whether this represents a more or less permanent bending of the curve or a temporary effect of the recession and its aftermath. However, there is a chance that growing Medicaid costs, while still creating an increased burden, will not seriously disrupt Florida’s other public services.

Currently, Florida already spends much less per resident on Medicaid than the national average, only two-thirds as much after adjusting for age, mostly due to being less generous in access to care. On its face, Florida would seem to be in a position to benefit from Federal help in expanding access to healthcare for its lower-income residents. Yet Florida is one of 24 states that, at the time of this writing, had elected not to participate in the expansion provision of the Patient Protection and Affordable Care Act (PPACA).
In K-12 education, funding per student and teacher salaries in Florida lag not just the U.S., but the south as well. Among states, Florida’s real teacher salaries declined at the 4\textsuperscript{th} fastest rate from the 2000-2001 through the 2011-2012 school years. Accountability requirements will continue to stress schools and teachers. Given the slow recovery of revenue sources and increasing demands of funding Medicaid, it will be difficult to support and improve the quality of our teaching workforce and schools without increasing tax rates, however unlikely that may be. Growth in in-migrant retirees will make raising tax rates even less likely. The Florida Education Finance Program (FEFP) is intended to largely equalize educational resources across school districts. Yet, it forces students in all 67 Florida districts to be funded below the national average. Allowing districts that choose to do so to charge additional (unequalized) discretionary millage sufficient to bring per student spending in their districts up to the national average would help. Reducing the required local effort millage in the FEFP and replacing it with a slightly higher sales tax rate with the proceeds devoted to education would give the districts room to make meaningful discretionary investments in addition to addressing the imbalance between effective property tax rates and the sales tax rate. This would allow districts that want to fund education to do so without having to convince the rest of the state that the investment is worthwhile, taking advantage of the fact that in-migrant retirees will not be uniformly distributed through the state. Further, people, in-migrant retirees included, may be more willing to pay higher taxes to support young people in their own neighborhoods than in other districts.

Funding for higher education has fallen even further behind the rest of the nation since \textit{Tough Choices} – Florida was last in the nation in the sum of state funding and net tuition per FTE for the 2011-2012 school year. The prospects for additional funding for state funding seem bleak given likely demands created by Medicaid and K-12 education. Allowing universities to charge tuition comparable to the schools with which they compete would bring substantial benefits, including improving rankings and graduation rates and promoting competition. Recent studies have documented a dramatic decrease in time students devote to their studies, with less than one in five students reporting spending more than 20 hours per week on combined class attendance and studying outside of class. Leading candidates for the cause of this decline are large classes and grade inflation. Finding creative ways to take advantage of student study time – perhaps universities’ most important but largely untapped educational resource – would help make the most of limited resources in higher education.

Congestion in Florida’s major urban areas is among the worst in the nation. That is caused partly because Florida has less than its share of roads, even after adjusting for density and the fact that the state is a peninsula, and thus has no roads pass through on their way elsewhere. That shortage is concentrated in urban arterials. Florida’s share of non-local roads in all urban roads is highest in the nation. That in turn, statistically, is largely accounted for by
having a high population share of those 65 and older. Possibly, retirees need local roads to open access to cheap land, and thereby keep home prices down, and access to local stores and restaurants, but do not need many urban arterials to ease commutes, as do workers. With coming Baby Boom retirements, and repeated failures to make the choices needed to raise revenues to address road shortfalls in the past, Florida is unlikely to address its urban transportation needs by building major urban roads. Public transit and railroads may help at the margin, but our intermediate density means they will not be a large help in the near future – Florida is dense enough to create congestion but not presently dense enough to support high levels of ridership on busses or fixed passenger rail. We argue the time is ripe for widespread implementation of tolls and congestion fees to make the best use or our transportation infrastructure.

Policymakers and business leaders in Florida have long talked of diversifying Florida’s economy, attracting innovative firms that would bring high-skill jobs and move Florida to the forefront of the knowledge economy. This is the goal laid out in Roadmap to Florida’s Future: 2010-2015 Strategic Plan for Economic Development.¹ In the mid-1980s, with Florida’s income per capita at approximate parity with the rest of the nation, K-12 teacher salaries and per student funding leading the south and not far behind the national average, and a beautiful natural environment and warm winters that are attractive amenities, anything seemed possible with a willingness to invest just a bit more in a brighter future. As shown in the Zwick Report, at that time Florida already suffered an infrastructure gap, but a modest fix to the gas tax and/or a broadening of the sales tax base at a lower tax rate (that was almost achieved) would have allowed that to be addressed putting the state on track to be a full partner in the knowledge economy of the 21st century.

Chances for such a future are distant now. We think Florida passed a tipping point in the 2000s – a point at which the gradual accumulation of many small changes became a large and (nearly) irreversible one. New high-skill jobs go where there are existing concentrations of high-skill jobs because they are more productive there. They go where investments in K-12 and higher education are world class, both to tap into the talent pool and because the workers want good schools for their children. They go where infrastructure is configured to support mobility in dense, dynamic, urban centers. In 1985, Florida was close and modest continued investment might have gotten us there. Now, we have a long way to go with a low share of high-skill jobs and low educational attainment among our young workers. That low starting point will be reinforced by the interaction of continuing labor market polarization, Baby Boom retirees, low relative investment in K-12 education, and the fact that high-skill workers avoid cities where there are not already lots of other high-skill workers. Prospects for a major revenue increase to fund infrastructure investment seem slim.

Our future seems to be largely focused on providing a safe, warm, pleasant location for great vacations for tourists and comfortable golden years for the nation’s retirees. There is nothing inherently wrong with either of these roles – they can provide a happy enough life for many Floridians. But, we could have done better. Perhaps we still can, but the cost will be much higher.

Not every city in a state as large as Florida can be a leader in the knowledge economy. Many cities in California, for example, are not significantly more skilled than cities in Florida. But, we feel Florida should have a few cities that are centers of high-skill workers. Retirees will not be uniformly distributed around the state. If the state as a whole is unwilling or unable to devote substantial resources to education and infrastructure to invest in the future, we think it should empower local areas that are willing to do so to try. Tampa, Orlando, Gainesville, and Tallahassee, for example, are young and home to major state research universities. Letting universities charge higher tuition, replacing required local effort with additional sales tax revenue and allowing districts to levy much higher unequaled discretionary millage until per student spending equals the national average per student, and providing more local option revenue sources for infrastructure investment would allow some of our cities the chance, at least, to achieve real participation in the innovation economy, even if much of the rest of the state focuses on tourists and retirees.

Florida’s leaders have often faced tough choices. LeRoy Collins, the revered governor who inspired the establishment of the LeRoy Collins Institute, provides a model for governance as he willingly risked his political career to guide Florida toward the right side of history during turbulent days in the 1950s and 1960s (LeRoy Collins Institute, 2013). Collins had political courage, visionary positions, a mastery of the art of politics and an inherent optimism that as a society we will rise to our challenges, if not sooner than later. Collins was not alone in his steadfast optimism. Martin Dyckman (2011, p.282), in his biography of Reubin Askew, wrote that “Askew and allies such as Richard Pettigrew, Don Reed, Buddy MacKay, Nathaniel Reed, and Curt Kiser shared a belief, regardless of party, that the American political process was inherently good.”

Floridians today face choices that are very tough. There is no reason to expect revenues to soar again, as they did in the early 2000s, postponing the need to face those choices. We must choose among becoming even more stringent in providing medical care to the poor, allowing K-12 schools to continue to languish without the resources needed to live up to the demands placed on them, expecting state universities to provide the best in the way of education without the funding to provide anything but huge class sizes or to retain the best faculty, and an urban transportation network that cannot adequately support mobility, or else implementing tax changes that will allow state and local government revenues to grow commensurate with those demands. More subtly, these choices are tough not just because...
there is no free lunch, but also because they often must be based on information that is far from complete, and because of the time and effort needed to make well informed choices and to revise those choices as needed over time. Floridians need to work hard and have open minds to guide some tough choices. They have a right to expect their elected officials – like the Floridians of earlier years – will lead the way. Failing to do so is simply choosing to accept a future far less bright than it could be.

Many of the issues raised in this report merit further and deeper study. Even more importantly, we hope that leaders and other citizens will show the faith in Florida of Collins, Askew, Zwick, MacKay and many others to be justified. LeRoy Collins’ view was clear: “Not favoring a strong government for the sake of strength alone,” Collins said, he believed that “the government remains the one vehicle through which all the people can work together to accomplish goals which they, as individuals and through private enterprise and resource, are unable to achieve” (Edmunds, 2013).

References
http://collinsinstitute.fsu.edu/sites/collinsinstitute.fsu.edu/files/LeRoy%20Collins%20Legacy%20-%20Web%20FINAL.pdf
Established in 1988, the LeRoy Collins Institute is a nonpartisan, statewide policy organization which studies and promotes creative solutions to key private and public issues facing the people of Florida and the nation. The Institute, located in Tallahassee at Florida State University, is affiliated and works in collaboration with the State University System of Florida.

Named in honor of Florida Governor LeRoy Collins, the Institute is governed by a distinguished board of directors, chaired by Lester Abberger. Other board members include executives, local elected officials, and other professionals from throughout the state.

Beginning in 2005, the Institute produced several reports in a series called Tough Choices: Shaping Florida’s Future. These publications provided an in-depth analysis of Florida tax and spending policy and concluded that Florida’s pattern of low spending and low taxes conflicted with the growing demands of the state’s residents, predicting trouble might be ahead.

Recent work has produced the series, Tough Choices, Facing Florida’s Governments, examining local retirement benefits, including pensions and other post-employment benefits, as well as ethics policy at the local level, all timely issues in state and local relationships.

This report, Tougher Choices, Shaping Florida’s Future, is an update of our original 2005 research. The report examines the past and predicts the future of state revenues, demographics, the Florida Retirement System, K-12 education, higher education and infrastructure, particularly transportation. Dr. Jim Dewey, Director of the Economic Analysis Program at the University of Florida’s Bureau of Economic and Business Research (BEBR), and Dr. David Denslow, a former director of BEBR co-authored the report with the assistance of Ray Schaub, Yujing Zhang, James Gibson, and Brian Flaxman with BEBR. Institute Director Dr. Carol Weissert wrote the executive summary and Lindsay Potvin, Christen Smith, Jamie Mongiovi and Stacie Linley contributed to the editing, proofing and production of the report.

The Tough Choices research series is supported by funds from the Jessie Ball duPont Fund. Future reports in the series will examine local retiree health benefits, special districts, and state intergovernmental aid.

All publications can be found on the Institute’s website: http://collinsinstitute.fsu.edu.