THIRD QUARTER 2011

REGION FOCUS

THE FEDERAL RESERVE BANK OF RICHMOND

WHAT PUBLIC POLICY CAN—AND CANNOT—DO TO CREATE JOBS

REGION FOCUS

COVER STORY

FEATURES

DEPARTMENTS

PHOTOGRAPHY: GETTY IMAGES

VOLUME 15
NUMBER 3
THIRD QUARTER 2011

Our mission is to provide authoritative information and analysis about the Fifth Federal Reserve District economy and the Federal Reserve System. The Fifth District consists of the District of Columbia, Maryland, North Carolina, South Carolina, Virginia, and most of West Virginia. The material appearing in *Region Focus* is collected and developed by the Research Department of the Federal Reserve Bank of Richmond.

Published quarterly by
the Federal Reserve Bank
of Richmond
P.O. Box 27622
Richmond, VA 23261
www.richmondfed.org

Subscriptions and additional copies: Available free of charge through our Web site at www.richmondfed.org/publications or by calling Research Publications at (800) 322-0565.

ISSN 1093-1767

President's Message

Is Joblessness Now a Skills Problem?

Today, long-term unemployment — that is, unemployment lasting six months or longer — is at a record high. The share of unemployed Americans whose job searches have lasted this agonizingly long is 43.1 percent, a figure that is unprecedented since the Bureau of Labor Statistics began keeping these records in 1948.

A growing number of observers have argued that this state of affairs is caused in significant part by a mismatch between available jobs and available workers, especially a mismatch in skills.

I agree that the long-term component of unemployment has structural origins, including a substantial degree of skills mismatch. I hear a fair number of stories from around our District of hard-to-fill job vacancies in certain specialties. Looking at the world around us, it is reasonable to assume that employers need higher skill levels from their workers today, on average, than they did a generation ago. Indeed, the unemployment rate of college-educated workers lately has been only around half that of workers without a high school diploma. Economic research indicates that the relationship between unemployment and the job vacancy rate changed during the recession; we're seeing more unemployment for a given rate of job vacancies — which suggests matching problems.

But critics of the skills-mismatch story argue that the empirical evidence does not fully support it. They point to studies that have looked at vacancy and unemployment rates according to industry and occupation, which have estimated that the portion of unemployment attributable to matching problems is between 0.6 percentage point and 1.7 percentage points.

In my view, such statistics do not disprove the mismatch theory. The occupation-level and industry-level data on which these studies rely can hide significant differences within broad categories. There is a wide range of positions within any given occupational or industry category, some of them in high demand and some not; for example, "professional, scientific, and technical services" includes such disparate businesses as law firms, advertising agencies, and interior design firms. Not only do these data combine very different categories of businesses, but they also combine highly different jobs within a given business — both experienced patent attorneys, who may be in high demand, and typists, whose demand has declined as lawyers have adapted to the computer age. Aggregating such jobs together may obscure the existence of scarcity, and skills mismatch, in some of them. Moreover, even the estimates that are cited by critics suggest a major role for mismatch: A percentage point, or 1.5 percentage points, is significant even within the context of today's unemployment rate of roughly 9 percent.

In short, I think it is quite plausible that skills mismatch is an important factor holding back improvements in the labor market. The question is how important — and that's an issue that economists are working to answer as precisely as possible.

What are the policy implications of the mismatch issue? One is that public programs to support job training can be a good investment. A more-skilled worker typically has a higher marginal product — he or she can contribute more to the economy — which means training programs are potentially beneficial to both the worker and the economy. But such programs can be costly and time-consuming, so it is unrealistic to expect such policies to transform the current job landscape overnight. Moreover, there are questions about the ability of government-directed programs to identify and target the appropriate skills. Community colleges and other providers do so in a decentralized way by responding to demand from individuals, as well as demand from firms for in-house training. Such efforts equip unemployed workers with the tools needed to land jobs that actually exist, and arguably are more effective than larger-scale, more centralized programs.

Another, more immediate implication is the extent to which monetary policy can make a difference in getting more Americans into jobs. To the extent that skills mismatch is identified as a significant portion of the long-term unemployment problem, monetary policy will have difficulty making meaningful inroads into the jobs problem without increasing inflation. Monetary policy, after all, doesn't train people.

Labor-market mismatch is an example of the kind of problems that have made policymaking so challenging since the Great Recession — and that will likely be the subject of vigorous yet collegial discussion at Federal Open Market Committee meetings in the months ahead.

JEFFREY M. LACKER
PRESIDENT
FEDERAL RESERVE BANK OF RICHMOND

Upfront

Regional News at a Glance

Tapping the Crowd
The Web Widens Funding Options

As donors and lenders tightened purse strings during the financial crisis and afterward, artists and entrepreneurs have tapped a less traditional source of funds: the Internet. "Crowd funding" describes the efforts of people or groups to solicit donations and investments for projects via the Web.

These donations are typically small, but collectively the potential can be significant. In Baltimore, Scott Burkholder and artist Michael Owen started the Baltimore Love Project, a nonprofit community art project with the goal of painting 20 murals that depict the word "love" — in hands — all across the city. For their seventh mural, Burkholder, the project's executive director, set up a donation page on Kickstarter, a crowd-funding website that caters to the arts.

Kickstarter allows online visitors to donate toward a stated funding goal. The site processes payments through Amazon's payment system, charging between 8 percent and 10 percent for marketing and credit card processing. Transactions only go through if the project's goal is reached within a set time of up to 60 days. The Baltimore Love Project exceeded its goal of $5,000, raising more than $6,500 in May.

"It's such a great means to connect with your community; it's a great opportunity to make your project accessible and help people realize that $5 can do something," Burkholder says. "I think as we progress, we're almost going back to the old community bank models, where money stays much more local."

Another Baltimore crowd-funding effort, GiveCorps, aims to build community interaction. The website pairs Baltimore area nonprofits with local businesses, which offer coupons and discounts to contributing donors.

"It's a way to both engage and encourage the generosity of a whole new generation of givers, who collectively could have a big impact, even though individually their donations may be small," says GiveCorps Chief Executive Officer Jamie McDonald. GiveCorps takes 10 percent for marketing and processing, and disburses donated funds regularly to nonprofits. There is no minimum funding target or time constraint.

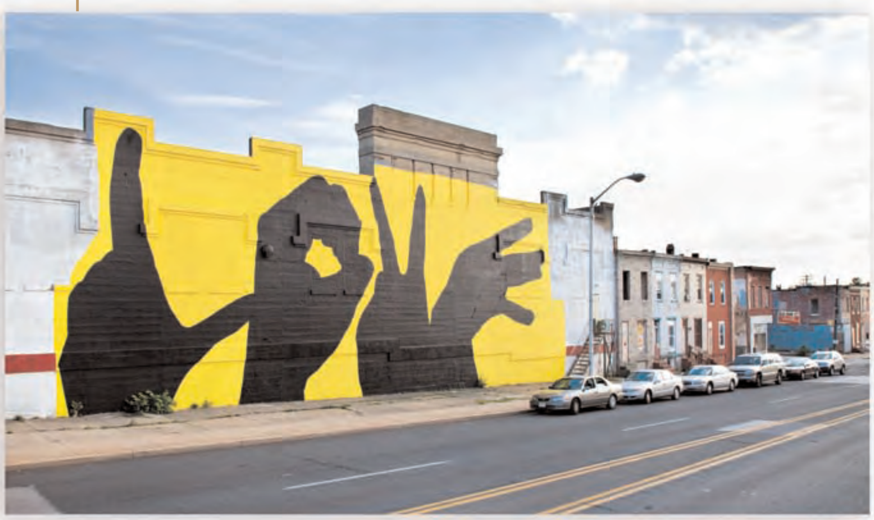
Business startups are also looking at the crowd as a viable source of funds. In February 2010, Michael Migliozzi II and Brian Flatow received more than $200 million in pledges from 5 million would-be investors for a plan to purchase Pabst Brewing Co. The Securities and Exchange Commission (SEC) ultimately shut down the effort because the two failed to register the public offering, but it demonstrates the potential of crowd funding.

Recognizing this demand, websites like ProFounder help entrepreneurs legally tap into potential investors. ProFounder enables entrepreneurs to retain ownership. In exchange for a funding commitment, investors receive a fixed revenue share — for example, 2 percent over four years.

This approach to business investment eventually may change regulations. SEC Chairman Mary Schapiro has spoken in favor of reevaluating rules, and President Obama's recent jobs bill proposes loosening regulations on raising capital through crowd funding.

— Tim Sablik

PHOTOGRAPHY: SEAN SCHEIDT



Kickstarter funded the Baltimore Love Project's mural on Broadway East and North Avenue in East Baltimore. The online campaign had 101 backers, more than half of whom pledged $35 or more.

Crowds are Coming

Democrats Pick Charlotte for 2012 Convention

Charlotte will host the Democratic presidential convention in September 2012, the first major-party convention for a Fifth District city since Baltimore also hosted the Democrats a century earlier. The Democratic National Committee's selection rewards the efforts of Charlotte officials who have worked many years to raise the profile of the Queen City. The benefits of such "mega-events" may be hard to quantify, however.

Based on the experiences of cities that hosted the last three Democratic and Republican conventions, the Charlotte Regional Visitors Authority (CRVA) estimates that as much as $200 million will be spent in the weeks before, during, and after the five-day convention in Charlotte. This figure includes direct spending by delegates, reporters, and others participating in convention-related activities, as well as the "multiplier effect" of any money that circulates through the economy as a result of the initial round of spending.

But money spent in Charlotte may not stay in Charlotte, according to Victor Matheson, an economist at the College of the Holy Cross who has studied the economic impact of mega-events.

"During the convention, hotels may double or triple room prices, but they won't double or triple the wages they pay their desk clerks or room cleaners," he notes. "The extra money doesn't go into the pockets of local workers."

Second, says Matheson, any marginal increases in revenue that result from the Democratic convention may be offset by a displacement or "crowding-out" effect — the throngs of visitors may prevent locals from spending on activities they normally do.

The Charlotte Arts and Science Council contacted cultural venues in other convention cities to see how the events affected them. Robert Bush, the council's senior vice president, noted in a recent *Mecklenburg Times* article that venues should expect local visitation to drop as residents avoid the crowds and traffic congestion.

William Miller, who leads the committee that organized Charlotte's bid for the Democratic convention, is more optimistic. September is a slow time of the year for the city's cultural institutions, so "it's a good time to have people here. We won't be eating into any tourism revenues." He also hopes that people who normally visit the Charlotte region for Labor Day weekend will stick around for the convention.

Finally, there are the direct costs of mega-events to consider such as improvements to local transportation networks. This should be less of an issue for Charlotte, according to Tim Newman, the CRVA's chief executive officer. "Due to our history hosting large events such as the Central Intercollegiate Athletic Association college basketball tournament — which drew 175,000 attendees in 2010 — [and] major NASCAR events, we have the infrastructure to support the Democratic convention."

There is one big difference between hosting a political convention and hosting a NASCAR race: protection for President Obama and Democratic politicians. "This event will require greater security than anything we have ever done," says Miller. It will require additional local and state police on top of the Secret Service. Convention cities receive a federal grant that is supposed to cover security costs, including purchases of specialized equipment and training.

Apart from its uncertain economic impact, a mega-event may have less tangible benefits to consider. It may raise the profile of the host city and, if nothing goes terribly wrong, boost its image. This can signal to businesses that it would be a good place in which to relocate or hold other events.

Miller says the 2008 Republican convention in the Minneapolis-St. Paul region generated free advertising that would have cost millions of dollars. "Charlotte hasn't done any international marketing, so any publicity would be a benefit."

— Charles Gerena

Carolina Gold

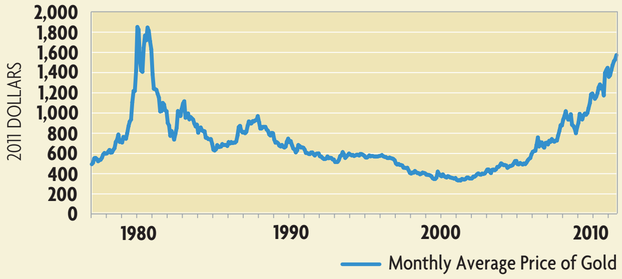
Exploration at a Historic Mine in South Carolina Is Put on Hold

The Haile Gold Mine is nestled deep in the Carolina slate belt, a region known for hosting one of the nation's first major gold rushes of the early 19th century. The area may once again be a significant source of gold extraction.

Romarco Minerals Inc., a Canadian exploration — and development — stage gold mining company, has broken ground on a new facility. But construction at the Lancaster County, S.C., mine will have to wait an additional year. The U.S. Army Corps of Engineers ruled in July that an environmental impact statement (EIS) is necessary before the mine can receive a wetlands permit. The mine's construction will involve digging or filling 162 acres of wetlands, and the use of the chemical cyanide. Both need further evaluation, according to the Corps.

Romarco had hoped to complete construction at the

The Price of Gold in Real Terms



NOTE: Gold's price reached higher levels briefly in the early 1980s.
SOURCES: KITCO.COM/BLS

mine and begin producing gold bars by early 2013, with plans to employ roughly 800 workers, including 500 during construction, and about 300 once production begins. The company estimates that the mine may hold an estimated 3.1 million ounces of gold, or about 40 percent of the 8.1 million ounces produced annually in the United States.

"From a business perspective, there are some positives to the [EIS] report process," says Romarco Chief Executive Officer Diane Garrett. "It gives the public an opportunity to comment on what we're doing, though it delays spending and hiring and the company's ability to move forward."

The county could use the jobs. Its unemployment rate was 14.1 percent in May 2011, well above the state average of 10 percent. Garrett says that there are no immediate plans to lay off any of the company's 140 current employees in the county.

Gold mining as an industry is not new to the Carolinas or to the Haile Mine, which dates back to 1827. Since then, mining has stopped and started as prices fluctuated. The United States currently ranks behind China and Australia in gold production, with most U.S. gold mined on federal lands in the West, primarily Nevada.

Indeed, gold mining in the Fifth District had been abandoned since the early 1990s. Recent technological advances in Australia have allowed miners to grind the soil to a finer consistency and extract even tiny particles of gold. This, along with advances in drilling and high gold prices, has given new hope to mining companies. The renewed interest has even started a wave of amateur prospecting in South Carolina, according to Scott Howard, the state's chief geologist.

The sharp rise of gold's price, from below $750 per ounce in late 2009 to roughly $1,750 at the end of October 2011, is commonly believed to be the result of higher inflation expectations, though economists differ on the causes of price spikes of precious metals.

As Romarco prepares to complete its assessment for the Corps, the gold mining industry is keeping an eye on the results. As Garrett puts it, "People are waiting and watching to see if you can produce gold in South Carolina."

— Louis Sears

Boy Scout Bonanza

BSA Develops $400 Million Complex in West Virginia

More than 1,000 Boy Scouts converged on the New River Gorge National River in Fayette County, W.Va., in July to build miles of multipurpose trails and remove acres of invasive vegetation. The project was one of the largest youth service projects in the history of the Boy Scouts of America (BSA), but it was only a small sample of things to come.

In 2009, the BSA purchased 10,600 acres — mostly in Fayette County — and announced plans to develop a $400 million scouting complex adjacent to the national park. The complex has been named the Summit Bechtel Family National Scout Reserve in recognition of a $50 million grant from the S.D. Bechtel Jr. Foundation. (Engineering and construction magnate Stephen Bechtel Jr. was an Eagle Scout.)

The Summit, as it has become known, will serve as the permanent home of scouting's National Jamboree beginning in July 2013. Every four years, about 40,000 scouts and 8,000 volunteers will spend 10 days at the complex. The first phase of development will prepare the Summit for the 2013 jamboree. Over the following six years, the BSA plans to develop a year-round "high-adventure base" similar to the Philmont Scout Ranch in New Mexico. By 2019, when the complex will host the International Jamboree, BSA officials expect the Summit to serve at least 30,000 Boy Scouts each year in addition to those who attend jamborees. The complex will employ about 80 people year round and 1,000 additional workers each summer.

To select a site for the Summit, the BSA considered 80 proposals from sites in 28 states. The organization initially planned to hold the National Jamboree in Rockbridge County, Va., and put the high-adventure base in Fayette County, but the Rockbridge site was "simply too restrictive from a land-utilization perspective," says Jack Furst, president of Arrow WV, a nonprofit subsidiary of the BSA that purchased the land. So the BSA decided to combine both projects in Fayette County.

That was welcome news for a county with 21.6 percent of its 46,000 residents living below the poverty line of $22,050 per year for a family of four. By August, the Summit had generated 285 jobs — mostly construction — with 50 percent of the workers coming from Fayette and other nearby counties. The project also had paid nearly $16 million to West Virginia-based contractors and $9 million to local consultants and service providers.

The Summit's operation also will create 207 full-time equivalent jobs, mostly seasonal camp workers, according to an economic impact study commissioned by the BSA and conducted by Syneva Economics, a consulting firm based in Asheville, N.C. That projection increases to 486 full-time equivalent jobs in later years as the complex becomes substantially complete. Those numbers do not include the impact of the National Jamboree, which is expected to generate more than $41 million in local expenditures every four years.

Boy Scouts build a trail at the New River Gorge National River.

The steady stream of scouts also will help the surrounding area in nonfinancial ways. The BSA plans to develop service-learning programs with the Park Service and neighboring communities. Every scout who attends a jamboree, an adventure camp, or a leadership school at the Summit will be expected to provide at least six hours of community service. — Karl Rhodes

Upwind, Downwind
Rule Restricts Interstate Pollution

The Environmental Protection Agency (EPA) has issued a rule aimed at slashing emissions that drift from state to state and dirty the air far from the pollution source. The rule will force the electric power sector to ratchet down emissions levels from plants in 27 states in the eastern half of the United States, where most of its population lives.

Tall smokestacks limit local air pollution by thrusting emissions high into the atmosphere. But wind and weather spread the pollutants — precursors to soot and smog — far and wide.

The Cross-State Air Pollution Rule (CSAPR), six years in the making, will cut sulfur dioxide (SO_2) levels from power plants in affected states by 73 percent from 2005 levels, and nitrogen oxide (NO_x) levels by 54 percent. The rule will take effect Jan. 1, 2012. It replaces the 2005 Clean Air Interstate Rule (CAIR), found to violate the Clean Air Act following a 2008 lawsuit North Carolina brought against the EPA.

North Carolina plants may be in better shape to meet new limits because of standards established by the North Carolina Clean Smokestacks Act passed in 2002. The law required scrubbers. The state also sued the Tennessee Valley Authority (TVA) in 2006 over downwind emissions from TVA's coal-fired plants. The action culminated in a settlement that will cut emissions across the TVA system.

SO_2 and NO_x react in the atmosphere and contribute to fine-particle pollution. Particles are one-tenth the diameter of a human hair and may impair lung function. Particle pollution can also increase the risk of heart disease and lung cancer, and the incidence of asthma attacks. SO_2 is also a chief culprit in acid rain, which has polluted air, streams, and forests and has damaged buildings.

Such regulations both impose costs on and accrue benefits for society, and it's sometimes hard to evaluate trade-offs. Power companies bear the brunt of compliance costs, which may entail plant closures and job losses. If electricity rates rise, that affects individual ratepayers and the broader economy. The biggest benefit comes from savings associated with lower mortality among children and the elderly; the pollution is associated with an estimated 13,000 to 34,000 premature deaths.

Compliance costs vary according to the number and age of coal-fired plants in electricity companies' generating fleets. Strategies such as added pollution controls, shutdowns of aging coal plants, or fuel-switching will cost money — but some controls are in place already to meet existing state regulations or CSAPR's predecessor rule.

Charlotte-based Duke Energy has spent $5 billion on

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PHOTOGRAPHY: GARY HARTLEY/BOY SCOUTS OF AMERICA

The Dodd-Frank Act and Insolvency 2.0

BY DAVID A. PRICE

A new tool lets regulators order troubled financial companies into receivership to avoid systemic risk

The financial crisis of 2008, particularly the bailout of the investment firm Bear Stearns and the bankruptcy of Lehman Brothers Holdings, led many policymakers to reach two conclusions: first, that the bankruptcy process lacks the expertise and agility needed to handle the failure of systemically important financial institutions, or SIFIs, such as Bear Stearns and Lehman; and second, that bailouts of financial institutions are unacceptable to voters and are themselves a source of excessive risk-taking.

In the wide-ranging Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, better known as the Dodd-Frank Act, Congress sought to address these issues by creating a new regime for handling the failure or expected failure of a SIFI. This regime, known as Orderly Liquidation Authority, has significant implications for the largest, most interconnected financial companies — both in death and in life.

How It Works

Orderly Liquidation Authority covers a subset of nonbank financial companies: bank holding companies, brokers and dealers registered with the Securities and Exchange Commission, and nonbanks designated for supervision by the Fed on the basis that they are systemically important. (On the latter category, see "Sifting for SIFIs," *Region Focus*, Second Quarter 2011.) In addition, Orderly Liquidation Authority covers financial subsidiaries of bank holding companies and designated nonbanks, other than insured depository institutions and insurance companies.

Companies in these categories are eligible to be placed into orderly liquidation if certain conditions are met. The Treasury Department must determine that the company is "in default or in danger of default," that its resolution under otherwise-applicable law (normally bankruptcy law) "would have serious adverse effects on the financial stability of the United States," and that "no viable private sector alternative" is available to prevent the company's default, among other requirements. (See box.) The process for reaching this determination is a complex one: It begins with a recommendation by both the Fed's Board of Governors and the board of the Federal Deposit Insurance Corp. (FDIC) — unless the company is a broker-dealer or an insurance company, in which case the FDIC's role in the process is taken instead by the Securities and Exchange Commission or the newly created Federal Insurance Office of the Treasury Department, respectively. Once the designated agencies have made a recommendation (supported by a detailed analysis), the Secretary of the Treasury is required to consult with the President and decide whether the company meets the statute's requirements for orderly liquidation.

When the Treasury makes such a determination, the company's board has a limited opportunity to challenge it in federal district court. The only findings of the Treasury Secretary that it can challenge are that it is indeed "in default or in danger of default" and that the company is a financial company as defined by the Act. The court can reject the Treasury Secretary's decisions on these issues only if it finds them to have been "arbitrary and capricious." Moreover, if the district court does not act within 24 hours, then the law deems the Treasury Secretary's determination to have been upheld. (The U.S. District Court for the District of Columbia, the court that will hear companies' objections, has issued a rule requiring Treasury to give 48 hours' advance notice to allow time to prepare; Treasury and the FDIC have objected to this requirement.)

At that point, the company involved is placed into a receivership, with the FDIC as receiver. In the FDIC's words, it is required to use its best efforts "to liquidate the covered financial company in a manner that maximizes the value of the company's assets, minimizes losses, mitigates risk, and minimizes moral hazard." The FDIC's powers over the company as receiver are analogous to its powers over a failing FDIC-insured depository institution. Among other things, it may sell the company or any of its assets; it may create a company to receive the failing company's assets; and it may repudiate contracts and leases to which the financial company is a party.

Ordering Orderly Liquidation

If the Secretary of the Treasury receives recommendations from the Fed and another designated regulatory agency that a nonbank financial company should be placed in receivership, the Dodd-Frank Act requires him or her to determine whether certain criteria are met. If so, he or she must pursue receivership for the company (with the consent of the company's directors, if they agree, or by court order, if not).

The statute sets out this list of determinations that the Secretary of the Treasury must make for the process to go forward:

1. the financial company is in default or in danger of default;
2. the failure of the financial company and its resolution under otherwise applicable Federal or State law would have serious adverse effects on financial stability in the United States;
3. no viable private sector alternative is available to prevent the default of the financial company;
4. any effect on the claims or interests of creditors, counterparties, and shareholders of the financial company and other market participants as a result of actions to be taken under this title is appropriate, given the impact that any action taken under this title would have on financial stability in the United States;
5. any [orderly liquidation] would avoid or mitigate such adverse effects, taking into consideration the effectiveness of the action in mitigating potential adverse effects on the financial system, the cost to the general fund of the Treasury, and the potential to increase excessive risk taking on the part of creditors, counterparties, and shareholders in the financial company;
6. a Federal regulatory agency has ordered the financial company to convert all of its convertible debt instruments that are subject to the regulatory order; and
7. the company satisfies the definition of a financial company under section 201.

SOURCE: Dodd-Frank Wall Street Reform and Consumer Protection Act, sec. 203(b)

An Expansion of Discretion

The Orderly Liquidation Authority provisions of the Act attempt to place numerous limits on regulators' discretion, both at the stage of designating a company for orderly liquidation and during the receivership process. The two agencies that recommend designation must agree with one another and must follow criteria set out in the law; the Secretary of the Treasury must also agree that designation is warranted on the basis of the law's criteria for him or her to apply. In carrying out its receivership, the FDIC must ensure that its actions conform to the criteria of maximizing the value of the company's assets, minimizing losses, mitigating risk, and minimizing moral hazard

Still, in comparison with the bankruptcy process, orderly liquidation gives regulators more discretion in the triggering of the process and in its administration. At least in the short term, and perhaps in the longer term, this difference may create a higher level of uncertainty in orderly liquidation than in bankruptcy.

For example, the incentives facing regulators with political accountability are likely to differ from those facing creditors, who have a distinct kind of accountability — their own money is at stake. Creditors have an incentive to provide more funding if they believe the company is a viable going concern and if they believe doing so will be profitable. But the motivations affecting regulators in deciding whether to pursue orderly liquidation are not so clear. In the post-financial-crisis era, will regulators consider it anathema to designate financial companies for orderly liquidation, knowing that an arranged acquisition of a company will almost certainly lead to a more concentrated industry in the hands of the companies left standing? Or, alternatively, will skittish regulators perceive dangers of default and systemic risk everywhere they look?

When the bankruptcy process is underway, it is overseen by trustees and bankruptcy judges with the involvement of the company and its creditors. In orderly liquidation, in contrast, the FDIC is not required to allow any party to be represented in the process. When the FDIC sells a financial company to another entity, for example, it is not required to consult or even give notice to the company's shareholders or creditors. The same has long been true in the receivership of an insured depository institution.

"Nobody has any standing except for the administrator who makes all the decisions," says Robert Bliss, a business professor at Wake Forest University. "They're going to be making massive decisions by themselves. The Act will have them doing it in a way that is not transparent and not subject to any substantial right of appeal. So it's an enormous amount of power and conflicting objectives."

Paying for Liquidation

Resolving a failing company typically requires an infusion of capital. In the case of failing banks, this may mean the government taking liabilities or bad assets off the institution's balance sheet, or promising sweeteners to an acquirer (such as loss-sharing agreements). When the FDIC resolves a nonbank in the orderly liquidation process, where will this money come from, if needed?

The statute emphatically states that it will not come from taxpayers. ("Taxpayers shall bear no losses from the exercise of any authority under this title," it directs at one point.) This mandate upholds one of the primary purposes of Orderly Liquidation Authority: to put companies and markets on notice that there will be no government bailouts of "too big to fail" institutions.

Instead, the first source of the funds needed to liquidate a company will be the disposition of the company's assets. If those funds are not enough, the FDIC is to recover the rest through assessments on other companies — initially on creditors that received preferential treatment during orderly liquidation, and then on other companies in the financial sector (specifically, large bank holding companies and Fed-supervised nonbanks).

During Congress' consideration of the Act, FDIC Chairman Sheila Bair argued for the creation of a reserve funded by the industry in advance rather than after-the-fact assessments on the industry. She contended that an advance reserve would avoid the pro-cyclical effects of assessments that would tend to hit other financial companies — and perhaps weaken them — during a downturn. Congress opted for the assessment approach, however.

Government money may flow into the process on an interim basis, however. The Act allows the FDIC to borrow from the Treasury Department in connection with a liquidation — for example, to make loans to the company (or a bridge company formed from the company), to guarantee its obligations, or to pay other costs of liquidation. Some observers have questioned whether the use of taxpayer funds to support the financial company, even if it is formally required to be repaid, may signal to markets that the government is likely to back the company further if necessary to get its money back and to avoid potential systemic consequences.

"In a bankruptcy process, there is no presumption that the court is going to put money into the insolvent company; the court doesn't have any money," says Bliss. "In the administrative process, the FDIC does have access to funds. There is, therefore, a presumption that the government is going to back anything that they put into a bridge bank. You have a potential for a much bigger commitment in the administrative process."

Treatment of Derivatives and Repos

One area where Orderly Liquidation Authority does draw upon existing bankruptcy law is in its treatment of so-called "qualified financial contracts" — primarily derivatives and repos. Federal bankruptcy law gives counterparties to these contracts special treatment; most notably, they are free to close out the contracts with the bankrupt company, overriding the automatic stay in bankruptcy and normal bankruptcy preference rules. This special treatment has been viewed as a means of averting the systemic risk that could be created by the default of derivatives counterparties.

A counterparty in the context of an orderly liquidation enjoys the same special treatment, but with an exception: It cannot exercise those rights if the FDIC transfers the qualified financial contract to a private acquirer or a newly created bridge company within one day from the start of the receivership. This one-day automatic stay gives the FDIC the opportunity to avoid close-outs of qualified financial contracts if they would be problematic to the institution.

As a policy matter, the desirability of special treatment for counterparties to qualified financial contracts — in both bankruptcy and orderly liquidation — has been criticized by some scholars. At a workshop on financial firm bankruptcy in July, co-sponsored by the Richmond Fed and the Philadelphia Fed, several business and law professors argued against the special treatment. David Skeel of the University of Pennsylvania Law School, Franklin Edwards of the Columbia University Graduate School of Business, and Douglas Diamond of the University of Chicago Booth School of Business contended that it reduces counterparties' incentives to investigate risks (since they have, in effect, a priority claim on the company's assets), that it leads to excessive use of derivatives (by making them cheaper relative to debt), and that it contributes to runs on the troubled financial company.

Waiting For A Stress Test

The Treasury Secretary has not yet placed any nonbank financial companies in orderly liquidation, so there is still much to be learned about how it will operate in practice and how effective it will be. Indeed, some of the regulations relevant to orderly liquidation are still being written. The ideal, though perhaps unlikely, outcome is that it will never need to be used. Some of its more severe provisions — from the perspective of directors, management, creditors, and equity investors — may have the beneficial effect of encouraging systemically-important companies to seek additional capital (even at highly dilutive terms) when they are facing trouble, rather than risk entering the orderly liquidation process. Almost certainly, sooner or later, a crisis in the finances of a major nonbank will shed light on how the existence of Orderly Liquidation Authority shapes the behavior of private parties and regulators alike. **RF**

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Incentives for Greener Transportation

BY RENEE HALTOM

North Carolina owners of cars with the newest environmentally friendly technologies can now drive on high-occupancy vehicle (HOV) lanes regardless of the number of passengers they carry. The new policies, signed into law in May and June of this year, are intended to encourage car buyers to choose plug-in electric vehicles and vehicles powered by certain alternative fuels. A small but growing number of states have similar HOV incentives for these types of vehicles.

The policies are somewhat ahead of the curve since those up-and-coming technologies are not yet widely available — unlike hybrid vehicles, which comprise about 3 percent of total vehicle sales (more than half of which are the popular Toyota Prius). Hybrids combine battery power with a gas-fueled internal combustion engine. HOV access for hybrids has been around in some areas since 2000, when Virginia became the first state to offer the incentive. Such policies are typically administered by a special marking — a sticker or a special license plate — available for purchase that authorities can watch for on vehicles traveling in HOV lanes.

The evidence is mixed on whether HOV access has been successful at spurring hybrid purchases. Of the five states that introduced HOV hybrid exemptions between 2000 and 2006, only in Virginia was there a positive and significant effect on hybrid purchases, according to economists Kelly Sims Gallagher at Tufts University and Erich Muehlegger at Harvard University.

Probably explaining Virginia's success, Muehlegger says, is that most of the area's HOV lanes exist in Washington, D.C. That area has what is commonly considered to be the worst traffic in the nation, making HOV access particularly valuable. (Los Angeles and San Francisco also tend to be included in lists of worst traffic areas, but California's program allocated 60 percent of its 85,000 HOV access stickers to people who already owned hybrids. That may explain why research has been unable to link HOV access to new purchases in that state.)

The lesson for policymakers might be that HOV access is most likely to change consumer behavior near extremely highly trafficked corridors. Usually, however, "HOV lanes are not the trigger that get people to buy a hybrid relative to a regular vehicle," Muehlegger says.

But consumers do seem to find HOV access valuable — and policymakers may be able to exploit that toward a positive end. Economists Sharon Shewmake at Vanderbilt University and Lovell Jarvis at the University of California, Davis, looked at California's program, which sold HOV access stickers between August 2005 and February 2007. They looked at the used car market for hybrids and found that ones adorned with HOV-access stickers, which conveyed with the cars, sold for a premium to the average tune of $625 for each year the buyer knew the HOV policy would be in effect. At that valuation, what the state sold for $8 a pop could have generated $270 million in revenue, they calculate.

By auctioning HOV access to the highest value users with *any* type of car, and using that revenue to encourage hybrid purchases via sales tax waivers, policymakers could both allocate HOV space to the people who value it most and encourage a greater number of hybrid purchases than HOV access has apparently been able to do, Shewmake and Jarvis argue. Based on estimates of the effectiveness of tax waivers to spur hybrid purchases, they further estimate that a sales tax waiver between $1,000 and $2,000 would have encouraged the same number of hybrid purchases as Virginia's policy did, with revenue left to spare.

Harvard's Muehlegger argues that the real hurdle to green car adoption is getting people comfortable with the technologies. For example, people were initially unsure about the long-run performance of hybrids — would the batteries eventually wear out? — but this problem receded as people observed more and more of their peers having positive experiences with hybrids.

Both of the technologies being promoted by the new North Carolina law are troubled by additional adoption hurdles. For plug-in electrics, consumers are worried about "range anxiety," or how far the car can go before requiring a charge-up. For alternative fuel vehicles, will fueling stations be widely available?

Policies that encourage these technologies could help to lower those adoption hurdles. But they also arbitrarily favor certain types of green technology over others. Most economists would ask: Why pass a law subsidizing one type of technology — say, hybrid vehicles or plug-in electrics — instead of a law that encourages *any* technology that yields environmental gains above a certain desired threshold?

And if the policy incentives don't prove enough to boost green technology, there's always vanity. One reason people might buy a Toyota Prius, with its unique, recognizable design, is the signal it sends to the driver's peers about that person's environmental enlightenment. Economists (and siblings) Steven and Alison Sexton, graduate students at the University of California, Berkeley, and the University of Minnesota, respectively, estimated that for people living in Colorado and Washington communities that are more "green" (as identified by voting preferences), this "green halo" was worth up to several thousand dollars per car, helping private markets produce what some consider to be a public good. **RF**

JargonAlert

Utility

BY LOUIS SEARS

Diamonds are attractive gems but water is essential to life. How can it be, then, that under most circumstances people are willing to pay far more for diamonds than water? Economists have struggled with this seeming paradox since Adam Smith famously proposed it in 1776, and in the process have changed how we understand and assess utility.

Utility, broadly, represents how useful or satisfying a good, service, or action is to an individual. Since economists believe that people want to live as happy and fulfilling lives as possible, understanding the utility that different outcomes create for individuals can help in understanding and predicting how they will behave. This tells businesses which goods they should produce, lets politicians know which policies they should enact, and allows people to understand the motives of those around them.

Much of the early theory of utility has its roots in the 18th and 19th century utilitarian philosophy of Jeremy Bentham and John Stuart Mill. Both authors believed that society's aim should be to promote the greatest happiness for all involved — "the greatest good to the greatest number," in Bentham's phrase. Bentham believed that this happiness was dependent on, and could be measured through, the intensity of pleasure or pain that a good or action produced for an individual, as well as several other factors. In fact, Bentham believed that by using these measurements as well as 32 traits of each person, society could measure and compare the happiness of all individuals. While still believing that maximizing mankind's utility was the most moral approach for governance, Mill argued that it was best to allow individuals to make their own choices, as long as this didn't interfere with the happiness of others.

While economists still look for ways of improving the utility of society, their conception of the nature of utility and how it should be measured has changed significantly since the time of Mill and Bentham. In most contexts, economists today generally reject the concept of trying to measure numerically the utility that someone derives from an outcome (that is, its "cardinal utility") and to compare different people's utility from different outcomes. Instead, they look at the order in which an individual desires various outcomes, that is, the person's "ordinal utility." To understand this ordering, they observe the choices individuals make between alternatives, and assign a higher utility value to the outcome which is eventually chosen. By keeping track of these revealed preferences, economists are able to compare the utility of all kinds of goods and actions to the individual.

Because it is impossible to compare the utility levels of different people, modern utility theory does not allow the economist to combine individual utilities into one number for all of society. In other words, if building a bridge makes some residents happy by improving their commute to and from work, but angers an equal number of others who do not own cars but must pay for the project, most economists would say that it is impossible to judge whether the happiness of the first group outweighs the dissatisfaction of the second group. Rather, in the tradition of Italian economist Vilfredo Pareto, economists can only state whether or not the decision improves the lot of some without hurting anyone else, or causes a Pareto improvement.

Economists do recognize that the utility a good brings an individual can vary according to his or her current situation. The idea that a good can bring different amounts of happiness depending on the current state of the individual leads economists to look at the effect of an additional unit of a good on the individual — that is, the good's marginal utility. The willingness of an individual to pay for a good does not depend directly on how costly it was to produce the item, or the usefulness of the item on the whole, but instead rests on the satisfaction that each additional unit of the good provides. Since individuals generally satisfy their most important needs with the first few units of the good they acquire, additional units are likely to have progressively less value to the acquirer. Economists call this the principle of diminishing marginal utility: The first unit of a desired good holds more utility than the second one, and so on.

This brings us back to the matter of diamonds and water. While the overall utility of water to an individual is much higher than that of diamonds, the marginal utilities of the two are a different story. At any given moment, most people do not have a strong desire for more water (unless the person happens to be crossing a desert, or, say, has just finished a workout); for them, the *marginal* utility of additional water is modest. On the other hand, most people are far from feeling saturated with diamonds, and would derive considerable utility from owning another one. But not everybody: As economics teaches, utility — like beauty — is in the eye of the beholder. **RF**

ILLUSTRATION: TIMOTHY COOK

Ties that Bind

BY TIM SABLIK

Adam Smith famously observed that people acting in their own self-interest are often "led by an invisible hand" to advance the interests of society as a whole. There are cases, however, where an economic agent is protected against losses from his risk-taking, allowing him to take risks that are personally optimal, but which negatively affect a third party. This is referred to by economists as moral hazard.

Moral hazard is commonly an issue in the context of insurance; for example, a homeowner might opt to spend less time and money protecting his property from theft because his insurance policy would cover the losses. Thus, insurance companies typically limit moral hazard by requiring deductibles and by increasing premiums following a pattern of losses.

C. Kirabo Jackson and Henry S. Schneider. "Do Social Connections Reduce Moral Hazard? Evidence from the New York City Taxi Industry." *American Economic Journal: Applied Economics*, July 2011, vol. 3, no. 3, pp. 244-267.

Since moral hazard can lead to undesirable economic outcomes and hamper market transactions, economists are interested in learning how parties avoid this inefficient behavior. C. Kirabo Jackson of Northwestern University and Henry Schneider of Cornell University explore the issue of moral hazard in the New York City taxi industry. They look at taxi drivers who lease their vehicles from owners who pay the costs of maintenance and repair. The drivers keep all fares they earn, minus lease fees and an accident deposit, capped by the city's Taxi and Limousine Commission (TLC) at $650 and $500, respectively. The costs of vehicle maintenance or accident repair can run much higher, and since the drivers are not liable for the majority of the downside, but reap the full profits of the upside, they are susceptible to significant moral hazard. They might drive more aggressively to pick up more passengers, unconcerned by the increased wear and damage this inflicts on the car.

In their article, Jackson and Schneider ask whether leasing to a driver from the same country of birth might reduce the moral hazard problem, and thereby reduce the owner's losses. They theorize that social connections could provide the pressure that formal contracts lack in this situation. Using data on New York taxi drivers from 2005 and 2007, they find that 44 percent of drivers lease "in-network" (that is, from owners with the same country of origin). The authors then perform a series of tests to isolate the causal effects of driving in-network on driving behavior, which they measure using summonses for TLC violations.

In order to isolate the in-network driving effect, the authors must control for the effect of individual driver ability. They do this in two ways. First, they look at the records of the drivers who were in-network in one period and out of network in another. Presumably, driving ability did not systematically change between the two periods. Although the sample of drivers who switched networks is relatively small (3.2 percent of the sample), the authors note that this subsample is representative of the whole in terms of driving experience, age, and countries of birth.

In addition, Jackson and Schneider test a second model incorporating the distance between residences of drivers and owners from the same country. They reason that drivers who happen to live close to owners from the same country will be more likely to lease from them. Proximity of owners and drivers from the same country of origin is therefore correlated with in-network driving, but not correlated with driver ability, allowing the researchers to isolate the in-network effect on driving outcome.

In the sample as a whole, approximately one in three drivers receives a summons in a six-month period, or an average of 0.39 summonses per driver. Testing the data without controlling for ability, the authors find that in-network drivers have 0.09 fewer summonses per six-month period, which is a fairly small improvement. When controlling for individual ability by using the data for drivers who switched networks, however, the researchers find that in-network drivers have 0.334 fewer summonses per six-month period, a statistically significant improvement. The results from the second test method are similar, though statistically somewhat weaker.

The authors then explore whether the strength of the owner's and driver's social network motivates this improvement in driver performance. The researchers measure social network strength as the density of residents from a particular country who live in a neighborhood. They posited that a greater density of residents from the same country leads to a stronger social network, and in-network drivers who are part of a strong social network will have greater incentive to perform better or risk being cut off from that network of support.

In fact, this is what the authors find: The interaction between leasing in-network and the owner's network density had the greatest influence on driving outcome. This suggests that the ability of the owner to enforce social sanctions on the driver accounts for most of the improved behavior demonstrated by in-network drivers.

Jackson and Schneider conclude that even in developed economies, social ties can reduce the effect of moral hazard in cases where formal contracts might fall short. **RF**

Why Aren't We Creating More Jobs?

Job growth usually rebounds quickly after a severe recession, but this time is different

BY JESSIE ROMERO

PHOTOGRAPHY: GETTY IMAGES

For many Americans, the recession hasn't ended. The unemployment rate in the United States has been above 9 percent for 28 of the past 30 months. More than 6 million people — nearly half of all those who are unemployed — have been out of work for longer than 27 weeks. Most of the nearly 9 million jobs lost due to the recession haven't come back; the job creation rate fell to a historic low in 2008 and is still well below its rate for the previous two decades. At the same time, corporate profits are above their prerecession levels and companies are holding a record-high $1.9 trillion in cash reserves. Policymakers — and households — are asking what the government can do to encourage those companies to start hiring.

Policymakers also are asking what has changed since the last very severe recession, in 1981-82. Then, the overall unemployment rate reached a higher level, but returned to its prerecession level about 18 months after the end of the recession. The share of long-term unemployed workers peaked at 26 percent, compared to the recent high of 46 percent. GDP growth averaged almost 7 percent during 1983 and 1984, but only 2.5 percent during the past two years (see chart on page 13). The divergence suggests broader changes in the labor market and in the economy that may be less amenable to traditional policy tools for job creation, such as stimulus spending, tax rebates, and direct hiring subsidies.

The effectiveness of those tools, and economic growth in general, might be hampered by an environment of considerable economic, fiscal, and regulatory uncertainty. If so, then restoring the American economy to previous levels of growth and employment is likely to be a long and challenging process, but one that could be fostered by stable, credible policies that provide the private sector with the tools and incentives to recover.

The Keynesian Approach

Since the mid-20th century, federal policymakers have often taken what could broadly be called a "Keynesian" view of economic downturns: When aggregate demand falls, the government should move to fill the gap by increasing government spending or, in some cases, cutting taxes. How much of the gap it can fill depends on the size of the "fiscal multiplier," the amount by which a dollar of government spending increases the economy's output.

The size of the fiscal multiplier is not a static number. Instead, it depends on what is already happening in the economy, and how the economy's characteristics are represented in a model. The multiplier also can vary with the type of stimulus, whether it is in the form of government purchases or tax cuts. In some models, the multiplier is less than one, meaning that one dollar of spending yields less than one dollar of additional output, often because it is assumed that households and firms expect higher taxes and interest rates in the future. In other models, the multiplier is larger than one, especially when interest rates are at the zero bound, as at present.

The American Recovery and Reinvestment Act (ARRA), enacted in 2009, was designed to stimulate the economy. The Congressional Budget Office (CBO) estimates the act will cost $830 billion, with about two-thirds of the cost coming from increased federal spending and one-third from tax cuts and credits. Before the ARRA was passed, the White House's Council of Economic Advisers (CEA) projected that it would save or create at least 3 million jobs by the end of 2010. The CEA used a model with a multiplier of about 1.5 on government purchases (that is, one dollar yields $1.50 in output).

Actually measuring the number of jobs created by stimulus spending is impossible because it requires knowing for certain what would have happened without the stimulus — what economists call the "counterfactual." Physically counting the number of jobs created doesn't paint a complete picture; recipients of ARRA funding are required to report the number of jobs they create, but there is significant over- and under-reporting, and the reports don't capture any indirect effects such as increased demand by the newly employed. As a result, official estimates of the impact of ARRA are based on models, often the same models that were used to predict its impact. The CBO estimates that the ARRA saved or created between 1.2 million and 3.3 million jobs in the first quarter of 2011, based on multipliers of between one and 2.5.

An analysis by Daniel Wilson, an economist at the San Francisco Fed, also suggests that the stimulus had a large effect on employment. Rather than using a model with an implied multiplier, Wilson compared state-level differences in ARRA funding and employment levels and found that the ARRA saved or created more than three million jobs by March 2011.

Other economists, including John Cogan and John Taylor of Stanford University, are skeptical about the ARRA's impact. They argue that very little of the money was actually used to increase government purchases. They found that the increase in purchases due to the ARRA was only 0.1 percent of GDP during 2009 and 2010. A large portion of the money was in the form of grants to states, which, instead of increasing their own purchases, used the money primarily to reduce borrowing, according to Cogan and Taylor. The implication is that the stimulus had little effect on consumption, and thus on employment.

As Wilson notes, however, job creation was not the only objective of the stimulus package. A significant portion of ARRA funds went to extended unemployment benefits and Medicaid reimbursements to states. "If the sole goal was to create employment it probably could have been designed in a different way," he says. "But maintaining health spending for low-income households was a goal, and so was providing unemployment benefits and increasing the safety net in general."

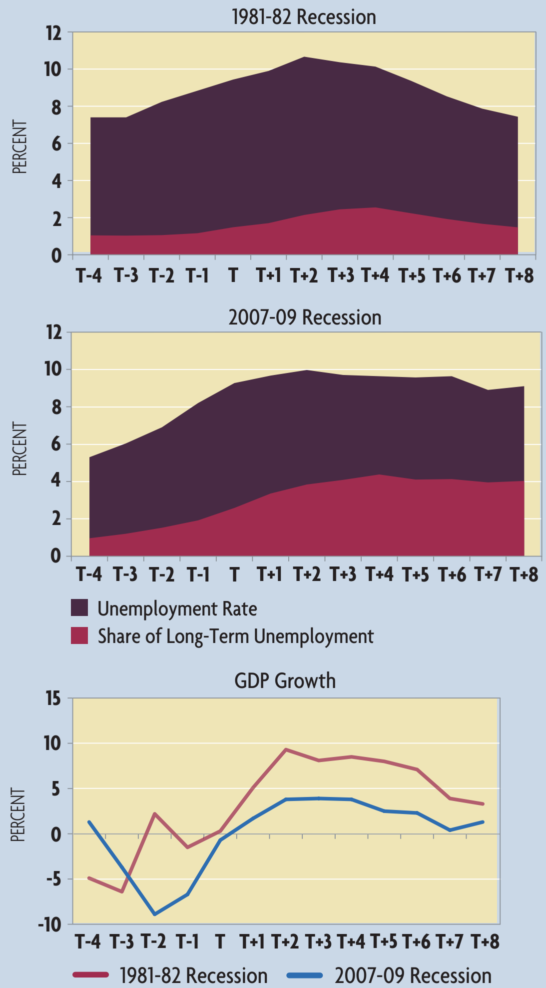
Revised GDP numbers released by the Bureau of Economic Analysis (BEA) in July show that the recession was much more severe than originally thought — GDP actually declined at an average annual rate of 3.5 percent, compared to the earlier estimate of 2.8 percent — so some argue that the stimulus package was simply not large enough to counter the magnitude of the downturn. Other commentators have noted that growth slowed in 2011, when the stimulus started winding down, which suggests that it did have an effect in boosting the economy.

On the other hand, this decline could also suggest that the stimulus did not fix what truly ails the economy, given that the effects do not appear to be sustainable. For example, more than 300,000 educators' jobs were saved by the stimulus, according to the Department of Education, but now more than half of U.S. school districts are planning layoffs. The Savannah River Site, a nuclear cleanup project in South Carolina, was awarded $1.6 billion in ARRA funding, which allowed the contractor to save the jobs of 800 full-time employees and hire 2,200 temporary workers. As of August, only 1,200 stimulus-funded workers remained, and their projects were scheduled to end in October, along with the funding. About 1,000 full-time workers have been laid off or accepted buyouts since the beginning of the year.

Temporary Tax Breaks

The government also can try to boost demand, and thus create jobs, via tax policy. That was the goal of the rebates issued to households in 2001 and 2008, and of the Job Creation Act of 2010, which expanded several tax credits for lower-income families and allowed businesses to expense all of their investments in 2011. The ARRA included the Making Work Pay tax credit, a $400 employee-side reduction in payroll taxes.

Recession and Recovery, Then and Now



NOTE: Data in all panels are for the four quarters before and the eight quarters after the trough (T) of each recession. GDP growth is the quarterly percentage change, at an annual rate.
SOURCES: Bureau of Labor Statistics, Haver Analytics; *Region Focus* calculations

Forecasting how households will respond to a temporary boost in income is difficult. Economic theory says that short-term income changes shouldn't have much effect on households' spending decisions, but people don't always respond as theory would predict. A study of the 2001 tax rebates — cited by many policymakers in support of the Job Creation Act credits — found that households, particularly lower-income households, actually spent a substantial portion of the rebates. The authors, David Johnson of the U.S. Census Bureau, Jonathan Parker of Princeton University, and Nicholas Souleles of the University of Pennsylvania, concluded that the rebates likely had a large effect on aggregate consumption.

In a survey about the effects of the 2008 tax rebates, however, Claudia Sahm of the Federal Reserve Board and

Matthew Shapiro and Joel Slemrod of the University of Michigan found that most recipients used the rebate to save or pay down debt, instead of spending it. The personal savings rate at the end of 2008 reached 6 percent, and remained around 5 percent until the summer of 2011, double the rate prior to the recession, according to the BEA. Other studies have found that the rebates did have a positive effect on consumption. Overall, however, they were not enough to stave off a more than 5 percent drop in spending in the fourth quarter of 2008, and a continued decline throughout the first half of 2009.

One reason for the different responses to the 2001 and the 2008 tax rebates might be that the 2001 rebates were perceived to be part of a longer-term tax cut, whereas the 2008 rebates were a one-time event. A study by Christina Romer and David Romer of the University of California, Berkeley, found that a tax cut equal to 1 percent of GDP could raise output by as much 3 percent, but that the effects were highly dependent on the economic conditions at the time. Countercyclical tax cuts — that is, those enacted in response to an economic downturn — tend to have a much smaller effect on the economy than tax cuts enacted to promote long-term growth.

A more significant factor in the divergence between 2001 and 2008, however, is likely that households' wealth had declined much more severely, and consumer confidence was significantly lower, in 2008 than in 2001, making consumers more cautious about spending. And that caution appears to be persisting. A new payroll tax deduction for employees went into effect at the beginning of 2011, but consumer spending has stayed fairly flat, according to BEA data. This suggests that the deductions are not having the desired effect on consumption, and by extension on employment, although they might be helping to offset a larger decline that could have been caused by higher gas and food prices.

Subsidize Private Hiring

The government can also try to encourage firms to hire new workers by offering direct hiring credits. Firms hire new workers when they believe the marginal benefits of new workers outweigh the marginal costs. Lower the cost of labor, for example by offering a tax credit for new employees, and in theory firms should be more willing to expand their payrolls. But estimates of how responsive firms are to changes in the price of labor vary widely, and most studies suggest that the effect of a hiring credit is relatively small.

Before 2010, the only broad-based national tax credit for employment was the New Jobs Tax Credit (NJTC), which was in effect from mid-1977 through 1978. (Other programs, such as the Targeted Jobs Tax Credit and the Welfare-to-Work Tax Credit, were designed to aid specific groups of disadvantaged workers. The NJTC was the first to target unemployed workers in general.) Studies of the NJTC showed it did create jobs, perhaps as many as 670,000, although it's possible that many of the companies who claimed the credit would have created jobs anyway, according to a 1996 review by Lawrence Katz of Harvard University.

State-level programs have had modest results. Wilson of the San Francisco Fed and Robert Chirinko of the University of Illinois at Chicago have been conducting a study of two dozen state-level hiring credits. Their preliminary results point to a positive — but small and transitory — effect on employment. A 2010 study of the MEGA tax credit program in Michigan concluded that the credit might only be decisive in 8 percent to 16 percent of hiring decisions (meaning that the remaining credits are earned for jobs that would have been created anyway), and that the program could boost the state's employment by one-third to two-thirds of a percent. The study was conducted by Timothy Bartik and George Erickcek of the W.E. Upjohn Institute for Employment Research. But as the authors noted, the effects of the MEGA program might be small because the program itself is relatively small.

A recent program at the federal level was the Hiring Incentives to Restore Employment (HIRE) Act, which became law in March 2010. The Act allows employers to claim a payroll tax exemption for qualified workers (those unemployed for eight weeks or longer) hired between February and December of 2010. At the end of 2010, the Treasury reported that 10.6 million workers who were hired during that period were eligible for the HIRE exemption. But that number represents only 11.6 percent of all the people who spent more than eight weeks unemployed during that period, and it's not certain how many of those workers were actually hired as a direct result of the program.

David Neumark, an economist at the University of California, Irvine, has studied the effectiveness of hiring subsidies. While a new subsidy may have small employment gains relative to the number of jobs needed, he considers it one of the better options available. "If we're really serious about increasing hiring, then let's focus on the things that directly incentivize hiring," he says.

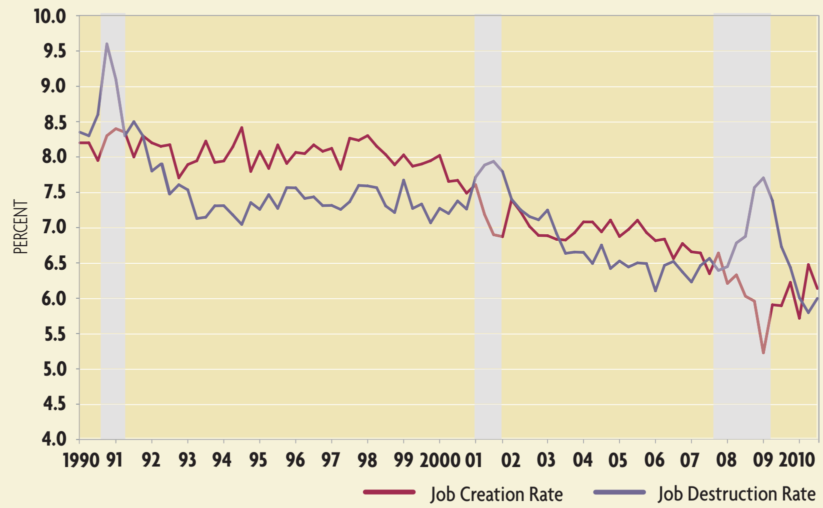
What's Behind the Jobless Recovery?

Following the recessions of 1990-91 and 2001, economists asked whether the "jobless recoveries" that followed were a function of those recessions being shallow, or if instead they reflected more permanent changes in the economy. During the 2007-09 recession, it was hoped that the answer was shallow, and that the recovery would follow the same path as the similarly severe recession in 1981-82, when the economy rebounded quickly and sharply. Instead, it seems that there has been "a change in how the labor market responds to shocks," says Jason Faberman, an economist at the Chicago Fed. "Even though this was a bigger shock, we're seeing the same kind of response in the labor market that we saw in 1991 and 2001. We don't see a sharp return to the labor market like we used to."

Faberman has documented a persistent decline in the job creation rate over the last two decades, exemplified by changing employment patterns after recessions. During and after the 1990-91 recession, the job creation rate was fairly constant, but the unemployment rate remained high because the job destruction rate was high. After the 2001 recession, in contrast, the job destruction rate quickly returned to prerecession levels, but the job creation rate continued to decline well into 2003.

The most recent recession has followed the pattern of the 2001 recession: Initially, the job destruction rate spiked and the job creation rate fell to historical lows. Now, the job destruction rate has subsided, but the job creation rate remains very low — far below the level needed to recoup the recession's losses (see chart). The reasons for the decline in the job creation rate could be structural changes in how the labor market operates. Productivity increases and new technology have reduced the need for labor overall, and the availability of temporary workers enables companies to ramp up production without hiring new permanent workers. In addition, firms are more likely to use permanent rather than temporary layoffs, for reasons including changes in how unemployment insurance costs are charged to employers and the decrease in union contracts.

Job Creation and Destruction Rates



NOTE: Data are for private non-farm employment. The job creation (destruction) rate in each quarter is gross job creation (destruction) divided by the average of total employment in that quarter and the preceding quarter. Shaded areas denote recessions.
SOURCES: Bureau of Labor Statistics, Haver Analytics, Faberman (2008); *Region Focus* calculations

The Cost of Uncertainty

The effects of structural changes in the labor market are amplified by the considerable uncertainty facing business owners. While uncertainty is difficult to measure, a large body of theoretical and empirical research suggests that when businesses are uncertain — whether it's about taxes, regulation, interest rates, future demand, or other factors — they delay investment decisions, which could include hiring. A 2009 study by Nicholas Bloom of Stanford University found that "uncertainty shocks," caused by economic or political events, can lead to a 1 percent drop in employment and output in the months immediately after the shock.

Bloom also found that output rebounds as uncertainty diminishes, but the sources of today's uncertainty remain persistent. The largest source is the future of the economy: GDP grew at an annual rate of only 1 percent in the second quarter of 2011, and 0.4 percent in the first quarter. According to the BEA's initial estimates, growth improved to 2.5 percent in third quarter, still well below the rate needed for a robust recovery. Its July release showing that the recession was deeper than previously thought also showed that growth had been slower than estimated since the recession ended — leading some to dub the period a "recoveryless recovery." The Federal Reserve recently lowered its growth and unemployment forecasts for 2012, and measures of consumer and business confidence remain very weak. The University of Michigan's Index of Consumer Sentiment fell 10 percent between October 2010 and October 2011, and only 19 percent of CEOs surveyed by The Conference Board, a business research association, expected the economy to improve in the next six months.

Uncertainty about the country's regulatory and fiscal environment could also be contributing to companies' reticence. The pending implementation of new health care and environmental regulations, for example, has led many business owners to express concern about how their companies will be affected. In the Fifth District, respondents to Richmond Fed surveys report that potential regulatory changes make it difficult to plan new hires. A greater source of concern is the resolution of nation's debt and deficit problems. According to Dallas Fed surveys, for example, the lack of clarity from legislators about future economic policies contributes to business owners' pessimism about the future. Monetary policymakers on the Federal Open Market Committee recently indicated that they are likely to keep interest rates low through 2013, but the fear of higher taxes and interest rates in the future might be enough to discourage businesses in the present.

How to resolve this uncertainty is a matter of debate. No one can predict for certain the jobs impact of specific regulations or the effect of various tax and spending policies. But there is broader agreement about creating economic conditions that promote long-term growth. Numerous cross-country comparisons have shown that countries with less regulated, more competitive markets have higher levels of business investment and faster growth. The United States generally has had less regulated product and labor markets than European countries, which could account for the fact that average GDP growth during much of the 1990s was about 2 percentage points higher in the United States than in France, Germany, and Italy, according to a 2005 paper by Alberto Alesina and Silvia Ardagna of Harvard University, Giuseppe Nicoletti of the Organization for Economic Cooperation and Development, and Fabio Schiantarelli of Boston College.

New business formation is especially affected by regulation. Multiple studies have shown that high barriers to entry for new firms limit the "creative destruction" that is an engine of economic growth. In the United States, new businesses account for almost 20 percent of gross job creation, according to a 2010 paper by John Haltiwanger of the University of Maryland and Ron Jarmin and Javier Miranda of the U.S. Census Bureau. While startups are also more likely to go out of business in a given year, those that survive grow much more quickly than their older counterparts. "The startups are a critical component of the experimentation process that contributes to restructuring and growth in the United States on an ongoing basis," the authors concluded.

The United States also has one of the highest corporate tax rates, and one of the most complex tax systems, in the world. In addition, the United States is the only major developed country that taxes the foreign earnings of domestically based companies when the earnings are repatriated, which could encourage multinational companies to keep their earnings offshore instead of investing them in the United States. Many lawmakers and economists have suggested that simplifying the tax code and making it more transparent, among other reforms, would help lower costs for businesses and increase the incentives to invest in productive activities at home.

There is consensus that restoring fiscal balance is essential to the country's long-term health. In a June speech, Fed Chairman Ben Bernanke noted that "a large and increasing level of government debt relative to national income risks serious economic consequences.... [F]ailure to put our fiscal house in order will erode the vitality of our economy." Large debts and deficits can hinder growth if they lead to higher interest rates or taxes, and thus crowd out private investment. The United States currently has a national debt of $14.8 trillion and a deficit of $1.3 trillion. Examining 200 years of data on 44 countries, Carmen Reinhart of the Peterson Institute for International Economics and Kenneth Rogoff of Harvard University have found that countries with a debt-to-GDP ratio of more than 90 percent have substantially slower growth. In the United States, growth has averaged negative 1.8 percent when the ratio was more than 90 percent and 4 percent when the ratio was below 30 percent. Without substantial spending cuts and increased tax revenue, the CBO projects that the U.S. debt-to-GDP ratio could exceed the historical peak of 109 percent (reached at the end of World War II) by 2023, and approach 190 percent by 2035.

Whether lowering the deficit should be achieved via spending cuts, revenue increases, or a mix thereof is a question being debated by economists and policymakers. But all sides agree that committing to a credible, enforceable plan is essential to restoring business and consumer confidence, and thus to promoting the country's short-term and long-term economic health.

The Path Forward

The U.S. economy is facing a number of significant challenges. Long-term changes in the labor market, an unsustainable fiscal situation, and the continued effects of the most severe recession since the Great Depression suggest that a near-term solution to the unemployment problem is not at hand.

The considerable uncertainty facing business owners makes these challenges more difficult to overcome. Work by economist Robert Pindyck of the Massachusetts Institute of Technology suggests that uncertainty not only decreases investment but also makes companies less responsive to stimulus. And Bloom's results show that uncertainty makes firms less likely to respond to an increase in demand. Resolving the uncertainty surrounding so many political and economic decisions thus could help spur businesses to increase their payrolls once the economy picks up.

Policy tools such as tax incentives or stimulus spending can help on the margin of the labor market. But broad-based job creation, which so far has dragged more slowly than the recovery generally, will require sustained improvement in economic conditions — and that means policymakers must credibly address the hardest problems rather than working only on the edges. This does not help the millions of people who need to find work now, but in the long run, the best hope for growth in output and employment is to create the conditions that allow new and existing businesses to flourish. **RF**

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Don't Know Much About Financial Literacy

In this classroom, the right choice may be (d) all of the above

BY TIM SABLIK

Suppose you had \$100 in a savings account with an interest rate of 2 percent. After five years, how much would you have in the account if you left the money to grow?

This was one of three questions asked of adults participating in a recent financial literacy study. They were given three answers to choose from: more than \$102, exactly \$102, or less than \$102.The good news: About 68 percent of respondents answered the question correctly. The depressing news: The other 32 percent either answered wrong or could not answer the question.

Troubling evidence about Americans' financial literacy abounds. In a 2003 survey of investors administered by the National Association of Securities Dealers (now merged into the Financial Industry Regulatory Authority), only 35 percent of participants received a passing grade. Many thought that stock market losses were insured. Among high school students surveyed by Jump\$tart.org, a nonprofit organization that promotes financial literacy training for students, about half believed either that sales tax was set nationally at 6 percent or that the federal government deducted it from paychecks.

The events of the 2007-09 recession and its aftermath have brought the need for financial knowledge sharply into focus. Even prior to the crisis, the Federal Deposit Insurance Corporation observed that "the extraordinary transformation of consumer financial markets over the past decade has made financial literacy nothing less than an essential survival tool."

Financial literacy can encompass many different traits, but the National Financial Educators Council defines it as "possessing the skills and knowledge on financial matters to confidently take effective action that best fulfills an individual's personal, family, and global community goals." As surveys indicate, financial skills and knowledge among many Americans seem to be lacking.

In response, federal, state, and private organizations have put a number of initiatives in place to improve financial literacy levels. In 2010, President Barack Obama declared April as National Financial Literacy Month and announced the creation of MyMoney.gov, a website designed to provide free financial resources and guidance. The Federal Reserve banks, including the Richmond Fed, also conduct economic and financial education programs, both independently and in cooperation with other nonprofit organizations.

PHOTOGRAPHY: JUNIOR ACHIEVEMENT USA®

Students participating in Junior Achievement's Finance Park simulation budget their assigned salary around typical household expenses, taxes, mortgages, insurance, and savings.

According to the 2009 "Survey of the States" by the Council for Economic Education, 13 states mandate a course in personal finance as a high school graduation requirement, up from just seven states in 2007. In the Fifth District, Virginia signed into law a requirement that high school students take a class in economics or financial literacy in order to graduate. Maryland passed a similar requirement in May.

Starting Early: Can High School Classes Shape Future Behavior?

Financial literacy programs aren't free, however. The Maryland high school program, for example, is expected to cost \$15.6 million in salaries, textbooks, and other materials. With a significant amount of money being invested in financial education for young students, there are important questions to ask: Does it work? Do students who participate in financial education programs end up with better financial skills? Although research on the topic of financial literacy is still in early stages, a few studies provide some clues.

Researchers Bruce Ian Carlin of the University of California at Los Angeles and David Robinson of Duke University studied data from a Junior Achievement Finance Park activity in California. Students between the ages of 13 and 19 were asked to make a budget by visiting various stations that handled house loan decisions, health insurance purchases, and savings accounts, among other things. Prior

Although high school and college-age consumers performed poorly on an objective test of financial literacy, they were also more aware of their limitations than any other age group.

to the event, some of the students took part in 19 hours of classroom instruction on financial literacy.

According to John Box, Junior Achievement's senior vice president of education, the curriculum is designed to teach students how to budget around four key categories: spending, saving, investing, and giving.

"We're really trying to get young people to understand that there is a balance," says Box. "Regardless of how much money they make, they should be thinking about, certainly, spending some, because they need to pay their bills and cover their expenses. But they also need to be saving for more immediate needs, they ought to be investing for more long-term needs, and they ought to be giving back."

Carlin and Robinson found that both the students who received training and those who did not allocated roughly the same portions of income at the different stations and had comparable completion rates. Seemingly, then, the training did not make a difference. The authors noted, however, that the schools that opted out of financial literacy training had better academic performance records and served less economically challenged populations. After controlling for these school effects, the authors found that the students who received the training were about 35 percent more likely to complete the activity with a balanced budget.

There were some signs that the training did not always affect students' behavior in the way the instructors might have hoped. When it came to choosing health insurance, students with the classroom training were more likely to economize on monthly costs by choosing insurance plans with lower premiums, even if those plans left them open to higher and more volatile future costs in the event of an emergency.

This illustrates one of the problems in identifying effective financial training: The soundness of many financial decisions is highly specific to the individual. Although lower-premium health care packages are not necessarily a bad financial choice depending on individual circumstances, the researchers classified some of these students as "underinsured" based on the family size they had been told to assume. Grey areas like these make it that much more difficult to teach a general set of "best practices."

Box says Junior Achievement's programs do encourage students not to spend more than they make. However, he recognizes that in reality students will need to weigh financial decisions based on individual circumstances, and financial education can help them at least make informed decisions. "Regardless of what decision you're making, you ought to at least have that baseline of understanding. Whether it's loans, insurance, buying a car, or buying a house, there's a body of knowledge that's economically and financially solid that kids should understand."

The students themselves recognize that they lack this baseline knowledge. Annamaria Lusardi of George Washington University and Olivia Mitchell of the University of Pennsylvania found in a recent working paper that although high school and college-age consumers performed poorly on an objective test of financial literacy (which included the question on interest rates with which this article started), they were also more aware of their limitations than any other age group. In self-assessment tests, they rated their level of financial knowledge the lowest on average of all surveyed age groups.

The key to approaching high school financial literacy, says Lusardi, is laying a foundation. "I always make this analogy: Financial literacy is no different than English," says Lusardi. "We don't teach English so that you can go and write *War and Peace*. We teach English so that you can appreciate a good book. And the same should be done for financial literacy. You learn the basics: demand and supply, interest compounding, risk diversification. This is something upon which you can build."

Financial Literacy and Retirement Planning

While laying a foundation for kids today may help them navigate financial waters in the future, what about working adults?

One of the arguments made by advocates of financial literacy is that workers approaching retirement are woefully underprepared. In the same study that surveyed high school and college-age consumers, Lusardi and Mitchell found that the disparity between self-described financial literacy and actual financial literacy among retirement-age persons is striking. Those over age 50 rated themselves, on average, well above the median in terms of financial literacy. Yet less than half of those between 51 and 65 correctly answered three simple financial literacy questions; for those older than 65, that amount dropped to slightly more than a quarter.

Lusardi and Mitchell found that after controlling for a variety of factors, such as education and income, financial literacy did have a significantly positive effect on retirement planning. Those who could correctly answer the three literacy questions were about 10 percent more likely to plan for retirement. The researchers noted, "those who do not plan reach retirement with half the wealth of those who do." Interestingly, they also found that those who had suffered a significant income shock had a similar boost to their planning behavior. It could be that learning from the "school of hard knocks" is as effective in changing behavior as taking formal classes in financial literacy. Or perhaps the traditional classroom is not the best way to reach adults. Lusardi says it's unrealistic to expect adults to take time from their busy schedules to attend financial literacy classes.

"We have to add financial literacy where it matters for people," she says. "Adults are not in the classroom, and it's very hard to bring them to the classroom, and it's not obvious that that's the best way that people really want to receive the education."

She argues that educators must be more creative in how they reach out to working adults. Part of the problem with current studies, Lusardi says, is that some researchers are testing the effectiveness of training regimens which are not likely to work from the start.

The challenge of finding evidence-based approaches to financial literacy training is recognized by other researchers as well. In a summary of existing studies of financial literacy education, William Gale and Ruth Levine of the Brookings Institution wrote in October 2010 that no approach "has generated unambiguous evidence that financial literacy efforts have had positive and substantial impacts."

Nevertheless, there are studies that point to areas of knowledge which have a measurable impact on financial decisionmaking. A study by Kristopher Gerardi of the Federal Reserve Bank of Atlanta, Lorenz Goette of the University of Lausanne, and Stephan Meier of Columbia University surveyed subprime mortgage borrowers to find out if their level of financial literacy influenced their loan decisions or likelihood of delinquency and default. They found that the aspect of financial literacy that had the most significant relationship with delinquency rates was numerical ability — the person's ability to perform math calculations. Those in the bottom quartile of numerical ability were about 18 percent more likely to suffer foreclosure than those in the top quartile.

An experiment under way in India adds evidence to the claim that mathematical ability, not just financial knowledge, plays a major role in financial behavior. Researchers Fenella Carpena and Bilal Zia with the World Bank, Shawn Cole of Harvard University, and Jeremy Shapiro of Yale University presented their preliminary findings of an experiment in which they randomly selected participants to take part in a video financial literacy curriculum.

They found that not only is mathematical ability positively correlated with financial literacy, but also those with higher mathematical ability are much more likely to contribute to a savings program. Of course, this doesn't necessarily mean that greater financial knowledge is imparted by training in mathematics, but perhaps that those who are more comfortable with math have an easier time calculating the results of financial decisions or at least looking at them methodically.

Such findings bolster the importance of teaching fundamentals — early and often. Lusardi says many people who think about teaching financial literacy are thinking about teaching the wrong things. Rather than teaching the finer points of mortgages or other financial instruments, which are always changing, instructors should be providing students with a framework to make sound financial decisions.

"For example, take interest compounding," she says. "It's very hard to make financial decisions if you don't know interest and interest compounding. People understand what the law of gravity is. And interest compounding is the same as the law of gravity — it applies everywhere. If you borrow at a high interest rate, you're going to pretty quickly double your debt — it's a law. And people need to know this law when they are making financial decisions."

Where Should Financial Literacy Go from Here?

There is a general consensus that a substantial number of Americans have limited financial knowledge, but the best way to increase an understanding of financial issues and decisions is a point still widely debated. Reaching out to students in the classroom, while not without some shortcomings, at least targets the younger population where they spend much of their time.

With regard to adults, the evidence suggests that financial literacy training does raise awareness of opportunities to save and invest for the future. For example, the researchers in India found that adult financial literacy training had a large and positive effect on basic financial knowledge and also made participants significantly more aware of some of the financial options available to them and more likely to suggest them to co-workers. While it is probably unwise to attempt to impose one "correct" model of savings and spending, financial literacy training seems likely to benefit adults as they make some of the most significant decisions of their lifetimes.

"We are not going to go back to a world of defined benefit pensions," Lusardi says. "Every country is facing this problem of shifting responsibility to the individual, and everyone is facing the problem of making decisions in a world that is more complex." **RF**

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A freight train shatters the solitude of Thurmond's abandoned commercial row.

Thurmond was beginning to slow down when this photo (below) was taken around 1930.

The End of Nowhere

What can ghost towns teach us about saving small communities?

BY KARL RHODES

The tree-canopied road to Thurmond, W.Va., winds along the banks of Dunloup Creek past waterfalls, wildflowers, and herds of grazing deer. The final approach to town spans the New River Gorge with a one-lane road cantilevered off a rusty railroad bridge.

Most people would call Thurmond a ghost town. Abandoned commercial buildings, three and four stories tall, loom over an empty rail yard. A passing freight train shatters the solitude, but as its warning chords fade in the distance, the loudest sound is once again the rushing waters of the New River.

Thurmond was not always such a peaceful place. A century ago, locomotives constantly jammed the rail yard — belching steam, smoke, and hot cinders. Twenty passenger trains arrived and departed daily, bringing hundreds of visitors to the area's hotels, boarding houses, and saloons. Drinking, gambling, and prostitution were 24/7 pursuits across the river in the Ballyhack district, where the Dunglen Hotel is said to have hosted a poker game that lasted 14 years.

At one point, Thurmond was called the "Dodge City of West Virginia," an image the town's marshal promoted by wearing a broad-brimmed Stetson hat and wielding a notched gun. Estimates of his "official killings" ranged from seven to 18, according to a book about the town by historian Ken Sullivan, executive director of the West Virginia Humanities Council. Thurmond's Wild West reputation has been cultivated and embellished, but Thurmond's other nickname — "Biggest Little Town" — was well-deserved. Trains, coal, people, and money flowed through this tiny town in copious quantities. In 1910, Thurmond generated nearly $5 million in revenue for the Chesapeake and Ohio (C&O) Railroad, approximately $110 million in today's dollars.

"For years this little city, without a highway leading into or out of it, was known as the greatest banking center in the country in proportion to population," wrote newspaperman Eugene Lewis Scott in 1943. Scott was hyperbole-prone, but other sources confirm that Thurmond's two banks were among the most prosperous in West Virginia.

The town's census population peaked in 1930, but coal mining already was declining in the surrounding county, and the Great Depression was hitting the town hard. The National Bank of Thurmond closed, the Dunglen Hotel

PHOTOGRAPHY: COURTESY OF JOHN H. BOWMAN; COURTESY OF THE NEW RIVER GORGE NATIONAL RIVER COLLECTION burned down, and, according to local legend, the fire ended the 14-year poker game. The biggest blow, however, came in the 1950s, when the C&O switched from steam locomotives to diesel engines, making Thurmond's rail yard obsolete.

Today, with only seven residents remaining, Thurmond is the smallest incorporated town in the Fifth District, but its story raises big questions about what should be done — if anything — to save small towns that no longer seem economically viable.

Throughout the Midwest, across the Great Plains, and in swaths of Appalachia, many small towns are losing population rapidly. Sociologists Patrick Carr of Rutgers University and Maria Kefalas of St. Joseph's University document this dramatic trend in their 2009 book, *Hollowing Out the Middle: The Rural Brain Drain and What It Means for America*. They plead passionately for saving small towns, but economists note that mobility of resources is essential to economic growth. The national economy benefits greatly from people moving easily to places where their talents can be put to better use.

"It's just economics 101," says Mario Polèse, an economist and geographer at the Institut National de la Recherche Scientifique in Montreal. Polèse explains that people have migrated from rural communities to big cities since the beginning of the Industrial Revolution, primarily because nations need fewer farmers and intermediaries to produce and transport agricultural commodities.

"All industrialized countries basically went from 80 percent rural to 80 percent urban," he says. "We've all gone through that stage — England, France, Canada, the United States, Japan — and now China and India are going through the same thing."

Ghost towns will develop only in extreme cases, Polèse predicts. "What is much more the rule is an increasing number of towns that are going to fall to a population level that is commensurate with what is economically reasonable." Most of these declining towns occupy a funnel-shaped region that begins at the Texas-Mexico border and extends across the Great Plains states and into the prairie provinces of Manitoba and Saskatchewan.

"Hollowing out" accurately describes this continental migration, but then again, "one shouldn't overdramatize," Polèse cautions. Migration levels have "started to level out," he notes. But in North America — especially in the United States — the population remains quite mobile. And that is a good thing. In a 2007 article, *The Economist* took this view one step further: "Ghost towns are sad places," it said, "but also monuments to American dynamism."

Ghost Town Model

From the 1880s to the 1980s, Thurmond completed the boom-bust cycle that produced thousands of ghost towns in the western reaches of the United States and Canada. In a 2009 article in the *Journal of Regional Analysis & Policy*, economists Philip Graves and Emily Elizabeth Tynon, of the University of Colorado, and Stephan Weiler of Colorado State University analyzed data from two Colorado examples — Cripple Creek and Leadville — to test a model they developed to study the economics of ghost towns.

"Most of these towns were based on intensive mining booms typifying the extractive industries of the 19th and early 20th centuries," they noted. The mines often were located in harsh, isolated areas. They generated quick profits for owners, high wages for workers, and short-term perspectives for everyone involved. The resulting economies had little diversification, rapid cycles, and fixed investment that was limited and disposable. These boomtowns also attracted the Wild West's most mobile population — single men — in disproportionate numbers.

Cripple Creek and Leadville certainly fit the model, as did many West Virginia towns with coal-based economies. But the Colorado researchers note that "coal towns have declined more slowly than would be expected based on the histories of their Rocky Mountain brethren," due primarily to higher levels of homeownership and the deeper socioeconomic roots that come with it.

Thurmond's early residents rented houses from the town's founder, Capt. William Dabney Thurmond. But by all accounts, he did not intend to build a temporary town. His homes and commercial buildings were well-constructed, and the town's residents developed a strong sense of community.

The Colorado researchers encountered those same factors when they applied their ghost town model to struggling agricultural communities in the Midwest. Farm employment has decreased steadily in the United States since World War I, but the people who built Midwestern towns invested considerably more in residential and commercial structures than their counterparts in Colorado. These substantial investments eventually attracted residents with higher mobility costs who now seek to reverse their towns' economic fortunes. Typically they pursue economic diversification, seek government assistance, and promote tourism and historic preservation. Yet the Colorado researchers are pessimistic about the future of these small towns.

"To some extent, the ubiquitous nature of Midwestern disamenities (e.g., gray winters, humid summers) implies that such programs may be fruitless in the long run," they conclude. "More slowly decaying extractive regions, such as coal mining in Appalachia and farming in the rural Midwestern United States, seemingly face similar difficulties in the late 20th century and early 21st centuries."

Worthwhile Canadian Initiatives?

Small towns are battling more than bad weather, Polèse says. They are competing against the enormous economic advantages that big cities enjoy.

"Trying to stop people from moving to cities will not work, certainly not as long as opportunities are more plentiful in the city than in the countryside," he writes in his 2009 book, *The Wealth & Poverty of Regions: Why Cities Matter*. And some rural development initiatives can accelerate migration to cities, he contends. Programs to boost education levels or agricultural productivity are prime examples. These are laudable goals, but more productive farms require fewer workers, and better-educated young people become even more likely to move to cities where their education will help them earn higher salaries.

Polèse lives in Canada, a nation with many ghost towns — economic casualties of declines in mining, fishing, forestry, and farming. In some extreme cases, Canada's provincial governments have offered relocation incentives to persuade residents to abandon remote towns that have become too expensive to maintain. Residents of Newfoundland, for example, started abandoning small fishing villages in 1945. The provincial government encouraged this trend by offering modest relocation incentives that emptied out many isolated towns. Some of these economic refugees moved to the coastal town of Great Harbour Deep, but the town's cod fishing industry collapsed in the early 1990s, and in 2002, residents abandoned the town in exchange for resettlement payments of CAD$100,000 per family (about $63,000 in U.S. currency at the time).

The deal must have caught the attention of residents of Murdochville, a remote mining town about 370 miles northeast of Quebec City. The town was struggling to survive after Noranda Inc. closed its copper mine in 1999 and its copper smelting operation in 2002. About 5,000 people lived in Murdochville in the 1970s, but by 2003, its population had dwindled to 734. Nearly two-thirds of the town's remaining electorate voted to abandon Murdochville if the provincial government would compensate them for relocation expenses and loss of property values.

Quebec officials refused. Instead, they offered Murdochville a CAD$17.5 million (about $12.6 million U.S.) relief package, including funding to balance the municipal budget, establish an auto insurance call center, and recruit new industries. The town has attracted two wind-turbine farms, built with $180 million in private investment, and the population has stabilized at about 800, but the town's unemployment rate remains precariously high.

Canadian policymakers are more likely to subsidize dying towns than their counterparts in the United States, Polèse says. "That is definitely part of the Canadian tradition. It's not as strong as in Europe, but it has always been part of the fabric of our country. Even in the Constitution, you have what we call 'equalization payments'" — essentially a redistribution of federal tax revenue from richer provinces to poorer ones. "Implicitly, that means that you are going to keep certain small communities alive that otherwise would not survive."

Small Towns, Big Ideas

Some small communities will become ghost towns, but that doesn't mean every small town losing population should stop fighting for survival. That's the philosophy of Will Lambe, director of the Community and Economic Development Program at the University of North Carolina at Chapel Hill.

In his 2008 book, *Small Towns, Big Ideas*, Lambe highlights 22 towns in North Carolina and 23 towns in other states that have experienced some success with a variety of economic development initiatives. Chimney Rock, N.C., has "figured out a way to capture tourists flowing into a nearby park" by sprucing up its downtown and building a river walk. Colquitt, Ga., has attracted tens of thousands of visitors to a theatrical phenomenon called *Swamp Gravy*, and Siler City, N.C., has "triggered a minor renaissance" with its North Carolina Arts Incubator.

These success stories are encouraging, but many other small towns are pursuing similar strategies, and there has to be a saturation point for arts-based projects and small-town tourism. Reynolds, Ind., is betting instead on America's seemingly insatiable appetite for energy.

Reynolds is "a one-stoplight town with 550 people and 150,000 pigs," Lambe writes. In 2005, the governor of Indiana proposed turning the struggling town into a demonstration project for producing alternative energy. According to a state study, "hog manure and other organic waste in and around Reynolds could produce 74 times the town's energy needs."

The town embraced the idea of building a biomass plant, purchasing flex-fuel vehicles, even adopting the nickname BioTown, USA. Charlie Van Voorst, president of the town council sums up the town's response this way: "We thought, 'Gosh, there's not much going on here in Reynolds, so we'll try anything.'"

Call it "reverse NIMBYism." Enthusiasm for projects that other localities would find unacceptable — at least "not in my backyard" — can be an important comparative advantage for small towns that are struggling to survive. Many communities have opposed wind-turbine farms, for example, but the residents of Murdochville were used to some industrial noise, so the constant humming of the turbines didn't bother them. They also didn't see the huge windmills as eyesores. In fact, they incorporated turbine blades into the town's logo.

Another good example of reverse NIMBYism unfolded in Chillicothe, Mo., where residents waged a successful campaign to keep the state from closing a nearby women's prison. The town put forward an innovative proposal that preserved the prison's 200 jobs and created 250 additional employment opportunities.

"While some rural communities may view prisons as an industry of last resort, officials and residents in Chillicothe have come to value the corrections industry," Lambe writes. They see it as "an antidote for the slowly collapsing farm economy and a century of declining population."

Thurmond's Future

Thurmond's 14-year poker game may have ended in 1930, but the town never folded, not even when the National Park Service started buying out the remaining residents and consolidating the town into the park system of the New River Gorge National River.

In 1995, the Park Service renovated Thurmond's 1904 passenger depot and turned it into a museum and visitors' center. The Park Service also stabilized the abandoned commercial buildings overlooking the rail yard and proposed a historic site similar to Steamtown in Scranton, Pa. The next step was to renovate the old C&O engine house and turn it into a railroad museum. But Thurmond's luck took a familiar turn for the worse: The engine house burned down, and the Park Service put its more ambitious preservation plans on hold.

Now it appears that Thurmond — or at least its surrounding county — might be making a comeback. The Boy Scouts of America is developing a $400 million complex near the town that will become the permanent home for the National Scout Jamboree. (See related story on page 4.) Every four years, about 48,000 scouts and volunteers will spend 10 days at the Summit Bechtel Family National Scout Reserve. The complex also will become a high-adventure base that will serve at least 30,000 Boy Scouts every year.

It's easy to imagine the retail potential of thousands of Boy Scouts exploring a ghost town, but the Park Service's historical architect says it would cost $3.5 million to prepare the ground floors of the abandoned commercial buildings for retail tenants. The Park Service already has invested more than $7 million to preserve the town, and the prospects of more federal funding are fading fast.

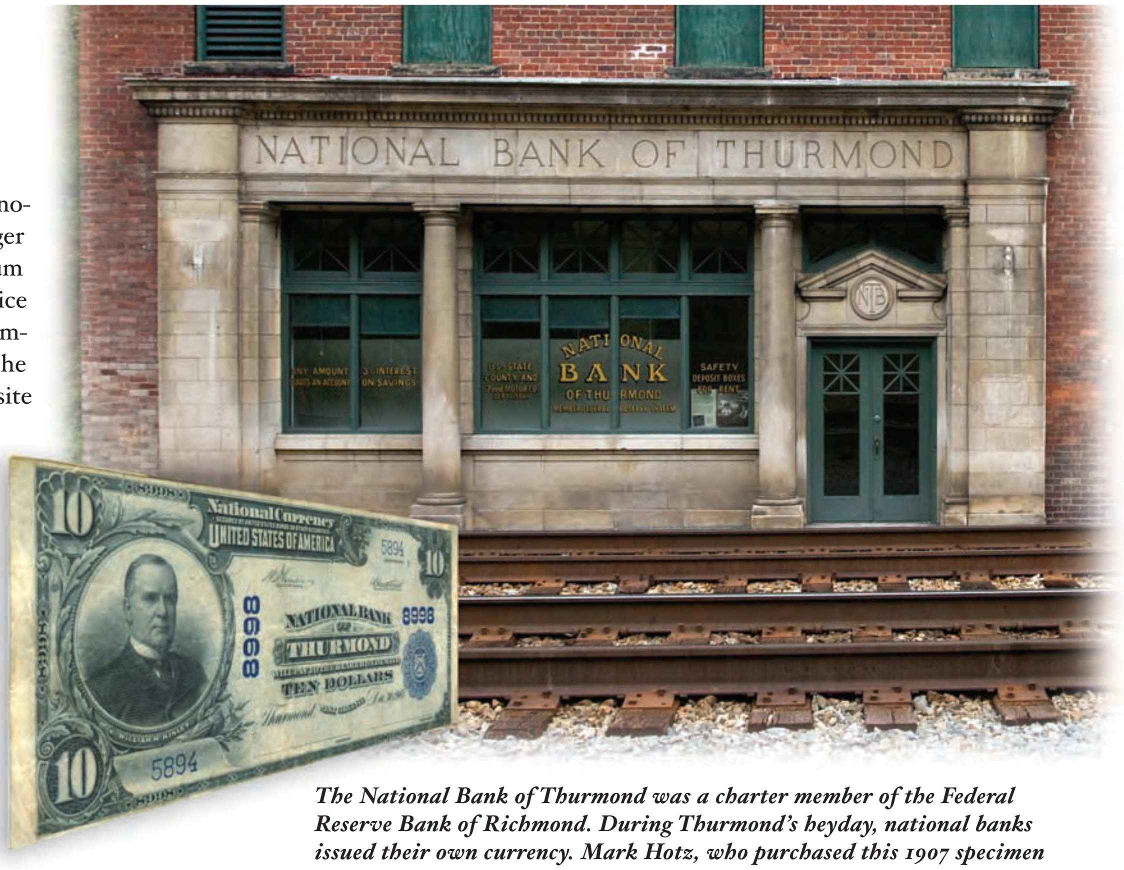
One Thurmond resident suggests that the Park Service has become gun-shy after the restored passenger depot made a brief appearance on "The Fleecing of America." The *NBC Nightly News* segment asked why the federal government would spend $3 million to renovate a train station in a town with only seven residents.

Thurmond is still a flag stop for Amtrak, but the town's mayor, Melanie Dragan, points out that the passenger depot has become more of a museum and visitor center than a working train station. It welcomes thousands of visitors each year, but the underlying question of how much money the federal government should invest to preserve a ghost town remains relevant.

"It depends on why you want to save it," Polèse replies. "If you are from the small town, and you are really attached to it, you agree. But if you are the federal government, and you are looking at the debt going up, you may not agree. That's really what democracy is all about."

Leah Perkowski Sisk, who grew up in nearby Beckley, W.Va., casts her vote for preserving Thurmond. As an education technician at the New River Gorge National River, she says this "Biggest Little Town" has much to teach about economic history.

Thurmond is a great example of many things," she says. "To me it's an example of changing technology, such as the railroad's conversion from steam to diesel, and how when job markets shift, so do the people. Today, Thurmond seems like the end of nowhere, but 100 years ago, it was the beginning of everywhere." **RF**



The National Bank of Thurmond was a charter member of the Federal Reserve Bank of Richmond. During Thurmond's heyday, national banks issued their own currency. Mark Hotz, who purchased this 1907 specimen on eBay, says Thurmond bank notes are quite rare.

PHOTOGRAPHY: COURTESY OF JOHN H. BOWMAN; COURTESY OF MARK HOTZ

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The Fish Market

What happened when Virginia brought tradable quotas to the commons

BY BETTY JOYCE NASH

Capt. Joe DelCampo of Virginia Beach started fishing for striped bass in the early 1990s. Harvests had only just begun to rebound after historically low catches the prior two decades. By 1995, this once-plentiful sportfish had recovered, thanks to a temporary fishing ban in state waters followed by annual quotas on catches.

But the quotas created a problem: They set off a race to catch as many stripers as possible before the cap was reached. That led to a surplus of stripers dockside and drove down prices. So in 1998, the Virginia Marine Resources Commission (VMRC) modified the quota system by allocating shares of the fishery to commercial fishermen, based on historical landings. Individual shares are tradable. Quota holders can sell shares outright or lease them; leases can be long-term or just for a season.

This individual transferable quota, or ITQ, enables DelCampo to time fishing trips. "In the springtime when the fish are here and I can catch them easily, I catch as many as I can," he says. "After the fish leave, I will lease whatever quota I haven't caught to others."

"It's worked well," says Ernie Bowden, president of the Eastern Shore Watermen's Association, "Before, we had a 'rodeo' fishery where everyone was fishing at one time. If the quota was caught, you had to quit even if you hadn't caught your fish." Bowden wasn't particularly happy about his initial quota allocation, but his prices have since gone up, thanks in part to the new system. "Now I can catch my fish in April and May when the prices are $4 to $4.50 a pound," he says.

ITQs are a subset of management tools known as "catch shares," in which fishermen own a share of total allowable catch. But an ITQ confers property rights; owners buy and sell quota among themselves. Evidence suggests that this rights-based management, used in some fisheries since the 1970s, has raised the value and quality of the stock, sometimes at lower regulatory costs. That ensures future generations will have something to fish for and make decent money doing it.

Fish Swim in a Common Pool

Resources without ownership — a "commons" — are easily exploited, even wiped out. Individual fishermen have little incentive to conserve while others are busy catching. As fish stocks fall, the cost of catching them rises, and fishermen overinvest in bigger, faster boats and better detection devices. This "input stuffing" contributes to commercial extinction.

"You have this resource that can yield substantial economic profits on a continual, sustained basis," says Ragnar Arnason, a fisheries economist at the University of Iceland. Iceland's fishing industry has operated under ITQs since 1976. "Under an ITQ, you can realize these potential gains because you're no longer racing for the fish, no longer competing. You can catch your allocated share."

The Atlantic Ocean surf clam and ocean quahog fisheries became the first seafood ITQ, in 1990. These types of clams lie within federally-managed waters, three to 200 miles offshore, from New England to Cape Hatteras. Hydraulic dredges, among other innovations, had fostered a clam industry along the Atlantic Coast that, by the 1970s, had nearly bankrupted the stock.

"The catch rates were very, very high," industry consultant Dave Wallace recalls. A former vessel and processing plant owner, Wallace lives on Maryland's Eastern Shore. "We would catch all the clams and, because the market was flooded, get low prices. Then that bed would collapse and the price would shoot up but we had no supply."

The cycle was unsustainable. In response, from 1979 through 1989, a federal plan dictated vessel numbers and narrowed fishing times, a conventional regulatory approach. "You could work Sunday through Thursday, 12 hours a day, two or three trips a week," Wallace recalls. Then the regulations kept tightening "to the point where we were fishing about six hours every other week. And we still had hard times."

It took manpower to enforce these rules, including patrols on the water. Worse, the Coast Guard had to rescue, when they could, vessels that risked hazardous weather in the rush to harvest.

Something had to give. The Mid-Atlantic Fishery Management Council (MAFMC) considered an ITQ system similar to those already under way in Scandinavia and Iceland. Federal ITQs were permitted by the Magnuson Act of 1976. (Wisconsin has managed certain Great Lakes species under ITQs since 1971.) The MAFMC adopted an

ITQ and monitoring costs fell, along with the number of Coast Guard rescues, says Jose Montanez, an economist at the MAFMC.

With transferable quotas, fishermen can schedule harvests in the year-round enterprise. "This also minimizes inventory storage cost," Montanez says. Before, with the six-hour window, you had to store — freeze — excess fish. This is one of the ways an ITQ enhances product value as it raises productivity: Fresh fish often command higher prices than frozen.

The ITQ has smoothed harvests. Before, everyone worked the fishery in mid-February. "It wasn't atypical to have several thousand pounds landing in a week," says Bowden, the watermen's association president. The fish would bring $3 a pound by end of the first week, $2 per pound the second, and then, by the end of the third week, the price would hit a dollar. Though ITQs may not be a panacea, they may outperform more traditional regulations. By comparing fisheries of similar sizes from 1950 to 2003, researchers have found that ITQ fisheries appear less likely to collapse than non-ITQ fisheries, according to a 2010 study in the Annual Review of Resource Economics by Christopher Costello, Steven Gaines, and Sarah Lester of the University of California at Santa Barbara, and John Lynham of the University of Hawaii.

State Managed Catch Shares in Ocean Fisheries
(up to 3 miles offshore)

Fishery*	First Year
VA Commercial Striped Bass	1998
MD Black Sea Bass	2004
DEL Commercial Black Sea Bass	2004
MD Summer Flounder	2005
RI Summer Flounder	2009
VA Black Sea Bass	2009

*NOTE: Some fisheries may have limited or no trading.
SOURCE: Environmental Defense

Federally Managed Catch Shares in Ocean Fisheries
(3 to 200 miles offshore)

Fishery*	First Year	Fishery*	First Year
Atlantic Surf Clam, Ocean Quahog	1990	Central Gulf of Alaska Rockfish	2007
Wreckfish (FL)	1992	Bering Sea, Aleutian Islands Groundfish Trawl Sector	2008
Alaska Halibut, Sablefish	1995	Mid-Atlantic Golden Tilefish	2009
Bering Sea, Aleutian Islands Pollock Co-ops	1999	Gulf of Mexico Grouper,Tilefish	2010
Pacific Sablefish	2002	Scallop (Mid-Atlantic, Gulf of Maine, U.S. Georges Bank)	2010
Bering Sea, Aleutian Islands Crab	2005	Multispecies, Northeast	2010
Gulf of Mexico Red Snapper	2007	Pacific Groundfish Trawl (90 species)	2011

*NOTE: Some fisheries may have limited or no trading.
SOURCE: National Marine Fisheries Service

It can be hard to see improvement in short-term data, and many ITQs are recent, but, according to Arnason, positive effects likely have been underestimated. "If you look at ITQ systems over 10, 20, or 30 years, you see a bigger stock improvement."

Trading also attracts the most efficient fishermen as quota prices guide the activity toward the common good, Arnason says. That is, if the property rights are stable and strong.

Enforcement Matters

Arnason outlines features necessary to the success of this market: rights that are secure, exclusive, tradable, and as permanent as possible. "If there's a likelihood someone will take your asset away, then that acts as a short time horizon and you will operate as if everything ends at the time of expiration of your asset," he says. Enforcement is also critical. "If other people subtract some of your rights by exceeding their catch, then it will be more expensive for you to catch your share.

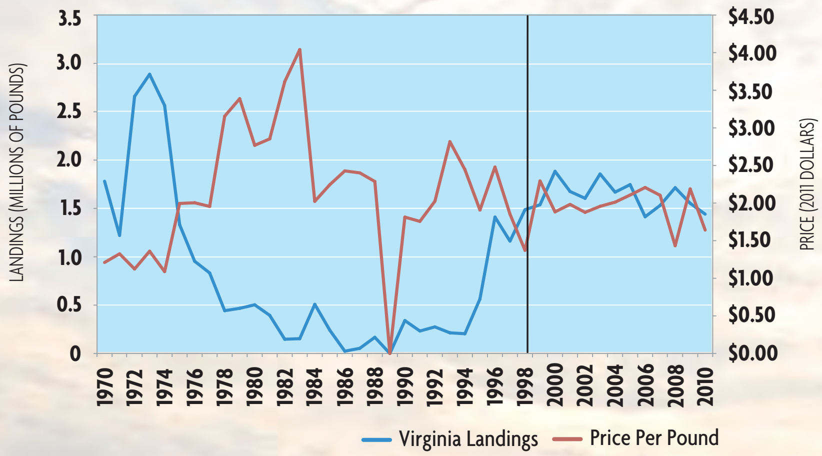
"There is still a vestige of the common pool problem. If you exceed your quota you expand your benefits," he says. "You realize everyone will be hurt, but if you think everyone will do it, then you must do it."

Enforcement issues have led to tweaks in Virginia's striped bass ITQ program over its 13-year life. In 2007, the program began measuring quota by fish weight rather than by numbers. That mitigated a practice known as high grading, according to Joe Grist of the VMRC, in which fishermen discard smaller fish in favor of larger ones.

Still, fishermen can falsify records or under-report catches. But even with 421 participants in the Chesapeake Bay and its tributaries' fishery, and 32 in the ocean striper fishery, Grist says, "We know these watermen." Fishermen report catches monthly and so do dealers. The Virginia Marine Police spot-check. In 2010, a poaching case went to federal district court, and resulted in fines, license revocations, and even prison time.

Monitoring does cost taxpayers time and money, and effort varies from fishery to fishery. In the clam fishery, Montanez says, some enforcement costs fell because "we didn't need to micromanage." The fishery is managed

Virginia's ITQ Stabilized Striped Bass Landings and Prices



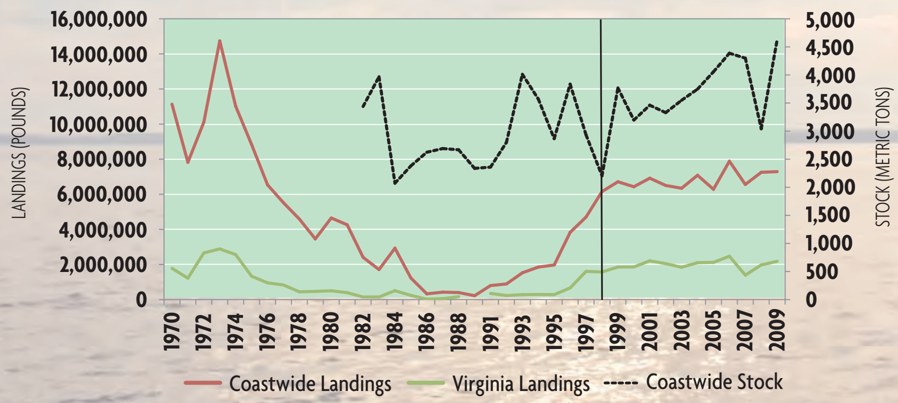
NOTES: Commercial striped bass fisheries were closed in coastal states at various times between 1986 and 1990. Virginia's fishery closed from June 1989 to November 1990. In 1995, the stock was declared restored.

Price data averaged from quarterly surveys of Virginia seafood dealers. Mandatory harvest reporting started in 1993; prior values provided by the National Marine Fisheries Service.

The vertical line indicates the starting year for Individual Transferable Quotas (ITQs) as 1998.

SOURCE: Virginia Marine Resources Commission

Striped Bass Landings, Stock Assessment



NOTE: The vertical line indicates the starting year for Individual Transferable Quotas (ITQs) as 1998.
SOURCE: Atlantic States Marine Fisheries Commission

dockside today through dealer records and vessel logbooks, cheaper than Coast Guard and National Marine Fisheries Service (NMFS) manpower. But because ITQs are relatively new and because fisheries differ in species, size, and scale, cost data are often scarce and inconclusive.

Angles and Obstacles

An ITQ adds value to the fish and the fishery, but there are reasons why some watermen object to the ITQ concept. First and foremost, a fisherman who wants quota may not get all he wants. (In the striped bass fishery, however, you can buy quota even today, if you have a commercial fishing license and find a willing seller.)

To reduce fishing effort and keep stock healthy, VMRC limited the commercial fishery in 1996 to those earning at least half their annual income in seafood sales. That had reduced fishermen's numbers even before the ITQ started in 1998, says Rob O'Reilly of the VMRC. That, in turn, made granting shares easier.

Though DelCampo of Virginia Beach didn't do the paperwork to get quota the first year of the ITQ, he entered a lottery the following year and eventually bought up to the limit, 2 percent of the Chesapeake Bay striped bass quota. (Ocean striper quota is capped at 11 percent per owner.) Ownership caps prevent domination by a few firms.

Naturally, distribution of initial allocations is a touchy issue. Shares in an ITQ are almost always granted according to historical participation in the fishery, known as grandfathering. Arnason says that grandfathering of rights promotes stewardship and long-term investment among fishermen. In a 2010 National Bureau of Economic Research working paper, Arnason and co-authors Terry Anderson and Gary Libecap, economists at Stanford University's Hoover Institution, argued that grandfathering increases the fishery's net value because it rewards efficient investments and encourages owners to work together for the fishery's future productivity.

But systems need careful design from the start. Economist Sylvia Brandt of the University of Massachusetts at Amherst compared outcomes of the surf clam ITQ with those of the ocean quahog in a *Regulation* magazine article. She found that because the initial allocations in the surf clam ITQ were based partly on vessel numbers, the surf clam fishery participants put more boats out on the water during the transition period so they could get more quota. She cautioned researchers to consider such possible strategic behavior when designing and evaluating ITQ policy.

The prospect of job losses also creates tension over ITQs in fishing communities; lawsuits against share-based systems in the 1990s prompted a federal moratorium in 1996, which expired in 2002. The Magnuson Act, reauthorized in 2007, requires NMFS to end overfishing and includes the tool of market-based management. Today opposition is back: A rider on the 2011 congressional budget bill cut funding for any new share-based systems in 2011.

At the state level, commercial fishermen in North Carolina generally oppose legislation that would allow ITQs, says Louis Daniel, the state's director of marine fisheries. In Maryland's striped bass fishery, the harvest using a specific gear-type is managed through an ITQ, but with limited rights. If fishermen want to lease or sell quota, they must transfer the whole lot, says Michael Luisi, of the Maryland Department of Natural Resources Fisheries Service. But Maryland is working with fishermen to develop alternatives to the arcane rules that currently govern the striped bass fishery. Maryland is also exploring the idea, with watermen, for the blue crab fishery.

Some fishermen philosophically oppose the restriction of the open ocean only to historical participants and to those who are able to buy their way in. Many also fear young people won't have money to buy into a fishery. But fishermen already may pay tens of thousands of dollars to obtain the required fishing permit, notes fisheries economist Kate Quigley of the consulting firm CapLog in Charleston, S.C. Still, the individual quotas limit a catch, while permits don't.

Fishermen also worry that a few big operators may buy all the shares, though some states, such as Virginia, limit ownership to a percentage of the total allowable catch to avoid this. Those who lack sufficient historical landings to get a healthy initial allocation also are likely to oppose ITQs; they might fare better under traditional management. "They can race to fish — and maybe do all right," Quigley notes. "Under catch shares, they are cut out, unless they buy more shares, which can be expensive."

DelCampo initially opposed the idea. He realized, though, that the old quota system was not only dangerous, because he was forced to fish regardless of weather, it also glutted the market. Now, he chooses when to fish based on weather, price, and availability. The ITQ also stabilizes his profession. "If you are a fantastic fisherman, and fill your box each and every trip, you make a living," he says. "But when you are ready to retire, all you are left with is your boat and your gear — that's it. When I retire, I can't sell a fish I've already caught, but I can sell the quota I've accumulated over the years, or lease it to other people for my retirement income."

But the quota is good only as long as the stock remains. And that's the point — to sustain the resource.

The world's appetite for fish seems insatiable and could haul the resource all the way to extinction. Varying types of share systems — especially those with tradable permits — may offer a buoy to the fish and the fishermen.

"We need property rights in the ocean in the same way we needed them on land, to make fishing more efficient," Arnason says. "ITQs are one step along the way." These systems that codify property rights have potential to manage the resources within the places — air, public lands, waters — that are common to all, but owned by none. **RF**

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A New Kind of Farm

BY CHARLES GERENA

Western North Carolina once depended on tobacco and cotton production to make money. When agriculture gave way to the Industrial Revolution, communities turned to textile and furniture production to utilize their natural resources.

Now another kind of farm is drawing upon the region's comparative advantages. Massive data centers called "server farms" — large enough to hold several football fields — house room after room stacked with computers. They draw about 20 times the power of a midsized office building yet require only a few dozen workers to operate.

Economic development officials in western North Carolina have been promoting the region to companies looking to build data centers, offering generous tax breaks to compete with rural towns like Quincy, Wash., that also have ample land, power, and water. Officials have had a number of wins.

Google has operated a data center in Caldwell County since 2008 and is in the process of expanding it. Apple began operating a center in Catawba County last spring, while Facebook plans to complete its center in Rutherford County next year. In addition, a subsidiary of the Walt Disney Co. is eyeing Cleveland County, where Wipro Technologies, a provider of IT services and infrastructure, is already converting part of a boat manufacturing plant into a data center.

Would these recruitment efforts stand up to a formal cost-benefit analysis? It depends on how you define "benefits." Data centers don't generate enough employment to make up for the thousands of manufacturing jobs that have been eliminated through automation or relocated overseas.

But for western North Carolina, some new jobs are better than no jobs in the face of double-digit unemployment that has persisted for more than two years. Data centers also generate significant tax revenue without requiring a lot of additional services like roads and schools. Finally, they hold the promise of generating new economic activity in the future.

"We feel like we still have to recruit companies that make stuff," notes Kristin Fletcher, executive vice president of economic development for the Cleveland County Economic Development Partnership. "But data centers give our rural county a foothold in the technology world. We're looking for diversification and stability."

The Demand for Virtual Real Estate

Data centers have been around in various forms since at least the 1960s. Companies have created these centralized locations to house a variety of computer equipment, from servers hosting enterprise-level applications and websites to routers and other networking equipment to data storage and backup facilities.

The demand for this virtual real estate has steadily increased over the years, driving the need for ever-larger data centers located far from the urban canyons of corporate America. For one thing, there are technical advantages and cost savings from consolidating smaller centers. "It's the economies of scale of having a certain amount of server capacity under one roof," explains John Lenio, an economist and managing director of the Economic Incentives Group at CB Richard Ellis, a real estate services firm.

Secondly, says Lenio, companies want their data centers located away from their headquarters in case of an emergency. Finally, taxes are higher in the big cities and mature suburbs where companies have usually been based. Technical factors are also driving the growth in the size and number of data centers. Like a river harnessed by dams and channels, torrents of data constantly flow through our economy that have to be manipulated and stored. Every picture posted on Facebook, every download of a song from iTunes adds to the torrent.

"The more people that have Internet access, the more people start using services" that require additional computing power, notes Peter Marin, president of T5 Partners, which has been developing data centers in western North Carolina since 2008. Then there's the emergence of cloud computing, where data processing and storage are taken out of PCs in people's homes and offices and placed in a more efficient environment. "All a data center does is provide power, space, and cooling on a larger scale."

Go West

To the east, the Research Triangle has been where data centers traditionally clustered in North Carolina. IBM, Fidelity Investments, and other companies have taken advantage of the region's nexus of IT professionals and telecommunications infrastructure.

What does the western part of the Tar Heel State offer for Google, Apple, and Facebook? Often, it is the same infrastructure that has supported manufacturers for more than a century.

At the top of the list is access to abundant, reliable, and relatively inexpensive electricity to run a large data center's computers and keep them cool. "The electrical power [sold by Duke Energy in western North Carolina] is 4.3 cents per kilowatt hour, which is one of the lowest rates in the country," says Marin. More than half of that power comes from nuclear plants, which are stable sources of electricity from a pricing perspective. Also, Duke has a history of serving the power needs of textile and furniture manufacturers. "Those industries have left the region and left significant capacity on Duke's system."

Server Farm Roundup

North Carolina lawmakers got the ball rolling when they approved the construction of a state-run data center in western North Carolina in 2008. Private industry quickly followed suit, taking advantage of the region's power, water, and telecommunications infrastructure.

Owner	Location	Size (sq. ft.)	Projected Capital Investment	Maximum Projected Employment	Past Use	Completion Date
NC Government	Forest City, Rutherford County	50,000	$25 million	50	None (new construction)	2008
Google	Lenoir, Caldwell County	100,000	$600 million	210*	Lumberyard operated by Burnhardt Furniture, single-family homes	2008
Apple	Maiden, Catawba County	500,000	$1 billion	50	None (new construction)	2011
Facebook	Forest City, Rutherford County	390,000	$450 million	45	Textile mill operated by Burlington Industries	2012**
Wipro Technologies	Kings Mountain, Cleveland County	215,000	$75 million	17	Boat manufacturing facility operated by Chris-Craft	N/A

* Includes contract workers   ** Estimated

SOURCES: News reports and information supplied by Google and Facebook

There is also lots of water that mills no longer use. At many data centers, the excess heat coming from computers is absorbed by water, which is taken to a tower where air quickly cools it off. Also, some of the water evaporates and some is drained to remove sediment before circulating back into the building. Both cause large losses of water. As a result, large data centers typically use between 500,000 and a million gallons of water a day, according to Lenio. To put that number in perspective, a knit-fabric textile plant operated by Hanesbrands in Forest City used 3 million gallons of water daily before it closed in 2008.

Finally, there is access to long-haul, high-speed communications lines. Some of them have been built by state and local government, while others are operated by telecom providers like AT&T and Verizon.

Western North Carolina has environmental factors in its favor as well. The region tends to have a mild climate and a low risk of natural disasters. It also has lots of land that's undeveloped or can be redeveloped.

On top of these factors, local economic development officials are aggressive recruiters. To assemble the 200-plus acres required for Google's data center, for example, the Caldwell County Economic Development Commission (EDC) acquired dozens of homesites in Lenoir that were next to a former lumberyard and an undeveloped parcel owned by Duke Energy.

John Howard, the EDC's former executive director, recalls how he dealt with a railroad that passed right through the site being developed for Google. "We had to negotiate with the owner of the railroad and the manager to stop the tracks prior to the site and create an off-load station." (Google did pay $3 million to help fund the railroad's reconfiguration.)

Data center projects also benefit from a slew of tax incentives. For example, Caldwell County gave Google a break on 100 percent of its business property taxes and 80 percent of its real property taxes for 30 years. The city of Lenoir, where the center is located, offered a similar deal.

Furthermore, the state enacted a sales-tax exemption in 2006 for purchases of electricity and business property by "Internet data centers." These are defined as facilities located in economically distressed counties and operated by software publishing and Internet services firms that have invested at least $250 million over five years.

Such incentives are important — data centers are very capital-intensive, so companies care a lot about the tax bills they'll have to pay. There's the sales and use tax on all of the computers, electrical equipment, fire suppression systems, and cooling systems that a data center needs. Then, business property taxes are due on all of that equipment on an ongoing basis. Finally, there are the real property taxes paid on the land and buildings.

You've Got to Give to Get

Lenio hopes that communities don't give up all of their potential tax revenue to recruit a data center. But he can see why they might do so. "There will be some counties that may not see good economic development projects every day [and] might be willing to use the big data center as a loss leader to build a cluster," he notes. "For some policymakers, they'd rather have something than nothing."

What is that "something?" In the short term, the construction of a large data center can provide an economic boost, if the required expertise is available locally.

"It's very specialized construction," says Robert McFarlane, who designs data centers for New York-based Shen Milsom & Wilke. "The equipment that is used to power and cool these facilities have to be built the right way, and the majority of trades people are not used to building them." Further, "they might use a local architect, but probably not a local engineering firm. Only a few engineers in the country know how to do these designs."

As of October 2011, more than 1,500 people have helped build Facebook's data center in Rutherford County. "Most of them live here; they eat at the restaurants and buy food and clothes here," says Thomas Johnson, executive director of the county's Economic Development Commission. Once a month, a local restaurant caters lunch for the construction crew.

In the long term, however, the employment impact is minimal. None of the companies with data centers will say exactly how many people they employ full time, but estimates range from 45 for Facebook and 50 for Apple to 210 for Google. The higher estimate for Google likely includes security personnel and service technicians who work on a contract basis.

While the number of jobs is small, they include a few well-paying positions such as software engineers and operations managers. Again, the challenge is whether local workers, many of whom were laid off from their factory jobs years ago, have the requisite skills.

"If a person is a computer jockey at home, it's very possible they could learn what they need to know on the job and fill many of the positions at a server farm," says McFarlane. That's because all the servers in a data center are identical. "When you learn to reload [the software on] one of them or replace it, you know what to do." Still, "that doesn't mean you can train a monkey to do it. You've got to have people who are very agile with computers because they are going to be expected to react quickly."

Economic development officials in western North Carolina are well aware that a data center isn't a manufacturing plant and won't single-handedly make up for the job losses in the region's manufacturing sector. But they see other benefits for their communities in the long term besides job creation.

Despite the generous tax breaks provided to data centers, county governments stand to receive a significant inflow of tax revenue from property that had been sitting vacant. According to Johnson, Facebook will probably become the fifth- or sixth-largest taxpayer in Rutherford County, paying about $109,000 annually for the next 10 years. Google was expected to yield $130,000 to $160,000 in tax revenues annually for Lenoir and Caldwell County.

For Kristen Fletcher in Cleveland County, and her competitors in neighboring counties, the huge amount of capital invested in data centers makes them worth the pursuit.

"It's a positive contribution to our tax base, which is going to allow us to progress in so many other ways — building schools, stabilizing our local government financially," says Fletcher. "It is a fairly easy target with a fairly large, immediate return on investment." **RF**

UPFRONT *continued from page 5*

scrubbers and pollution controls over the past few years, and is likely to spend $5 billion to $6 billion more over the next decade, according to spokeswoman Erin Culbert of Duke, now the nation's sixth-largest electricity provider. (If Duke merges with Raleigh, N.C.-based Progress Energy, as planned, the combined firm will be the nation's biggest utility.)

"We are planning retirements of coal-fired plants between now and 2015 that will total around 3,200 megawatts," Culbert says. That's the amount of electricity required to power about 2.56 million homes. Affected plants are in the Midwest and the Carolinas. The plant closings are not only in response to Duke's modernization of its 50-year-old coal fleet but also to future emissions cuts. "With anticipation of multiple environmental regulations, we do see an upward pressure on rates nationally."

According to American Electric Power, based in Columbus, Ohio, costs will range from $6 billion to $8 billion through the end of this decade. The company plans to close three plants in West Virginia and one in Virginia, among others; 600 jobs overall may be lost.

The new rule limits market-based emissions trading. This ability to buy and sell pollution allowances gave power plants flexibility to meet emissions standards in the past. (Older, dirtier plants could buy allowances from newer, cleaner plants.) CSAPR allows no carryover of SO_2 or NO_X banked emissions from previous programs. EPA says the large number of old allowances would have made it more likely for states to exceed levels and for power plants to incur penalties.

CSAPR establishes four new trading programs, two of which are for SO_2. One applies to states that require deep cuts and one to states needing fewer emissions cuts. Another program was set up for annual NO_X emissions, and still another for ozone-season (summer) NO_X. The new rule allows intrastate trading of pollution allowances, along with limited interstate transactions among certain groups of plants. A strict emissions cap in each state is designed to prevent pollution "hotspots."

Environmental benefits may be hard to quantify. Existing cost-benefit studies of the rule and its predecessor rule find, however, that benefits outweigh costs, often by a wide margin, write Richard Schmalensee and Robert Stavins in a March 2011 paper analyzing the pollution transport rule. The authors are economists at the Massachusetts Institute of Technology and Harvard University, respectively. Estimates of benefits vary across studies, from a low of $20 billion annually to a high of $310 billion, with most of the variation coming from assumptions about the value of a statistical life, estimated by the EPA at about $7.3 million in 2006 dollars. Annual costs to utilities are estimated at $2.4 billion, including capital investments already in progress under the old rule.

The cross-state rule is one of several proposed that will affect the electric power sector. Others include regulations of greenhouse gas emissions, mercury and other hazardous air pollutants, cooling water intake structures, and fly-ash disposal at combustion sites. — Betty Joyce Nash

Toil and Trouble for Revenue Forecasters

Greater sensitivity to business cycles has made state tax revenues more difficult to predict

BY KARL RHODES

As the economy receded in March 2008, Barry Boardman was putting together his forecast of North Carolina tax revenues for fiscal year 2008-09. He knew that housing prices were declining sharply in sunshine states like California, Arizona, and Florida, but things didn't seem so bad in North Carolina. The housing boom there had been driven mostly by solid population growth — not wild speculation.

Boardman, the state's senior fiscal analyst, predicted a mild recession in North Carolina, but by October 2008, tax revenues were down 3 percent, then 9 percent, then 15 percent by the end of the fiscal year. North Carolina's exposure to the housing bubble may have been minimal, but its exposure to the ensuing contraction was substantial. "We weren't tying that together back in March of 2008," he says.

Forecasting state tax revenues is tricky, especially when the economy veers into a deep and prolonged recession, but state revenue forecasting errors have become increasingly large and pervasive during the past three recessions, according to a report by the Nelson A. Rockefeller Institute of Government at the State University of New York at Albany and the Pew Center on the States. The study, "States' Revenue Estimating: Cracks in the Crystal Ball," analyzed states' ability to forecast their tax revenues from 1987 through 2009.

"Errors in revenue estimates have worsened progressively during the fiscal crises that have followed the past three economic downturns," according to the report. "During the 1990-92 revenue crisis, 25 percent of all state forecasts fell short by 5 percent or more. During the 2001-03 revenue downturn, 45 percent of all state forecasts were off by 5 percent or more. And in 2009, fully 70 percent of all forecasts overestimated revenues by 5 percent or more."

Accurate revenue forecasts are important. They help states plan ahead, carefully consider the merits of individual budget decisions, and avoid massive across-the-board cuts like those that became necessary in 2009.

"It's been a constant challenge," Maryland Gov. Martin O'Malley told the Pew researchers. "No sooner do you make $200 million in tough and painful cuts than the guys in green eyeshades come into your office and tell you that revenues have eroded further and you need to find another couple hundred. It's like trying to keep your nose above the waves while the riptide is pulling you under."

Revenue forecasters throughout the Fifth District tell similar stories. "The fall forecast of 2008 was the start of the downward revisions that continued until February of this year," says Norton Francis, director of revenue estimation for Washington, D.C. "We became persona non grata, because every time we came around, we had bad news."

Revenue Forecasting 101

Revenue forecasters in Fifth District states and D.C. start with national forecasts purchased from IHS Global Insight and/or Moody's Analytics. They adapt the national projections to the unique economies within their states. Then they feed the data into estimating models that predict various categories of revenue based on how their states' tax structures capture portions of economic activity.

In the Fifth District, the most popular tools of the trade include simple trend analysis (projections based on the trajectory of past performance such as revenue from court fines and fees); time-series modeling (projections based on sequential data that reveal underlying factors such as seasonal differences in employment); and linear regression modeling (projections based on mathematical correlations between different types of data such as the relationship between personal income and sales tax revenue).

In addition to these statistical tools, all of the Fifth District jurisdictions, except D.C. and West Virginia, use some form of consensus forecasting, which brings officials from both the legislative and executive branches into the process, often joined by advisory groups of business leaders and external economists.

The Rockefeller/Pew study analyzed the effectiveness of each of these approaches and found that none of the methods was "significantly linked to the size of the errors." Other research indicates that combining multiple forecasts can lead to somewhat greater accuracy. North Carolina, for example, now considers two forecasts, one developed by the legislature's analysts and another prepared separately by the Office of State Budget and Management.

"We get together and kind of haggle back and forth," Boardman says. "It's an informal process. Then the governor and the legislature pick numbers — usually the consensus number."

Technological advancements also can improve revenue estimation. Forecasters in West Virginia, for example, have benefitted greatly from a new integrated tax information system that replaced a mainframe system that was installed in 1972 and never upgraded significantly. The new system, which became fully operational in 2009, allows forecasters to quickly access and analyze tax data in ways that were previously impractical or impossible.

"We were in the dark for many years," says Mark Muchow, West Virginia's deputy secretary of revenue.

Degree of Difficulty

The tools are getting better, but the task is getting harder. State revenues have become more sensitive to economic swings, according to Richard Mattoon and Leslie McGranahan, economists at the Federal Reserve Bank of Chicago. In a 2008 working paper, they conclude that from 1998 to 2007, state revenues were more sensitive to economic conditions than they were during the preceding two decades.

"While a one percentage point change in economic conditions led to a 0.9 percentage point change in income tax revenues prior to 1998, it corresponds to a 1.6 percentage point change during the 1998-2007 period," they write. This trend appeared in 36 of the 43 states that collect income taxes, and it was statistically significant in 10 states, including North Carolina and Virginia. The authors attributed nearly all of this heightened sensitivity to states' growing exposure to increasingly volatile capital gains revenue.

From 1970 to 2000, capital income — including capital gains — was "more than five times more volatile than wages and salaries or consumption," according to a 2003 article in *State Tax Notes* by David Sjoquist and Sally Wallace, economists at Georgia State University.

Their analysis of Internal Revenue Service data also shows that capital gains have become a much larger component of state income tax proceeds. Capital gains, as a percentage of federal adjusted gross income, increased in every state and D.C. from 1990 to 2000. In the Fifth District, capital gains were up 211 percent in Maryland, 171 percent in D.C., 170 percent in Virginia, 152 percent in North Carolina, 150 percent in South Carolina, and 124 percent in West Virginia.

"About 20 to 25 percent of our general fund — that's a big chunk — now comes from business income and capital gains," Boardman notes. "Those are the sources of income that have been shown to swing from anywhere from plus 30 percent to minus 30 percent — even more — in any given year." Corporate income tax proceeds always have been difficult to predict, but capital gains volatility is the worrisome wrinkle that has emerged during the past 12 years — caused primarily by wild swings in the stock market.

Revenue forecasters often say, "If I could predict the stock market, I wouldn't need this job." But predicting stock market gyrations is just the first step toward estimating capital gains revenue. Forecasters also have to consider how an increasingly diverse group of investors might respond to market performance and to tax policy changes — both real and anticipated.

The federal capital gains tax rate is expected to remain at 15 percent through 2012, says John Layman, chief economist and director of revenue forecasting for Virginia's Department of Taxation. But then what? Antsy investors might be thinking: "The bracket is going up. I'm going to start culling my winnings and know that I am only paying 15 percent," Layman says. (Most states treat capital gains as regular income.)

Forecasting capital gains revenue might be the ultimate challenge, but other growing components of personal income tax revenues also are difficult to predict. "We have seen a big shift over the past 20-some-odd years to a lot fewer corporate taxpayers," Boardman notes. "With subchapter S (corporations) and LLCs and so forth, a lot of that income now comes through the personal income tax, which is making that a far more volatile source of revenue."

Sales Tax Erosion

Most states have three main sources of revenue: sales tax, personal income tax, and corporate income tax. Sales tax revenue is the most predictable category, but sales taxes have been shrinking in many states as a percent of overall taxes.

Expenditures on services increased from 47.4 percent of consumption in 1979 to 58.8 percent in 2002, notes William Fox, an economist at the University of Tennessee, in a 2003 article in *State Tax Notes*. The corresponding decline in expenditures on goods relative to expenditures on services erodes the sales tax base because most goods are taxed by states while most services are not. In other words, state sales tax structures are still based on a manufacturing economy, Boardman says. "For most states, their sales tax bases were constructed back in the 1930s."

More recently, technological advancements have chipped away at the sales tax base, Fox notes. The Internet has been the primary factor — facilitating tax-free transactions and blurring the lines between goods and services with downloadable books, music, and software. States, however, are starting to reclaim this sales tax territory.

"Virginia passed a law a few years ago that said, 'If you want to bid on a contract in the Commonwealth, you have to be a registered sales tax dealer,'" Layman recalls. "Think about all the computer manufacturers out there that want to do business with Virginia. That made a big difference."

Some states have raised their sales tax rates to offset the shrinking base, but some revenue erosion is self-inflicted. During the economy's so-called "Great Moderation" from the mid-1980s to 2007, many states exempted food and nonprescription drugs from sales tax. This practice made many taxpayers happy, but it eliminated two of the most predictable sources of sales tax revenues.

The Perfect Storm

Sales tax shortfalls were not a major problem for most states during the revenue downturn of 2002 because consumer spending remained relatively strong during and following the 2001 recession. But the shrinking sales tax base has caused states to become more reliant on the more volatile personal income tax.

The rise in personal income tax proceeds that occurred in the 1990s — driven mostly by higher capital gains — more than offset erosion of sales tax bases. But after the dot-com crash, states that had become heavily dependent on capital gains found themselves in a bind.

Mindful of voters' concerns about taxes, state policy-

> The rise in personal income tax proceeds that occurred in the 1990s — driven mostly by higher capital gains — more than offset erosion of sales tax bases. But after the dot-com crash, states that had become heavily dependent on capital gains found themselves in a bind.

makers may have missed an opportunity to shore up underlying tax structures. Many state leaders balanced their budgets by cutting costs, tapping rainy-day funds, and securitizing tobacco settlement payments instead of raising taxes as they had during previous recessions. These politically attractive alternatives "may have papered over structural imbalances in the state revenue and expenditure systems," according to the Chicago Fed study. "While this one-time money (reserve balances and tobacco money) could balance their budgets in the short run, it did not force states to examine whether their revenue structure was in fact productive enough to meet expenditure demands."

The 2002 revenue downturn highlighted this imbalance, but at the time, many experts viewed the severe shortfall as a dot-com aberration instead of a bellwether event. The National Governors' Association called it "the perfect storm." Fox called it a "100-year flood," the worst revenue disturbance since at least 1970.

If state officials believed that the dot-com crash caused a perfect storm of revenue-forecasting errors, then it was reasonable for them to assume that nothing so disruptive would happen again anytime soon. Certainly, the stock market floodwaters receded slowly. The S&P 500 Index declined steadily for three years, but then it resumed a growth trajectory that was nearly identical to its rate of increase in the early 1990s. By mid-2007, the S&P 500 Index again was approaching its all-time high, but it would not stay there long.

The financial crisis that began to show itself in the second half of 2007 caused the stock market to fall even faster and further than it did during and following the dot-com calamity. Compared to the 2007-09 recession, the 2002 disturbance was more like a thunder shower than a perfect storm.

"The 2002 revenue crisis gave us the experience to handle 2008 and 2009," says Layman in Virginia. "But now we had a financial recession and a housing recession together, and it was a killer."

The housing market monster dragged sales tax revenues down with it as expenditures on home furnishings, fixtures, and building materials plunged. The unemployment rate peaked above 10 percent, much higher than the 6.3 percent mark following the 2001 recession. As housing prices continued to fall, many consumers ended up living in homes that were worth less than the balances on their mortgages.

"The level of wealth that you have is a big determinant of the amount you will spend," Francis notes. "So losing the value of your house or losing your house will rein in your spending a lot."

As the economy struggles to recover from the recession of 2007-09, uncertainty still clouds the crystal ball. The unemployment rate hovers above 9 percent. Nations struggle to pay their bills, and stock market volatility persists. After bottoming out in March 2009, the S&P 500 doubled by February 2011. Then it plunged 18.2 percent in late July and early August. In this environment, it doesn't appear that forecasting state revenues is going to get easier.

What Can States Do?

State revenue forecasters will never master the vagaries of capital gains, but they are improving their models based on lessons learned from each business cycle.

After the 1990-91 recession, for example, Virginia replaced its statewide economic model with regional economic models. "The three largest metropolitan areas, and now the balance of the state, have their own equations to forecast professional business services, hospitality, education, and health care, because one size doesn't fit all," Layman says. Northern Virginia, in particular, has become the state's economic engine during the past four decades with dramatic wealth creation from government contractors and information technology services.

On the other side of the Potomac River, D.C. is revisiting its economic models in light of new data from the most recent financial crisis and recession. "It's going to be a challenge," Francis says. "You don't want to zero out that whole period, but you have to make decisions about whether it is an anomaly or whether it represents a new cycle."

States could restructure taxes to place more emphasis on stable sources of revenue, such as the sales tax. Virginia raised its sales tax to 5 percent in 2004, and Iowa raised its sales tax to 6 percent in 2008. In addition to taxing goods, Iowa now taxes 94 types of services, but raising taxes or adding new taxes would be difficult during a weak recovery.

A more politically appealing strategy might be to smooth out the benefits of revenue windfalls. In this regard, states with high exposure to volatile capital gains might learn something from states with high exposure to highly variable energy prices.

West Virginia, for example, collected more than $500 million in severance taxes from coal and natural gas companies in its most recent fiscal year — up sharply from about $200 million in 2003. (Companies pay severance taxes based on the value of coal or natural gas they extract — or "sever" — from the state.) Anticipating the inevitable swing the other way, West Virginia has built one of the largest rainy-day funds (as a percentage of total budget) in the nation. When the price of coal goes up enough to create a huge budget surplus, as it did last year, West Virginia puts more money into the fund.

Would a similar approach work for the capital gains component of personal income tax revenue? Massachusetts,

continued on page 45

Volatility at the Pump

Where do high gas prices come from?

BY BETTY JOYCE NASH

Drivers curse high gas prices. Over the summer of 2010, prices hovered around $2.80 per gallon, climbed in late autumn, and then spiked in March 2011 as revolutions in the Middle East disrupted supplies. Gas prices remained above $3.50 for 29 weeks in a row by late October.

A $10 per barrel increase in crude oil raises pump prices by about 25 cents per gallon, according to Jeff Lenard of the National Association of Convenience Stores (NACS). Those stores retail about 80 percent of the gasoline sold in the United States.

The extra quarter adds up to $35 billion annually. That causes people to spend less on other goods or save less when they need to pay more for gas; the $10 more per barrel not only further subtracts from GDP, since almost half of U.S. oil comes from abroad, but diminishes estimated multiplier effects from spending on domestic goods and services. This lowers net consumer spending by about the same $35 billion, a 0.2 percent decline of GDP, in a $15 trillion economy, according to economist James Hamilton of the University of California at San Diego.

Refinery costs, distribution and marketing costs, varying fuel specifications, and taxes also influence prices, along with the weak dollar. Other influences: seasonal variations in consumption, production, imports and inventories, along with trading speculation. But the biggest determinant by far is the price of crude oil, roughly 68 percent of the retail price at current price levels, according to the U.S. Energy Information Administration (EIA).

Supply Matters

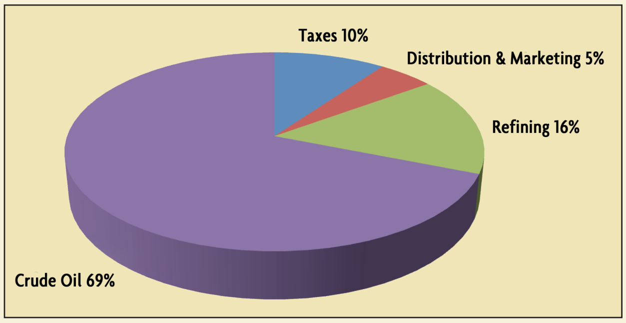
The current run-up in oil prices began as world economies started to emerge from the latest recession. Their energy needs grew. Between 2003 and 2008, crude prices also escalated because of intensified demand and stagnant production. That sent prices to $147 per barrel in 2008 before dropping to less than $40 per barrel as the global recession reduced demand.

Today, in the developing nations of Brazil, India, and especially China, demand has fueled the price hikes. In China, energy needs rose by 12 percent in 2010. U.S. demand rose 1.9 percent over the first six months of 2011 compared to the same period in 2010. Summer also accelerates demand as people take more vacation trips.

Risks and reductions create uncertainty about supply, and that affects prices. Turmoil in Libya and other Mideast nations has influenced supply, and an April price spike also reflected events closer to home — Mississippi River flooding and resulting refinery outages.

The United States produced the most oil, worldwide, until the early 1970s when Texas oil production started to decline. The United States imported 49 percent of its oil in 2010, according to the American Petroleum Institute (API): 25 percent from Canada, 12 percent from Saudi Arabia, and smaller percentages from Mexico, Venezuela, Algeria, Nigeria, Iraq, Russia, and elsewhere. Instability in oil-producing nations threatens supply and raises world market prices. The Arab oil embargo in 1973, the Iranian revolution in 1978, the Iran-Iraq war in 1980, and the Persian Gulf conflict in 1990 all boosted U.S. prices.

What's Included in a $3.80 Per-Gallon Price of Regular Gas?



SOURCE: U.S. Energy Information Administration

Refinery to Retail

The nation's 148 refineries heat crude oil to change it into a gas, and then condense it into liquid gasoline and other petroleum products. The process accounts for about 13 percent of the per-gallon gasoline price. Refinery capacity in January 2011 was at a 29-year high, despite many refineries having shut down since the 1970s. Existing facilities have expanded, according to Tim Hogan of the National Petrochemical and Refiners Association. "In some cases, [shutdowns occurred] because that facility was not economical and did not want to make investments in new equipment," he says.

It's unclear the extent to which refiners will continue to expand, Hogan says, because biofuel mandates have reduced production at refineries. Gasoline-ethanol blends account for more than 90 percent of the gasoline sold in the United States; blends of up to 15 percent have recently been approved for some later model vehicles, though that gas is not yet sold at the pump. Increased volumes of ethanol and other renewable fuels displaces the need for more refinery capacity. (Ethanol refineries are typically located in the Midwest, near corn producers.)

From the refinery, about 168,000 pipeline-miles send various fuel blends to product depots around the nation. Most states in the Fifth District use gas piped from the Gulf

Coast, including Texas and Louisiana; in 2010 about 26 percent of the gasoline produced in the United States came from the Gulf Coast, according to the EIA. Other ingredients may be blended into gasoline at the refinery.

Gas prices at the pump also vary according to "boutique" fuel formulas that federal regulations require in certain regions and metro areas. Hot-weather blends reduce the volatile organic compounds that contribute to smog — the incremental cost of production is estimated at roughly 5 cents per gallon or less. Fuel requirements vary by location. The District of Columbia, for example, uses reformulated gasoline, or RFG. Pipelines carry the different blends, and computer controls route fuels that may bypass Virginia, for instance, and go all the way to New Jersey.

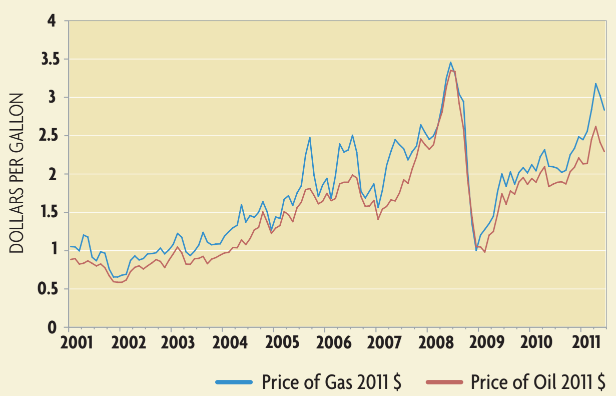
At the Pump

It takes about seven to 10 days for an oil price increase to reach the pump, according to Lenard of the NACS. Competition for customers determines the timing and amount. Distance from gas depots, for instance, affects prices because deliveries cost more with distance. The markup on gas is about 15 cents per gallon at convenience stores, and about 3 cents of that is profit to the retailer.

People consider price first when shopping for gas, according to consumer research published by NACS, with nearly one-third of respondents in consumer surveys saying they will reroute trips to save as little as 3 cents per gallon. That knowledge makes retailers cautious. "Retailers know they can't pass on the whole increase," says Lenard. Convenience stores use gas to generate traffic inside the store, he explains, and so they first assess the local competition. If the retailer raises gas prices by 10 cents and the competition doesn't, traffic plunges, not just at the pump but inside the store. "People won't say, 'They have a terrible gas price but I'm still getting a sandwich.'"

Pump prices also depend on the gas source and the stores' supplier contracts. Branded gasoline offers fewer highs and lows, especially if the store is affiliated with an oil company. Contracts ensure the branded stores get served first. Unbranded stores may sell cheaper gas when supplies are plentiful, but may charge more when supplies tighten because they are forced to pay more on the spot market.

Oil Prices and Retail Gasoline Prices



SOURCE: U.S. Energy Information Administration

The demand for gasoline responds to price, although not very much. From 2007 to 2010, vehicle miles traveled in the United States have stayed roughly constant at around 3 trillion miles.

Demand for gasoline may react less to price today than in the 1970s, according to Jonathan Hughes, Christopher Knittel, and Daniel Sperling of the University of California at Davis. They estimated the average per capita demand for gasoline in the United States from 1975 to 1980 and from 2001 to 2006, both periods of similarly high prices. The results suggest drivers in the later period responded less to increases. People may depend more on cars for daily transportation, because of long commutes, today than in the 1970s and 1980s. Drivers also may respond more slowly to short-term price increases because they now drive more fuel-efficient cars.

Elasticity of Supply

As gas prices escalated, to nearly $100 per barrel, so have drilling and calls for more exploration. While drilling in the western Gulf of Mexico will continue under new regulatory safeguards, a year after the BP oil spill, the eastern Gulf and the Atlantic coast's outer continental shelf remain under a drilling moratorium.

In August, the Department of the Interior granted Royal Dutch Shell conditional approval to drill four exploratory wells next summer in the Beaufort Sea off the Arctic National Wildlife Refuge.

North Dakota and Montana are cashing in on oil in an area known as the Bakken Formation. Recent horizontal drilling technologies fracture shale and release oil.

Oil's high prices have revived prospects for oil leases in an area 50 miles off Virginia's coast, despite the moratorium. No one knows yet how much oil to expect there; the potential for oil in that location is based on old estimates from the 1970s, says Mike Ward of API's Virginia office. A seismic investigation can't happen before a "lease sale," which allows energy companies to bid for rights to explore.

"Estimating undiscovered resources in areas with little previous drilling is as much art as science," says energy consultant Michael Lynch of Strategic Energy & Economic Research Inc.

Even if oil were discovered there today, it could take years to enter the supply chain. In Prudhoe Bay, Alaska, production of oil found in 1968 did not begin until 1977. Exxon's recent discovery of two reserves in the Gulf of Mexico must be studied, verified, and permits authorized.

Saudi Arabia holds a fifth of the world's oil reserves and production capacity. It's also the world's largest exporter. U.S. supply represents only about 2 percent of world supply, too small to affect global prices very much. But U.S. drilling has expanded, reversing a 30-year decline. By 2009, proven oil reserves had gone up about 8.6 percent over 2008 for a total of about 22 billion barrels. **RF**

Interview

Derek Neal

Nearly everyone has an opinion on what should be done to reform the American educational system. Among the more popular ideas over the last few decades has been to hold teachers and schools accountable by tracking student performance through standardized assessment exams. Such exams were at the center of the No Child Left Behind Act of 2002. Like many policies, though, it may have had consequences that were both unintended and undesirable, argues Derek Neal, an economist at the University of Chicago. Teachers have incentives to "teach to the test" rather than impart critical thinking skills that help students reason through issues. And school administrators have incentives to issue tests that help students achieve the scores needed for their schools to continue to receive full public funding.

Neal, whose work on education issues draws on his training as a labor economist, has also examined the factors behind the increase in wage and wealth inequality in the United States. He argues that trend is largely due to increasing returns to skill — that is, higher-skilled workers tend to earn a substantial premium relative to their lower-skilled counterparts. To help bridge that divide and improve educational opportunities for people in economically disadvantaged neighborhoods, particularly those in large cities, Neal argues that providing school vouchers is an idea worth trying. Vouchers, he says, may also help to narrow the skills gap that exists, on average, between black and white Americans.

Neal earned his Ph.D. in economics at the University of Virginia. In addition to his appointment in the Department of Economics at Chicago, he also is a professor with the university's Committee on Education. Neal has served as the co-editor of the *Journal of Human Resources*, the editor-in-chief of the *Journal of Labor Economics*, and is the current editor of the *Journal of Political Economy*. Aaron Steelman interviewed Neal in August 2011.

PHOTOGRAPHY: BETH ROONEY

RF: What is your view of subject matter assessments administered to students? Do they, on balance, have the intended effect of increasing knowledge in certain key areas and, as a result, students' human capital?

Neal: I don't think we have precise answers to those questions. I do believe there are reasons to suspect that the entire assessment-based accountability movement has produced rather small gains in terms of the true subject mastery that students possess, their true command of the curriculum. It is very easy to find evidence that increases in test scores on a particular high-stakes assessment that are tied to accountability or performance pay often don't show up when the same kids are taking other tests that are supposed to cover the same topics but happen to be low-stakes tests. That is not definitive proof that the source of the gains on the high stakes is entirely coaching or cheating or some other activity that has little lasting value for the students. But there's enough evidence of that flavor in the literature now that we should be very cautious when advocates of these programs point to movements in scores of high-stakes tests as evidence that something important is happening.

There is a paper by Daniel Koretz in the *Journal of Human Resources*. In that paper he looks at a Kentucky school district that had a moderate-stakes assessment program and he noticed that when they changed test vendors — not the curriculum, just the company that made the exams — he saw drops in the scores, and then the scores went back up over three or four years. So he took the old test and gave it to a random sample of students, and it turned out that on the old test, the students who were now doing so well on the new test did just as poorly as the first year the new test was introduced. So it appears that all of the improvements on the new tests over a three- or four-year period were improvements in performance that were completely specific to a particular type of exam. I don't believe that is the type of performance we are interested in when we are evaluating whether our schools are doing a good job or not.

RF: So this might suggest that assessment-based programs do little to help a student improve his ability to reason his way through a question or set of questions on a particular subject.

Neal: The big thing you have to realize is that these tests were not designed to be used to gather information for accountability systems. These tests were designed so that you could track the performance of kids over time — for instance, that you could have a score for a kid in 2005 and a score for a kid in 2008 and make the claim that both scores are well placed on the same scale, so that a score for a third-grader in math in 2008 is comparable to a score for a third-grader in math in 2005. The idea was that this would permit us to say meaningful things about how the distribution of student achievement for third-graders is changing in a state or a district or a school over a period of time.

If you want that type of stability and the ability to make comparisons over time, you are going to need a testing system where a lot of questions are repeated, the tests follow a common format, and the tests are very regular in a way that allow the psychometricians to have links between the exams to place them all on a common scale. So the very regularity, the repetition of items, the features that provide the opportunity to create the constant scale also create the opportunity for coaching and manipulation and drilling on answers to specific questions. When you attach stakes to the exams, there can be a response by teachers that undermines the integrity of the scale because now it is no longer measuring student aptitude but measuring how well students were coached for the exam. The same features that make consistent scaling possible over time in theory will guarantee that the scale becomes corrupted over time in practice if you use the tests for accountability and performance pay rather than just as a source for gathering information. So the best way to understand this is that they are trying to have a twofer — they are trying to have a set of tests designed for one thing and use them for something different, and that's often problematic.

RF: If assessment-based systems provide an incentive for teachers to coach students for a test rather than help them gain mastery over a subject, how do you alter that incentive?

Neal: The first thing you need to do is have two sets of tests. You need the current tests and those tests have to be low stakes, and you have to have commitments that no one will ever know how the students in one particular school did on this test, that these scores will be reported on a district level or above, and they will be for the education department to track how things are going. And then you need a second set of tests for accountability and incentives that are designed for those purposes. Those tests would look very different. They would never repeat questions; they wouldn't have fixed formats; they would have a lot of essay and short answer questions; and they would not be multiple-choice tests, where there are optimal strategies for when you guess and when you don't guess and opportunities for people to coach students on test-taking strategies. It would be a process of developing an entirely new type of exam that would not be predictable and would have the property that the best thing teachers could do to raise the scores of their students would be to teach them in ways that build a deep mastery of the curriculum.

> Economists need to start weighing in on how [accountability policies in education] should be designed, the same way that economists weigh in on the design of regulations, the design of environmental policies, the design of government auctions, the design of the tax code.

The way that mechanism design works in economics is you figure out what you want people to do and then you build a system so that if they just try to maximize their own take-home pay or maximize their take-home pay net of effort — maximize their own well-being — then in response to the system you designed, they will do what you want them to do. So if we want teachers to teach well and build subject mastery in students, we need to design a system such that the best response of the teachers to the system is to teach that way.

RF: On that second test, even if you give short-answer rather than multiple-choice questions, there is still opportunity and incentive for administrators to grade those answers favorably. It seems that you need a third party to grade the exams.

Neal: You need third-party everything. You need third-party administration. You need third-party development of the grading rubrics. The thing that is silly about No Child Left Behind is that the impetus for it was the allegation that there were local school districts wasting the money the federal government, and in some cases state governments, were giving them, so we needed a system for making sure that people were accountable, especially for the federal money they received. Now, if the whole problem is that the states aren't holding the local school districts accountable for their performance, then why in the world does it make sense to develop a system where the states make up the exams, the states define what proficient means, the states let individual teachers administer the exams to their own students, and then the state education office scores the exams and decides what score is needed each year to meet the proficiency standard? It's very much analogous to me telling my kids that they have to clean their rooms but letting them define the standards of cleanliness and then letting them inspect their rooms to determine if they have met their own standards.

There are many things about the way No Child Left Behind was implemented that just make you scratch your head in terms of whether this was ever a serious effort to build an accountability system that could work. People roll their eyes and scream and yell about the recent events in Atlanta — where teachers got together, sometimes with their principals, and changed the answers on exams before they turned them in to be graded. But if you read the literature, it's not a new story.

People in the private sector do not have situations where their supervisors say, "You come up with your own evaluation form, fill it out, and turn it in to HR yourself." Any system that is going to be worth having is going to be one that is designed to induce the behavior we want and to eliminate obvious opportunities for corruption.

RF: While many of the reforms you have discussed seem relatively straightforward, it seems that it may be useful to have economists who understand a little about mechanism design sitting on the committees that determine how the programs are structured. Is that the case?

Neal: If you look at all the stuff I have been doing recently, that idea has been the thrust of much of my research. One way to understand why performance-pay and accountability systems have been less than successful in public education is that these are human resource policies that are typically designed by people in education or maybe public policy schools who have no background in the design of incentive systems, who never took a class in the design of contracts, who never took a class in personnel economics. And so far what has happened, I believe, is that economists have gone and done empirical work to show that poorly designed incentive systems have had less than desirable outcomes that were completely predictable if you analyzed the systems from the outset. That's been valuable but it's time for economists to do more than that. So a big theme of my writing of the last year or two is that people who work in the economics of education need to do more than just come up with sophisticated methods for evaluating poorly designed programs. Economists need to start weighing in on how programs should be designed, the same way that economists weigh in on the design of regulations, the design of environmental policies, the design of government auctions, the design of the tax code. They need to be involved from the outset in building models that tell us how accountability policies in education should be designed.

RF: What does your research on Catholic high schools tell us about their performance? And are there certain characteristics that are particularly important to the results they achieve in some cases?

Neal: The second question is for someone who knows how to run a school. As an economist, I can say that it appears that the greatest gain from getting access to a Catholic school is for economically disadvantaged kids who have bad options in the public system. If you have a great public school you can attend, it's not a big deal. If you live in an urban area and you have a bright kid and you can get him into a really good magnet school, who cares whether you have vouchers, who cares whether your kid won a scholarship to a private school. You have made sure that the public system gave you yours. I think the one thing that is most clear from the public-private schooling literature is that if there is a group who benefits greatly from having the private sector more involved in providing alternatives for them, it's politically and economically disadvantaged people who live in large cities where there is a large monopoly school system.

I believe what the literature shows is that Catholic schools, as a rule, are not super schools. If you go to the northern suburbs of Chicago, you are likely to find that both the local Catholic school and the public school offer good, comparable educations. But if you go to the inner-city neighborhoods of Chicago, you will find some Catholic schools where the students are doing quite well but the public school down the street is just a disaster. It's not that Catholic schools are better than all public schools. It's that in certain settings, Catholic schools are a lot better than their public school neighbors.

RF: Much has been made about the importance of early childhood education in building human capital over the course of a student's educational career and then later in life. What is your view on this issue?

Neal: I am not an expert on this issue, but I am predisposed to believe that there is something to it, that if you improve children's health and emotional well-being and cognitive development early in life, you give them things they can build on for the rest of their lives. That logic of making investments that can grow over time is quite compelling. The details of how you do it and how you could be confident that it would pass a cost-benefit test, that's something for others who know more about the issue to determine.

RF: How large is the black-white skill gap and how has it changed over time? And what might be done to narrow that gap?

Neal: The gap is smaller than it used to be in terms of basic reading and math skills. But it's still quite large and it's still quite important as a determinant of overall labor market inequality between blacks and whites. Jim Heckman and others have pointed out in recent years that there are gaps in noncognitive skills — persistence, work habits, personality traits — that are also important. I think that it is fairly obvious that strong basic reading and math skills are more essential requirements for labor market success in many different areas of the labor market than they were 50 years ago and, therefore, even though the black-white skill gap may be smaller than it was 50 years ago, the gap that remains may be more important.

As for narrowing the gap, I think one of the things we should try — and I am not promising that it would necessarily work — is to give economically disadvantaged families who live in disadvantaged areas access to something like education vouchers that would allow the United Way or the Catholic Church or the local Edison Schools company — whoever it might be — to move into the neighborhood, open up a brand-new school, and compete for the public funding that has been allocated to these students. I think there's very little evidence that people who are wealthy or upper-middle class benefit greatly from expanded access to private schooling options, because they are usually politically powerful enough and geographically mobile enough to make sure that they get good services for their children, either by living in a good school district or by sending them to a good private school. The place where we have the most compelling evidence that there would be significant benefit from enhancing private alternatives is with disadvantaged minority populations, especially in large cities. If you have neighborhoods where the potholes aren't always fixed, and the police and ambulances don't always come when you call, and the trash isn't picked up regularly because the people living in the community are poor and disenfranchised and do not have a lot of political clout in the city at large, it should not be a great surprise that those same individuals do not receive great public schooling.

Derek Neal

➤ Present Position

Professor, Department of Economics and the Committee on Education, University of Chicago

➤ Previous Faculty Appointment

University of Chicago (1991-1998 and 2001-present); University of Wisconsin (1998-2001)

➤ Education

B.S. (1985), Shorter College; M.A. (1987) and Ph.D. (1992), University of Virginia

➤ Selected Publications

Author or co-author of papers in such journals as the *American Economic Review*, *Journal of Political Economy*, *Journal of Economic Perspectives*, *Review of Economics and Statistics*, *Journal of Labor Economics*, and *Journal of Human Resources*

RF: Opinion polls suggest that vouchers are, in fact, relatively popular with lower-income people and have been for some time, yet there has been little progress on that issue. How do those families gain the type of political support necessary to implement such programs?

Neal: I don't know. Every time someone says it will never change, though, I always think about the time I said that 15 or 20 years ago at lunch and Gary Becker said, "When I was your age, they said we would never deregulate the airlines or trucking." So I don't understand how these things change or why these things change when they do, but we do have historical cases where there was an entrenched group of special interests that either had government monopolies in terms of providing some good or service or had a regulatory environment that stifled competition, cases that were clearly wasteful and went on for some time, but at some point policy changed and we got rid of them. Does that mean it will happen here? I don't know. But I do think it's hasty to adopt a this-will-never-change attitude simply because the political actors involved are very powerful. Which will we see first: real school choice for disadvantaged families in large cities or the elimination of wasteful farm subsidies? I don't know, but both may happen.

RF: Broadly measured, what has been the trajectory of returns to skill over, say, the post-war period — and has that changed recently?

Neal: It depends on where you look in the skill distribution. The return to a college degree has been very significant for a long time, but it has not grown in the last 10 years. The return to graduate and professional degrees has grown during that period. And you have more people going on to graduate and professional education at the same time that you do not have more people graduating from high school, and you might actually have fewer if you count things correctly. So I think what we are seeing is a great polarization in terms of the skills and capacities that people have and also the lifetime earnings that people can expect given their skills. We have a growing number of people who are becoming very well educated and highly trained by historical standards and another group that is poorly educated even by the standards of several decades ago.

RF: We have seen a lot of stories in the popular press about the growing amount of debt that many college students are incurring and whether that is a wise decision from a simple pecuniary standpoint. What is your view?

Neal: I think that's mostly silliness. The vast majority of people have an option, or at least people who live in urban areas have an option, of some state university where if they go and pay in-state tuition, and they work hard, and they get a degree that is marketable, the difference in what they will make over their lifetime as opposed to what they could have made if they went to work at, say, a retail store out of high school and tried to work their way up the ladder with no additional formal education is very large. The return on the time and money they spent on the college education is really impressive.

RF: There have also been some claims that a growing number of people are now going to college who are simply not well suited for it.

Neal: People aren't born as college material or not college material. There is a whole sequence that happens in terms of how their parents interact with them, how their teachers interact with them, and how their parents interact with the schools that determine whether they will have the cognitive skills, work habits, and emotional stability to function well in college. I think the real question is, given that the returns to college have remained so high for so long, why has there been such a tepid response in terms of the number of young men — and it is more true among males than females — who are being shaped and urged to become prepared to succeed in college?

RF: Why do you think the unemployment rate, especially the long-term unemployment rate, has remained so persistently high following the recession?

Neal: I don't have any favored theories that I would offer as explanations for large components of what we have seen. I do believe one reason that unemployment remains at 9 percent or more is that we have extended people's eligibility for unemployment insurance benefits in ways that were never even dreamed possible decades ago. And I think we have fairly clear evidence from many different states in this country and many different countries around the world that when people's benefits exhaust, they look much harder for a job and they become less picky about the jobs they are willing to take. I am not claiming that this is a huge portion of why unemployment is 9 percent rather 6 percent, but I find it inconceivable that the policies we have adopted with respect to unemployment insurance haven't played at least some modest role in keeping unemployment high.

RF: What are the big unanswered — or understudied — questions in labor economics, in your view?

Neal: I think the biggest question is one we have already talked about. The returns to formal education have been very high in the United States for a long time — at least from the 1990s through the present — but there have been very small changes in the number of males, in particular, who graduate from high school and finish college. So the question of why we live in a world where skills appear to be so valuable in terms of lifetime income and we still have roughly the same high school graduation rate among men that we had 30 or more years ago and college graduation rates among those who have graduated high school that have trickled up only a little bit is really puzzling. Why is that happening? Why aren't people responding to market signals that skills are really valuable and, as a result, acquiring more skills? A related question is: Why do the girls appear to get it? Unlike with males, there have been noteworthy changes in terms of educational attainment and skill development among young women over the same time period. I don't think we have answers to those questions, but I think they are key to understanding why we see the type of inequality that exists in the United States and what we can expect in the future.

RF: As the editor of the *Journal of Political Economy*, how would you assess the overall health of the publication process in economics? Are there things that could be done to improve its efficiency and more generally the dissemination of research?

Neal: This is a completely organic market. We see new journals start all the time and we see old journals fold; we see some journals that make you pay submission fees and we see some journals that don't; we see some journals that have very high standards and publish one out of 15 papers submitted and other journals that publish one out of three papers submitted.

So, overall, I think this organic publication process with no central governing body works pretty well. I believe there are very few papers worth reading that aren't published somewhere. If there is any inefficiency on that dimension it may be that papers are often published years after they should be because some editors allow the perfect to become the enemy of the good and waste months and sometimes years on revisions that have marginal value. So it may be the case that there are publication delays due to socially inefficient editorial behavior. But there are so many journals and so many different outlets that I find it very hard to believe there are good papers out there that don't see the light of day.

RF: Which economists have been most influential in shaping your research agenda and your thinking about economic policy issues?

Neal: I would say that the most important person who I ever had the privilege to interact with on a daily basis was Sherwin Rosen, who was a senior labor economist at Chicago when I was an assistant professor. He was both a mentor and a dear friend and was very willing and eager to sit and discuss ideas and help me learn about so many different areas of economics that I hadn't been exposed to. He also took the time to give me a pat on the back when I needed it and to give me a kick in the rear when I needed that.

I also learned a great deal from Bill Johnson and Steve Stern, my thesis committee chairs at the University of Virginia. Bill, especially, was very much like Sherwin in wanting to see how labor economics fit within the big picture of economics generally and how to always be aware of the opportunities to take ways of analyzing markets that were maybe more prevalent in other areas of economics and bring those into labor economics.

Even though I was on the faculty at the University of Wisconsin for only three years, John Kennan, whose office was next to mine there, also was in many ways like Sherwin, in that he knew a great deal about many fields of economics outside labor and was very willing to help me learn things that have improved my work and have made me a better economist. **RF**

The Uncertain Effects of Economic Uncertainty

BY CHARLES GERENA

"How Do Households Respond to Uncertainty Shocks?" Edward S. Knotek II and Shujaat Khan, Federal Reserve Bank of Kansas City *Economic Review*, Second Quarter 2011, pp. 63-92.

Question marks hang over many things lately — from the pace of the nation's recovery to the implementation of health care and financial market reforms. As a result, many believe businesses and consumers are holding back on spending decisions that would be costly to reverse.

But do sudden changes in uncertainty actually lead to significant changes in economic activity? Economists have tried to factor in varying levels of uncertainty into their models. But, note Edward Knotek II and Shujaat Khan of the Kansas City Fed, "the results have been mixed thus far, with some authors finding that fluctuations in uncertainty are a key factor in the business cycle, while others have found little such evidence."

Knotek and Khan tackled this question by looking at how households respond to changes in two measures of uncertainty: first, the monthly appearance of the words "uncertainty" or "uncertain" in *New York Times* articles about the economy and second, an index of stock market volatility.

Knotek and Khan found that increases in uncertainty don't necessarily lead to sharp pullbacks in household purchases and economic weakness. Rather, reductions in spending overall seem to be modest and take some time to occur. "In addition, movements in uncertainty account for only a small portion of the total fluctuations in household spending," the authors write.

They concede that, overall, recessions tend to coincide with spikes in uncertainty and that expansions tend to coincide with low or declining uncertainty. However, they cite prominent exceptions to those correlations.

"How Much of the Decline in Unemployment is Due to the Exhaustion of Unemployment Benefits?" Luojia Hu and Shani Schechter, Federal Reserve Bank of Chicago, Chicago Fed Letter No. 288, July 2011.

Although the pace of the recovery in labor markets has been painfully slow, the national unemployment rate has been generally falling since its peak in October 2009. Some of that decline, however, may be due to a rise in the number of people dropping out of the workforce as they lose their unemployment insurance (UI) benefits, which are paid out only to those actively seeking a job.

Luojia Hu and Shani Schechter, two economists at the Chicago Fed, used data on unemployment duration to identify how many workers were within five weeks of exhausting their UI benefits. Then the researchers tracked these so-called "exhausters" over time to see whether they found work, continued their job search, or gave up and left the workforce. They compared this group to "nonexhausters" — longtime unemployed who still had more than five weeks of eligibility for benefits.

"From 2008 onward, nonexhausters became increasingly likely to stay unemployed," Hu and Schechter write in their paper. Meanwhile, exhausters followed a similar trend until mid-2009, when they started becoming less likely to stay unemployed. "This visible split between the two groups' tendencies to leave unemployment, especially from September to December 2010, is not so much due to exhausters being more likely to find a job…but due to exhausters' higher likelihood of leaving the labor force."

"Adopting, Using, and Discarding Paper and Electronic Payment Instruments: Variation by Age and Race." Ronald J. Mann, Federal Reserve Bank of Boston, Public Policy Discussion Paper No. 11-2, May 2011.

Can't remember the last time you pulled a dollar bill out of your wallet? You're probably among the millions of Americans who almost exclusively use cards or electronic forms of payments for their convenience and security.

The Boston Fed decided to find out more about this shift in behavior by conducting a survey in fall 2008. A recent paper details some of the survey's findings, including demographic differences in how Americans have adopted new types of payment instruments.

For example, older adults (ages 45 years and older) appear much less likely to use debit cards or online bill payment, even when controlling for variables like income, education, and race. Also, a much higher percentage of blacks than whites use money orders. In general, "blacks are significantly less likely to use all of the products summarized here [paper, cards, electronic payments] except for debit cards," notes Ronald Mann, an electronic commerce expert at Columbia University who wrote the paper.

Mann reran his model and controlled for various characteristics of the survey respondents to attempt to account for this difference. Each time, the model yielded a similar racial divide — except when he narrowed his focus to blacks and whites with checking accounts. There, he found no significant differences in adoption rates of payments instruments.

"The analysis sheds relatively little light on precisely what is causing [many] blacks to shy away from noncash payment instruments," concludes Mann, "but it does suggest that it is closely related to whatever is keeping them from using mainstream institutions like checking accounts." **RF**

Wartime Wilmington

BY RENEE HALTOM

World War II shipyards brought a short-lived economic boom to the North Carolina port city

Those on the homefront during World War II remember exciting times and a thriving economy, but also the shortage of some basic necessities. Wilbur Jones recalls finding a creative solution: Walking across the street to trade with German prisoners of war.

Jones was just 5 years old when Europe went to war in 1939. His hometown is Wilmington, N.C., located on the Cape Fear River, less than 30 miles from the mouth of the Atlantic Ocean. The city hosted 551 POWs at three camps spread across the city toward the end of the war. "We couldn't always get bubble gum and candy at our 'mom and pop' neighborhood stores," due to wartime sugar rations, he remembers. "The only place to get it was the German prisoners." He and his friends got sweets in exchange for paper for the prisoners to write letters home. "You could just walk up to the fence."

Wilmington residents celebrate the christening of the S.S. Zebulon B. Vance *— the first ship launched out of the North Carolina Shipbuilding Company, on Dec. 6, 1941 — with no idea the Pearl Harbor attack that drew the United States into the war would take place the following day.*

In addition to hosting three of the nation's roughly 500 POW camps, Wilmington was a hotbed of defense activity during the war. The metropolitan area housed bases for all five branches of the military, including 50,000 soldiers at Camp Davis, an Army training facility. The state's largest port shipped materials to allies and imported scarce petroleum from the Gulf of Mexico and Brazil. The Atlantic Coast Line Railroad, then headquartered in Wilmington, transported equipment, defense workers, and troops. Most important of all to Wilmington's economy was a privately run shipyard that became the largest employer, and the largest defense producer, in the state that housed more servicemen than any other in the country.

The North Carolina Shipbuilding Company (NCSC) opened in 1941 as one of a handful of shipyards constructed nationally in an emergency effort to expand the nation's cargo shipping fleet for the war. The NCSC employed an estimated 21,000 people at its peak, many of whom brought their families to Wilmington. The city's population surged from 34,000 before the war to perhaps more than 100,000, all within a span of two or three years. The locals coped with the population explosion, massive construction projects, overcrowding and food shortages, and even the threat of enemy attack.

Prophetic Production

"Let me give you a picture of what Wilmington was like in 1940," says Jones, speaking as a resident, historian, and military veteran. "It was the hub of southeastern North Carolina. It still is, but the area then was extremely rural." The downtown area, he recalls, "was probably no more than one half mile by one half mile. This was where all the financial institutions, theaters, restaurants, department stores, doctors, and dentists were located. Anytime someone needed something, they'd have to go downtown."

Wilmington's small-town institutions were totally unprepared for the economic boom brought by the war, but the shipping industry was not. Congress had the "prophetic foresight" to pass the Merchant Marine Act in 1936, as described by Admiral Emory Land, head of the newly established Maritime Commission. The act authorized a massive shipbuilding program to restore and modernize the nation's aging and outdated merchant

PHOTOGRAPHY: COURTESY OF NEW HANOVER COUNTY PUBLIC LIBRARY fleet, comprised of privately owned cargo ships that would become a naval auxiliary in times of war.

The Maritime Commission's objective was to build 50 ships per year over 10 years — a lofty goal considering that the nation produced a grand total of two dry cargo freighters in the 15 years prior. Nearly all of the nation's 1,375 merchant ships before World War II were two decades old and obsolete. New shipyards and technologies were in desperate need.

The increasing war threat upped the ante. By mid-1940, less than one year into the conflict, Britain — which had by far the largest fleet in the world — had lost 10 percent of its shipping capacity, mostly as a result of the devastating German U-boat submarine campaign. France had already fallen. Germany controlled the coast of Europe and threatened to strangle Britain's resources. Without an adequate ship supply to transport weaponry, equipment, and soldiers to the front lines, the war was starting to look dismal for the Allied forces, which the United States would eventually join.

The shipbuilding program was accelerated as the war threat mounted, and production targets expanded considerably in 1941. Part of the impetus was Congress' decision that year to allow President Roosevelt to supply ships to Britain and other Allied powers under the "Lend-Lease" program, despite the United States being technically still neutral. The strategic headway made between the wars helped make possible what war historians view as one of the most remarkable feats of engineering and production in human history: The United States built a total of 5,777 cargo vessels under the Maritime Commission between 1939 and 1945.

An early task was to choose cities to host additional shipyards, which would be privately run with the help of federal subsidies. The offices of the Maritime Commission were flooded with letters from politicians and other local interests throughout the country lobbying to be one of the chosen locations.

Wilmington offered an ideal site. The Cape Fear River's estuary boasted deep water, and the region's temperate climate limited the harshness of year-round outdoor production. The Atlantic Coast Line Railroad was headquartered there, which would allow the 250,000 parts to each ship to be prefabricated in 250-ton sections offsite, traveling by railcar for final construction at the yard. The shipyard was located several miles up the Cape Fear River, which allowed ships to be launched without immediately becoming vulnerable to enemy attack. Perhaps most important was the large, cheap labor supply that Wilmington offered. Swathes of unemployed, lower-skilled men were seen as adaptable for training in various ship-related trades. Without much other industry around, a Wilmington shipyard would face little competition for trade laborers compared to the larger cities that were vying for yards.

The Wilmington yard was announced on Jan. 10, 1941, and ground broke on February 3. Within three months — under the shadow of increasing Allied ship losses and likelihood of U.S. involvement in the conflict — enough progress had been made to lay keels for the first two vessels.

The NCSC's first vessel, the *S.S. Zebulon B. Vance*, sailed on Dec. 6, 1941 — the day before the horrific attack on Pearl Harbor that officially drew the United States into war.

High Marks for Wilmington

The NCSC produced 243 ships in its five years of operation. Half were the famed Liberty ships, designed for quick assembly line construction, not for aesthetics. Upon first sight, President Roosevelt declared them "dreadful looking objects," and they became known as Ugly Ducklings, even in official correspondence. Liberties were designed to carry 10,000 tons of cargo — such as 2,840 jeeps, 440 light tanks, or 234 million rounds of rifle ammunition.

Once up and running, the shipyards' productivity improvements were astounding. In early 1942, a Liberty ship took an average of 241.6 days to complete. In December of that year, 82 Liberty ships were completed nationally in an average of 55 days. The structure of the federal subsidy was designed to reward productivity and encourage friendly rivalry between the yards. One California yard produced a Liberty ship in barely more than four days as a publicity stunt.

Stunts aside, the Wilmington shipyard had one of the top production records. The NCSC was one of five yards to earn consistently high marks from the government's Truman Committee, created to ensure efficient defense production. The western yards excelled in speed, while Wilmington's had the lowest dollar cost per ship of all the yards building Liberty ships — partly because southeastern wages were low — and also ranked second in productivity.

Margaret Rogers, a young child during the war, used to cross the Cape Fear River Bridge to check out the ships. "There were so many stockpiled there that they ran from the river, from the highway all the way back to the state port and you could literally step from one ship to the other without touching the water for miles," she remembers. (Rogers relays her experience in "World War II: Through the Eyes of Cape Fear," a commemorative website created jointly by the University of North Carolina Wilmington and the Cape Fear Museum. It's at http://library.uncw.edu/capefearww2/.)

Boomtown

Beyond the walls of the shipyard, Wilmington embodied the wartime incongruity of profit and economic boom juxtaposed with shortage, sacrifice, and discomfort.

All of Wilmington, it seemed, found profit. Retailers providing clothing, food, and entertainment formed the nucleus of the social scene. Banks and real estate agents served the new residents. Truckers hauled supplies between Camp Davis and Camp Lejeune, both newly opened in early 1941. The city became a madhouse on weekends when soldiers flooded downtown for recreation.

"You stood in line everywhere," Helen Dobson told *Wilmington Magazine* in 1995. She was a schoolteacher who took a summer job organizing housing for shipyard workers.

"If you were lucky enough to get a [restaurant] booth or table, you had to keep your hand on your coffee cup because, I'll tell you, they would grab it up and take it! They want to get more people in there and move you out!"

As with a lot of wartime boomtowns, the city's housing stock couldn't quite keep up. One in five Americans relocated during the war, many more than once, and most of those who relocated did not return to their original hometowns. One in eight Americans left farm life for good. Cities like Wilmington were their destination. Right away, tiny Wilmington was short 3,000 housing units — even though half the shipyard workers commuted up to 95 miles a day from their homes outside the city. The shipyard leased eleven 100-person trailer buses to transport workers, many of whom continued to work on local farms. Shipyard managers turned a blind eye to summertime absenteeism so workers could tend to their crops as necessary. Such workers earned the pride of supporting two wartime necessities: defense and food production.

Eventually the federal and local governments would build more than 6,000 new housing units, and private groups another 1,400, all within walking distance from the shipyard. But the housing shortages persisted — and since ships couldn't be produced without workers, families were urged to rent out rooms in their houses as a patriotic gesture. Everyone went along, if a bit grudgingly at first ("Southern hospitality only went so far," Wilbur Jones writes in one of his memoirs of the war experience.) Few people were willing to rent to single women, which posed a serious problem for the teachers, nurses, and shipyard women who filled the city's labor gaps.

When housing couldn't be found, residents simply doubled up. It was common for men to rotate the use of a single bed according to shipyard shift; when one's shift started another turned in for sleep. Building codes were sometimes cast aside. One local shipyard worker reported dividing his house into five separate apartments, finding immediate takers for the cramped quarters. The *Wilmington Morning Star* reported an instance of 40 shipyard workers sharing a home with one toilet and a single bathing area.

Food was another serious problem. Meat, butter, sugar — all the meal staples were rationed. Not all cities experienced the shortages felt in Wilmington; the Office of Price Administration (OPA) had determined food and ration allocations based on the city's lower prewar population. Families waited in store lines for hours on mere rumors of a new beef shipment. The city's handful of restaurants had to close or serve scraps after running through their ration points. The OPA couldn't prevent black markets from arising for virtually all rationed goods; the Raleigh OPA office deemed Wilmington the state's worst violator of price controls.

Despite the tough times, community prevailed. "Everybody in the neighborhood took care of everybody else. We didn't have homeless people in our neighborhood unless the person decided that was what they wanted to do. We didn't have people who were hungry unless they were just so proud that no one knew they were hungry," Rogers remembers. Her dad worked for the railroad, and she recalls that cargo filled with basic necessities was sometimes "accidentally" spilled, workers sharing the contents with the neighborhood.

A byproduct of all the war activity that flocked to Wilmington was that it displaced the labor supply of surrounding farms. This might have exacerbated the food shortage, except the POWs again proved helpful. Most were held in the main camp, located in a large park right in the middle of an old established neighborhood. The location was chosen so farmers could easily bus the prisoners out to work on local dairy farms. The prisoners labored there without shackles, but never tried to flee; after all, imprisonment meant freedom from combat. Many formed relationships with the farmers and corresponded with them for years after the war.

War Comes to Wilmington

Wilmingtonians had more than shortages and overcrowding to worry about. As soon as the United States entered war, residents became acutely aware of how vulnerable they stood as a militarily strategic town on the coast of the Atlantic. The city was at the southern end of so-called Torpedo Junction, a stretch of waters infested with German U-boats. In the first six months of 1942 alone, 397 ships were sunk off the East Coast, including more than 80 off the coast of North Carolina.

"Our government put us on pins and needles to anticipate that at any time, the Germans could attack by land, sea, or air," Jones recalls. "We were put on constant footing with air raid drills and blackout drills [since city glare could illuminate American ships patrolling the coast], looking for German planes. Goodness knows where they were supposed to be coming from, as they didn't have any aircraft carriers. But we didn't know that," he says. "What we did know was that submarine warfare was going on because we had evidence washing up on the beaches."

The threat of attack led to some local lore that is disputed to this day. Many Wilmington residents recall the night of July 24, 1943, when a German U-boat reportedly fired several shells at the Ethyl-Dow chemical plant, located on Kure Beach, 15 miles south of Wilmington. The plant produced a special compound for aviation gasoline. The shots missed, the story goes, and landed on the other side of the Cape Fear River. During the blackout that night, even the round-the-clock shipyard went dark, which residents knew meant it was more than a drill; attack — or further attack — could be imminent. Thankfully, none followed.

But the alleged U-boat incident was never proven, and a critic — another Wilmington-based veteran, David Carnell, who died in April — has argued that German records establish U-boat activity in the region had ended before then.

"Some people think the attack is a myth," Jones says, "but I've accumulated enough evidence to say it's not. It happened." If true, it apparently would be the only German attack (apart from failed sabotage missions) to have taken place on American soil during the war.

"Back to a Sleepy Little Town"

Just as remarkable as the boom's magnitude was how quickly it evaporated with the war's end in 1945. The Army closed shop at Camp Davis and Fort Fisher the year before, and the Air Force followed in 1945. The last vessel was launched from the North Carolina Shipbuilding Company on April 16, 1946. Wilmington's economy collapsed, and its 6-digit population plunged to roughly 50,000. Thousands of veterans returned to the city but there were few jobs for them. Wilmington's somewhat parochial culture wasn't always welcoming to would-be transplants, and many eventually moved on.

That's what makes Wilmington's World War II experience unique, Jones says. "The thing about [other war boomtowns] like Philadelphia, Long Beach, San Pedro, Norfolk, Newport News, is that after the war, they continued to thrive. There was no bell curve for them," Jones says. "Everything went back to Wilmington being a sleepy little town."

The $20 million shipyard that had once employed up to 21,000 people became the center of a tug of war between the Maritime Commission and local interests looking to regenerate Wilmington's economy. Nearby shipyards weren't eager to welcome peacetime competition, and with perhaps a little nudging, the Maritime Commission decided to place the NCSC, along with three West Coast shipyards, in a dormant reserve status while international tensions subsided. This prevented the shipyard from being sold or commissioned for alternative use. (It wasn't until the end of 1949, after five years of negotiations, that the Maritime Commission finally leased the facility to the state of North Carolina to become the site of the state ports authority. The land itself was locked in legal battle until 1971.)

Another major blow to the economy came when the Atlantic Coast Line Railroad abandoned Wilmington as its headquarters in 1960. Wilmington wouldn't see another boom until the completion of the I-40 highway in 1990, which provided a vital link from the ports to the inland Mid-Atlantic population, once again turning the city's prospects around. Along with the North Carolina State Ports Authority, today Wilmington hosts a campus of the University of North Carolina, a tourism industry that pumps nearly $400 million into the local economy each year, and the largest television and movie production studio outside of California. Its population is about 106,000 — roughly equal to its size during the war.

Though the economic boom belied sometimes painful conditions, many Wilmington residents remember World War II as one of the most exciting times of their lives. The city bustled with an energy and purpose it had never experienced. Though the boom faded, the city's wartime heritage has remained. Many of the buildings — even some of the hastily constructed housing projects — are still in use today. Even more potent for the war's witnesses is the memory of a handful of years when the city took on new life. **RF**

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REVENUES

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a state with high exposure to capital gains, is about to find out. Last year, the state passed a law limiting the amount of capital gains revenue the state can include in its operating budget. Anything over $1 billion will go into a rainy-day fund.

The Massachusetts strategy does nothing to improve revenue forecasting, but bigger rainy-day funds (especially in states that experience dramatic revenue swings) appear to be the best defense against inevitable forecasting errors in an increasingly unpredictable economic environment. **RF**

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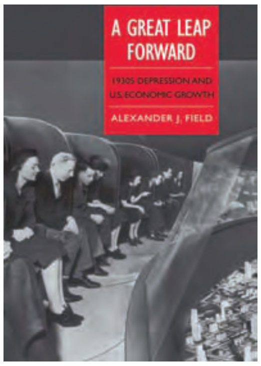
BookReview

Depression and Innovation



A GREAT LEAP FORWARD: 1930S DEPRESSION AND U.S. ECONOMIC GROWTH

BY ALEXANDER J. FIELD
NEW HAVEN: YALE UNIVERSITY PRESS, 2011, 387 PAGES

REVIEWED BY DAVID A. PRICE

The 20 years following World War II saw an extraordinary period of prosperity in the United States. While the business cycle had not disappeared — there were occasional brief recessions — the period is remembered today for its burgeoning middle class, rapidly rising output, and modest inflation. When did the leaps in productivity occur that laid the foundations for this prosperity? During the war? Or perhaps during the boom years of the 1920s?

Economic historian Alexander Field of Santa Clara University argues in *A Great Leap Forward* that the answer is "none of the above." For Field, the Depression-era decade of the 1930s — despite its financial crisis and unemployment — was a period of greater technological and organizational innovation than either the 1920s or the war years, and one that made a greater contribution to America's economic development. The 1930s represent a "golden age," Field says, that "experienced the fastest sustained growth in the material standard of living in U.S. economic history."

Field draws this conclusion based primarily on rates of total factor productivity (TFP) growth; TFP, a measure of productivity in relation to the supply of all inputs, can be understood (with some exceptions) as a measure of innovation. The numbers are clear: TFP grew faster during the period of 1929-1941 than in other 20th-century periods. Although inputs increased only very slightly, if at all, from 1929 to 1941, real output grew at a rate between 2.3 percent and 2.8 percent annually. Not only was TFP growth higher in the 1930s, it was also broader-based; while TFP growth in the 1920s was almost entirely within manufacturing, in the 1930s it also gained strongly in other sectors, including wholesale and retail, transportation, and public utilities.

No one area of innovation was responsible for the 1930s advance in productivity. A major cause, in Field's view, was public infrastructure spending, especially the building-out of the highway network; this, in turn, led to a transforming of transportation and distribution through the integration of railroad shipping and trucking. In addition, the decade brought significant innovations in chemistry and materials that improved equipment and structures and extended their lives. Finally, employment in private research and development in manufacturing more than quadrupled.

Field's account of the course of progress between the wars is closely argued and firmly grounded in statistics. It is a valuable reminder that the 1930s, although ruinous in terms of unemployment, were far from bleak in terms of technological and business innovation.

At the same time, a closer analysis indicates that much of the TFP growth took place in one year, 1941. Some 30 percent of TFP gain from 1929 to 1941, and 22 percent of TFP gain from its 1933 trough, shows up in that single year. While it's true that the United States did not enter World War II until the last weeks of 1941, the question remains: To what extent was the concentration of TFP growth in that year a product of President Roosevelt's prewar buildup, how much of it was due to highway spending and the other phenomena that Field catalogs, and how much of it came from other, unexamined influences emerging in the early 1940s? Field rejects any influence from the buildup on innovation at that point on the basis that "only a small fraction" of total military spending for the war had already been spent.

With regard to the war years themselves, Field concedes that some advances came about through the war effort, such as radar, penicillin production, and atomic energy, but holds that "there is relatively limited evidence of beneficial feedback from wartime production to civilian activity in the postwar period." Even with regard to the wartime spinoffs, he believes the war may have done no more than accelerate developments that were already on course to happen regardless.

Such an assessment, however, seemingly would require a micro-level study of the development of these technologies and their prewar trajectories, a type of analysis that Field eschews here. The counterfactual question — what would have happened without the war? — is, of course, impossible to resolve conclusively. But it does appear likely that at least some important innovations would have come about much later. Atomic power is one. Another is the commercial production of penicillin, stymied until rescue came from a citric-acid manufacturer, Charles Pfizer & Co. of Brooklyn, which applied its unique fermentation expertise to the problem — a cross-disciplinary breakthrough that would have been unlikely without the exigencies of war.

It goes to show that innovation does not yield easily to quantitative analysis. Nonetheless, *A Great Leap Forward* will no doubt stimulate scholars of the subject for years to come. **RF**

The Federal Presence in the Fifth District

BY R. ANDREW BAUER AND JAKE BLACKWOOD

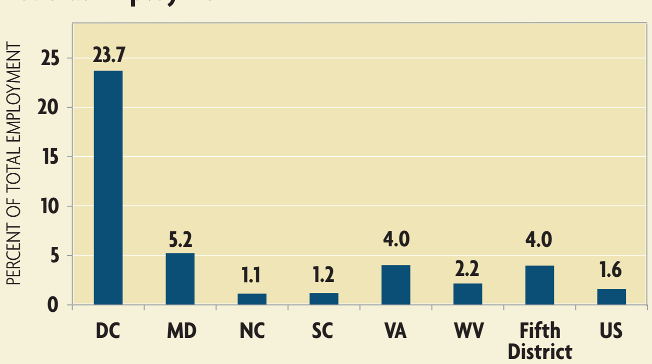
The Fifth District has a very diverse economy with strong manufacturing, trade, and service sectors. The District economy also benefits from the presence of the federal government from the capital in Washington, D.C., to the numerous civilian and military facilities located throughout the District. Government employment and spending is an important source of demand, attracting businesses to the region to provide goods and services to various government agencies. In many cases, these goods and services are technical in nature and require highly skilled or educated workers and sometimes also include capital-intensive production processes. These additional resources add to the District's productive capacity and higher rates of economic growth. In addition, government employment and spending has traditionally brought a source of stability to the District economy, acting as a buffer during economic downturns.

Yet with the recent focus on the budget deficit — both the short-term deficit as well as long-run fiscal imbalances — the benefit of having the federal government's presence and influence in the economy may become a potential source of uncertainty. The impact of budget cuts would vary across the Fifth District as the influence of the federal government varies in each jurisdiction, both in terms of employment and contract spending.

Civilian Employment

A primary conduit through which the government influences the economy is the civilian job market. By hiring and laying off federal employees, the government can tangibly boost or dampen a location's economy. This is particularly true in the Fifth District. In March 2011, more than 500,000 people in the Fifth District were employed directly by the federal government, many of them concentrated in the Washington, D.C., metro area. As the District's largest employer, the federal government could greatly affect the regional job market through future budget cuts.

Federal Employment



SOURCE: U.S. Office of Personnel Management

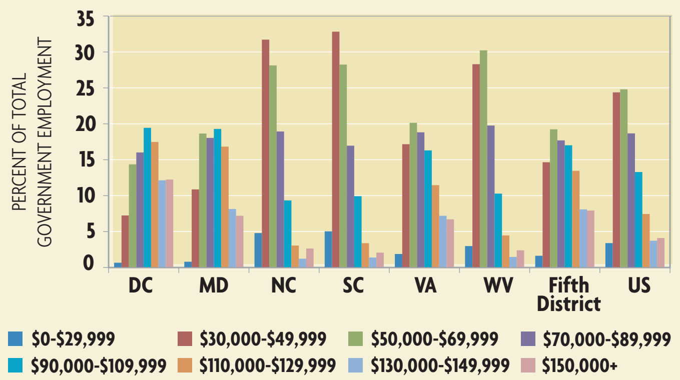
The influence of government employment can be further quantified by some other measures. One approach is to describe its presence in terms of the government share of total civilian employment. Four percent of Fifth District citizens were employed by the federal government (excluding the postal service and military) in March 2011, while federal employees made up only 1.6 percent of workers in the United States as a whole. At the state level, federal government shares of employment were as high as 23.7 percent in D.C., while Maryland and Virginia also posted high shares of 5.2 percent and 4.0 percent, respectively (see chart). Government shares of employment were notably lower in West Virginia and the Carolinas, although West Virginia's share (2.2 percent) was still higher than the national average.

Perhaps the geographic concentration of federal government jobs in the Fifth District helps explain the strength of the relationship between this region and the federal government. In March 2011, one-quarter of all federal government workers were employed in the Fifth District. D.C. alone accounted for 8 percent of federal employment, with Virginia (6.9 percent) and Maryland (6.2 percent) also contributing a notable amount of workers.

Fifth District citizens not only make up a disproportionate amount of federal government payrolls, they also take home larger paychecks. In the United States as a whole, 27.8 percent of federal government workers received a salary of less than $50,000 in March 2011, whereas only 16.3 percent of all District federal employees earned less than $50,000. District employment was also more heavily concentrated in higher-paying jobs, with 46.8 percent of federal employees making more than $90,000 per year, while in the United States as a whole, only 30.2 percent of federal employees took home $90,000 or more in salary (see chart on page 48).

As one would expect, not all states in the Fifth District reap the same benefits from the presence of the federal government. Indeed, government influence differs greatly in the farthest states from the government seat. For example, the Carolinas have smaller shares of federal workers than both the Fifth District and the nation as a whole. Moreover, the salary distribution of federal government employees suggests that federal workers in West Virginia and the Carolinas earn less than those in D.C., Maryland, Virginia, and the nation as a whole, although some of this difference may be offset by cost of living adjustments. More than 36 percent of federal workers in the Carolinas are paid less than $50,000 per annum, and less than 17 percent make more

Federal Government Salary Distribution by State



SOURCE: U.S. Office of Personnel Management

than $90,000 a year. According to these data, federal employment in these states underperforms both in terms of quantity and quality in comparison with the rest of the Fifth District.

Defense Employment

Although budget reductions typically carry implications for most departments and agencies, a common thread among the various proposed federal budgets this year is revision to defense spending. Most proposals address the rate of growth in total military spending, calling for tighter caps on spending rather than broad cuts. Nonetheless, many plans require absolute cuts to certain defense programs, which could have a more immediate effect on employment and the economy. This carries a good deal of weight in the Fifth District, where the Departments of the Army, the Navy, and Defense employ more than 30 percent of civilian federal government employees.

Furthermore, the employment statistics above understate the effect of defense budget cuts on Fifth District employment because they do not cover military personnel. For many citizens, the numerous military bases located in the Fifth District are the most visible representations of the federal government's influence on employment. From Fayetteville, N.C., home of Fort Bragg, to the Beltway area around Washington to the U.S. Navy installations of Hampton Roads, the military's presence is especially constant and vital to the economy. For these places, the military is an important engine of local employment. (See also "The Benefits and Burdens of Expanded Military Bases," *Region Focus*, First Quarter 2011.)

According to 2009 data, more than 250,000 military personnel were stationed in the Fifth District, making it home to 23.5 percent of the nation's military. While having a low share of civilian government employment, North Carolina accounted for 10.3 percent of all military personnel in the nation — the highest share in the Fifth District and the third highest in the nation. Virginia had the next highest share (5.8 percent), followed by South Carolina (3.0 percent), Maryland (2.8 percent), D.C. (1.2 percent), and West Virginia (0.1 percent). Such high concentrations of military personnel in the District would make military cuts particularly significant to the region.

Budget cuts may also vary in their effect on different branches of the military, making the composition of the military in the District a notable factor. Within the Fifth District, a large majority of active military were Army personnel (41.3 percent), followed by the Marine Corps (30.0 percent), and the Air Force (16.2 percent). Notably, 30.1 percent of all Marine Corps personnel in the United States are located in North Carolina, home of Camp Lejeune, the largest Marine Corps base on the East Coast. Also, the Navy has stationed 36.4 percent of its personnel in the Fifth District, although naval personnel account for only 7.4 percent of the military in the region.

These figures and percentages are bound to shift not only in response to budgetary actions, but also in response to the shifting structure of the military. The Base Realignment and Closure plan from 2005, or BRAC, details the shifting of personnel across various institutions and, in some cases, the closure and expansion of installations. By the time of the scheduled completion date in mid-September, the Fifth District will have ultimately gained military jobs through the BRAC plan, adding 1,368 net jobs in the process, despite the closure of 11 installations in the District. These gains will not be shared equally, however, as four of the six jurisdictions will lose military personnel due to the plan. Though Virginia will gain 5,101 military jobs, and South Carolina is set to gain 1,464 jobs, D.C. will lose almost 3,000 military personnel and Maryland will lose more than 1,500 defense jobs. North Carolina and West Virginia will both lose less than 1,000 military jobs due to the realignments and closures.

Overall, both military and civilian employees in the Fifth District are likely to be affected by federal budget cuts. Even if budget cuts do not lead to outright eliminations of military or civilian positions, they could yield further pay freezes or reductions. Pay cuts would almost certainly affect the Fifth District more than some other areas, as more highly paid government workers generally shoulder a disproportionate amount of the burden when pay is cut. Whether through job loss or salary reduction, the potential impact of budget cuts causes uncertainty in the Fifth District economy via the labor market.

Federal Contract Spending

In addition to employing workers, the federal government influences the economy through fiscal expenditures. There are many forms of government expenditures: contracts, grants, loans and guarantees, direct payments, and insurance, among others. The government most directly interacts with the economy by purchasing goods and services through contracts with private sector businesses. Since the nation's capital is located within the Fifth District, a sizeable number of those contracts are with businesses located in the District. Indeed, looking at federal contract spending for fiscal year 2010, three of the Fifth District's jurisdictions ranked in the top 10 recipients among all states.

The federal government's demand for goods and services within the District impacts the economy in a number of ways. The types of goods and services that the government purchases will affect the region's industry and the location decisions of businesses. In many cases, businesses will move to be closer to federal departments and installations, and as a consequence, there is often a clustering of contractors around these facilities and installations. In addition, the types of goods and services demanded by government are sometimes highly technical in nature and involve a longer production cycle. Defense spending, which is the second-largest expenditure in the federal budget after health care, is a good example. Many defense goods and services are highly technical and can require years of research, development, and production. The firms that enter this market, defense contractors, employ a large number of highly skilled and educated workers and have longer time horizons as their contracts often stretch over several years. For a local economy, this provides the benefit of attracting high-paying workers to an area as well as providing stability given the longer-term nature of the projects.

At the same time, reliance on government contracts brings risks of its own. For some of these goods and services, especially defense and basic research, the government is the only market. Should the contract be canceled due to shifting priorities or budget cuts, it is unlikely that these businesses would be able to find a purchaser in the private sector for their good or service.

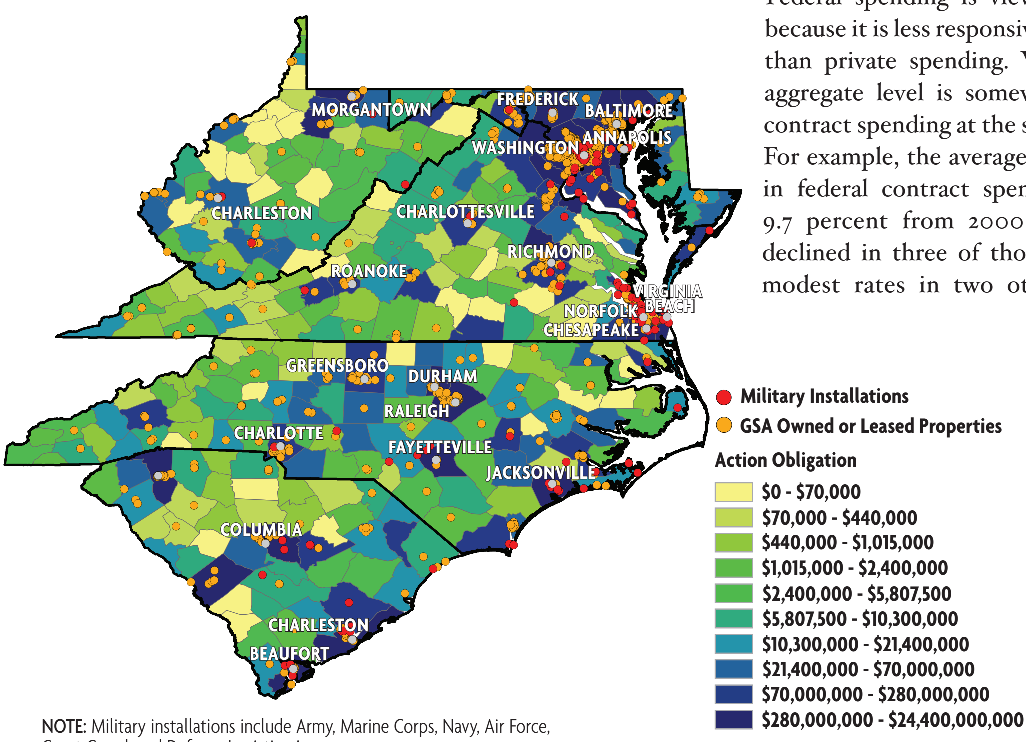
Federal Agency Spending Within the District

While the Fifth District receives a large amount of federal contracting each year, the location, source, and type of spending vary considerably across the District. Not surprisingly, Virginia, Maryland, and D.C. are the jurisdictions that receive the most federal contract dollars each year (see map). In fiscal year 2010, Virginia received nearly $58 billion in federal contracts, second only to California, while Maryland received nearly $26 billion, fifth highest among all states. D.C., received roughly $21 billion, seventh among all states. South Carolina, North Carolina, and West Virginia, on the other hand, received much less (roughly $8 billion, $5 billion, and $2 billion, respectively).

To gauge the impact of contract spending on a state, it is useful to scale the spending to get an idea of the size of the expenditures in proportion to regional economy. As such, contract spending as a percentage of gross state product is greatest for D.C. (2.0 percent), with Virginia (1.4 percent) second and Maryland (0.9 percent) third. Across the entire Fifth District, federal contract spending represents 0.8 percent of the District's economy. Overall federal contract spending for fiscal year 2010 was $537 billion, representing 3.7 percent of gross domestic product for the United States in 2010. The percentage has increased for all of the jurisdictions within the Fifth District over the past 10 years with the greatest increases in D.C., Virginia, and Maryland. The increase is related to the expansion in government over the past decade — a significant amount resulting from the creation of the Department of Homeland Security as well as an increase in defense-related spending due to ongoing military operations.

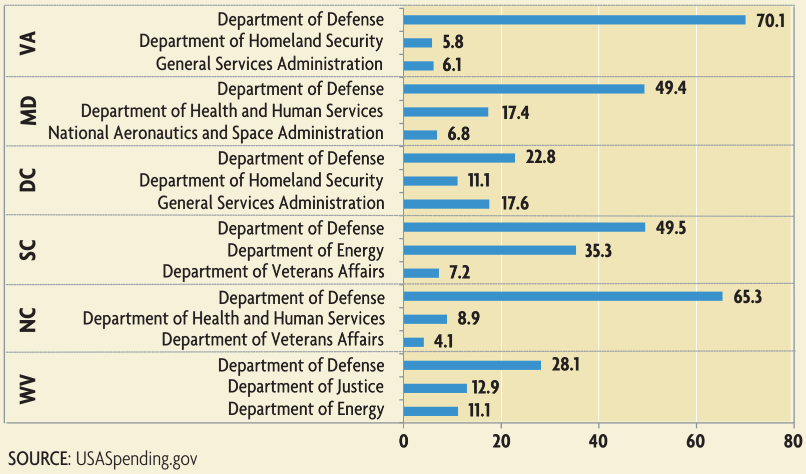
Federal spending is viewed as an economic stabilizer because it is less responsive to downturns in the economy than private spending. While federal spending on an aggregate level is somewhat stable over time, federal contract spending at the state level can vary considerably. For example, the average nominal year-over-year growth in federal contract spending for North Carolina was 9.7 percent from 2000 through 2010, but spending declined in three of those years and increased at very modest rates in two other years. Similarly, in D.C., contract spending fell in 2003, increased at very modest rates in 2004 and 2007, and had much stronger growth in other years; it averaged 10.9 percent over the 11-year period. For the entire Fifth District, however, federal contract spending averaged 10.3 percent, increasing every year in nominal terms except for 2010 when spending was unchanged from 2009.

Federal Contract Spending in Fiscal Year 2010



NOTE: Military installations include Army, Marine Corps, Navy, Air Force, Coast Guard, and Defense Logistics Agency.
SOURCES: Federal Procurement Data System (FPDS); Department of Defense; U.S. General Services Administration

Federal Contract Spending by Agency
Percent of total spending, 2000-2010



SOURCE: USASpending.gov

Federal Spending by Type

The type of federal spending also influences the local economy through the type of industry and businesses that it attracts. The chart above shows federal contract spending in each District jurisdiction by the top three funding agencies from 2000 to 2010. Some interesting patterns emerge when looking at spending through this lens. Not surprisingly, the Department of Defense is the primary source of contracting dollars in each of the jurisdictions in the District. Research and development on defense-related technology is a strong component of all contract spending within the District, as is spending on defense-related goods such as aircraft carriers, drones, camouflage, ammunition, and combat vehicles. The Defense Department also contracts for technical support services for its data systems and logistical support for its many programs.

As the chart indicates, there are notable differences in the proportion of defense spending relative to total spending. In Virginia and North Carolina, Department of Defense contracts accounted for 70 percent and 65 percent, respectively, of all contract dollars from 2000 to 2010. A number of factors account for the high percentage of defense spending in both states — notably, the Pentagon, the Norfolk shipyard, and the various military bases in Virginia and North Carolina. In Maryland and South Carolina, defense contracts accounted for nearly half of all contract dollars over the past 11 years; in D.C. and West Virginia, it was considerably less, closer to one-quarter of all spending. Overall, it is clear that the Fifth District has benefited from federal spending on defense.

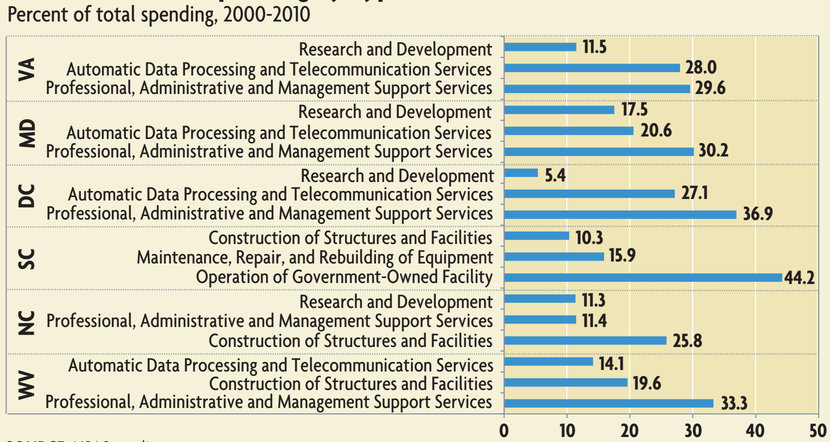
Civilian contract spending by agency varies considerably across the District. Not surprisingly, Homeland Security spending is strong in Virginia and D.C. Health and Human Services (HHS) contract spending is strong in Maryland, in part due to institutions such as the National Institutes of Health, the Centers for Medicare and Medicaid Services, and the Food and Drug Administration there; HHS spending is also strong in North Carolina. In South Carolina and West Virginia, the Department of Energy (DOE) is one of the largest contracting agencies, also partly as a result of having significant installations in those states.

As one would expect, the goods and services being provided to these agencies vary considerably across the District. The chart below shows the top three services that have been contracted from 2000 to 2011. There are some commonalities, however. In most jurisdictions, agencies contract with private businesses for professional, administrative, and management support service. These services provide agencies with program management, logistical support, technical assistance, and systems engineering.

Agencies also frequently contract with businesses for information technology services such as data storage, systems development, telecommunications network management, and systems analysis. Along with these services are purchases of data processing equipment, software, supplies, and support equipment — the category of goods most purchased by the government in the Fifth District over the past 11 years, representing nearly one-quarter of all goods purchases. Purchases of communication, detection, and coherent radiation equipment were the second-highest over that period — roughly 10 percent of all goods contract spending.

Spending on research and development is also strong within the Fifth District and the type of research conducted is very broad, ranging from research in defense-related systems and applications to energy research to biomedical research. In Maryland, research and development includes defense services; defense electronics and communication

Federal Contract Spending by Type of Service
Percent of total spending, 2000-2010



SOURCE: USASpending.gov

equipment; space science, applications and operations; biomedical; and defense missile and space systems. In Virginia, contract spending on research and development focuses on the defense industry, with "other defense" and defense services receiving the greatest amount of research and development contracts. In addition, R&D spending in Virginia includes defense electronics and communication equipment, defense missile and space systems, and tank and automotive systems, among other research types. In North Carolina, the other Fifth District jurisdiction with a relatively high percentage of research and government contracting, contracts for research are focused on biomedical; basic research, including basic research in biomedical, AIDS, and defense services; defense missile and space systems; and other defense and health-related work.

Agencies also contract private businesses for building construction. This is true across the District, but as a percentage of total contracts, construction spending is considerably more substantial in the Carolinas and West Virginia.

Conclusion

In conclusion, the federal government has a strong influence on the Fifth District through its hiring and its purchasing of goods and services from the private sector. The District has a much higher percentage of federal workers than other areas of the United States, and those workers, on average, receive higher salaries than federal workers in other parts of the country.

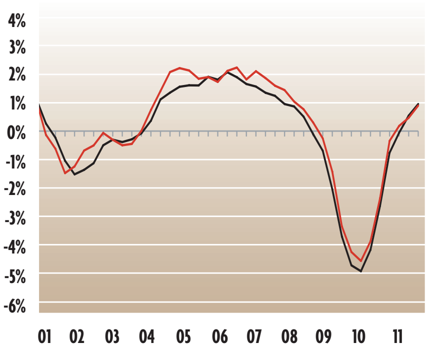
The District benefits from the presence of numerous military installations. Federal contract spending attracts businesses to the region to provide services and goods to the various government agencies at these installations. In addition, government contracting attracts workers, often with specific skills or advanced degrees, to the region. As a consequence, the District labor market is stronger both in the underlying demand for workers as well as the quality of the supply of workers.

With the possibility of budget cuts in response to the federal deficit and longer-term fiscal imbalances, there is concern about the impact of those cuts on the Fifth District economy. Reducing the deficit and putting the federal government on a fiscal sustainable path is a long-term positive for the United States and the District economy. Yet it also creates uncertainty for workers and businesses within the District who have, in the past, benefited from the federal government's influence on the regional economy. **RF**

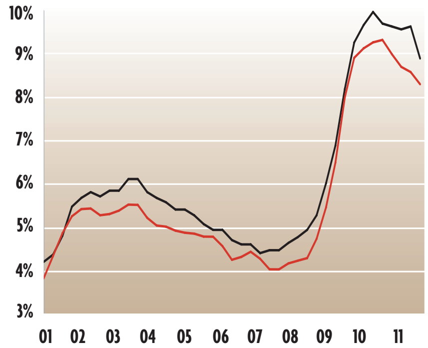
State Data, Q1:11

	DC	MD	NC	SC	VA	WV
Nonfarm Employment (000s)	**714.6**	**2,511.3**	**3,877.6**	**1,814.8**	**3,647.2**	**748.6**
Q/Q Percent Change	0.0	-0.2	0.5	0.4	0.4	0.1
Y/Y Percent Change	1.3	0.7	0.6	1.1	1.1	1.0
Manufacturing Employment (000s)	**1.2**	**112.1**	**435.0**	**210.1**	**231.1**	**49.3**
Q/Q Percent Change	0.0	-1.3	0.9	0.5	0.7	0.2
Y/Y Percent Change	-7.7	-2.6	1.0	2.0	-0.2	1.1
Professional/Business Services Employment (000s)	**149.3**	**389.4**	**494.5**	**221.6**	**660.0**	**62.4**
Q/Q Percent Change	-0.5	0.2	1.0	-0.5	0.5	2.1
Y/Y Percent Change	1.4	2.0	4.6	9.8	3.1	3.9
Government Employment (000s)	**249.5**	**499.6**	**695.2**	**334.1**	**703.0**	**149.9**
Q/Q Percent Change	0.8	0.4	0.3	-0.1	0.6	-0.7
Y/Y Percent Change	2.1	0.6	-1.3	-3.8	0.2	-1.3
Civilian Labor Force (000s)	**333.7**	**2,977.5**	**4,469.8**	**2,155.4**	**4,188.1**	**781.8**
Q/Q Percent Change	0.8	-0.1	0.1	-0.3	0.2	0.4
Y/Y Percent Change	-0.6	-0.2	-1.9	-0.6	-0.1	-0.7
Unemployment Rate (%)	**9.5**	**7.1**	**9.8**	**10.2**	**6.4**	**9.4**
Q4:10	9.7	7.4	9.8	10.9	6.6	9.6
Q1:10	10.2	7.6	11.4	11.6	7.2	8.8
Real Personal Income ($Mil)	**38,995.3**	**260,434.4**	**305,876.0**	**137,940.7**	**325,741.7**	**54,028.0**
Q/Q Percent Change	0.9	0.9	1.0	0.9	0.8	0.3
Y/Y Percent Change	4.5	3.4	2.7	3.5	3.6	2.7
Building Permits	**714**	**2,414**	**8,471**	**3,569**	**5,837**	**364**
Q/Q Percent Change	413.7	22.6	27.9	24.4	62.2	31.9
Y/Y Percent Change	138.8	-19.1	-7.3	-19.1	12.4	-13.3
House Price Index (1980=100)	**560.2**	**417.1**	**311.9**	**317.3**	**401.6**	**219.8**
Q/Q Percent Change	-1.5	-3.3	-2.0	-1.9	-2.3	-1.5
Y/Y Percent Change	0.3	-3.8	-2.6	-2.9	-2.2	-0.0
Sales of Existing Housing Units (000s)	**10.0**	**82.4**	**140.8**	**68.4**	**112.4**	**28.4**
Q/Q Percent Change	31.6	21.2	12.5	1.2	16.6	7.6
Y/Y Percent Change	13.6	9.0	-0.8	-1.7	2.2	7.6

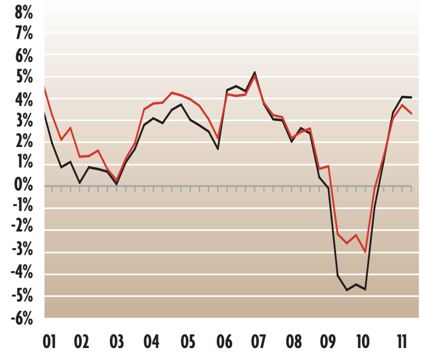
Nonfarm Employment
Change From Prior Year
First Quarter 2001 - First Quarter 2011



Unemployment Rate
First Quarter 2001 - First Quarter 2011

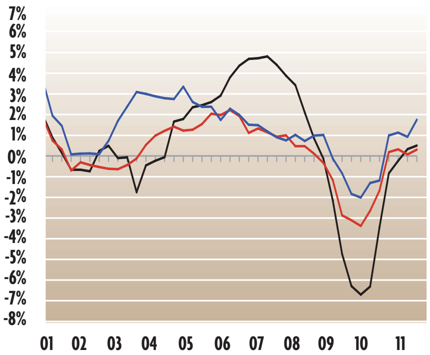


Real Personal Income
Change From Prior Year
First Quarter 2001 - First Quarter 2011



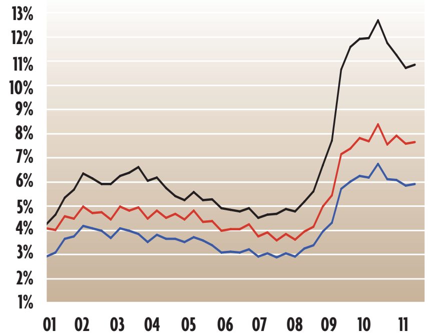
Fifth District — United States

Nonfarm Employment Metropolitan Areas
Change From Prior Year
First Quarter 2001 - First Quarter 2011



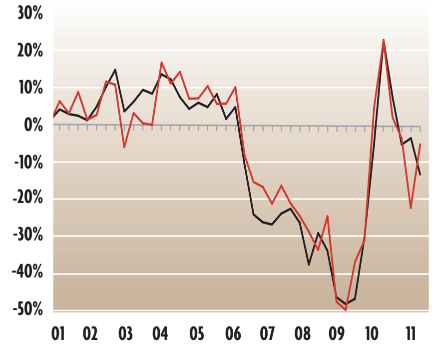
Charlotte — Baltimore — Washington

Unemployment Rate Metropolitan Areas
Change From Prior Year
First Quarter 2001 - First Quarter 2011



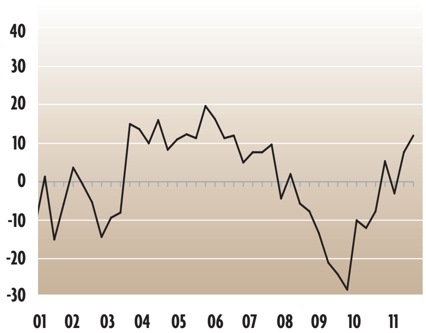
Charlotte — Baltimore — Washington

Building Permits
Change From Prior Year
First Quarter 2001 - First Quarter 2011

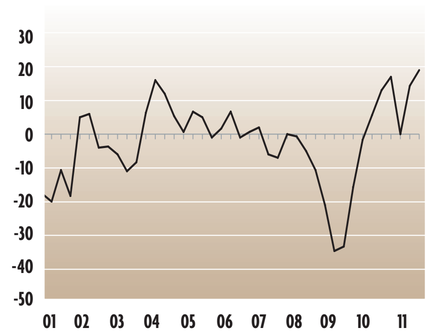


Fifth District — United States

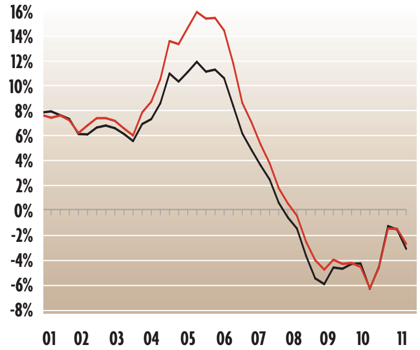
FRB—Richmond Services Revenues Index
First Quarter 2001 - First Quarter 2011



FRB—Richmond Manufacturing Composite Index
First Quarter 2001 - First Quarter 2011



House Prices
Change From Prior Year
First Quarter 2001 - First Quarter 2011



Fifth District — United States

NOTES:
1) FRB-Richmond survey indexes are diffusion indexes representing the percentage of responding firms reporting increase minus the percentage reporting decrease.
The manufacturing composite index is a weighted average of the shipments, new orders, and employment indexes.
2) Building permits and house prices are not seasonally adjusted; all other series are seasonally adjusted.

SOURCES:
Real Personal Income: Bureau of Economic Analysis/Haver Analytics.
Unemployment rate: LAUS Program, Bureau of Labor Statistics, U.S. Department of Labor, http://stats.bls.gov.
Employment: CES Survey, Bureau of Labor Statistics, U.S. Department of Labor, http://stats.bls.gov.
Building permits: U.S. Census Bureau, http://www.census.gov.
House prices: Federal Housing Finance Agency, http://www.fhfa.gov.

Metropolitan Area Data, Q1:11

	Washington, DC	Baltimore, MD	Hagerstown-Martinsburg, MD-WV
Nonfarm Employment (000s)	**2,394.4**	**1,249.4**	**95.5**
Q/Q Percent Change	-1.3	-2.4	-2.1
Y/Y Percent Change	1.7	0.3	0.2
Unemployment Rate (%)	**5.9**	**7.7**	**10.3**
Q4:10	5.9	7.6	9.7
Q1:10	6.8	8.4	10.9
Building Permits	**4,156**	**1,079**	**125**
Q/Q Percent Change	119.2	8.2	16.8
Y/Y Percent Change	22.2	-26.7	-26.5

	Asheville, NC	Charlotte, NC	Durham, NC
Nonfarm Employment (000s)	**164.7**	**797.8**	**279.0**
Q/Q Percent Change	-2.4	-1.1	-0.9
Y/Y Percent Change	0.7	0.5	0.7
Unemployment Rate (%)	**8.6**	**10.9**	**7.4**
Q4:10	7.7	10.7	7.0
Q1:10	10.0	12.7	8.5
Building Permits	**287**	**1,429**	**456**
Q/Q Percent Change	39.3	52.5	29.9
Y/Y Percent Change	-7.7	-18.2	2.2

	Greensboro-High Point, NC	Raleigh, NC	Wilmington, NC
Nonfarm Employment (000s)	**335.6**	**499.7**	**134.1**
Q/Q Percent Change	-1.4	-0.5	-2.0
Y/Y Percent Change	0.0	2.6	0.4
Unemployment Rate (%)	**10.6**	**8.1**	**10.2**
Q4:10	10.1	7.8	9.6
Q1:10	12.4	9.7	11.7
Building Permits	**649**	**1,093**	**389**
Q/Q Percent Change	46.2	30.6	7.8
Y/Y Percent Change	20.9	-26.9	-37.3

	Winston-Salem, NC	Charleston, SC	Columbia, SC
Nonfarm Employment (000s)	**202.0**	**283.0**	**341.3**
Q/Q Percent Change	-1.3	-0.8	-0.6
Y/Y Percent Change	-0.6	2.0	-0.1
Unemployment Rate (%)	**9.7**	**8.2**	**8.3**
Q4:10	9.3	9.1	9.2
Q1:10	11.2	9.9	9.6
Building Permits	**201**	**719**	**786**
Q/Q Percent Change	-12.2	26.6	40.6
Y/Y Percent Change	-21.5	-28.3	-15.2

	Greenville, SC	Richmond, VA	Roanoke, VA
Nonfarm Employment (000s)	**295.0**	**594.6**	**151.9**
Q/Q Percent Change	-0.9	-1.3	-1.7
Y/Y Percent Change	1.5	0.4	-0.5
Unemployment Rate (%)	**8.3**	**7.3**	**7.1**
Q4:10	9.3	7.3	6.9
Q1:10	10.5	8.4	8.2
Building Permits	**431**	**610**	**107**
Q/Q Percent Change	17.1	1.5	91.1
Y/Y Percent Change	-19.4	-30.9	0.0

	Virginia Beach-Norfolk, VA	Charleston, WV	Huntington, WV
Nonfarm Employment (000s)	**719.1**	**146.1**	**112.6**
Q/Q Percent Change	-2.1	-1.5	-1.8
Y/Y Percent Change	-0.2	0.6	-0.1
Unemployment Rate (%)	**7.3**	**9.1**	**9.5**
Q4:10	7.1	8.3	8.7
Q1:10	7.9	8.5	9.2
Building Permits	**1,158**	**24**	**4**
Q/Q Percent Change	21.8	-14.3	-55.6
Y/Y Percent Change	2.9	-48.9	-66.7

For more information, contact Sonya Ravindranath Waddell at (804) 697-2694 or e-mail Sonya.Waddell@rich.frb.org

Opinion

A Focused Approach to Financial Literacy

BY JOHN A. WEINBERG

An article in this issue of *Region Focus* begins with an observation on the difficulties many adults have in answering basic questions about key aspects of financial decisionmaking. Indeed, systematic research has revealed large gaps in knowledge about such things as compound interest. These findings suggest that many people would have difficulty assessing the trade-offs involved in even the simplest financial decisions. Even more so, then, people must struggle with the really big decisions we all face at some time in our lives — decisions about the acquisition and financing of education, or about homeownership, or about saving for retirement.

The demonstrably high level of financial improficiency in many parts of the population also presents a challenge for economic analysis, since our understanding of the aggregate behavior of households is based on a model that assumes individuals are capable of making the decisions that lie at the heart of household finance. If grasping the essential trade-offs is difficult for many individuals, then can we trust a model based on an assumption of sophisticated decisionmaking to give a good representation of the data? Perhaps surprisingly, there is evidence that at the aggregate level, or looking broadly across the population of households, such models do reasonably well at describing consumption and savings decisions.

Does the fact that models of sophisticated consumers do well at capturing aggregate economic behavior imply that the problem of financial improficiency is small, and that resources dedicated to financial education would not yield large improvements in peoples' well-being? I don't think so. It is certainly possible that errors in decisionmaking, relative to a standard model of household choice, are not systematic enough to show up in aggregate behavior but that such errors still have large consequences for individuals. This is especially true of the large decisions that households must make — decisions that can have lasting consequences.

These most consequential decisions tend to be associated with major phases of an individual's life cycle. Early on, people must make choices about education — choices that may imply delaying labor market participation and, thus, delaying earning income — in order to accumulate further human capital after secondary school. This can have a large impact on both an individual's lifetime earnings ability and financial position in early adulthood, as the delay in earnings and the cost of education may need to be funded by debt.

Another early decision may be whether to purchase a home. This may not alter the actual housing services enjoyed so much, but it does have significant implications for the household's balance sheet and to what risks it is exposed.

Finally, as a household enters its peak earning years, plans for retirement become important. Savings and the accumulation of wealth through financial or real estate assets become key financial tools for such planning.

These decisions not only involve basic trade-offs between consumption now and consumption in the future, but they all bring with them a choice among financing strategies or instruments — how much debt to incur, what kind of loan to take on, what kind of savings instruments to use. And they are decisions that can have lasting effects on well-being, as well as having important implications to how exposed a household is to economic shocks. Ill-informed decisionmakers are not only prone to make mistakes, but they also become more vulnerable to abusive financial practices.

> Financial education could have substantial implications for individuals' well-being, even if the overall effects on the macroeconomy are not large.

I think it's also important to note here that, while what may appear to be ill-informed financial decisions indeed often are, that is not always the case. Individual circumstances that cannot be observed by outsiders may lead households to make decisions that, in fact, are rational. If one's future income stream is highly variable or unstable — for instance, if a person is self-employed in the first case or faces a potential layoff in the second — then it very well may make sense for that person to act differently than what we would normally perceive as optimal. That person may wish to save less now for long-term purposes such as retirement — especially, perhaps, in tax-preferred vehicles that can carry significant penalties for early withdrawal — in order to remain relatively liquid and better weather those more immediate financial shocks.

That said, I do not wish to downplay the importance of financial education. It seems likely that such efforts, targeted at people who are close to critical decision points in their lives, could have substantial implications for individuals' well-being, even if the overall effects on the macroeconomy are not large. Indeed, effective financial education could be the single best strategy for consumer financial protection. While there may be a role for regulatory oversight and legal recourse, such as in the case of fraud, giving consumers the tools to better understand the financial choices before them should also help make unfair and misleading practices less profitable. **RF**

John A. Weinberg is senior vice president and director of research at the Federal Reserve Bank of Richmond.

NextIssue

The State of the Manufacturing Sector
Rapid productivity increases and continued output growth imply that the U.S. manufacturing sector is quite strong, despite large declines in employment. But recent research suggests that the picture is more complicated than it first appears. How healthy is manufacturing, and what does this mean for the U.S. economy as a whole?

A Little Inflation to Create a Bigger Economic Recovery?
Weak employment numbers and relatively contained inflation have led some economists to propose an unexpected solution: a short-term dose of inflation to kick the recovery into gear. Why do some think this would help, and what are the costs?

Recession on the Eve of Retirement
This year, the first of the 82 million baby boomers hit retirement age, on the heels of the worst recession since before they were born. The conventional wisdom is that boomers are being forced to delay retirement to shore up decimated retirement portfolios, but research shows there may be more to the story.

Policy Update
Despite their presence in Virginia well before the Jamestown settlement, Native Americans of the region have struggled for formal recognition from the federal government. Why is the process so hard, and why do the tribes pursue it?

Federal Reserve
The Dodd-Frank Act gives federal banking regulators and the SEC new authority over compensation and compensation-related governance practices at large financial institutions. What will the rules mean for covered institutions?

Economic History
Colonists extracted tar, pitch, and turpentine from Southeastern longleaf pines, and exported these goods to the world's largest navy, the British. North Carolina produced the most, and earned its nickname, The Tarheel State.

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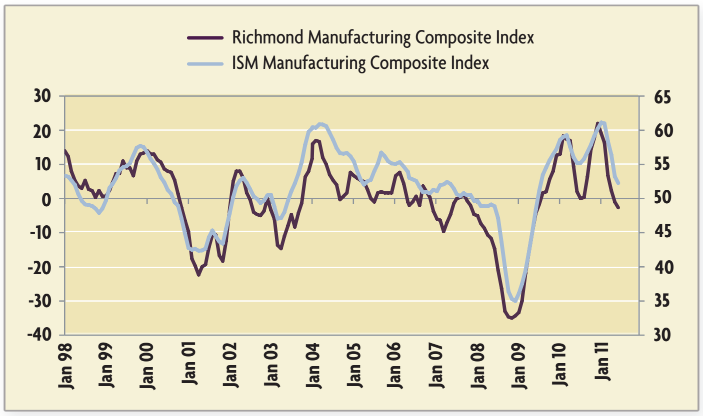
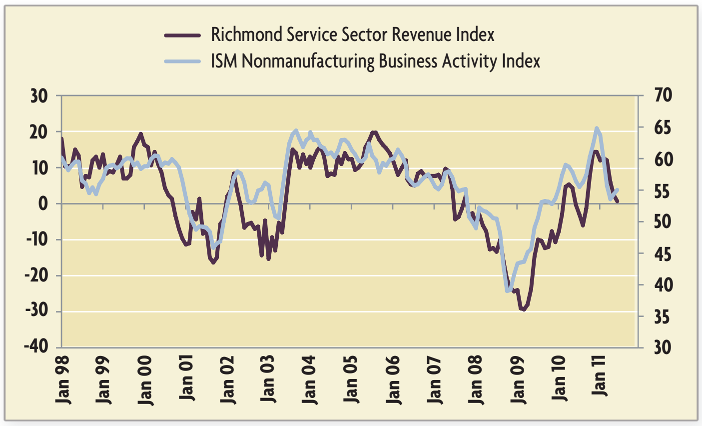
Monitoring Trends in Fifth District Business Activity





For more than two decades, the Richmond Fed has conducted monthly surveys of hundreds of manufacturing, retail, and services firms in the region. Participants are selected to represent the industrial structure of the District's economy in terms of type, size, and location. Over time, these surveys have proven to be an accurate gauge of economic conditions in the region. By comparing the surveys with benchmark measures for the nation, such as the Institute for Supply Management (ISM) manufacturing and nonmanufacturing indexes, they provide insights into how the region is faring relative to the nation as a whole. And, in mid-2011, all the indexes were revised and updated for the first time in a decade, with the introduction of recalculated seasonal factors over the entire history of the surveys. While most indexes changed little, the indexes conformed more closely to comparable measures, without losing the distinctive characteristics of Fifth District business activity.

Manufacturing Survey

This survey covers a variety of economic measures, including sales, orders, backlogs, inventory, employment, and prices, as well as the expectation of most measures over the next six months. The sales, orders, and employment indexes are combined as a weighted average to create a composite index of manufacturing activity. Not only do these indexes help explain how recessions and recoveries are playing out in the District, but they also provide region-specific measures that are not often available on a monthly basis to monitor cyclical activity.

Service Sector Survey

This survey covers both retail and nonretail service firms, capturing such economic measures as revenue, employment, wages and prices. And in the case of retail firms, inventory, shopping traffic, and sales of big-ticket items are tracked.

To find out what these surveys tell us about District economic activity, please see the District Digest section in *Region Focus* or visit our website at **http://www.richmondfed.org/research/regional_economy/surveys_of_business_conditions/index.cfm**

Become a participant in one of our surveys and have your voice heard. It's quick, easy, and confidential, and will give you the opportunity to share your views on local business conditions. Please contact Judy Cox at judy.cox@rich.frb.org