



ECON SOUTH

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[Infrastructure: The Foundation for Prosperity](#)

Roads, bridges, dams, sewers, wastewater treatment plants, and more make up what we collectively refer to as infrastructure. It is vital to the way we live, but it usually makes headlines only when something goes wrong with it. This issue of EconSouth examines infrastructure from local, national, and international perspectives.



[Work Zone Ahead? Repairing the Southeast's Infrastructure](#)

The Southeast's infrastructure, which sustains the region's fast-growing population and dynamic economy, faces the challenge of meeting today's needs as well as those accompanying future growth.



[Building a Better World: Infrastructure's Role in Economic Growth](#)

Infrastructures everywhere face strain from globalization, population growth, and urbanization. Infrastructure needs among countries vary, but infrastructure's importance to economic growth, improved public health, and poverty reduction is universal.

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Infrastructure: The Foundation for Prosperity

On Aug. 1, 2007, an eight-lane, steel truss bridge packed with rush hour traffic collapsed into the Mississippi River in Minneapolis. This catastrophic failure of an interstate highway in the heart of a major U.S. city killed 13 people, injured 145, and prompted renewed focus on the condition of the nation's infrastructure.



Photo courtesy of the Federal Emergency Management Administration

The collapse of a bridge in Minneapolis killed 13 people and led to a renewed focus on the nation's infrastructure.

While media coverage of the Minneapolis bridge failure has receded, the need to rebuild and repair bridges, roads, and other facilities essential to the nation's economy and way of life becomes more pressing with the passage of time. This issue of *EconSouth* examines physical infrastructure in the Southeast, in the United States, and around the world. To effectively explore the topic, we focus chiefly on physical infrastructure such as roads, bridges, water systems, and sewers.

Why a special focus on infrastructure? A sound infrastructure supports economic growth and productivity; increases in productivity are in turn linked to higher living standards, rising levels of employment and incomes, and lower prices for goods and services. Infrastructure also supports business investment and innovation and allows consumers and products to reach each other more easily; better roads foster faster and more efficient delivery of goods.

Saving money at what cost?

So if infrastructure is so important, why doesn't more money go to pay for it? For starters, building new infrastructure and rehabilitating existing works are expensive. Projects must compete with other needs in the budgets of revenue-strapped federal, state, and local governments. Also, the benefits of infrastructure maintenance, such as

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shoring up a sewer system, are not something most constituents will notice. And the return on investment in infrastructure can take many years—beyond the planning horizon of many elected officials—so the temptation is strong to delay infrastructure maintenance.

Also, infrastructure issues don't make front page news—until a tragedy like the Minneapolis bridge collapse occurs. A less dramatic story is the \$3.8 billion Clean Water Atlanta Program, launched after pressure from environmental groups upset about pollution caused by Atlanta's outdated water infrastructure. *EconSouth* asked Atlanta Mayor Shirley Franklin for her thoughts on this and other infrastructure programs the city has undertaken ([see interview](#)).

Historically, government—with the tax base and the borrowing capacity to fund improvements—has taken the lead in paying for infrastructure. But with ongoing economic and population growth, rising land and commodity prices, and increasing regulations, infrastructure costs are likely to continue to increase. In recent years, in the United States and elsewhere, governments and businesses have begun to work more closely together to invest in infrastructure. These increasingly creative public-private partnerships offer hope of overcoming the challenges of funding growing physical infrastructure needs.

One infrastructure does not fit all

All nations must build and maintain infrastructure, but their requirements—and the level of investment—vary widely. For instance, in India officials have made upgrading their nation's inadequate infrastructure a national priority, increasing their annual investment in infrastructure from about 3.6 percent of gross domestic product (GDP) in 2005 to 8 percent in 2008. China spends even more—about 9 percent of GDP in 2005—on infrastructure, an investment level that is no doubt a factor in its continuing rapid economic growth. By contrast, Latin American countries on average spend only about 1.5 percent of GDP on infrastructure. In recognition of the importance of infrastructure investment, however, some Latin American countries have recently boosted spending on physical projects.

Back in the U.S.A.

Compared with much of the rest of the world, the United States has a vast and well-developed physical infrastructure. For instance, the 47,000-mile U.S. interstate system is the world's most extensive highway network and one of the largest public works project in history. To this point, U.S. investment in roads and other public facilities has coincided with decades of solid economic growth, strong productivity gains, and wealth creation. But infrastructure maintenance is only 2 percent of U.S. GDP—a number that lags many nations' investments—and is a potential competitive disadvantage for the future, according to the U.S. Chamber of Commerce.

This inadequate investment has over time caused a deterioration in U.S. infrastructure. The United States spends about \$113 billion each year on infrastructure maintenance, but that amount doesn't come close to paying for the \$1.6 trillion in maintenance projects needed through 2010, according to the American Society of Civil Engineers (ASCE).

Those projects include upgrading about one-third of the nation's major roads, which are in poor or mediocre condition, according to the ASCE. In recent years, the United States has also deferred maintenance on bridges; about a quarter of U.S. bridges are structurally deficient or functionally obsolete, according to the U.S. Chamber of Commerce.

The deterioration of the nation's transportation network is evident in residents' quality of life. Worsening physical infrastructure forces millions of U.S. motorists to endure worsening congestion (with the resulting increased air pollution) and wastes \$78 billion per year in time and fuel costs, according to the Texas Transportation Institute.

"Decades ago we built the best infrastructure system the world has ever known and then proceeded to take it for granted," said U.S. Chamber of Commerce President and Chief Executive Officer Thomas Donohue. "It shouldn't take a disaster like the bridge collapse to focus the nation's attention on our vast infrastructure challenges. But now that we have that focus, we must not lose it."

This introduction was written by William Smith, a staff writer for EconSouth.

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Work Zone Ahead? Repairing the Southeast's Infrastructure

The United States, with its vast network of roads, bridges, and water and sewer systems, has a daunting infrastructure to maintain. In the fast-growing Southeast, the challenge extends beyond meeting today's needs to accommodating tomorrow's growth.



Courtesy of the State Archives of Florida

Work on the U.S. interstate highway system—one of the nation's most ambitious infrastructure projects—began in 1956. Here, work on the Florida Turnpike proceeds in May 1956.

Homeowners never get excited over the prospect of replacing a roof or a hot water heater. Nor do businesses welcome replacing broken-down or obsolete equipment. But regardless of whether they dip into their savings or lean on credit, wise homeowners and businesses figure out a way to make an investment that in the long run beats the alternative of doing nothing.

However, when the job is bigger—specifically, maintaining the physical infrastructure of the United States—the decisions about what to do and how to do it can become almost paralyzing. With massive repair bills piling up in the inbox, the nation's infrastructure payment plan is far from settled.


Paved with good intentions

Americans need look no further than their highways to see a classic example of their problem. When President Eisenhower created the Interstate Highway System in the mid-1950s, the federal government agreed to pay, through the Highway Trust Fund, for 90 percent of new interstate construction and 80 percent of state highway construction. Funds for road maintenance, however, were intended to come from state government. But where are those funds?

Taxes were supposed to endow the Highway Trust Fund, which would accumulate states' money for repairs until it was needed. However, deposits into the fund have not been as substantive as projected because the gasoline excise tax per mile of travel, when adjusted for inflation, has fallen by half since the

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mid-1960s. During the same period, the number of heavy trucks on the road tripled, an unforeseen increase that pushed the highway system's maintenance costs beyond what engineers expected.

[American Society of Civil Engineer's report card on the U.S. infrastructure](#) OFF-SITE

Still, with revenues and costs going in opposite directions, the ultimate strain on the nation's infrastructure may be the political economy at the heart of its creation. The funding disparity, combined with the simple fact that new construction is more glamorous and visible to voters, has encouraged state departments of transportation to pursue new road construction even as existing roads reach the end of their usable life, according to the Department of Transportation's Federal Highway Administration.

Struggling to make the grade

A report card on the nation's infrastructure prepared by the American Society of Civil Engineers (ASCE) depicts a nation with a crumbling infrastructure and significant problems funding its repair.

All infrastructure categories drew grades of Cs (mediocre) or Ds (poor), with an overall grade of D. These ratings shouldn't be surprising, considering the nation's \$112.9 billion annual spending on infrastructure maintenance and repair falls far short of the \$1.6 trillion needed, according to the ASCE, for the projects identified through 2010.

Falling in the C range were solid waste treatment (C+), bridges (C), and rail (C-). Aviation, dams, energy (the items composing the national power grid), disposal of hazardous waste, roads, drinking water, navigable waterways, transit systems, and wastewater received ratings in the D range.



The American Society of Civil Engineers says the condition of U.S. roads merits an overall grade of D, with congestion and poor condition costing motorists billions of dollars annually.

In the ASCE's state-by-state assessment of the biggest problems, roads topped the list in 48 states, including all Southeastern states. Janet Kavinoky, director of transportation infrastructure at the U.S. Chamber of Commerce and the executive director for Americans for Transportation Mobility Coalition, testified before the Senate Environment and Public Works Committee on Feb. 6, 2008, about the state of American roads. Her testimony noted that 36 percent of America's major urban highways are congested with motorists spending 4.2 billion hours a year stuck in traffic.

Annoyance aside, this congestion costs money: Kavinoky cited estimates that wasted time and fuel cost American drivers \$78 billion a year. Also, with 33 percent of the nation's major roads in poor or mediocre condition, Kavinoky noted that motorists incur an additional \$67 billion—about \$600 per driver—in vehicle repairs (because of wear and tear) and operating costs (because of congestion) per

year.

For the most part, urban drivers in the Southeast fare even worse, ASCE statistics indicate. Congestion and repairs cost Atlanta motorists \$1,065 per year, followed by those in Miami (\$927), Orlando (\$904), Tampa (\$742), and Nashville (\$730). Of the region's major metropolitan areas, only Birmingham (\$468) and New Orleans (\$299) are below the national average.

Kavinoky also said that poorly maintained roads contribute to a third of all highway fatalities—about 14,000 deaths every year—and that the nation's transportation system is "overworked, under-funded, increasingly unsafe, and without a strategic vision."

Quoting the Transportation Research Board's National Cooperative Highway Research Program's study "Future Financing Options to Meet Highway and Transit Needs," Kavinoky noted that the average annual gap in capital, operations, and maintenance funding to maintain the nation's highway and transit systems from 2007 to 2017 totals \$50 billion. To improve these systems, the average annual gap is more than \$100 billion, she said.

At the same time, the cost of materials used to fix pavement, such as steel, oil, and concrete, has increased 33 percent in the past three years, according to Kavinoky. Yet despite these growing needs and costs, current estimates project the Highway Trust Fund will be \$4 billion–\$5 billion in the hole in fiscal year 2009. Meanwhile, the user fees on fuels that are the primary source of funds at the federal level have not been increased since 1993.

Southern exposure

Southeastern states have varied infrastructure needs, yet one trait is common to their agendas: There's not enough money to accomplish them.

Alabama. Through 2035, the state's transportation needs, excluding transit, are projected at \$57 billion, with revenues projected between \$47 billion and \$51 billion by Alabama's Department of Transportation. Factoring in transit, the projected needs are \$62 billion, with projected revenue between \$50 billion and \$53 billion.

Florida. Through 2030, the state projects its infrastructure needs at \$187 billion, with \$129 billion funded through a combination of taxes and tolls, according to the state's budget office (see the [sidebar](#)).

Georgia. During the next six years, Georgia's Department of Transportation forecasts a gap of \$7.7 billion between its infrastructure needs (\$19.2 billion) and projected funding (\$11.5 billion). During the next 30 years, these forecasts also show a gap of \$74 billion between its infrastructure needs (\$160 billion) and projected funding (\$86 billion).

Louisiana. The state is currently working on a \$14 billion infrastructure backlog, but funding has been identified for only \$550 million a year, according to the state's Division of Administration. Most of the revenue is slated to come from gasoline taxes. The division also reported that Louisiana is using a budget surplus from 2007 to provide up to an additional \$500 million in 2008



Photo courtesy of the Federal Emergency Management Administration

In the Southeast as well as the rest of the United States, the condition of bridges is a major concern. Approximately one in five bridges in Florida, Georgia, and Tennessee and three in 10 in Louisiana and Mississippi are considered structurally deficient or functionally obsolete.

and is implementing a progressive plan that will dedicate revenue from vehicle license fees and the vehicle sales tax. Beginning in 2008, the state will dedicate 10 percent of this revenue to infrastructure and increase the percentage in subsequent years until 2013, when 100 percent of this revenue will be dedicated to infrastructure.

Mississippi. The state's Department of Transportation has published a long-range transportation infrastructure plan that estimated needs of \$22 billion between 2003 and 2030, with revenue identified for only \$15.1 billion.

Tennessee. The state's long-range plan includes \$24 billion in transportation needs over the next 10 years, according to the state's Department of

Transportation. Initially, the department's revenue forecasts indicated a \$2 billion funding gap, but declining federal revenues and the sharp increases in project costs have changed the department's projections to a \$5.5 billion gap, with potential for it to grow wider.

U.S. bridges—and more—fall short

But physical infrastructure needs extend beyond asphalt. The second-biggest infrastructure concern in the Southeast, as well as the nation, is bridges, with 17 states (including Alabama, Mississippi, and Tennessee) identifying bridge repairs as their No. 2 priority. Approximately one in five bridges in Florida, Georgia, and Tennessee is considered structurally deficient or functionally obsolete, according to the ASCE. In Louisiana and Mississippi, the figure is approximately three in 10.

Despite these widespread problems, the Southeast has been spared a bridge disaster since 1993, when barge collisions were responsible for two different incidents. Two people were injured and one was killed when a barge struck the Claiborne Avenue Bridge in New Orleans, and 103 were injured and 47 killed when a barge hit the CSXT Big Bayou Canot rail bridge near Mobile, Ala. The Southeast's last bridge disaster caused by neglect was in 1989, when deterioration of foundation timber led to the collapse of the Hatchie River Bridge 45 miles north of Memphis, killing eight.

As for dams, the ASCE has identified 3,500 nationwide that are unsafe and require \$10 billion in repairs, and the Southeast is home to almost 1,000

Jacksonville's Port Boosts Capacity

Ports represent an important part of the nation's infrastructure. In the midst of upgrades that will substantially increase its capacity, the Port of



of them. Georgia leads the Southeast with 399, Mississippi has 307, and Tennessee has 147. (The numbers in Alabama are unknown as it is the only state in the country without a dam safety program.) So far, the region hasn't had a major dam-related catastrophe although Georgia narrowly missed one in April: A dam in Gordon County developed a hole 75 feet long, 45 feet wide, and about 35 feet deep, according to reports in the *Rome News-Tribune*. Fortunately, the crack was above water level.

The ASCE identifies wastewater issues as a top need in both Georgia (\$2.3 billion) and Louisiana (\$2.4 billion). Louisiana's tab could have been higher if the city of New Iberia hadn't just constructed a new \$30

Jacksonville is undergoing an expansion that will have an annual economic impact of about \$2 billion and add nearly 10,000 jobs to north Florida, according to port officials.



Growth comes from overseas

Two recent developments originating from Asian companies illustrate the changes at the port.

By January 2009, Mitsui O.S.K. Lines Ltd., a Japanese shipping company, will complete a \$350 million terminal at the port. The terminal will be able to handle more than one million TEU (20-foot equivalent unit) containers, which have a capacity of 20 feet by eight feet. The terminal is expected to double the port's container capacity within the next three to five years.

In addition, the port recently announced that Hanjin, a Korean shipping company, will add a second private terminal, a \$360 million investment that could triple the port's current container capacity by 2011.

But before Jacksonville reaps the benefits of new cargo, key infrastructure challenges related to trade, rail lines, trucking volumes, and the port's navigational issues must be resolved.

On the trade front, the Port of Jacksonville has experienced stable cargo volumes and a combination of shipments that should keep the port's revenue base strong. Automobile imports and exports make up much of the volume of the port's cargo trade, and the expansion of container cargo helps diversify its mix. Container trade represented 44 percent of the port's revenue in fiscal 2007, while automobiles represented 25.6 percent.

Enhancing the port's infrastructure

The combination of truck and railroad capacity at the port will be crucial to handling terminal productivity, minimizing costs, and streamlining distribution times. CSX's plan to spend \$40 million in rail improvements is good news for the port. Port officials estimate that 30 percent of the port's future cargo will move by rail, so additional rail lines and intermodal facilities may be necessary to maintain operational efficiencies.

Trucking congestion at port facilities is another concern for Jacksonville. Estimates of up to 8,500 trucks a day—one every 10 seconds—will present a challenge if, as port officials expect, the port's container volume triples by 2020.

million wastewater plant in response to Clean Water Act violations in 2005, city officials confirmed.

Other port infrastructure issues include costly improvements in navigational channels and harbors. Dredging deeper harbors and drafts is the single most important issue for the port to accommodate a new generation of very large ships likely to make calls on the Port of Jacksonville after the expansion of the Panama Canal, which is scheduled for completion in 2014.

This sidebar was written by Gustavo Uceda, a senior economic analyst in the Atlanta Fed's research department.

The lone area in which the Southeast

appears to be faring better than the rest of the nation is drinking water. Seven states outside the region identified drinking water as one of their top needs in the ASCE report card, and their maintenance price tag for drinking water is estimated between \$280 billion and \$400 billion. But the maintenance total cited in the report for the six Southeastern states is only \$10 billion.

The ABCs of PPPs

One source of funds to restore or build existing infrastructure is a public-private partnership (PPP). Typically, such an agreement between a government entity (local or state) and a private enterprise involves granting a franchise to a private firm to operate and, in some cases, build a piece of municipal or state infrastructure. Recent examples of PPP agreements include the Chicago Skyway and the Indiana Toll Road.

In the Southeast, the Mississippi state legislature is considering a PPP for a toll road from Gulfport, Miss., to Memphis, Tenn. The state or local government sets the tolls, and the private firm, which builds the road, uses the toll revenue to recoup its investment and earn a profit.

A local or state government pursuing a PPP effectively signs one of two types of contracts as it sells or leases its infrastructure. For instance, the government can specify an allowed rate schedule or tolls (in the case of roads)—which are typically anchored to a measure of inflation or economic growth—and then allow firms to bid on the right to own or lease the franchise for a given period. This type of contract was employed in the recent 75-year lease of the Indiana Toll Road for \$3.8 billion to a Spanish-Australian consortium.

Alternatively, a PPP can negotiate a contract with a fixed rate of return, often referred to as a "cost-plus" contract. If the state pursues an allowed rate schedule, it risks negotiating a bad deal up front and then watching as a firm reaps excessive profits that could have been captured by the state. Conversely, the firm also bears any losses. One potential drawback of a cost-plus contract is supplying a firm with an incentive to inflate costs to generate a higher profit (a practice sometimes referred to as "gold plating").

In either case, the power of market competition occurs only when the contract is put out for bid, and even then the number of eligible bidders may be small given the enormous required capital and necessary technical expertise. Once agreements are reached, the firm and the local government must work together for the next 20 to 100 years, depending on the length of the contract. Over time, officials in the government who regulate private operators run the risk of becoming beholden to the firms they

ostensibly manage, a dilemma known as "regulatory capture."

A PPP, like any marriage, can go sour. In 1999 Atlanta contracted with United Water to run its water system for 20 years at a fixed price. However, the deal was abandoned in 2003 as water users complained about poor service and water quality, and United Water lost money trying to manage the antiquated pipes and facilities in the infrastructure.

To PPP or not to PPP?

Despite these potential drawbacks, several arguments favor using PPPs to meet infrastructure needs. First, state and local governments may not have sufficient funds or bonding capacity to build roads themselves. PPPs offer the promise of uniting cash-strapped state and local governments with vast pools of private money attracted by the steady, predictable returns promised by infrastructure.

Advocates for PPPs also contend that private firms can operate public infrastructure more efficiently than local governments either because of greater experience from operating multiple franchises around the world, including automated electronic tolling technology, or because private firms, obliged to shareholders, will have a strong incentive to hold down operating costs.

Perhaps the most compelling case for private ownership, though, is that raising tolls is politically difficult for elected officials. A private entity would be more insulated from political pressure and could more easily increase tolls to meet maintenance and improvement needs.

However, arguments can be made that PPPs aren't really necessary. For example, cities and states could fund a project directly by issuing their own tax-favored debt (statutory debt ceilings notwithstanding). Also, although government may have a difficult time managing its workforce given the temptations of patronage, managing a private firm poses its own challenges. Local governments must negotiate very complex, long-term contracts with firms that will usually have much more experience with such deals. In the recent 99-year lease of Chicago's Skyway toll road, for example, the city paid Goldman Sachs \$20 million in advising fees.

Finally, the claim that states are unwilling to raise tolls is not universally true. Elected officials essentially commit to raise rates when they enter into a PPP; for Indiana's Toll Road, officials raised rates before the sale to command a higher sale price.

PPP's afford the opportunity to raise rates on future users that cannot be readily reversed by subsequent elected officials. Of course, politicians could also do this by issuing bonds backed by tolls or fees, but such fees are typically limited to paying off 30-year bonds. By raising tolls and fees themselves, states could turn public infrastructure into profit centers.

Public need versus popularity

In the end, taxpayers and policymakers must confront some basic limitations of the market and of the local political economy. Roads, pipes, and sewers are natural monopolies that can, in many cases, command substantial economic rents. Governments must decide to either regulate them or own them outright. Elected officials, with one eye on the election calendar, may choose the high profile of new construction at the expense of long-term maintenance of existing works. But this same tendency may also lead them to sell off valuable assets at fire-sale prices. On the other hand, given the huge backlog of deferred maintenance and great uncertainty about future needs, the chance to share capital and risks with private

investors may be too appealing to resist.

For the Southeast as well as the United States, local and state governments are confronting the vast majority of infrastructure challenges. Rehabilitating America's infrastructure will not depend on a single choice but on a multitude of decisions. Only time will tell who made the right ones.

This article was written by Ed English, a staff writer for EconSouth, with Chris Cunningham, a research economist and assistant policy adviser at the Atlanta Fed.

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Building a Better World: Infrastructure's Role in Economic Growth

Globalization, population growth, and urbanization are placing considerable strains on infrastructure around the world. Advanced industrial economies like the United States and Western Europe are focusing on repair and replacement of their aging infrastructures. But the developing world faces the more daunting task of creating new transportation, communication, water, and energy networks to foster economic growth, improve public health systems, and reduce poverty.



Courtesy of the World Health Organization

Many of the world's poor have inadequate access to water because of limited access to infrastructure.

Infrastructure development is a vital component in encouraging a country's economic growth. Developing infrastructure enhances a country's productivity, consequently making firms more competitive and boosting a region's economy. Not only does infrastructure in itself enhance the efficiency of production, transportation, and communication, but it also helps provide economic incentives to public and private sector participants. The accessibility and quality of infrastructure in a region help shape domestic firms' investment decisions and determines the region's attractiveness to foreign investors.

A bumpy road toward prosperity

This relationship between infrastructure development and economic growth has not gone unnoticed by the world's two most populous countries, China and India, which have a combined population of almost 2.5 billion. The experience of these two rapidly growing nations illustrates how different the paths to growth can be.


For the most part, India has forgone the typical manufacturing export-led path to development and instead focused on its service sector. Although India has been very successful in information technology services and business-processing exports, its inadequate and dilapidated infrastructure has held back growth in the manufacturing sector.

The living standards in China, as measured by GDP per capita, overtook those in India more than 15 years ago. Since that time the Chinese economy has grown nearly twice as fast as India's, and its GDP per capita is now more than double

India's. Investment in infrastructure is recognized as one of the main ingredients of China's success.

In her book *The Elephant and the Dragon*, Robyn Meredith writes that, beginning in the 1980s, China built new coal mines to supply electricity plants. The country developed a modern power grid, nearly quadrupling the capacity of its generators between 1990 and 2003. China is currently building nuclear power plants, hoping to triple the amount of power it generates by 2020.

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China's most visible infrastructure investment, however, has been in roads and highways. By 2020 China plans to build 55,000 miles of highways, more than the total length of the U.S. interstate system, which was 46,385 miles in 2004, according to the Federal Highway Administration.

Overall, China's new infrastructure, coupled with probusiness policies and cheap labor, has made the country a very attractive market for foreign direct investment (FDI). According to the Economist Intelligence Unit, by 2011 China will be the third-largest global recipient of FDI, after the United States and the United Kingdom. Better infrastructure is one reason why China attracted nearly four times more FDI in 2006 (\$78 billion) as India (\$19.7 billion). In 2005 China spent 9 percent of GDP on infrastructure compared to India's 3.6 percent of GDP.



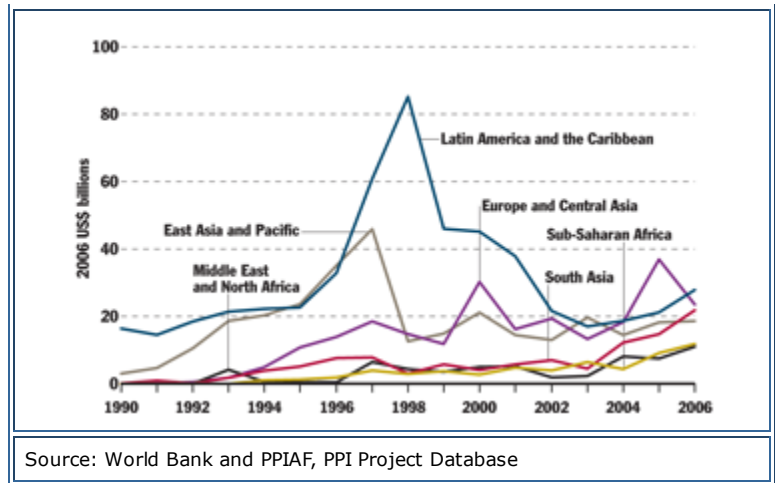
India's government has recently acknowledged that its growth has been constrained by low levels of infrastructure development, and it is now looking to catch up with China. India's finance minister estimates that the country's inadequate infrastructure has restricted economic growth by 1.5 to 2 percent per year. India's central bank recently reported that "infrastructure bottlenecks are emerging as the single most important constraint on India's economy."

The country's manufacturing sector is held back by relatively inefficient and high-cost infrastructure—roads, railways, airports, ports, and electricity. The lack of adequate infrastructure is constraining not only foreign trade but domestic trade as well. For example, with little refrigeration available, 40 percent of India's fruits and vegetables spoil before reaching markets.

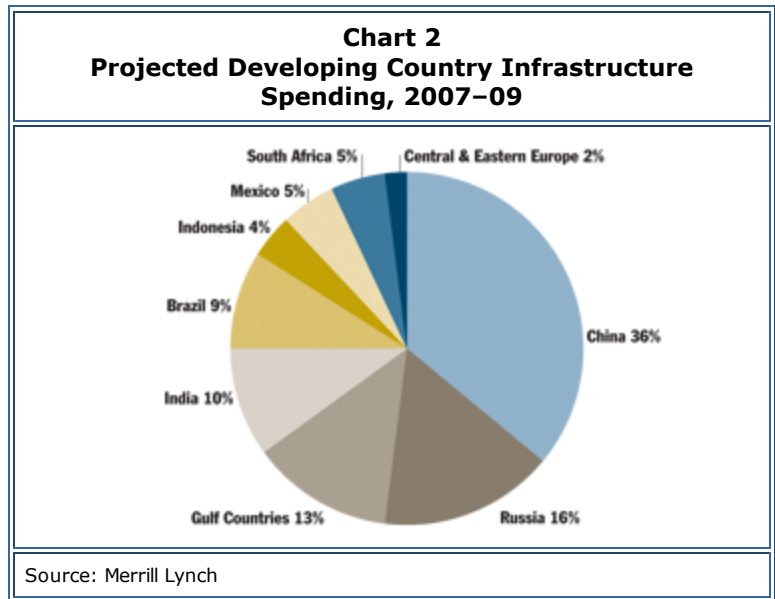
The Indian government has committed to increasing its expenditure on infrastructure from 3.6

Chart 1 Private Investment in Infrastructure: Commitments in Developing Countries

percent of GDP in 2005 to 8 percent of GDP in 2008. The government estimates roughly \$500 billion is needed by the end of 2012 to sufficiently upgrade roads, ports, airports, and power.



The strength of a nation:



Infrastructure and public health

In addition to machinery and technology, human capital also plays an important role in economic development. The health of a country's population, and thus the quality of its human capital, depends crucially on an infrastructure network supporting the necessities of life.

According to the World Bank, one in six people worldwide, mostly the poor, have inadequate access to water, more because of limited access to infrastructure than because of water scarcity. The availability of clean water is a requisite for maintaining a healthy population. In India, the treatment of waterborne diseases resulting from inadequate access to water infrastructure is estimated to cost the government \$15 billion–\$20 billion, nearly 2 percent of the country's GDP. Only three-fifths of the population of Shanghai, China, live in buildings connected to sewage systems.

Insufficient access to electricity can also prove devastating to public health. HIV/AIDS medication, for instance, must be refrigerated, so the insufficient supply of electricity in rural areas impedes the delivery of basic health care services to the poor. Increasing demand for electricity by mining companies in Africa has strained that continent's already shaky power grids, leading to increased power outages. In addition, as electricity input prices (coal, natural gas, and other petroleum products) have soared recently, projects to extend the electricity grids into rural areas have

come to a halt. Storage and distribution systems of pharmaceutical drugs are so poorly managed in many parts of Africa that the World Bank estimates that only a small fraction of every \$100 spent by African governments on medicines actually reaches patients.

Poorly maintained or nonexistent roads also inhibit access to health care services and medicines in the developing world. In South Asia, more than a third of the rural population lives more than a mile from all-season roads. According to the World Bank, in South Africa the poorest fifth of the population has to travel an average of nearly two hours to obtain medical attention, compared with 34 minutes for the wealthiest fifth of the population.

Inadequate transportation infrastructure is also a major factor behind what is considered one of the biggest public health crises in the world—road traffic deaths. Globally, road crashes are now the top cause of death for people aged 10 to 24, according to the World Health Organization (WHO). Eighty-five percent of traffic casualties occur in developing countries, where transportation infrastructure is poorly maintained or nonexistent. Children, pedestrians, and cyclists in developing countries represent the vast majority of these casualties. The WHO projects that by the year 2020, traffic injuries could rank third among causes of death and disability in the world, ahead of such other health problems as malaria, tuberculosis, and HIV/AIDS.

Those with the most to gain from infrastructure development are the poor. Investment in infrastructure is often cited as one of the most effective tools for fighting poverty. Access to infrastructure is essential for improving economic opportunities and decreasing inequality. For example, adequate transportation networks in developing countries could give the poor better access to schools, hospitals, and centers of commerce, which in turn would improve the education, health, and entrepreneurial opportunities that strengthen a country's economic potential.

A Renaissance for Western Europe's Aging Infrastructure

As an advanced economy, Western Europe faces many of the same infrastructure challenges as the United States. (See "[Work Zone Ahead? Repairing the Southeast's Infrastructure.](#)") But in Western Europe, where some infrastructure systems are far older, maintenance and repair issues surfaced long before they did in the United States, and European nations have already drawn up extensive infrastructure plans. As in Latin America, many European countries encourage partnerships with private operators to finance and manage infrastructure facilities.



After years of neglecting infrastructure needs during the postwar Franco era, the Spanish government has budgeted more than \$120 billion since 2000 for an extensive infrastructure and public works makeover plan focused on increasing the country's road, rail, port, and airport capacity. But government funding has not always been able so ample. Twenty years ago, the cashstrapped

government offered toll concessions to private builder-operators, backed by government guarantees to attract foreign loans. Spain now ranks as a world leader in building privately managed toll roads. Two decades of experience at financing, building, and calculating tolling rates has enabled Spanish companies to export their toll road expertise for billion-dollar projects across Europe and Latin America as well as to Canada and, most recently, the United States, where a Spanish-Australian consortium is operating the Indiana Toll Road.

Similarly, infrastructure has suddenly become a major priority for Italy after more than two decades of neglect and severe underfunding. The country now has budgets for more than 100 needed projects—many of them public-private partnerships—ranging from rail and roads to water management, electricity grids, and ports.

About three-fourths of France's 7,400-mile motorway system is tolled and managed by various private and semiprivate companies to which the government has sold concessions through 2032. Currently, the country is moving toward public-private partnership models to fund new projects with less state control.

In the United Kingdom, nearly 800 private finance initiative projects worth \$55 billion are either under way or operational. About 16 percent of U.K. infrastructure outlays involve public-private partnerships, including all major airports and railways. Also privatized are most water systems as well as the gas and electricity industries.

Partnering with the private sector

In any country, infrastructure development and maintenance is an expensive endeavor. The poorer a country's population, the more difficult it is to foot the bill for infrastructure solely through tax revenues. Some countries are turning to the private sector as a way to finance much-needed infrastructure improvements.

Latin America has a long history of private participation in infrastructure. (The more advanced economies of Western Europe also engage in many public-private partnerships to maintain and improve infrastructure; see the sidebar.) Although Latin America has made great strides in both the quality and the scope of infrastructure development in the past decade—particularly in water and sanitation, electricity, ports, and airports—much work still needs to be done. During the past two decades, infrastructure development in Latin America has been much slower than in other middle-income regions. On average, Latin American countries invest only about 1.5 percent of GDP in infrastructure, an eighth of what China and a fourth of what India invest.

In the 1990s, because of a combination of fiscal limitations and a changing paradigm for infrastructure development, government expenditures on infrastructure, the source of nearly all investment in the 1980s, dropped drastically in many Latin American countries as financing and management responsibilities were delegated largely to the private sector. Although the region was able to attract almost half the dollar amount of private participation in infrastructure going to the developing world between 1990 and 2006 (see [chart 1](#)), this private money was not enough to offset the enormous cutbacks in public investment.

Recognizing the need to address this investment shortfall, some countries have renewed their emphasis on the public sector's role in infrastructure development. For example, Brazil and Mexico, which together constitute 55 percent of Latin America's population and 60 percent of its GDP, have taken important steps to promote infrastructure investment. Last year Mexican president Felipe Calderón presented a 2007–12 National Infrastructure Program, calling for \$39 billion annually (4 percent of GDP) to be directed toward infrastructure, doubling the amount spent under the previous administration. Calderón stresses the importance of infrastructure investment to make Mexico's economy more competitive and to provide equal opportunities for its people.

Brazil is also increasing initiatives to help encourage infrastructure investment. At the beginning of 2007, the Brazilian government initiated a four-year, \$235.8 billion (5 percent of GDP) program, financed largely through the public sector, to promote large-scale infrastructure development.

Investing in tomorrow

Several years of strong economic growth worldwide have highlighted the need for universal infrastructure investment and expansion. In developing countries, infrastructure spending will likely exceed \$1 trillion between 2007 and 2009, led by China, Russia, Persian Gulf countries, and India (see [chart 2](#)).

Where will the money for infrastructure investment come from? In many cases, current account surpluses (more exports than imports of goods, services, and transfers) will enable developing countries to increase their investment in infrastructure. Oil revenues, as well as sovereign wealth funds (state-owned financial asset accounts), are also becoming increasingly important sources of funding. And investment banks like the European Bank for Reconstruction and Development, the Asian Development Bank, and the Inter-American Development Bank are making more money available for infrastructure in developing countries.

This article was written by Laurel Graefe and Galina Alexeenko, economic analysts in the international group of the Atlanta Fed's research department, with contributions from intern Harold Vasquez and staff writer Ed English.

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Chris Cunningham is a research economist and assistant policy adviser at the Federal Reserve Bank of Atlanta. He walks to work.

Clearing the Roadways: The Case for Congestion Pricing

FED @ ISSUE

In 2005 the average American lost 38 hours—almost an entire work week—to traffic delays at an estimated annual cost to the economy of \$78 billion. Two of the 10 most traffic-delayed cities in the United States are in the Southeast—Miami, at No. 5, and Atlanta, at No. 6. The underlying cause of congestion is readily apparent: More vehicles are using the roads than the roads were designed to accommodate.

The reason drivers continue to crowd onto the roads is that this limited supply of road capacity is available for free. In some areas, road capacity is a scarce resource; if it is given away for free, it will be overconsumed to the detriment of all. Economists refer to this phenomenon as the "tragedy of the commons." Each additional driver on the road slows down all the other drivers but does not "internalize" the cost of the lost time and expense suffered by the other drivers when deciding to make a trip.

Rationing is not the answer

In the early days of car travel, when roadway systems developed, the relatively high cost of cars and fuel served as an imperfect check on car travel generally. But as cars have become cheaper (in real terms) and development has followed new highways, congested roads have become endemic. Until recently, little could be done to address the problem because of the cost of monitoring and administering tolls over entire road networks.

A few cities attempted to alleviate congestion by rationing road access. For instance, Mexico City and São Paulo implemented a scheme that limits access to the central city on a given day based on the last digit of a car's license plate. In the United States some local governments, including greater Seattle, have attempted to keep demand from outstripping the supply of roads through a land use regulation called "concurrency." In this approach, new subdivisions are not permitted until road capacity—often financed by impact fees levied on the development—has been expanded to meet the additional need.

Both types of initiatives are a form of rationing, one explicitly rationing road access and the other indirectly rationing developable land. And both approaches have had only limited success. In Mexico City, many residents have simply bought a second car to double their access to the city. And in Seattle, concurrency regulations have had little effect beyond improving traffic on the arterial roads nearest to the restricted subdivisions. The impact of new housing on the broader road network has gone unchecked.

Even if these measures had worked in reducing congestion, rationing is a poor way to allocate a scarce resource. For example, a truck driver with a load of perishable produce sits in the same traffic jam as a teenager going out for a burger. The trucker, who is losing money by the minute, would be happy to pay the teenager to take the bus or even stay home, and the teenager, for the right price, would be happy to accept. Unfortunately, even if such an impossibly complex market could be formed, it couldn't prevent other drivers from entering and re-congesting the road.

So now everyone sits in traffic and thus everyone loses. One could randomly kick a certain number of cars off the freeway (a la Mexico City) to speed up traffic. But ideally policymakers could target those

individuals or groups who derive the least benefit from driving and pay them to stay home, carpool, take public transit, or change where they live, work, or shop.

Goodbye to the free ride

Two new strategies for checking the overconsumption of road infrastructure are gaining increased attention. These strategies—congestion pricing and a limited version of it called high-occupancy toll (HOT) lanes—are driven by spiraling congestion costs, a dwindling Highway Trust Fund, rising urban land prices (which limit road-widening projects), and the falling cost of information technology. Congestion pricing is, in its purest form, a variable rate tariff that rises as needed to deter enough drivers to keep traffic flowing on a particular road; in effect, the state becomes the market maker.

The most recent experiment with congestion pricing was implemented in central London in 2003. Drivers now pay a fee of £8 (about \$16) a day to enter or drive within the city's core between 7 a.m. and 6:30 p.m. Since this fee was implemented, vehicle trips into central London have fallen by 20 percent and public transit use has increased by 13 percent. As a result, peak period congestion has dropped by 30 percent and travel times by 37 percent. Revenue from the fee has been directed to public transportation to serve the increased ridership there.

On March 31 of this year, the New York City Council voted to implement a congestion charge—an \$8 toll for a private vehicle, for instance—for all trips into Manhattan south of 60th Street between 6 a.m. and 6 p.m. But the plan, which was expected not only to alleviate congestion but also to raise more than \$400 million a year for transit, failed to pass in the state legislature mainly because of opposition from representatives in the outer boroughs.

Congestion pricing is HOT

A less comprehensive form of congestion pricing is the use of HOT lanes. These lanes charge a fee for single-occupant vehicles to drive in high-occupancy vehicle (HOV) lanes (while HOVs still use the lanes for free). The plan keeps existing lanes untaxed and thus congested but provides a fast travel option for those willing to pay for it. The toll charged to drive in the HOT lanes changes dynamically with the amount of congestion. As the lanes become more congested, the toll goes up. First initiated in Southern California in the mid-1990s, HOT lanes are being opened across the country, including in Florida, which will soon introduce them on I-95 between Miami and Fort Lauderdale.

Variable-rate tolling holds the promise of matching demand with supply with the smallest loss in social welfare. It should also inform policy. If drivers are willing to pay more to avoid congestion, then that willingness would suggest that more roads should be built. On the other hand, if only a modest toll deters enough drivers to speed up travel, then perhaps our existing road network is sufficient after all.



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Grassroots

Manufacturing Revs Up Mobile

Change is afoot in Alabama's oldest city.

The port town of Mobile, Ala., 300 years old in 2002, anticipates welcoming two of the biggest industrial employers the city has seen since a World War II-era shipbuilding frenzy. Given Mobile's international heritage—the flags of France, Britain, Spain, the Confederate States of America, and the United States have all flown there—it is perhaps appropriate that the new factories largely will be courtesy of European companies. Moreover, Mobile's economic progress of late has been helped mightily by an Australian shipbuilder and an aerospace firm based in Singapore.



Photo courtesy of the Mobile Area Chamber of Commerce

Mobile's economy should get a jump start from German steelmaker ThyssenKrupp and European airplane maker EADS. Foreign manufacturing firms have long played an important role in the city's employment composition.

The economy goes boom

Already, Mobile County's population has begun to rise after a decade stuck at about 400,000. And forecasters predict the city is on the cusp of a full-blown economic boom.

Moody's Economy.com estimates that between 2007 and 2012, Mobile County's economy will have the greatest expansion among all 363 U.S. metropolitan areas. Economy.com and Forbes.com forecast the Mobile economy will grow 34 percent during that five-year period.

Forbes attributes the coming boom to the \$3.7 billion ThyssenKrupp steel mill scheduled to open just north of Mobile in 2010, Austal USA's ongoing success in shipbuilding, and the Northrop Grumman/EADS airplane assembly plants slated to be built in Mobile. The city's port and access to interstate highways 10 and 65 are also major assets to its growth.

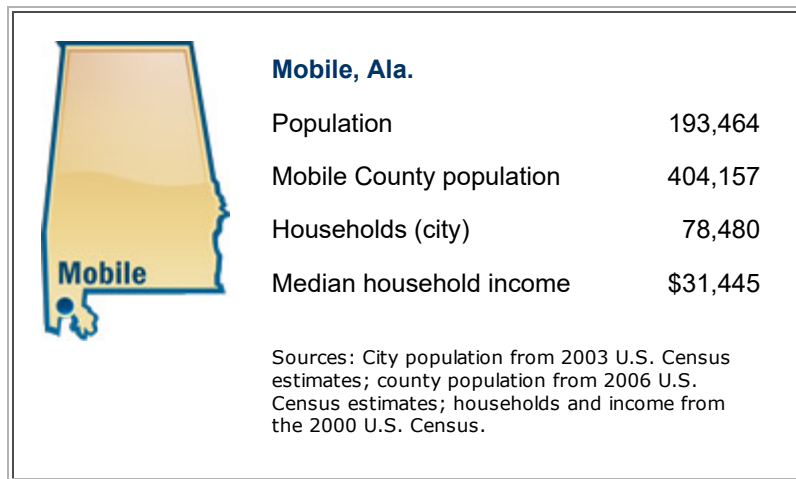
Based solely on projects already planned or under way, the Mobile area could easily add more than 15,000 jobs in the next three to five years, said Semoon Chang, professor of economics and director of the Center for Business and Economic Research at the University of South Alabama in Mobile. By comparison, from 2000 to 2007, Mobile added just 3,200 jobs, according to the U.S. Bureau of Labor Statistics, with the majority being added only recently.

Manufacturing and more

Austal USA has been a critical factor in Mobile's recent growth. The Perth, Australia-based shipbuilder opened its U.S. base in 1999, "and ever since, the metro area has bloomed as a manufacturing center," according to Forbes.com. Austal's arrival helped to salve the wounds when the area's venerable economic pillars, International Paper and Scott Paper, gradually shrank and finally closed paper mills in the late 1990s and 2000-01, respectively.

Austal is currently Mobile's second-largest manufacturing employer, with 1,100 workers and a plan to roughly double its shipbuilding capacity, mainly to supply U.S. Navy combat ships. The company launched the first such vessel, a futuristic 417-foot aluminum craft, in late April and is expected to add about 4,000 workers in the next few years, according to Chang.

Along with shipbuilding, the aerospace industry has surged in recent years. Mobile's present top manufacturing employer, with 1,302 workers, is ST Mobile Aerospace Engineering, a unit of a Singapore-based company that opened an aircraft servicing operation at the Brookley Industrial Complex in 1990.



Mobile's Alabama State Docks complex has also

contributed to recent growth. It now ranks as the 10th busiest seaport in the country based on tonnage, according to the U.S. Army Corps of Engineers.

Even more development is on the way, including a new container terminal at the Port of Mobile scheduled to open in September and the planned Alabama Motorsports Park and Dale Earnhardt Jr. Speedway.

The biggest bang

But of all the currently anticipated new development, ThyssenKrupp's plans are expected to have the single biggest impact. After an intense competition among several states, the German steelmaker was wooed to Mobile by \$810 million in state and local government incentives. With a workforce of 2,700 projected at its opening in 2010, ThyssenKrupp would immediately become the area's largest manufacturing employer.

The Northrop Grumman/EADS plants are a close second in terms of expected economic impact. The Air Force refueling tanker and civilian cargo plane assembly plants are expected to employ about 1,800. (European aircraft maker EADS opened an office last year at the Brookley Industrial Complex and already employs 75 aerospace engineers.)

Pending the outcome of a Boeing protest of the awarding of the Air Force tanker contract to Northrup Grumman/EADS, Airbus tentatively plans to break ground on the \$600 million center at Brookley Field on June 28 and start producing the commercial freighters within two years, according to the *Mobile Register*. The aircraft assembly plant would almost certainly attract numerous suppliers, Chang noted.

A couple miles north of Brookley, the \$300 million Mobile Container Terminal at Choctaw Point is expected to create 300 jobs. The terminal will eventually add two million annual tons of containerized cargo to the 700,000 tons the Port of Mobile currently handles each year, according to the Alabama Port Authority, which operates the docks. All the property abutting the terminal has been snapped up for warehouse and other development, Chang said.

Although plans are in place, construction has not yet begun on the proposed Earnhardt Speedway complex in Prichard, an area adjacent to Mobile. Chang said the complex would create about 2,000 full-time jobs, most of them in the lower-paying service sector.

Growing pains

"In three to five years, Mobile will be a boom town," Chang said. But all this additional activity creates challenges. For example, roads

will likely need improvements. A long-debated Interstate 10 bridge into the city, which would supplement the aging and narrow Wallace Tunnel, is now more likely than ever to be built, Chang noted. The bridge would cost about \$1 billion and take eight years to build, according to Bill Sisson, vice president of economic development at the Mobile Area Chamber of Commerce.

In addition, finding enough highly skilled workers to fill the new positions could be a challenge. "Workforce development becomes a huge issue for this community," Sisson said. The state, city, county, and local community colleges and schools have established an umbrella job training initiative to help satisfy the demand. The initiative is setting up training centers specifically for ship building and aerospace workers and for ThyssenKrupp.

If the predicted boom does come, it won't be Mobile's first. By 1840, as cotton growing spread farther inland, the city became the nation's second-biggest cotton exporter, behind New Orleans. And by 1860, Mobile was the second-largest city in the Southeast, again trailing only New Orleans.

Another boom occurred 80 years later, when workers flocked to Mobile to build Allied warships. Between 1940 and 1944, Mobile County's population soared by 91,000 people, to 233,000. But when World War II ended, so did about 40,000 defense jobs.

Today, another bonanza looms for the city. This time, though, the diversity of development means it is unlikely to end as suddenly as previous ones.

This article was written by Charles Davidson, a staff writer for EconSouth.

Facts About Mobile

- Mobile was founded as Fort Louis de la Louisiane in 1702 as the capital of the French colony of Louisiana.
- Spanish forces captured Mobile in 1780 during the Revolutionary War and held it until American forces captured it in 1813.
- Mobile's Mardi Gras celebration is the oldest in the United States, dating to 1840.



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Q & A

"I Hope That We Have Set an Example"

An Interview With Atlanta Mayor Shirley Franklin

Atlanta Mayor Shirley Franklin has many distinctions. She is the first woman elected Atlanta mayor and the first black woman to be elected mayor of any major Southeastern city. Spearheading projects including Operation Clean Sewer and Clean Water Atlanta, Franklin intends to rehabilitate a part of the city's infrastructure that had fallen into disrepair after decades of neglect. The political and fiscal pressure from undertaking these projects is significant, but she says the cost of inaction is greater still and that the overhaul of the city's water system is essential to Atlanta's future quality of life.



SHIRLEY FRANKLIN

Title Mayor

Organization City of Atlanta

Web Site <http://www.atlantaga.gov>

Other Franklin is a member of the Board of Trustees of the United Nations Institute for Training and Research and the Atlanta Regional Commission. She has held leadership roles in the U.S. Conference of Mayors, the Georgia Municipal Association, and the Georgia Regional Transportation Association. A native of Philadelphia, Franklin earned a bachelor's degree in sociology from Howard University and a master's degree in sociology from the University of Pennsylvania.

EconSouth: *As mayor of Atlanta, you've been called the infrastructure mayor, and you've even dubbed yourself the "sewer mayor."*

How do you feel about the progress you've made on Atlanta's water and sewer infrastructure?

Shirley Franklin: We've made significant progress. We've drastically reduced sanitary and combined sewer overflows across the city. We've separated the sewers into three sewer basins, leaving only the downtown area with combined sewers. We've built more than 120 miles of new water mains. We've inspected more than 1,000 miles of sewers and rehabbed about a quarter of them. Because of this effort, the Chattahoochee River is cleaner than it was 10 years ago.

ES: *Before your election as mayor, you likely had some serious concerns about Atlanta's faltering infrastructure. What brought Atlanta to the brink, resulting in the 1998 consent decree against the city for sewer overflow and pollution to Atlanta-area rivers and streams?*

Franklin: The Upper Chattahoochee Riverkeeper [an environmental advocacy organization] sued the city for violating the federal and state Clean Water Acts. And we were getting fined daily. Everyone knew the system had been neglected for decades. But it was the lawsuit and the subsequent consent decrees that made everybody sit up and take notice.

ES: *One of your first acts as mayor was to set up the Department of Watershed Management. Why did you feel that was so important?*

Franklin: The concept of watershed management is a fairly recent development that charges us to look at everything that makes up a watershed in a holistic way. When I became mayor, the sewer system was under Public Works, the drinking water system was under United Water, and the stormwater system really didn't exist. It just made sense to put "all things water" under one operational umbrella.

ES: *Tell us a little about Operation Clean Sewer.*

Franklin: Under Operation Clean Sewer, we vowed to clean 25 percent of our system every year and to put a comprehensive grease management program in place. Many people don't realize that when you put your bacon grease, ice cream, or even mayonnaise down your sink drain that mess hardens in your sewers and can cause blockages and backups. This program is particularly important for restaurants. So we established a grease management program. We've issued 1,130 wastewater discharge permits to food service establishments, conducted more than 6,000 grease trap inspections, and issued 160 notices of violation and 138 citations. We've prevented more than five million gallons of grease from entering our sewer system, and grease is no longer the leading cause of sewer spills in the city.

ES: *Funding for infrastructure projects seems to be the key to the castle. How did you secure the kind of multibillion dollar funding needed for infrastructure repairs in Atlanta?*



Though upgrading a city's water treatment facilities is a costly undertaking, such improvements can carry a greater price later if not made now.

expenses. We basically have 15 years, an unheard-of time period for such a massive undertaking.

Franklin: We got some very minor federal grants and some low-interest state loans. But mostly we've had to rely on our residents. We've raised our water/sewer rates, and they are now among the highest in the country. Atlantans have really done this on their own. They overwhelmingly approved a one-cent sales tax to help fund the work. It's a serious hardship for many Atlantans, but the work has to be done, and it has to be done in an extremely short time period. Other cities doing this work have 20–30 years, and that time allows them to spread out the

ES: *Atlanta's sewer and water systems are not as old as those in other major cities, particularly cities in the Northeast, yet the problems were ignored for more than 30 years and through seven prior administrations. Besides the consent decree facing you, where did you find your passion for the infrastructure projects?*

Franklin: I'm not a politician; I'm an administrator. Politicians want to pay attention to the flashy things, but administrators know that it's the relentless drudgery of the stuff you can't see that makes a city work. I always use the example of a leaky roof. Your roof leaks, so you spend \$10,000 or \$20,000 putting a new roof on your house. That's a lot of money, but no one is going to walk by your house and say, "Hey! Great roof!" But if you don't put the roof on, really bad things can happen to your house.

ES: *Are there trade-offs to focusing on infrastructure issues? For instance, does public safety or other important aspects of the city's bailiwick have to suffer because of funding limitations?*

Franklin: Not really. The water and sewer work is funded through water/sewer rates, not through the city's general fund, under which police, fire, and public works fall. So spending money on sewers doesn't affect the city's bottom line.

ES: *You recently said in a speech to the Atlanta Rotary Club that "Atlanta can't be great unless we invest." How do you think your infrastructure legacy will play out in future administrations?*

Franklin: I hope that we have set an example that future administrations will follow. I think people understand for the most part what we're trying to do here. They know that the sewers are an intrinsic part of Atlanta's quality of life. They realize the work has to be done.

ES: *Where do you stand on your implementation schedule and paying for the water and sewer upgrade project?*

Franklin: We are on schedule and basically on budget. The entire undertaking, including the water projects that are not federally mandated but are absolutely necessary, is right at \$4 billion. We've done some amazing work to keep costs under control. The entire budget for the Clean Water Atlanta projects has increased just 1.27 percent over the past five years. With the incredible rise in gasoline prices and the cost of steel, concrete, and other construction materials, I think that's something to be very proud of.

ES: *Atlanta has raised water and sewer rates an average of 10 percent a year. How do you balance the benefits of infrastructure improvements with potential tax or user fee increases? Can taxpayers see the long-term benefits or just the short-term financial squeeze?*

Franklin: It's been extremely hard on our customers, but I think they see the long-term benefits. Our residents know that the work is necessary for their quality of life, and our businesses know that economic development is



Photo by Sabrina Sexton

impossible without clean, safe, reliable drinking water and sewer systems. That doesn't mean rate increases don't hurt; they do. We are very sympathetic, but we know this program is the right thing to do.

One of Franklin's first acts as Atlanta mayor was forming the "Pothole Posse," which responded swiftly to residents' needs for small-scale road repair.

ES: *We've talked about water and sewer infrastructure, but what about roads and bridges? Does the city face the same infrastructure challenges there, or has there been more ongoing upkeep over the decades?*

Franklin: Atlanta's roads and bridges are in pretty good shape. However, anyone who's been paying attention knows that traffic is the bane of our existence as Atlantans. So I fully expect that we as a city, in concert with the state and the Atlanta Regional Commission, will be dedicating significant time and resources in the future to solving our congestion issues.

ES: *You have been on both the national and international stage during your tenure as mayor, having been named in 2005 as one of the top ten world mayors and being a recipient of the John F. Kennedy Profiles in Courage Award the same year. How much of that recognition do you feel has come from your commitment to infrastructure issues?*

Franklin: I think my interest in and commitment to Atlanta's infrastructure is a large part of the reason that I have gotten the attention. Infrastructure sure isn't sexy, but I do think it is on the national radar screen. It just doesn't get the focus, day in and day out, that flashier projects get. But just let a bridge collapse in Minnesota or sewage foul a beach in Hawaii, and you'll hear about the country's infrastructure. Unfortunately, that inattention has been reflected in our federal government, which has steadily decreased funding for roads, bridges, and water systems.

This interview was conducted by Lynne Anservitz, editorial director of EconSouth.

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The State of the States

Recent events and trends from the six states of the Sixth Federal Reserve District



- Sam Addy, director of the University of Alabama's Center for Business and Economic Research, discussed the economic expectations of the state's business leaders in a presentation in Huntsville in May. He cited the second quarter 2008 Compass Bank Business Leaders Confidence Index (BLCI) survey, which shows that economic activity is slowing in the state. But those surveyed expect moderate growth for the state this year.
- The HudsonAlpha Institute for Biotechnology in Huntsville was dedicated in late April. The institute will perform genetic research on more than 1,500 untreatable or poorly treated diseases to further the understanding of how genetics affect the diseases' development. HudsonAlpha researchers also will examine ways to genetically alter plants so biofuel material can be more easily extracted. The \$80 million initiative is expected to generate as many as 900 jobs.



- Consumer confidence in Florida in April was at the same recessionary levels as it was during 1990–91 recession, according to Chris McCarty, the program director for survey research at the University of Florida's Bureau of Economic and Business Research. "Unlike the relatively mild recession of 2001," he said, "the recession of 1990–91 resulted in a longer time to recover. The question remains whether the [current economic downturn] will get worse. Most economists believe the economy will pick up by late 2008 or early 2009."
 - Embraer, a Brazilian aircraft manufacturer, plans to spend \$51 million to build a plant at Melbourne International Airport. It will be the company's first U.S. factory, dedicated to final assembly and delivery of the company's Phenom business jets. The 149,500 square foot factory will open by 2011 and will create jobs for approximately 200 people.
-



- Manufacturing activity in Georgia was up in April? according to the Econometric Center at Kennesaw State University. The center's Georgia Purchasing Managers Index (PMI) Report—a snapshot of the state's manufacturing sector—surpassed 50 for the second consecutive month. (A reading above 50 indicates that manufacturing activity is expanding, below 50, that it's contracting.) "If this trend continues? it would suggest Georgia's manufacturing sector is outperforming the national manufacturing sector?" said Don Sabbarese? professor of economics

and director of the
Econometric Center.

- In March, Kia Motors opened the Kia Georgia Training Center, the first facility of its West Point automotive assembly complex. The center will provide pre-employment assessment and job-specific training for employees at Kia's \$1.2 billion assembly facility, which is scheduled to begin production in 2009. The facility, Kia's first in the United States, will eventually produce 300,000 vehicles a year.
-



- Employment growth in New Orleans has moderated after a strong rebound following Hurricane Katrina, according to Janet Speyrer, director of the University of New Orleans' Division of Economic and Business Research. "Employment and population totals in the metropolitan area are now both at about 86 percent of pre-Katrina levels," she said. Speaking at an economic seminar at the university in early April, Speyrer noted that future employment gains would likely be strongest in the private educational services and leisure and hospitality sectors.
- This year's New Orleans Jazz and Heritage Festival returned to its traditional seven-day format in late April and early May, drawing nearly 400,000 people. That turnout nearly matched attendance in spring 2005, before Hurricane Katrina. More than half the festivalgoers came from out of town, boosting hotel occupancy to nearly 100 percent. Festival officials estimate the event pumps \$300 million into the local economy.



- The Mississippi Institutions of Higher Learning's (IHL) Department of Forecast and Analysis reported in April that the state's index of leading indicators continued to decline. Post-Katrina rebuilding has largely fueled the state's economic growth over the past couple of years. That momentum, however, is waning, reported Darrin Webb, an IHL senior economist. The report showed that Mississippi should post a modest recovery in the second half of 2008 and continued improvement in 2009.
- South Mississippi's newest manufacturing plant, PSL North America, is now hiring and preparing to start production in Pearlington in July. The \$100 million, 450,000-square-foot plant will produce 300,000 tons of steel pipe a year for the gas and oil industry. The company plans to hire more than 300 people at an average yearly salary of \$50,000.



- In the Nashville area, most of the available economic indicators show slowing economic activity, with some sectors (housing construction and manufacturing) hard hit. But other sectors (health care, education, accommodation, and food services) still show signs of growth. The loss of manufacturing jobs is the primary culprit in the Nashville area's flat job growth, reported David Penn, the director of Middle Tennessee State University's Business and Economic Research Center, in the spring edition of the center's *Midstate Economic Indicators*.

- Since summer 2006, workers in Franklin have been putting the finishing touches on the Nissan headquarters building for its July opening. The headquarters will oversee the company's operations in the Americas and will employ more than 1,000 people.

This information was compiled by Shalini Patel, an economic analyst at the Atlanta Fed.

Illustrations by Jay Rogers

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Research Notes and News

Research Notes and News highlights recently published research as well as other news from the Federal Reserve Bank of Atlanta.

[Bernanke explains Fed's recent liquidity measures](#)

In a speech delivered via satellite to the Atlanta Fed Financial Markets Conference in May, Federal Reserve Chairman Ben Bernanke explained the principles behind central bank action to support market liquidity and the reasoning behind the Fed's actions to soothe recent strains in short-term funding markets.

Bernanke outlined the Fed's thinking in responding to a sharp increase in the demand for cash or equivalents by private creditors by providing new liquidity instruments to commercial banks and investment banks. He cited research establishing that a central bank may be able to eliminate or limit negative outcomes by making cash loans secured by borrowers' illiquid but sound assets. "Thus, borrowers can avoid selling securities into an illiquid market, and the potential for economic damage is substantially reduced," Bernanke said.

In recent months it became clear, he noted, that the discount window—part of the Fed's traditional framework for providing market liquidity—had become less effective in addressing the strains in short-term funding markets. Banks had become reluctant to borrow through the Fed's discount window for fear that market participants would think it signifies financial weakness.

Thus, last December the Fed introduced the Term Auction Facility, through which discount window credit is auctioned every two weeks to eligible borrowers for terms of 28 days. This process, Bernanke noted, appears to have overcome the "stigma problem" of the discount window: Large numbers of banks have participated in each auction held so far, and the size of each auction has been increased from \$20 billion at the start to \$75 billion in the May auctions.

But if a central bank is too quick to provide liquidity in a crisis, it could induce moral hazard—the incentive for market participants to take more risks if they believe the Fed will come to the rescue. Bernanke believes this problem can perhaps be best addressed by supervision and regulation that ensure financial institutions manage liquidity risks effectively before a crisis.

"Of course, even the most carefully crafted regulations cannot ensure that liquidity crises will not happen again," Bernanke concluded. "But if moral hazard is effectively mitigated, and if financial institutions and investors draw appropriate lessons from the recent experience about the need for strong liquidity risk management practices, the frequency and severity of future crises should be significantly reduced."

[Text of speech](#)  OFF-SITE

[Atlanta Fed conference examines reforms](#)

Academics, policymakers, and market practitioners gathered in May to discuss the status and future of financial market reforms at the Atlanta Fed's annual Financial Markets Conference at Sea Island, Ga.

Topics explored included Sarbanes-Oxley corporate governance requirements; investor activism; Regulation FD, which aims to level the informational playing field among institutional investors, analysts, and individual investors; and the likelihood of a global, round-the-clock capital market emerging.

Regarding Sarbanes-Oxley, the consensus from the gathering was that research conducted thus far has yielded mixed results in terms of the law's effects on companies and investors. The discussions also pointed out the reality that market forces are continually evolving in response to regulation, innovation, and other events or phenomena. For example, the rapid advance of technology has eroded the traditional monopoly power of financial exchanges such as the New York Stock Exchange. Today, almost anyone can trade virtually any financial instrument from almost anywhere, giving rise to a complex array of trading platforms, joint ventures, and alliances among market participants that are extremely difficult to regulate.

[Financial Markets Conference papers and presentations](#)

Lockhart: Too soon to breathe easy

Atlanta Fed President Dennis Lockhart said in a June 2 speech that the last few weeks in the economy have had the feel of "coming up for air," though he cautioned that it is too early to "breathe easy."

The national economy has faced continual challenges since the emergence and spread of financial turmoil beginning last August, Lockhart noted. Among those challenges, he listed financial market illiquidity and significant losses by banks and financial institutions, a home building slowdown and falling house prices, the rapid onset of general economic weakness, and inflation pressures stemming partly from rising energy prices.

Lockhart characterized the current economy as "growing slowly, poised for gradual recovery, but carrying real risks that could subvert the story."

Looking forward, Lockhart expects forthcoming information to reveal a weak first half of 2008 followed by some improvement in the second half as the challenges he listed gradually diminish. Nevertheless, he said, the nation's economic outlook remains uncertain mainly because of three main risks: renewed financial instability, an oil price shock, and a long and even steeper decline in house prices.

In addition to those immediate concerns, Lockhart discussed "persistent structural imbalances that present serious risks to our nation's long-term and continuing economic well-being," including structural trade deficits, foreign petroleum dependency, and fiscal deficits. "These concerns deserve high rank on the country's economic agenda," he said.

[Text of speech](#) | [Related podcast](#)



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		Alabama	Florida	Georgia	Louisiana	Mississippi	Tennessee	6th District	U.S.
Total payroll employment (thousands)^a	2008Q1	2,015.2	8,030.7	4,179.3	1,939.7	1,155.7	2,796.9	20,117.5	137,917.3
Percent change from	2007Q4	0.0	0.0	0.6	0.0	0.1	-0.2	0.1	-0.1
Percent change from	2007Q1	0.7	-0.4	1.0	1.9	0.6	0.2	0.4	0.5
Manufacturing payroll employment (thousands)^b	2008Q1	292.4	374.8	423.2	157.8	166.4	372.8	1,787.3	13,600.3
Percent change from	2007Q4	-0.9	-1.7	-0.4	-1.4	-1.1	-1.0	-1.0	-1.5
Percent change from	2007Q1	-1.8	-5.3	-2.9	1.9	-2.6	-3.8	-3.0	-2.1
Civilian unemployment rate^a	2008Q1	3.9	4.7	5.1	4.1	6.0	5.2	4.8	4.9
Rate as of	2007Q4	3.6	4.4	4.5	3.8	6.3	5.0	4.5	4.8
Rate as of	2007Q1	3.4	3.7	4.2	3.8	6.4	4.5	4.1	4.5
Existing single- family home sales (thousands of units)^c	2008Q1	98.4	246.0	188.4	66.4	55.2	134.0	788.4	4,950.0
Percent change from	2007Q4	-7.2	1.3	0.9	0.6	-4.2	-3.7	-1.3	-0.9
Percent change from	2007Q1	-20.9	-27.0	-19.8	-19.0	-8.6	-13.0	-20.6	-22.2
Single-family building permits YTD (units)^b	2008Q1	3,465	11,722	7,927	3,304	2,188	4,455	33,061	149,251

Percent change from	2007Q1	-35.9	-46.8	-52.4	-18.6	-33.1	-46.2	-44.6	-43.1
Personal income (\$ billions)^c	2007Q4	152.6	714.7	323.9	152.9	86.1	207.6	1,637.8	11,839.9
Percent change from	2007Q3	1.0	1.1	1.1	0.9	0.7	0.6	1.0	1.0
Percent change from	2006Q4	5.7	5.6	6.0	10.7	8.1	3.9	6.1	5.9

		Atlanta	Birmingham	Jacksonville	Miami	Nashville	New Orleans	Orlando	Tampa
Total payroll employment (thousands)^b	2008Q1	2,462.8	529.8	630.7	2,436.9	760.8	521.7	1,102.8	1,295.4
Percent change from	2007Q1	1.2	0.0	0.1	-0.4	1.5	2.5	0.5	-0.9
Civilian unemployment rate^b	2008Q1	5.1	3.7	4.5	4.2	4.6	3.7	4.4	5.0
Rate as of	2007Q1	4.2	3.2	3.6	3.4	4.0	3.5	3.4	3.7
Office vacancy rate^b	2008Q1	19.3	—	14.0	8.6	10.5	—	11.3	14.7
Rate as of	2007Q1	19.0	—	14.5	7.4	10.6	—	7.9	11.3
Median existing home sale price (thousands of \$U.S.)^b	2008Q1	154.0	153.2	185.7	318.9	—	157.1	232.0	184.7
Median price as of	2007Q1	170.4	157.5	197.6	385.3	—	155.9	267.0	203.2

^aSeasonally adjusted data. Data updated June 17.

^b Not seasonally adjusted

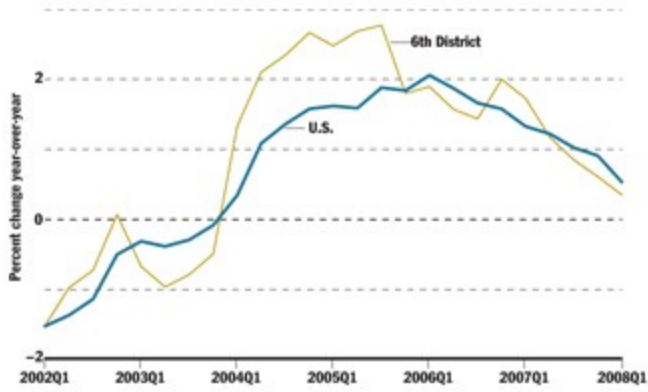
^c Seasonally adjusted annual rate

Sources: Payroll employment and civilian unemployment rate: U.S. Department of Labor, Bureau of Labor Statistics. Existing home sales and median existing home sale price: National Association of Realtors. Single-family building permits: U.S. Bureau of the Census, Construction Statistics Division. Personal income: Bureau of Economic Analysis. Quarterly estimates of all construction data reflect annual benchmark revisions. Office vacancy rate: CB Richard Ellis. Most data were obtained from Economy.com.

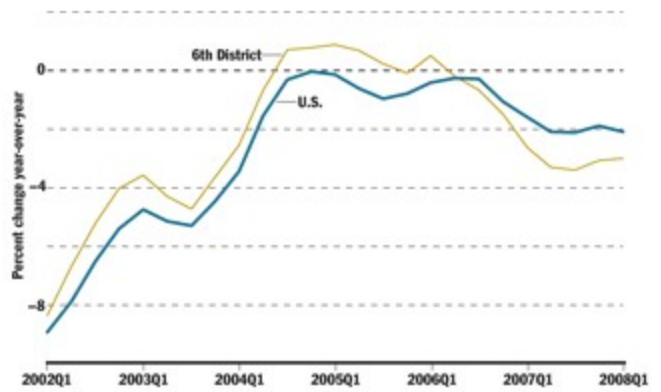
For more extensive information on the data series shown here, see www.frbatlanta.org/publica/econ_south/2008/q2/dist_data.cfm.

Total Payroll Employment

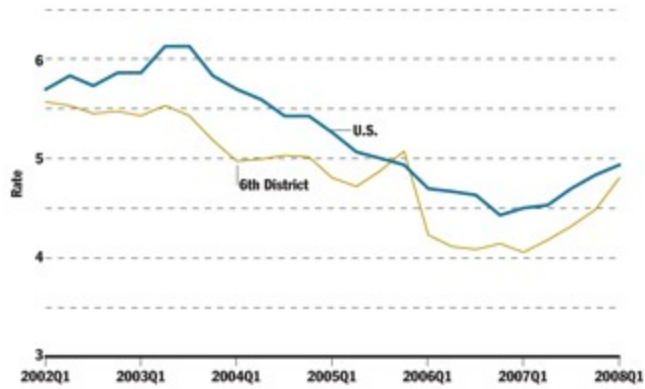
Manufacturing Payroll Employment



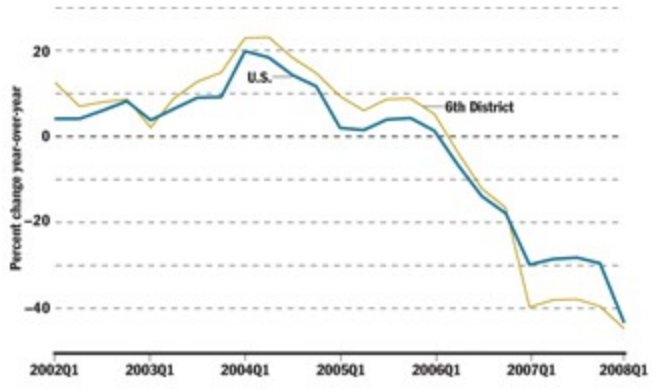
Civilian Unemployment Rate



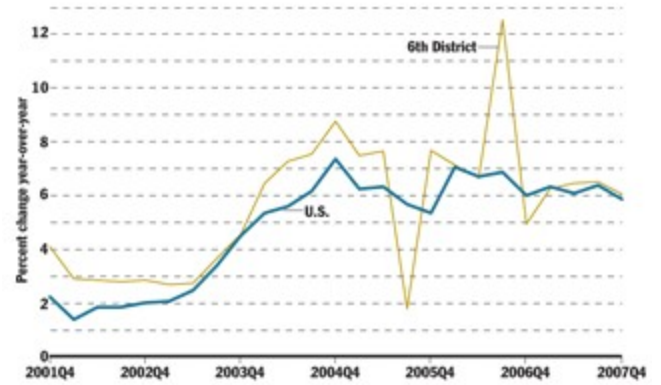
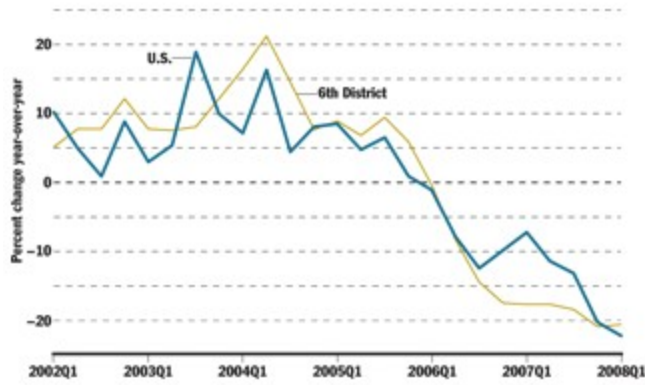
Single-Family Building Permits YTD



Existing Home Sales



Personal Income





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Editor's note: Throughout this issue, *Southeast* refers to the six states that, in whole or in part, make up the Sixth Federal Reserve District: Alabama, Florida, Georgia, Louisiana, Mississippi, and Tennessee.

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Back Ground



Photo courtesy of the Library of Congress photo archives

Although road building has always been a central part of U.S. infrastructure development, the technology used today contrasts sharply with the methods used in the past. Here, prisoners and horses work on a road project in Georgia at the turn of the 20th century.