Special Report
April 2008

106 N. Bronough St. • P.O. Box 10209 • Tallahassee, FL 32301 • (850) 222-5052 • FAX (850) 222-7476

This report was initially released electronically before being printed in hardcopy

Transportation Infrastructure Investment Will Stimulate Florida's Sluggish Economy and Increase Productivity

An efficient transportation system is critical to Florida's economic viability, development, productivity, and the quality of life for the state's citizens and out-of-state visitors. Investment in transportation infrastructure generates a wide range of economic benefits for both individuals and businesses. Transportation infrastructure investment reduces traffic congestion and accidents, while it increases mobility, productivity, and leisure time. In short, it is a crucial component in the daily lives and livelihoods of taxpayers, the quality of which can either greatly enhance or impair their ability to save time and money and enjoy their time off. Likewise, for businesses, it encourages a more efficient, reliable, and safe exchange of goods and services. It is the platform that links our commerce exchanges and ensures our economic competitiveness both in-state and inter-state. The need for a robust Florida transportation infrastructure cannot be understated.

Statutory Recommendation (SR) 36, adopted by the constitutional Taxation and Budget Reform Commission (TBRC), proposes to modify and/or adjust current user fees and taxes related to transportation funding. The proposal recommends that the Legislature increase the automobile title fee over a three-year period and then index it to the U.S. Consumer Price Index (CPI). The recommendation also proposes a similar change for vehicle license taxes. The recommendation will create the National System Tax indexing federal fuel taxes and also indexing local option fuel taxes. Finally, the recommendation will require statewide implementation of the 9th cent Motor Fuel and maximum 11 cent Local Option Fuel taxes. All revenues generated will be deposited into the State Transportation Trust Fund (STTF) and will be used to improve the state's transportation infrastructure.

The Regional Economic Models, Inc. (REMI) was used to capture the direct, indirect, and induced economic impacts resulting from transportation investment and changes in taxes and fees based on SR 36.

Transportation in Florida[1]

The Florida Department of Transportation (FDOT) is responsible for the planning, design, construction, maintenance, and operation of all roads and bridges on the State Highway System, as well as assisting the owners and operators of a substantial network of seaports, airports, railroads, and public transit. Local governments are accountable for local systems (such as local bridges and public transit).

Florida's transportation system consists of 130 public aviation facilities (in addition to 19 which have scheduled commercial passenger service), 2,100 railway miles, nearly 120,000 centerline miles of public roads, 14 deepwater seaports, and 29 fixed-route transit systems. The State Highway System (SHS) consists of 12,067 centerline miles of road, 42,022 lane miles, and 6,440 bridges. The Strategic Intermodal System (SIS) is composed of transportation corridors and facilities of statewide and inter-regional significance and consists of 4,295 centerline miles of major roads, seaports, airports, rail lines, and passenger and freight terminals.

The condition of the transportation infrastructure is closely linked with how well a particular region, or the state as a whole, prospers economically. The continued growth of the state has outpaced infrastructure improvements and has placed pressure on the existing transportation system. As a result, congestion in metropolitan areas has increased, resulting in a growing challenge of getting people to and from work and keeping the daily economy moving.

The Strategic Intermodal System (SIS) was established in 2003 to enhance Florida's economic competitiveness by focusing limited state resources on those transportation facilities that are critical to Florida's economy and quality of life. The department developed the SIS Multi-Modal Unfunded Needs Plan in 2006 to identify the major unfunded transportation capacity improvement needs for the SIS through 2030. By this time, the SIS multi-modal unfunded needs plan will amount to $53.2 billion in 2006 dollars according to the staff analysis. The same source estimates that this amount includes over $45 billion dollars for highways, $3.1 billion in aviation, and $5 billion for other modes in the SIS; about $4.5 billion in public transit support for the SIS is needed by 2030.

The General Revenue source for transportation is the Federal Motor Fuel Tax. The Federal Motor Fuel Tax includes approximately 18 cents per gallon in federal gas tax, 17 cents per gallon in state gas tax for the state, 4 cents per gallon for local governments, and various optional local gas taxes that can be as much as 12 cents per gallon. Altogether, approximately 50 cents per gallon goes into gas taxes, making it the engine behind transportation funding. Funding for the State Transportation Trust Fund includes proceeds from motor vehicle license taxes, initial registration fees, rental car surcharges, and other state taxes and fees; as well as tolls and document stamp tax funding.

[1] This and the following section are based on the TBRC staff analysis of SR 36.

SR 36 Proposal Features

This recommendation will incrementally increase title fees for motor vehicles over a three year period and index rates to the CPI for future years. The recommendation will increase the service charges on title fees to county tax collectors and index these fees to the CPI. It will also increase the service charges to county tax collectors for applications handled in connection with original issuance, duplicate issuance, or transfer of any license plate, mobile home sticker, or validation sticker or with transfer or duplicate issuance of any registration and then index these fees to the CPI. The recommendation will create the "National System Tax," a new state tax on motor fuels which generates state revenues equivalent to indexing the Federal Motor Fuel Tax to the CPI. All revenues generated will be deposited into the STTF. It will establish the currently optional county gas tax at 12 cents in all counties and index the 12 cent county gas tax to the CPI.

The recommendation will remove the option for counties and municipalities to control the rate of the county fuel tax and municipal fuel tax, respectively. The recommendation will require statewide implementation of the 9th cent fuel tax and 11 cent fuel tax. It will remove most eligibility requirements for the Small County Road Assistance Program (SCRAP),[2] including the enactment of local option fuel taxes, thus making it easier to build roads in small counties.

The recommendation will increase vehicle license taxes in specified amounts in 2009, 2010, and 2011, and index them to the CPI in 2012. Under this recommended proposal, the automobile title fee will increase to $33 in 2009 ($30 to STTF), $42 in 2010 ($39 to STTF), and $50 in 2011 ($47 to STTF). The recommendation will index title fees to CPI beginning in 2012 (Index fee minus $3 to STTF). It will also remove the current General Revenue service charge. The recommendation will remove the General Revenue service charge by amending Section 319.31, Florida Statutes.

The recommendation will increase the service charge to county tax collectors associated with the issuance, duplication, or transfer of any certificate of title from $4.25 to $7.25; index these fees to the CPI every three years after July 1, 2008. The Department of Highway Safety and Motor Vehicles will adjust the statutory tax collector fee by rule based upon the change in the CPI. The recommendation will also increase the service charge to county tax collectors from $2.50 to $3.50 for applications handled in connection with original issuance, duplicate issuance, or transfer of any license plate, mobile home sticker, or validation sticker or with transfer or duplicate issuance of any registration; and also index these fees to the CPI every three years after July 1, 2008. The Department of Highway Safety and Motor Vehicles will adjust the statutory tax collector fee by rule, based upon the change in the CPI.

The Research Methodology

A number of different methods, ranging from educated professional judgments to complex economic models, are used to estimate the impact of new investment on the economy. Historically, most impact studies have taken into account only the direct, short-term impacts of investment on state and local economies. For example, transportation projects and the related

[2] SCRAP assists small county governments with resurfacing and reconstructing county roads.

subsequent procurement activities directly increase demand for goods and services throughout the state, while sustaining and creating jobs. However, the economic impact of such investment will not be limited to its direct impact on the transportation sector, it will also create jobs and output in related sectors throughout the state.

The REMI dynamic input-output model was used to measure changes in consumer and producer behaviors and their impacts on the state Gross Regional Product, output, employment, and income. The model measures the effects of both the fee and tax increases and the rise in infrastructure spending. REMI captures direct, indirect, and induced impacts of transportation investment on the state economy. Indirect effects include purchases of inputs made by firms that are supplying goods and services to the transportation sector. Induced effects result from the "re-spending" of wages—that is, new employees have money to spend on a variety of different goods and services such as groceries, clothes, insurance, hospital bills, and bank services.

REMI is based on a nationwide input-output model that captures inter-relationships among sectors and measures the impact of changes in economic variables on overall economic activity. REMI's principle advantage is that it is a dynamic input-output econometric model, and can be used to forecast both direct and indirect economic effects over multiple-year time frames. The REMI model that was used for this analysis was specifically developed for the state of Florida and includes 169 sectors, and it is deployed by state economists as part of the Consensus Revenue Estimating Conference.

The Research Data

The analysis used the SR 36 staff analysis for estimates of the fee and tax increases for the 2009 to 2017 period, as seen in the table below. The motor vehicle title and license fees are treated as a personal tax. The fuel tax increases are treated as a sales tax.

Projected Revenue Increase from Fees, Taxes, and CPI Adjustment Recommended by SR 36 (in millions)

	2009	2010	2011	2012	2013	2014	2015	2016	2017
Motor Vehicle Fees	$254.4	$394.0	$542.5	$650.2	$693.9	$738.0	$778.7	$824.0	$871.6
Title Fees	$22.8	$73.0	$125.5	$138.8	$131.1	$136.4	$148.1	$157.3	$166.7
County & City Fuel	$34.3	$39.5	$48.4	$49.8	$55.0	$64.3	$69.9	$79.8	$85.7
Local Fuel Taxes	$275.8	$305.6	$333.7	$366.2	$401.9	$432.8	$468.1	$510.5	$551.1
National System Tax	$31.3	$68.2	$116.2	$155.0	$206.9	$251.1	$307.0	$377.1	$436.9
Total - Indexes & Increases	$619	$880	$1,166	$1,360	$1,489	$1,622	$1,772	$1,949	$2,112

Source: Florida Department of Transportation

According to a recent study conducted by Ernst & Young[3], the total state and local sales tax on business input in Florida was $7.7 billion in 2006. The denominator is total state ($21.7 billion)

[3] Cline, R., T. Neubig, A. Philips, and Ernst & Young LLP: *Total State and Local Business Taxes*, February 2007.

and local sales tax ($1.9 billion) in 2006. Thus, the business sector paid 32.6 percent of the total sales tax and consumers paid 67.4 percent of the sales tax. This model separated tax and fee increases into consumer and business sectors based on these percentages.

The business sector tax and fee increases were further divided into 165 industries. Each industry was allocated a share of the business sector share of fee increases in proportion to each industry's share of spending on transportation.[4]

Based on information provided by the Florida Department of Transportation, it is assumed that 55 percent of the increased revenue will be spent on infrastructure capacity development, 43 percent will be spent on operating and maintenance expenditures, and 2 percent will be spent on administration.

The REMI Model's Limitations

The Florida REMI econometric model used in this study does not capture all of the benefits of the increased infrastructure spending.[5] For example, it does not include the benefits of the reduced travel time for drivers. A 2001 study at the University of North Florida estimated that the average cost per Florida driver due to congestion-related time delays and fuel consumption was $784 per year.[6] The amount of congestion reduction, if the infrastructure is improved, is unknown. It also does not incorporate the impact of the increased number of visitors to the state that will occur as a result of the improved infrastructure. Lastly, it does not capture the benefits of increased transportation infrastructure spending resulting from the reduction in:

- The loss of life and life quality
- The loss of output due to temporary incapacitation
- Medical costs
- Legal costs
- Property damage costs

[4] The spending on transportation by industry was obtained from http://www.dot.state.fl.us/planning/policy/trends/pg07.pdf.

[5] See Appendix for information about REMI.

[6] *Cost/Benefit Analysis of Tourism in Florida*, Center for Research and Consulting in Statistics, University of North Florida, June 2001.

The Findings

The REMI model indicates that the increased infrastructure spending will yield substantial economic benefits to Florida. The impact on the state Gross Regional Product (GRP) and output is shown in Figure 1. GRP is a measure of final goods and services produced in the state, while Output is a measure of both final and intermediate goods and services produced in the state. Real Output is predicted to increase over the entire 2009 to 2017 period. Florida's GRP is predicted to rise during the years 2009 to 2015 and will modestly decline during the years 2016 and 2017. The fall in GRP will occur because of the negative effects of the fee increases on spending, as well as reduced retiree and economic migrants to Florida, in the future as the projects are built.

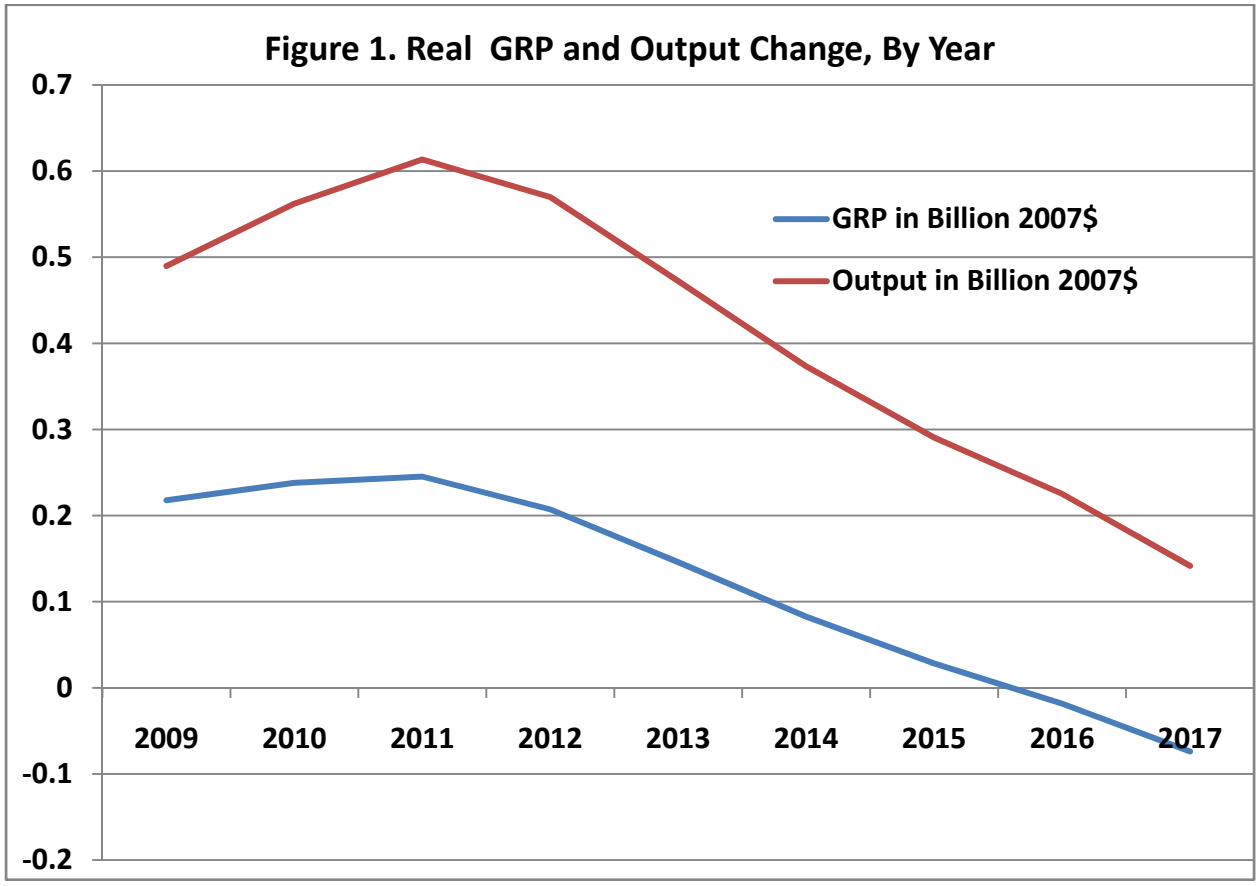


Figure 2 shows the impact of increased infrastructure spending on the change in GRP and Output over the entire 2009 to 2017 period. GRP is predicted to rise by $1.1 billion in 2007 dollars. Output is forecasted to increase by $3.7 billion in 2007 dollars.

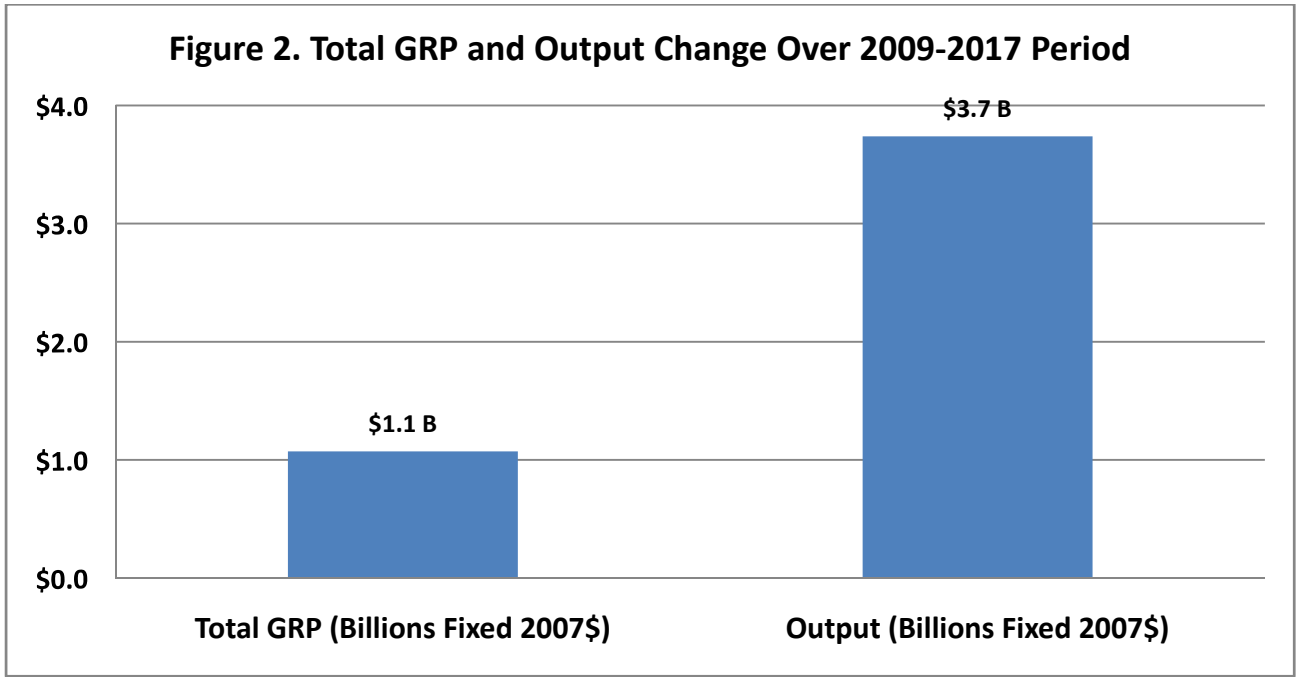


Figure 3 shows the impact of the increased infrastructure spending on employment. For each year in the 2009 and 2017 period, net employment will rise between 5,005 and 7,339 jobs. Over the entire 2009 and 2017 period, net employment will rise by 58,977 jobs.

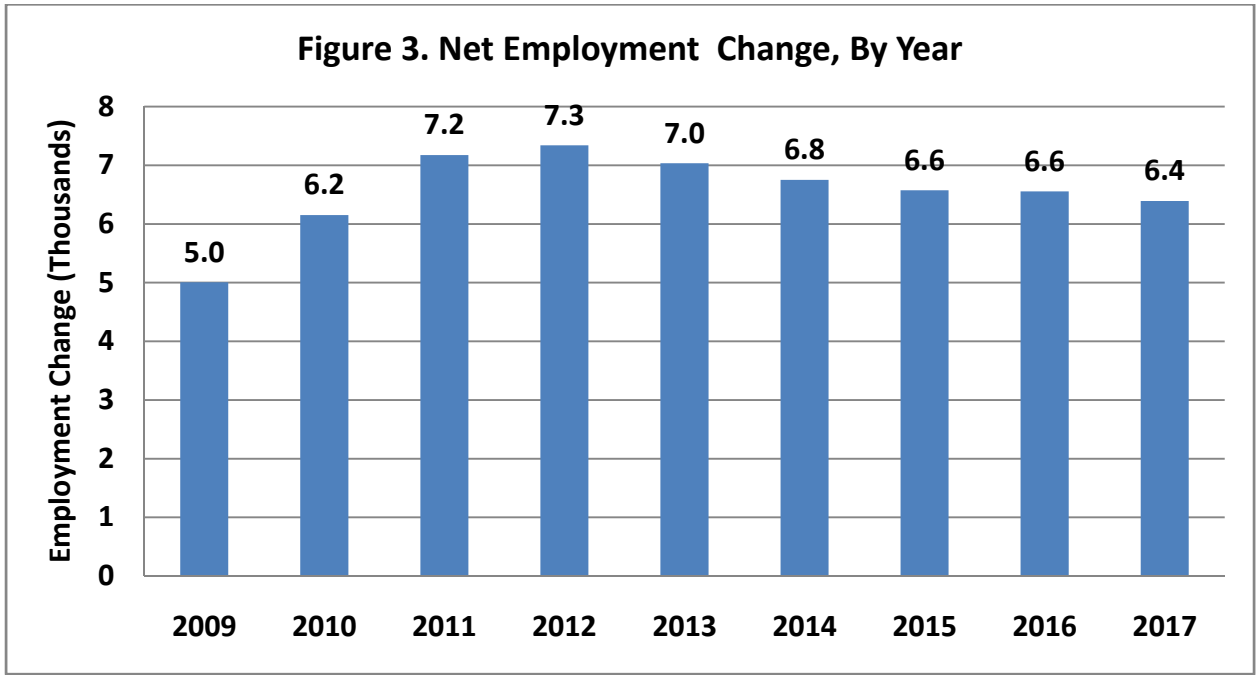
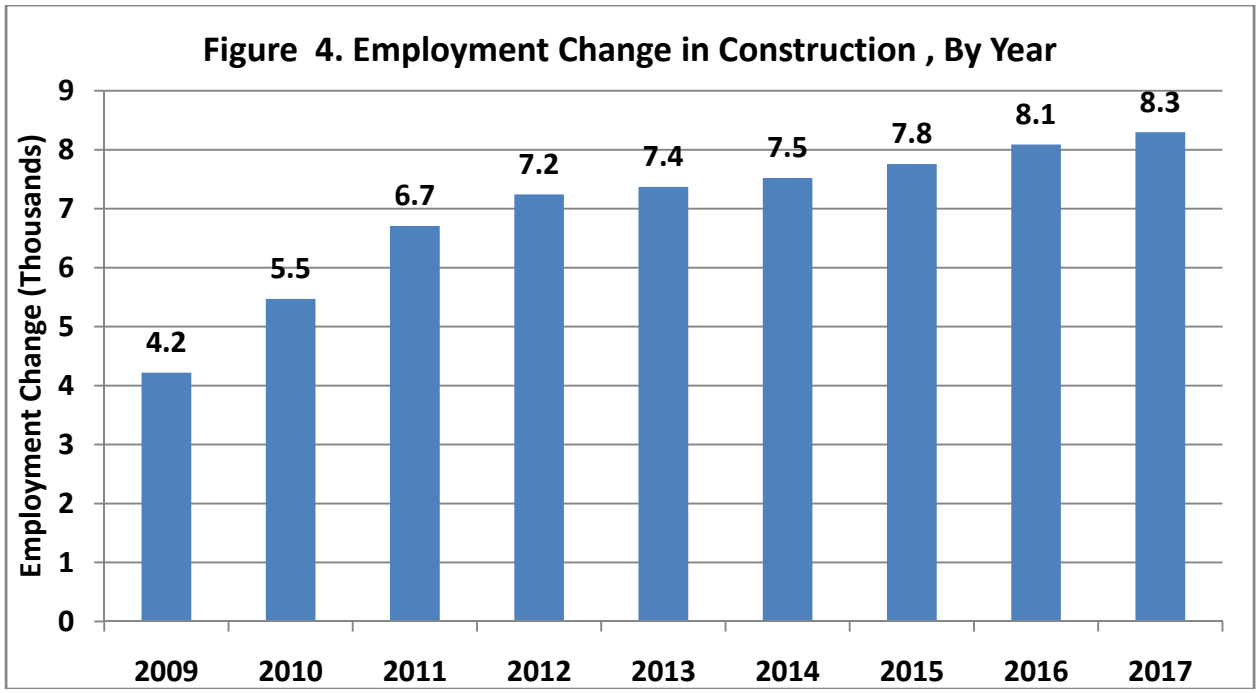
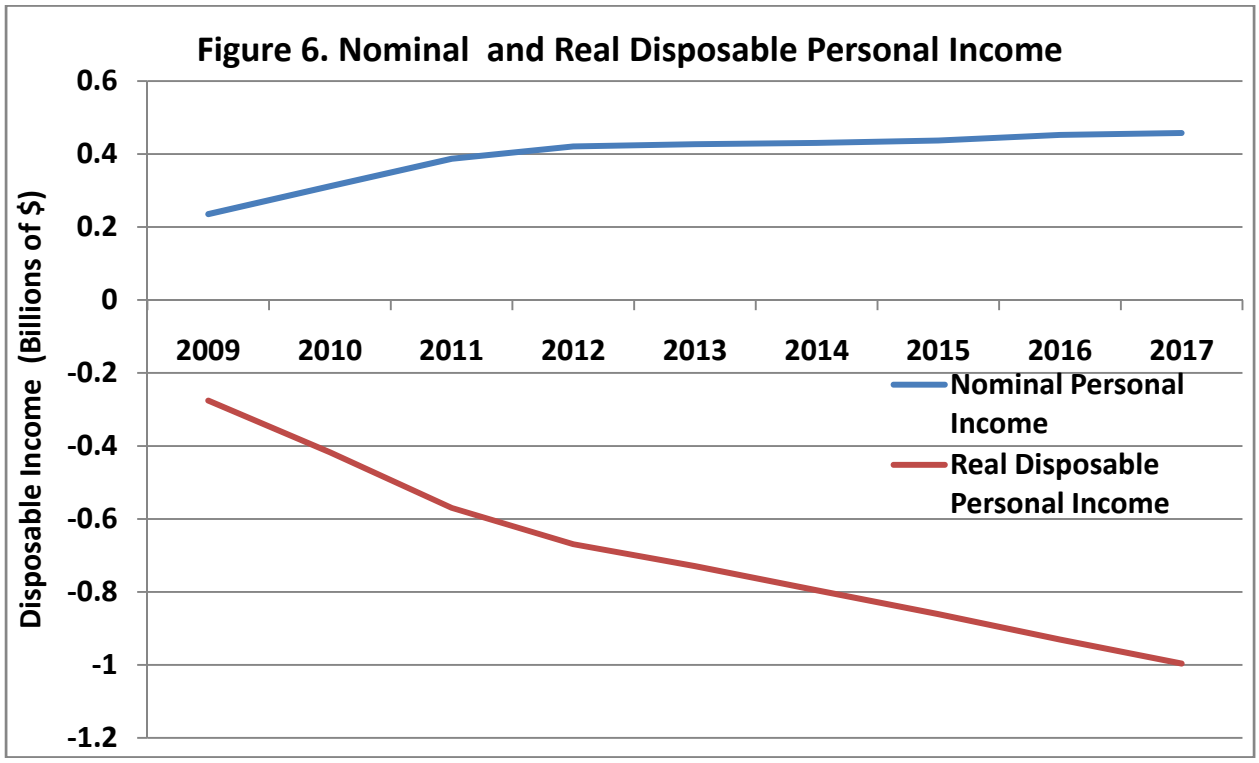


Figure 4 shows the effect of the rise in infrastructure outlays on employment in construction alone. Not surprisingly, employment is predicted to rise significantly in the construction industry. In 2009, employment is projected to rise by 4,220 jobs; by 2017, the annual rise is forecasted to be up to 8,296 jobs.



The impact of the increased infrastructure spending on employment over the 2009 to 2017 period is shown in Figure 5. Net employment is projected to rise by 67,900 jobs in construction and 58,977 jobs overall. Employment will fall modestly in non-construction industries; therefore, total employment growth will be slightly lower than the construction employment change.

Figure 6 illustrates the impact on nominal income as well as real disposable income. Nominal income is projected to increase by $3.6 billion from 2009 to 2017, while real disposable income is projected to fall by $6.2 billion during the same period. The fall in real disposable income is not surprising since fees and taxes have been increased to finance the increased spending. However, it is important to note that a decline in real disposable income does not mean a decline in the economy overall; it means only that consumer spending will go down, due to changes in fees and taxes, while government spending will go up.



Conclusions

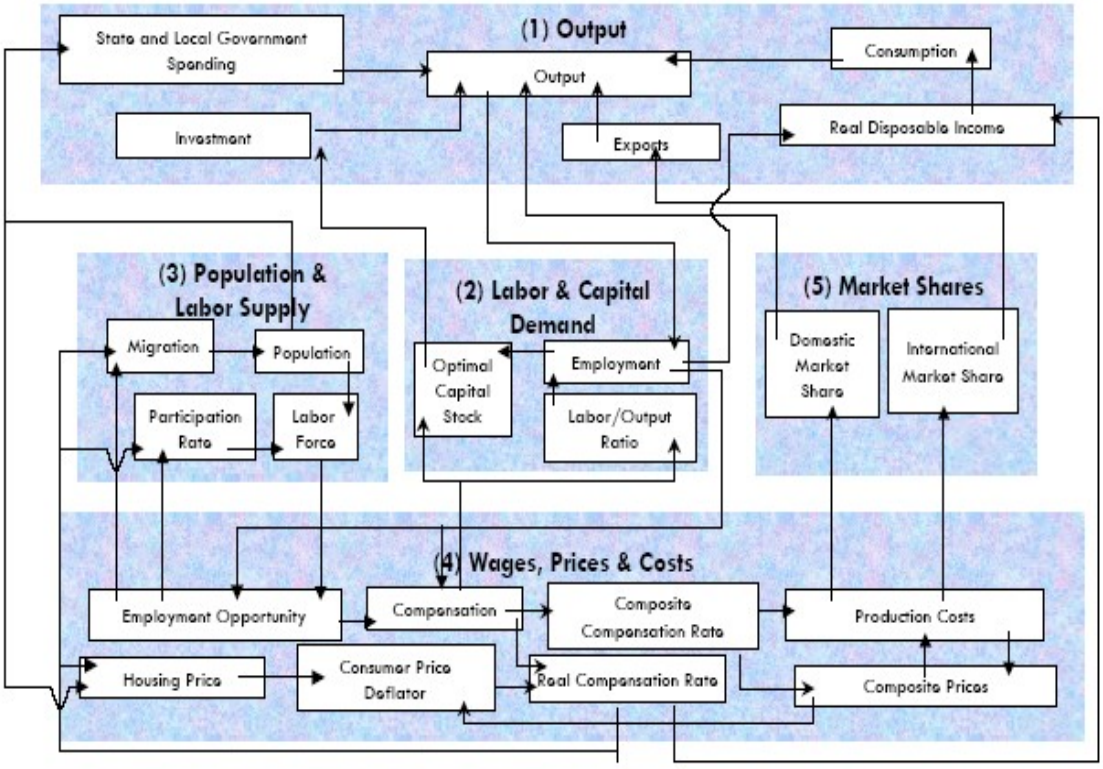
This study clearly indicates that SR 36 will provide a recurring stimulus to Florida's economy. For instance, increased infrastructure spending is predicted to add $218 million to real GRP in 2009 and $1.1 billion over the 2009 to 2017 period. Employment is forecasted to increase by 5,005 jobs in 2009 and by 58,977 jobs over the 2009-2017 period. Not surprisingly, the employment growth is predicted to be concentrated in the construction industry. Lastly, real disposable income is expected to fall as the increased infrastructure spending will be financed by fee and tax increases.

It is important to note that the Florida REMI econometric model used in this study does not capture all of the benefits of the increased infrastructure spending. It does not include the benefits of the reduced travel time for drivers. It also does not incorporate the impact of the increased number of visitors to the state that will occur as a result of the improved infrastructure. Lastly, it does not capture the benefits of transportation infrastructure improvements which result

in higher road-travel safety, thus reducing the loss of life and life quality (i.e., the loss of output due to temporary incapacitation, medical costs, legal costs, or property damage costs).

Appendix: Additional Information About REMI

Regional Economic Models, Inc. of Amherst, Massachusetts developed the REMI model in 1980.[7] It specifies commodity-trade and personal-income flows between regions creating long-term portraits of regional economic growth. The model consists of five basic blocks as seen in the chart below: (1) output, (2) labor and capital demands, (3) population and labor supply, (4) wages, prices, and profits, and (5) market shares.



Source: www.remi.com.

Production is categorized into 49 non-farm, private industries (primarily at the two-digit S.I.C. level), three government sectors, and the farm sector. Economic relationships are given by an industry-based input-output component combined with an econometric component. The econometric specifications are derived from economic theories that are generally neoclassical in nature. The model is dynamic, enabling it to be used both as an impact model and for forecasting.

The REMI model, as Bolton (1985) states in a review of econometric models, "is a world apart in complexity, reliance on inter-industry linkages, and modeling philosophy" from other econometric models. It may be seen as an eclectic model that links an input-output model to an

[7] For more information about REMI, please visit: www.remi.com.

econometric model. In this way, if econometric responses are suppressed, the model collapses to an input-output model.

REMI uses three sources of employment and wage and salary data: (1) Bureau of Economic Analysis (BEA) employment, wage and personal income series; (2) ES-202 establishment employment and wage and salary data; and (3) County Business Patterns (CBP) data published by the U.S Census Bureau. The BEA data are annual averages reported at the two-digit level for states and one-digit for counties. The ES-202 data, which are the foundation for BEA data, are collected monthly in conjunction with the unemployment insurance program at the two-digit level for counties and states. CBP data are collected in conjunction with Social Security programming in March of each year. Output measures are based on regional employment data, the BEA Gross State Product series, and national output-to-employment ratios.

REMI begins by applying the national output-to-employee ratio to employment by industry. This application is adjusted by regional differences in labor intensity and total factor productivity. Regional differences are given by industry production function and unit factor costs. Total factor productivity calculations depend on industry value added in production reported in real U.S. dollars by BEA and on adjustments by REMI to the BEA numbers.

REMI is a widely used, dynamic, integrated input-output econometric model. The model's structure incorporates inter-industry transactions and final demand feedbacks. REMI is used extensively to measure proposed legislative and other program and policy economic impacts across the private and public sectors. The Florida Legislative Office of Economic & Demographic Research, the state Agency for Workforce Innovation, and other state and local government agencies use REMI extensively to measure economic impacts of proposed legislative and policy proposals. In addition, REMI is the chosen tool to measure these impacts by a number of universities and private research groups that evaluate economic impacts across the state and nation. REMI has been widely used to model the economic impacts of property and sales tax analyses[8].

The REMI model used for this analysis was specifically developed for the state of Florida (using the latest 2004 data), and includes 169 sectors. In addition to accounting for economic variables (production, spending, employment) REMI also accounts for labor force, population (migration, births, deaths) and fiscal impacts. REMI's principal advantage is that it is a dynamic input-output econometric model, and can be used to forecast both direct and indirect economic effects over multiple-year time frames.

[8] See tax-specific publications on the REMI website: www.remi.com.

This Florida TaxWatch *Special Report* was written by
David Macpherson, Ph.D., Senior Research Fellow and a member of the Florida Council of Economic Advisors at Florida TaxWatch, Director of the Pepper Institute at Florida State University, where he holds the Rod and Hope Brim Eminent Scholar Chair in Economics,
and
Necati Aydin, Ph.D., Senior Research Analyst/Economist,
with the direction of Kaye Kendrick, CPA, Senior Vice President for Research.
David A. Smith, Chairman; Dominic M. Calabro, President, Publisher, and Editor;
Steve Evans, Chief Operating Officer

Florida TaxWatch Research Institute, Inc.
© Copyright Florida TaxWatch, April 2008

About Florida TaxWatch

Florida TaxWatch is a statewide, non-profit, non-partisan taxpayer research institute and government watchdog that over its 29 year history has become widely recognized as the watchdog of citizens' hard-earned tax dollars. Its mission is to provide the citizens of Florida and public officials with high quality, independent research and education on government revenues, expenditures, taxation, public policies, and programs, and to increase the productivity and accountability of Florida Government.

Florida TaxWatch's research recommends productivity enhancements and explains the statewide impact of economic and tax and spend policies and practices on citizens and businesses. Florida TaxWatch has worked diligently and effectively to help state government shape responsible fiscal and public policy that adds value and benefit to taxpayers.

This diligence has yielded impressive results: in its first two decades alone, policymakers and government employees implemented three-fourths of Florida TaxWatch's cost-saving recommendations, saving the taxpayers of Florida more than $6.2 billion -- approximately $1,067 in added value for every Florida family, according to an independent assessment by Florida State University.

Florida TaxWatch has a historical understanding of state government, public policy issues, and the battles fought in the past necessary to structure effective solutions for today and the future. It is the only statewide organization devoted entirely to Florida taxing and spending issues. Its research and recommendations are reported on regularly by the statewide news media.

Supported by voluntary, tax-deductible memberships and grants, Florida TaxWatch is open to any organization or individual interested in helping to make Florida competitive, healthy and economically prosperous by supporting a credible research effort that promotes constructive taxpayer improvements. Members, through their loyal support, help Florida TaxWatch bring about a more effective, responsive government that is accountable to the citizens it serves.

Florida TaxWatch is supported by all types of taxpayers -- homeowners, small businesses, large corporations, philanthropic foundations, professionals, associations, labor organizations, retirees -- simply stated, the taxpayers of Florida. The officers, Board of Trustees and members of Florida TaxWatch are respected leaders and citizens from across Florida, committed to improving the health and prosperity of Florida.

With your help, Florida TaxWatch will continue its diligence to make certain your tax investments are fair and beneficial to you, the taxpaying customer, who supports Florida's government. Florida TaxWatch is ever present to ensure that taxes are equitable, not excessive, that their public benefits and costs are weighed, and government agencies are more responsive and productive in the use of your hard-earned tax dollars.

The Florida TaxWatch Board of Trustees is responsible for the general direction and oversight of the research institute and safeguarding the independence of the organization's work. In his capacity as chief executive officer, the president is responsible for formulating and coordinating policies, projects, publications, and selecting professional staff. As an independent research institute and taxpayer watchdog, Florida TaxWatch does not accept money from Florida state and local governments. The research findings and recommendations of Florida TaxWatch do not necessarily reflect the view of its members, staff, distinguished Board of Trustees, or Executive Committee, and are not influenced by the positions of the individuals or organizations who directly or indirectly support the research.

Florida TaxWatch Values:

♦ ***Integrity*** ♦ ***Productivity*** ♦ ***Accountability*** ♦ ***Independence*** ♦ ***Quality Research***

For a copy of this report, please call:
(850) 222-5052
OR
Write to Florida TaxWatch at: P.O. Box 10209
Tallahassee, FL 32302
OR
Access and download the report at:
www.FloridaTaxWatch.org, where this *Research Report* was initially released before being printed in hardcopy format.

106 N. Bronough Street
P.O. Box 10209
Tallahassee, FL 32302

NON-PROFIT ORG.

U.S. POSTAGE
PAID

TALLAHASSEE, FL
Permit No. 409