

SECOND QUARTER 2013

ECON FOCUS

FEDERAL RESERVE BANK OF RICHMOND



SIZING UP MANIPULATION

Does It Matter If China
Holds Its Currency Down
to Boost Trade?

How Green Are
Green Jobs?

Caring for the
Mentally Ill

Interview with
John Haltiwanger

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Financial System Fragility — Inherent or Induced?

When I was a college student some years ago, I took a seminar class in the government department on international relations. One of the readings was Graham Allison's *Essence of Decision*, his account of decisionmaking within the Kennedy administration during the Cuban missile crisis. The book taught me a lesson that I hadn't received in my economics classes: In a crisis situation, when the available facts are evolving quickly and seem to point in more than one direction, policymakers tend to rely heavily on theory to help them make sense of those facts.

Flash forward to 2007-2008 and the financial turmoil that struck the United States during that period. I found myself among the regulators and policymakers who needed to interpret what was happening quickly and contribute to decisions about how to respond. Among the unknowns in mid-2007, before disaster struck: What firm conclusions, if any, should be drawn from the fact that mortgage delinquency rates have been rising steadily for over a year? And once the existence of a crisis becomes clear, what weight should be given to the benefits of minimizing financial distress today (for example, through bailouts of institutions) versus the costs of moral hazard that could promote further risk-taking tomorrow?

The transcripts of Federal Open Market Committee (FOMC) meetings during this time show participants looking closely at the facts that were available and seeking to resolve them into a coherent interpretation of what was happening. The same, surely, was taking place within the Treasury Department and elsewhere. As in other crises, moreover, the lens through which policymakers turned scattered and contradictory facts into interpretations, and ultimately into policy conclusions, was theory.

Without trying to survey the entire landscape of theories about financial markets, I would like to highlight two broad alternative views that influenced policymakers during and after the crisis. One sees financial markets as inherently prone to fragility. In this view, the inherent fragility of markets makes it necessary, in turn, for policymakers to create an expectation of a financial safety net to maintain the trust of market participants in institutions and to minimize destabilizing behavior. This view has led to a number of instances starting in the 1970s in which government has extended the financial safety net beyond the scope of deposit insurance. Among these is the private bailout of the hedge fund Long-Term Capital Management (LTCM) organized by the New York Fed in 1998; even though the LTCM rescue was privately financed, the Fed's involvement may well have changed expectations about the Fed's willingness to sit out a failure of a major financial firm.

The other broad view sees fragility in financial markets

as something induced in large measure by government policies themselves. This view recognizes that financial distress is always a possibility (because some losses and failures are inevitable), but it emphasizes the incentives of market participants to manage risk through their selection of institutions and contractual arrangements.

For example, bondholders can insist that an institution maintain an agreed level of equity to create a buffer against losses. In this view, expanding the financial safety net, either explicitly or implicitly, lessens the incentives of participants to adopt stability-enhancing arrangements — thereby rendering the system more fragile.

During the financial crisis, the model of inherent fragility predominated in shaping policy responses. Most notably, the Fed increasingly used emergency lending and, later, purchases of assets to encourage lending and to establish a safety net beneath large institutions.

It is not clear how much these measures contributed to stabilizing the U.S. financial system even in the short run. For those of us who see merit in the model of induced fragility, however, a greater concern is the longer-run effects of such programs. The actions taken by the Fed likely had the effect of telling the market to expect actions in support of large institutions if they fell into distress. The institutional leaders hearing this message would naturally feel less urgency in safeguarding their firms by, for example, raising capital or selling assets. There are indications that the leaders of Bear Stearns and Lehman Brothers had this point of view in the weeks leading up to their firms' failures in 2008.

Parts of the Dodd-Frank Act enacted after the crisis, including its rules for "living wills" to enable distressed financial firms to be wound down without government support, reflect the induced-fragility view. Yet the financial safety net is still large; it included as much as 57 percent of all financial firm liabilities at the end of 2011, up from 45 percent in 1999, according to research by my Richmond Fed colleagues. The persistence of the safety net and the moral hazard that goes with it means that the work of responding to the crisis is not yet finished.

EF



JEFFREY M. LACKER
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Moving from Hoover

The Competition for the FBI's New Headquarters

The Federal Bureau of Investigation is moving from its downtown Washington, D.C., headquarters. Three dozen sites in Maryland, Virginia, and D.C. are competing to host the bureau's new home, a project that could cost nearly \$3 billion to build and will bring 11,000 jobs to the new location.

The FBI has occupied the famous J. Edgar Hoover Building for nearly 40 years, but it has outgrown the facility after experiencing a 25 percent growth in personnel since 9/11. Now only half the staff is stationed there, with the rest scattered across 20 buildings in D.C., Quantico, Va., and Clarksburg, W.Va. According to the General Services Administration (GSA), the government's procurement arm, the building is aging, expensive, and inadequately secured. The split locations also impede operations. Rather than spend

\$850 million to renovate the headquarters, the GSA decided to canvas the greater capital region for possible new homes.

The administration received submissions from 35 potential sites by the March 2013 deadline. The FBI requires 2.1 million square feet of office space on at least 40 acres of land, as well as access to the Beltway and the Metro subway system. D.C. Mayor Vincent Gray proposed building the headquarters on Poplar Point, a 110-acre piece of land owned by the National Park Service, but 70 of its acres are required by federal law to remain parkland, which doesn't leave much space for the FBI and private developments that would provide needed tax revenue. Another contender is the Greenbelt Metro station site in Prince George's County, Md. The Washington Metropolitan Area Transit Authority, which operates the Metro, set up a development deal back in 2011 in anticipation of the FBI's search.

A 70-acre warehouse site in Fairfax County, Va., boasts proximity to FBI training facilities on the Quantico Marine Corps base as well as to other intelligence agencies. It's on federally owned land that would save taxpayers on rent. There's just one problem: The Fairfax site is rumored to house a classified Central Intelligence Agency facility that would have to be evicted to make room for the FBI.

The next step is for the GSA to request formal bids, but the timing depends on additional studies and the input of stakeholders, says GSA spokesman Dan Cruz. There's no word yet on what will become of the downtown building, known for its striking Brutalist architecture. The GSA has said that it might give the building to a private developer in exchange for a new development to house the FBI.

—RENEE HALTOM



The J. Edgar Hoover Building, known for its striking appearance, in downtown Washington, D.C., may soon be up for grabs.

Virtual Mugging

Cyberattacks Have Lasting Effects

Online banking and other services have been a boon for consumers and generate vast amounts of data that can yield useful insights into users' behavior — data that can help further improve offerings from financial services firms. But this aggregated information also has created attractive targets for criminals looking

to make money and “hacktivists” looking to make a political statement.

Case in point: The cyberattack on the South Carolina Department of Revenue in September 2012, which resulted in the theft of electronic information from nearly 4 million individual tax returns and about 700,000

business returns. It cost South Carolina about \$12 million to offer the victims a year's worth of credit monitoring. But the repercussions haven't ended there.

Catherine Mann, an economist at Brandeis University who has studied the effect of information technology on the economy, has calculated the costs of data breaches in various ways. First, there is the effort and expense devoted to discovering a breach and plugging it. South Carolina spent \$500,000 to hire Alexandria, Va.-based Mandiant to block hackers' access to its computer network and \$800,000 on additional security measures. The state's 2013-2014 budget sets aside another \$10 million for cyber security, including an extension of the credit-monitoring program.

For private firms, there is also the revenue loss associated

with changes in consumer behavior and the possibility of punishment by the stock market. In both cases, the effects are relatively small and short-lived, according to Mann.

As a result, it is consumers who usually bear the brunt of a data breach. For example, victims of data breaches are disproportionately victims of identity theft, according to a June 2013 report from Javelin Strategy & Research. Javelin estimates that South Carolina taxpayers could face \$5.2 billion in losses resulting from identity theft, or \$776 in out-of-pocket expenses per affected consumer.

To mitigate these expenses, the state is offering \$1 million of identity theft insurance for those who sign up for the credit-monitoring program. The insurance will cover certain costs for a year, including lost wages and unauthorized electronic fund transfers.

— CHARLES GERENA

Fuel Finances

MD and VA Change Their Gas Taxes for the First Time in Decades

If there's one thing drivers can count on, it's changing gas prices. Prices fluctuate for a number of reasons — from shifts in oil supply and demand to natural disasters that interfere with production and delivery. But one component of the price at the pump has long remained constant in many states: the gas tax. About half of the states haven't increased their gas tax in a decade or more. Falling revenue and a growing need for transportation funding, however, have prompted two Fifth District states to make a change.

Prior to this year, Virginia last revised its gas tax in 1986 when it fixed its rate at 17.5 cents per gallon, while Maryland established its 23.5-cents-per-gallon rate in 1992. Since then, inflation has reduced the effective value of the taxes in constant dollars to about 8 cents and 14 cents, respectively. Additionally, higher fuel efficiency standards are reducing how often drivers fill their tanks, another hit to gas-tax revenue.

In response, Govs. Bob McDonnell of Virginia and Martin O'Malley of Maryland proposed revisions to their states' gas taxes that were approved by their legislatures in April. Virginia's plan replaces the fixed cents-per-gallon tax in part with a 0.3 percentage point increase in the general sales tax, the proceeds of which will go to transportation projects. (The sales tax will increase by 0.7 percentage point

in Northern Virginia and Hampton Roads, which have much higher traffic congestion than the rest of the state.) The plan also includes a 3.5 percent tax on wholesale gasoline and a \$64 annual titling tax on hybrid cars, which use less gasoline.

"While gasoline prices may be very volatile, the price level in general has a ratchet. It doesn't go down," says George Hoffer, a transportation economist at the University of Richmond. "By relying on the general sales tax, you avoid the problem of volatility in the transportation trust fund."

Although using proceeds from the general sales tax to fund transportation is not entirely new — Virginia previously earmarked 0.5 percent of the tax revenue for that purpose — it does raise a concern for some. The gas tax represents a kind of user fee: People who drive the most generally buy the most gas, and therefore pay the most to maintain the roads. Increasing the funding that comes from the general sales tax reduces the tie to roadway usage. In addition, the tax on hybrids penalizes a technology aimed at reducing the negative externalities of air pollution, something that lawmakers in Virginia have previously encouraged via tax credit. Hoffer also notes that the fixed nature of the fee means that it applies equally to all models of hybrids regardless of how fuel efficient they are, and so

punishes buyers of hybrids that are not much different from their gas equivalents.

Maryland's plan keeps its fixed per-gallon tax, but indexes it to inflation. It also imposes a 3 percent sales tax on gasoline that will be phased in over the next three years. As a result, Maryland drivers could pay up to an extra 21.1 cents per gallon by 2018. Critics are concerned this will hurt the state's competitiveness with Virginia, where Hoffer estimates prices will fall by a few cents, and with Washington, D.C., which replaced its 23.5-cents-per-gallon tax with an 8.3 percent wholesale tax in May. If half of the Marylanders

who commute to D.C. and Virginia choose to fill up across the border because of price differences, the state could lose out on as much as \$22 million annually, according to Wendell Cox and Ronald Utt of the Maryland Public Policy Institute.

All told, the Virginia plan is forecast to raise \$406 million in tax revenue for 2014, and the Maryland plan is expected to raise \$116 million. But the changes might be short-term fixes at best. As cars become more fuel efficient, Hoffer says, it will become increasingly difficult to draw adequate transportation funding from the pump. —TIM SABLİK

Medicaid Malpractice

U.S. Supreme Court Strikes Down NC Medicaid Rule

Thirteen-year-old Emily Armstrong is blind, deaf, and mentally disabled. Her condition is the result of injuries she sustained during birth, via a Caesarian section at a hospital in Hickory, N.C. The doctor who delivered her had a history of drug abuse; her parents sued him, the hospital, and several other medical staff, and received a settlement of \$2.8 million. As the result of a U.S. Supreme Court ruling earlier this year, Emily and her family won't have to give nearly \$1 million of that settlement to the state of North Carolina.

Emily is a Medicaid recipient, and North Carolina has paid about \$1.9 million toward her medical expenses. Under the federal Medicaid statute, states are required to recover some portion of these expenses from Medicaid recipients who win tort settlements. In North Carolina's case, it has done so by fixing its share at one-third of a plaintiff's settlement. But the Medicaid statute also prohibits states from placing a lien on any portion of a settlement that is *not* related to medical expenses. The Armstrongs' settlement did not specify how the money was allocated, and they and their lawyers argued that much less than one-third of the total settlement was actually earmarked for medical expenses.

"Given the nature of the plaintiff's injuries and the long-term care required, and the amount of pain and suffering [damages] likely awarded, it was hard for the state to say 'One-third is fair,'" says Richard Saver,

a professor in the University of North Carolina School of Law and the School of Medicine.

North Carolina argued that trying to divide every settlement between medical and nonmedical expenses would be "wasteful, time-consuming, and costly." But writing for a 6-3 majority, Justice Anthony Kennedy noted that "even if that were true, it would not relieve the State of its obligation to comply with the terms of the Medicaid anti-lien provision."

While the Court ruled that North Carolina could not establish an "unrebuttable" uniform percentage, it stopped short of specifying the precise process states must follow. Currently, 16 states and Washington, D.C., hold administrative hearings for each case to determine the state's recovery amount. Another possibility, Saver says, is that North Carolina could establish a uniform percentage but give plaintiffs the opportunity to contest it. "What won't fly is fixing one number across the board with no justification and no opportunity for plaintiffs to rebut why it doesn't make sense in that case," he says.

In addition to the administrative burden, states also are concerned that Medicaid recipients might try to shield their settlements by claiming that the full amount was for pain and suffering. Given many states' fiscal difficulties and the future expansion of Medicaid via the Affordable Care Act, states are under pressure to recover every dollar they can.

—JESSIE ROMERO

FEDERAL RESERVE

Playing by the Rules

BY TIM SABLİK

The Fed has followed a number of monetary principles over the years — with mixed results

Milton Friedman often said that, given the choice, he would replace the Federal Reserve with a computer. This computer would have one task: Print out the same amount of money, month after month, year after year. There wouldn't be much work for central bankers, except perhaps as IT personnel.

Friedman's proposal preceded and ultimately complemented work he and several other economists did in the 1960s through 1980s to develop "rational expectations" models. Under rational expectations, market participants make their decisions based not only on past monetary actions but also on their expectations of future actions. If the central bank can commit to a rule for future behavior, it can help set market expectations, making the job of achieving its goals easier. A noncontingent rule — one that doesn't change based on conditions in the economy — makes it even easier for the market to predict future monetary policy; an example is a fixed rate of money growth.

Even before the adoption of the rational expectations assumption, economists understood the importance of having some guide for managing the money presses. Without something to limit the growth of money, a government might be tempted to create more whenever it needed to finance extra spending. That would lead to inflation, the result of too much money chasing too few goods. More important, simply the fear that the government would give in to this temptation could be enough to generate an expectation of inflation, which could then become a self-fulfilling prophecy as new contracts came to reflect that expectation.

The Federal Reserve has never adopted an official monetary rule, but its decisions have been guided by several implicit rules over the course of its 100-year history — frameworks that guide its decisions, even if not as mechanically as Friedman's imagined computer. The most recent was measured by Stanford University economist John Taylor in 1993. The "Taylor Rule" is an empirical summary of how the Fed has actually behaved. It is a mathematical formula for calculating the Fed's interest rate based on the sizes of two gaps: the gap between current inflation and the Fed's target and the gap between current GDP and the economy's potential. When the economy is running above potential and inflationary pressures are high, the Fed raises interest rates to tighten the supply of money in the economy and return inflation and growth to target. When the economy is

below potential and inflation is weak, the Fed lowers rates to loosen money supply and spur growth.

The Fed's Taylor-Rule-like behavior has been credited by some for contributing to the period of low inflation and high growth the United States enjoyed in the mid-1980s through the early 2000s, known as the Great Moderation. But the Fed did not arrive at this behavior overnight. Indeed, the history of the central bank is in many ways a search for the best monetary rule.

The Early Years

The Fed was established in 1913 to serve as a lender of last resort and to meet public demand for exchanging deposits for currency during financial panics. To accomplish this, the Federal Reserve note was envisioned as an "elastic currency" — meaning that the central bank could expand its supply rapidly if needed. At this time, the Fed was not seen as the steward of inflation that it is today; its only overarching objective was financial stability, especially in the short term. Its job was to issue money, and the amount of money to be issued was dictated largely by the gold standard.

The Fed inherited its first guide in the gold standard system. Under this regime, dollars were convertible into gold at a fixed rate of \$20.67 per ounce. The Fed's role in this process was to meet money demand, but the amount of money it could supply was capped by the amount of gold it held in reserve. On the surface, the gold standard was a type of noncontingent monetary rule: The supply of money was restricted by the quantity of gold, which was determined by factors outside the central bank's control. Changes in the price level can occur under a gold standard, but instead of being caused by monetary policy, they are caused by fluctuations in gold supply or by the need for relative prices to change across countries.

"The gold standard, if left alone, in a sense drives the money supply, and there isn't much room for monetary policy," says Michael Bordo, an economist and monetary historian at Rutgers University.

As Bordo noted in a 1997 paper with late economist Anna Schwartz, however, the gold standard was not exactly noncontingent because it was understood that countries would suspend it when convenient. In wartime, governments often went off the gold standard in order to print extra money to finance the fighting.

"The rule was contingent in the sense that the public understood that the suspension would last only for the duration of the wartime emergency plus some period of adjustment, and that afterward the government would adopt the deflationary policies necessary to resume payments at the original parity," Bordo and Schwartz wrote.

Such a suspension occurred in Europe shortly after the Fed was established, when World War I broke out and European countries left the gold standard. The United States remained on the gold standard, but purchases of American weapons and supplies by the Allied powers in Europe resulted in large gold inflows, which led to inflation. “The Fed was relatively powerless in the face of these gold movements,” says Bordo. The episode illustrates one of the downsides of the gold standard as a monetary rule — the money supply was at the mercy of gold movements, which did not always match the needs of the economy. Although gold levels would eventually return to equilibrium, this process could be slow, and the price fluctuations that occurred in the meantime could be painful.

Central banks could speed the adjustment process by increasing or decreasing the amount of credit in the system in the same direction as gold flows. They could also move in the opposite direction to “sterilize” gold flows, for example increasing the amount of credit in the system by an amount equal to the decline in gold. This would keep the money base constant and prices stable. After the experience of inflation in World War I, this was the practice the Fed adopted (see chart). There was a growing belief that the Fed should play a role in maintaining stable prices, and the Fed also argued that until Europe returned to the gold standard, the gold adjustment mechanism would not function properly.

The other monetary principle that guided the Fed at its founding was the “real bills doctrine.” This rule stated that money growth would not be excessive as long as the central bank only made loans backed by real bills (short-term debt from businesses) as collateral. This way, the money supply would expand to meet real growth in the economy rather than speculative investments, which would keep inflation in check. The rule was flawed, however, as it did not account for the fact that rising prices would lead borrowers to demand more money for real bills. As soon as inflation expectations set in, there was nothing in the rule to stop

inflation from spiraling out of control, as the Fed would supply greater amounts of money to feed the rising prices of real bills.

Throughout the 1920s, the Fed and other central banks continued to sterilize gold flows, even after Europe returned to the gold standard. This prevented the natural adjustment mechanisms from working and shifted world gold supplies to the sterilizing countries. Although the full causes of the Great Depression are debated, many economists agree this was a major contributing factor. When the Depression hit, the Fed’s two rules guided it in the wrong direction. The Fed was required to hold gold reserves equal to 40 percent of its issued notes, and Fed leaders feared that expanding reserves would lead to gold outflows that would jeopardize the convertibility of its notes. Additionally, the real bills doctrine made them reluctant to extend credit that might fuel stock market speculation, and they argued that the deflation was a necessary response to the stock market boom of the late 1920s.

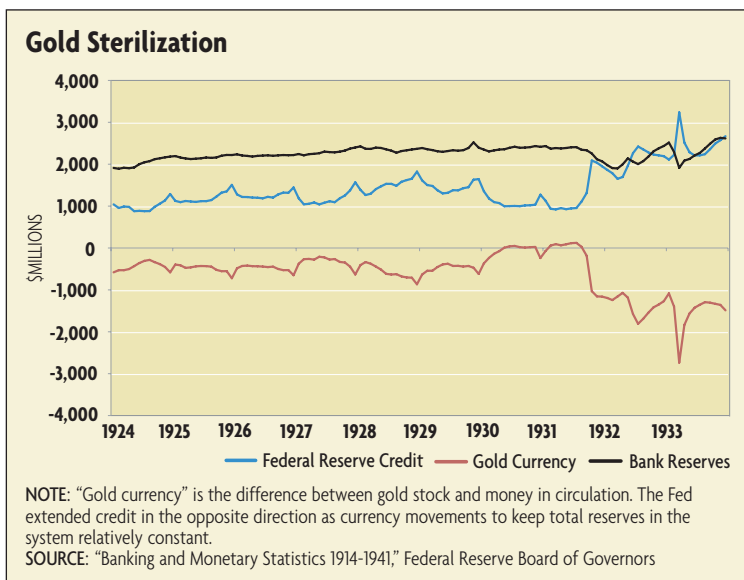
By the mid-1930s, the Fed had demonstrated that it was either unwilling or unable to increase the money supply in response to the Great Depression. The monetary guides it had relied upon failed to provide adequate guidance or, in the case of the gold standard, were distorted by a failure to play by the rules.

“The gold standard tended to prevent the Fed from doing what it should have done to offset the deflation, the fall in output, and the bank failures,” says Bordo. “But it didn’t have to do this.” In research with Schwartz and Ehsan Choudhri, Bordo found that the Fed had enough gold reserves to follow an expansionary policy during the Great Depression if it had chosen to do so.

New Economics, Old Rules

From the mid-1930s and into World War II, the Fed followed a policy of keeping the interest rates of government bonds low to help finance the war effort (a role it had first played in World War I). During this time, Bordo says development of monetary policy in the United States essentially ceased, as the Fed was effectively a branch of the Treasury Department. By the late 1940s, however, it became clear that holding interest rates artificially low was contributing to inflation, and the Fed began agitating for greater independence. That independence was established with the Treasury-Fed Accord of 1951.

The post-war period also brought changes to currency policies. Toward the end of World War II, economic leaders from the Allied countries met in Bretton Woods, N.H., to discuss the formation of a post-war international monetary system. They were concerned about a return to the Great Depression once wartime spending ceased, and they wanted to create a system that would protect against the deflationary spiral that had occurred in the 1930s. The Bretton Woods system combined the fixed money discipline of the gold standard with the flexibility of floating exchange rates. Countries agreed to peg their currencies to the dollar at



an exchange rate that could be adjusted, and the United States agreed to convert dollars to gold at the fixed rate of \$35 per ounce. It was thought that this would provide the best of both worlds: It would keep prices stable through a commitment to gold convertibility, and it would allow nations other than the United States flexibility to set their own monetary policy.

It would take until the end of 1958 before full international convertibility began, but from the start, economists noted flaws in the system. In 1947, Belgian economist Robert Triffin observed that if the gold base did not expand to meet the growth of the world economy, countries would demand a greater number of dollars as a substitute for gold. At some point, the number of outstanding dollars would be so large that the United States would not be able to credibly promise convertibility to gold at the fixed price of \$35 per ounce, and the system would collapse. Another problem would also hasten the demise of Bretton Woods: the desire by the United States to set monetary policy that ran counter to the rules of the gold standard.

In the 1960s, many Keynesian-oriented economists proposed that fiscal and monetary authorities should play a bigger role in managing the real economy. A key component of this movement was the Phillips Curve, which appeared to show an inverse relationship between nominal wages and unemployment. It suggested that policymakers could obtain lower unemployment in exchange for higher inflation. Like the prewar gold standard, the Bretton Woods system left little room for monetary policy other than keeping the gold price fixed and the number of outstanding dollars low enough to credibly commit to conversion. But policymakers now envisioned a more active role for the Fed. Indeed, Congress established the Fed's "dual mandate" with the Employment Act of 1946, which stipulated that the Fed should set monetary policy to maintain maximum employment and stable prices.

At the time, it was believed that maximum employment meant unemployment of 4 percent, and economists on the Council of Economic Advisers and the Federal Reserve Board believed that as long as unemployment was above that level, expansionary monetary policy could help close the gap without risking inflation. Fed Chairman William McChesney Martin disagreed, arguing that it was difficult to know for certain what the optimal level of employment was, and that expansionary monetary policy past that point would result in inflation. In the mid-1960s, as unemployment approached 4 percent, he argued in favor of tightening, but he was increasingly opposed by others on the Federal Open Market Committee.

"They thought that maintaining full employment was

By the mid-1930s, the Fed had demonstrated that it was either unwilling or unable to increase the money supply in response to the Great Depression.

The monetary guides it had relied upon failed to provide adequate guidance or, in the case of the gold standard, were distorted by a failure to play by the rules.

much more important than price stability and that the constraints of the Bretton Woods system were something that had to be jettisoned," says Bordo.

By 1970, inflation had risen above 5 percent and outstanding dollars at foreign central banks outnumbered gold reserves two to one at the official exchange rate. Spending on domestic projects under the Great Society and on the Vietnam War put added pressure on the Bretton Woods system, and attempts to limit gold outflows culminated with the United States

ending convertibility in 1971. The monetary rules guiding the Fed toward expansionary policy to achieve lower unemployment took precedence over the restraint dictated by the gold standard, and the Bretton Woods system collapsed.

Recognizing Limitations

The Fed continued to implicitly target unemployment of 4 percent in the 1970s, following a "stop-go" monetary policy that loosened money supply to target lower unemployment and then tightened when inflation expectations started rising. The problem, as economist and Fed historian Allan Meltzer and others have noted, was that the Fed did not tighten enough during the "stop" periods. In fact, the Fed failed to distinguish between real and nominal rates when setting the federal funds rate target. While it thought it was tightening money supply by raising nominal rates, real interest rates were in fact quite low or even negative (see table).

Over the course of the 1970s, the market came to believe that the Fed was following a rule that placed greater importance on unemployment than inflation, and inflation rose dramatically. The greater weight on labor market conditions was problematic because policymakers miscalculated which unemployment rate to target. In a 2011 working paper, Athanasios Orphanides of the MIT Sloan School of Management and John Williams, president of the San Francisco Fed, proposed a model for a monetary rule consistent with the Fed's behavior during this time. They

End-of-Year Effective Federal Funds Rate 1965-1972

Year	Nominal Rate	CPI Inflation	Real Rate
1965	4.32	1.54	2.78
1966	5.40	3.33	2.07
1967	4.51	3.81	0.70
1968	6.02	5.08	0.94
1969	8.97	5.91	3.06
1970	4.90	6.60	-1.70
1971	4.14	3.10	1.04
1972	5.33	3.00	2.33

NOTE: Consumer Price Index inflation excludes food and energy.
SOURCE: Federal Reserve Economic Data (FRED), Federal Reserve Bank of St. Louis

found that the Fed's underestimation of the natural rate of unemployment at 4 percent, combined with the emphasis it placed on targeting the natural rate of unemployment, led to the Great Inflation of the 1970s.

"We can only tell if the economy is not operating at its natural rate long after the fact by subsequent developments in inflation," says Orphanides. "In the late 1960s and 1970s, the structure of the economy changed considerably, including changes in demographics and a slowdown in productivity. These factors led to a significant increase in the natural rate of unemployment that was only recognized with a significant lag."

It became apparent that the trade-off implied by the Phillips Curve was not as stable as policymakers had thought. Although unexpected inflation was capable of reducing unemployment in the short term, once markets came to expect higher inflation, raising inflation no longer reduced unemployment. In response to loose monetary policy and the lack of a rule to restrain money growth like the gold standard, inflation expectations soared.

In 1979, Paul Volcker was appointed chairman of the Fed to stop the inflation spiral. Volcker favored a change in procedure to regain the Fed's credibility for keeping prices stable. In a special meeting on Oct. 5, 1979, Volcker proposed focusing on price stability rather than unemployment by targeting money growth more aggressively and allowing interest rates to "float" to whatever level needed to bring down inflation. Although the Fed had incorporated monetary targets into its policy in the 1970s, it had frequently overshot these targets. Volcker believed that targeting price stability would ultimately lead to both low inflation and full employment.

This new focus represented a new monetary rule of sorts — one that placed less emphasis on the gap between current employment and full employment and more emphasis on inflation. Volcker's first attempt to convince the market that the Fed was dedicated to price stability failed. Tight monetary policy triggered a recession in early 1980, and as the recession worsened, the Fed felt compelled to ease up. To the market, the episode resembled the same sort of "stop-go" policies they had come to expect, and inflation continued to climb. The Fed tightened again, allowing the fed funds rate to reach about 20 percent, and the economy plunged into a deep recession in 1981-1982. This time, however, Volcker held course, despite unemployment near 11 percent and charges from some in Congress that the Fed

was neglecting its mandate to maintain full employment. But as Volcker, and later his successor Alan Greenspan, interpreted the mandate, full employment would follow naturally from a pursuit of stable prices.

The Fed's actions were a concession to the difficulty in measuring the natural employment level, and to the lesson learned in the 1970s that the Phillips Curve trade-off did not exist in the long run. The Fed's commitment to its new rule in the face of the deep 1981-1982 recession convinced markets, and inflation expectations declined. During the early 1980s, changes in the composition of the money supply made targeting money growth more difficult. The Fed continued targeting the money supply until disinflation set in because of concern that a change in policy would undermine the credibility it was trying to establish. Once inflation had subsided and real interest rates were easier to estimate, the Fed returned to using interest rates as the primary tool for maintaining price stability.

The Great Moderation that followed was a period of low inflation and impressive economic growth, leading many observers in the 1990s to proclaim the monetary policy equation "solved." Some economists attributed that performance to the Fed's adherence to the Taylor Rule, but Orphanides argued in a 2002 paper that Taylor's original equation also fits Fed policy during the Great Inflation when accounting for the data available at the time.

"Policymakers at the Fed always thought that they were following systematic policy in the 1960s and 1970s. The question is: What are your guides? The guides you use may fool you because they may be based on a presumption of too much knowledge, or too precise knowledge," says Orphanides. He argues that simple rules — Friedman's constant money growth being the simplest — are preferable for this reason.

In the wake of the 2007-2009 recession, the Fed turned to a number of discretionary measures to bolster the economy. Interest rates hit zero but the economy remained weak, so the Fed used some unconventional tools that by definition reached beyond the rule it seemed to have been following for decades. Many economists agree that monetary policy should return to rules-based guides sooner rather than later. Although there is no consensus as to which guides the Fed should adopt, history has made one thing clear: Expectations of future monetary policy play a big role in the economy, and those expectations will be driven by the rule the Fed is perceived to be following. **EF**

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New Disclosures for Climate Change

BY CAROLINE TAN

The environmental consequences of energy extraction have drawn attention not only to the energy industry, but also to the financial firms that help fund it. Soon, these firms may feel more pressure to disclose their exposure to financial risks from greenhouse gas emissions, thanks in part to a recent decision by the Securities and Exchange Commission (SEC).

In a significant shift from previous rulings, the SEC decided in February that the shareholders of PNC Financial Services Group had the right to vote on whether the bank must report its risk exposure to climate change. For the first time, a bank was not allowed to exclude a climate change disclosure resolution questioning its lending practices from its proxy ballot. Though manufacturing and electrical companies had already been held to this standard, the SEC had previously reasoned that issues related to the way a bank maintains its lending portfolio fell within its “ordinary business” and did not need a shareholder vote.

As the nation’s sixth-largest commercial bank in terms of assets, Pittsburgh-based PNC claims about \$300 billion in total assets and is the only major bank headquartered in Appalachia, where coal extraction is a key business. Environmental group Rainforest Action Network estimated that PNC’s lending practices accounted for 43 percent of Appalachian coal extracted in 2011 through the controversial “mountaintop removal” mining (MTR) technique.

In light of PNC’s role in financing MTR mining, activist shareholders submitted a resolution in November 2012 requesting that the bank report its exposure to climate change risk through its lending, investing, and financing activities. PNC has marketed itself as a “leader in eco-friendly development,” and the shareholders expressed concern that mismanagement of climate change issues could pose significant risks to the bank’s brand, business operations, and performance. Boston Common Asset Management, which drafted the resolution, told PNC that it is important for investors to “understand in what ways these concerns are being addressed by PNC’s lending policies.”

PNC’s board members unanimously opposed the resolution, requesting an SEC no-action letter that would permit the bank to keep the proposal from a shareholder vote. PNC argued that such an assessment would be costly, unnecessary, and micromanaging. Because PNC was not directly involved in coal mining, the board argued there was no sufficient “nexus” between the bank and the proposal.

The SEC replied that it was “unable to concur” with PNC’s request, calling climate change a “significant policy issue.” The Commission’s decision effectively transferred authority on climate change disclosure from corporate managers to shareholders, for the first time requiring that a

bank bring the issue to a shareholder vote. Though shareholders did not pass the resolution at their April 23 annual meeting, more than 22 percent voted in favor — a strong statement, shareholder activists say.

“This decision means that even companies a few steps removed from having a direct climate impact must pay attention to [climate] issues,” says Michael Gerrard, director of the Center for Climate Change Law at Columbia University. In effect, some experts argue that the SEC broadened the range of companies for which climate change disclosure resolutions could apply, bringing the banking industry into the fold.

Climate change disclosure may mark a new and challenging phase for the banking industry — one that Chicago environmental lawyer E. Lynn Grayson of the law firm Jenner & Block says may be “darn near impossible” for some firms to accommodate, due in part to limited information and the difficulty of quantifying environmental risks. In 2010, the SEC issued an interpretive guidance to help public companies navigate existing climate change disclosure rules. The Commission emphasized that it was “not opining on whether the world’s climate is changing,” but rather trying to ensure that disclosure rules were consistently applied. The SEC noted different scenarios — legislation, international accords, changes in demand of a good or a company’s reputation, and the physical impact of climate change — that may require a company to disclose its carbon footprint.

The PNC ruling does not necessarily mean that the SEC is “going green.” It simply represents an attempt to inform shareholders about risk, Grayson says. To the extent that climate change portends regulatory changes or damage to major capital assets and infrastructure, it counts as risk.

Gerrard expects the SEC’s decision to apply to a broad range of financial firms, as “large swaths of the economy are seriously affected by climate change,” and he predicts it will inspire many similar resolutions. Indeed, even before the decision, more than 40 percent of shareholder resolutions from 2011 were related to environmental and social issues, a 10 percentage point increase from 2010, according to an Ernst & Young study. (Other resolutions related to political spending and lobbying, human rights issues, and governance matters, including executive compensation.) Still, the SEC told Bloomberg that its decision applied only to PNC and did not create a new duty for the entire financial sector.

It is unclear if a wave of climate change disclosures is in the forecast. That depends on whether the SEC’s decision inspires activist shareholders to present similar resolutions — and how shareholders vote if the resolutions make the proxy ballot. At the very least, Grayson says, the ruling marks a “changing tide” for banks and climate change. **EF**

JARGON ALERT

Full Employment

BY TIM SABLİK

Since the 2007-2009 recession ended, unemployment has slowly declined, but most would agree that today's level of 7.6 percent unemployment does not represent the economy's full potential. Full employment is often described as the level of employment at which virtually anyone who wants to work can find employment at the prevailing wage. One might assume that if everyone who wants a job has one, then the unemployment level would be zero. Yet in the last half century, the unemployment rate in the United States has ranged from 2.5 percent to 10.8 percent; it has never been zero. Does that mean we have never had full employment?

Not according to economists. Full employment is not the same as zero unemployment because there are different types of unemployment, and some are unavoidable or even necessary for a functioning labor market. At any given time, jobs are being created and destroyed as industries evolve, and the transition from old jobs to new is not seamless. For example, frictional unemployment occurs because workers who lose their jobs or quit typically do not accept the first new job for which they qualify. Unless they are facing extreme pressure to replace lost income, most people take the time to find a job that fits their skills well. Because of this lag, some percentage of the workforce is between jobs at any given time and classified as unemployed.

Persistent unemployment also arises from mismatch between the supply of workers and the demand for labor at a given wage, which is known as structural unemployment. In a fully flexible market, wages would adjust to the point where the number of people seeking work equaled the number of positions employers were willing to provide at that wage. Wages can be set above this level for a variety of reasons, however, such as minimum wage requirements or because employers choose to set higher wages in order to get better productivity from their workers. As a result, the supply of labor can exceed the demand for it, and structural unemployment arises.

Since some degree of frictional and structural unemployment exists at any given time, economists define full employment as the unemployment level resulting from a combination of these two components, which is always greater than zero. Unemployment can rise above this level due to shocks in the economy, such as the housing market collapse that occurred in 2007-2008. It can also temporarily fall below this level if the economy is operating above its efficient capacity, resulting in rising prices and wages.

In the 1950s, many economists argued that fiscal and monetary policy could steer the economy toward the full employment level. By the end of the decade, policymakers came to believe they could permanently increase full employment in exchange for some inflation. This idea was embodied in the Phillips Curve, which depicted a trade-off between unemployment and inflation. Indeed, in the 1962 *Economic Report of the President*, the Kennedy administration opined, "If we move firmly to reduce the impact of structural unemployment, we will be able to move the unemployment target ... to successively lower rates." While policymakers succeeded initially, inflation and unemployment both rose in the mid-1970s.

Around this time, Milton Friedman and Edmund Phelps modified the ideas behind the Phillips Curve by including a natural rate of unemployment for the economy. Policy

actions to reduce unemployment below that level could succeed in the short run, but in the long run, unemployment would return to the natural rate and inflation would be higher as a result of expansionary policy. This idea was largely a return to the pre-Phillips Curve understanding of full employment as a generally fixed level.

Although the natural full employment level is relatively stable, it can change over time. Changes in the composition of the labor market or structural changes in industries can shift the full employment level. Some economists have argued that changes during the 2007-2009 recession may

have increased the natural rate of unemployment. They point to the fact that job vacancies have increased without the expected decline in unemployment, suggesting a potential mismatch between industry demands and worker skills.

The shifting nature of the natural rate of unemployment makes it difficult to estimate. Since the 1970s, the Fed has steered clear of targeting a specific level of unemployment, choosing instead to target low and stable inflation. In its December 2012 action, the Federal Open Market Committee (FOMC) indicated that it planned to maintain accommodative monetary policy at least until unemployment fell below 6.5 percent, but Chairman Ben Bernanke explained that this rate was not the Fed's estimate of the natural rate of unemployment. Additionally, the FOMC conditioned its accommodative policy on inflation remaining near 2 percent. Reflecting the lessons of the 1970s, Bernanke noted that attempting to target a precise level of full employment risked missing the mark and could "compromise the FOMC's longer-term inflation objective." **EF**



RESEARCH SPOTLIGHT

Industrialization and the Workforce

BY DAVID A. PRICE

Employment in the United States since the 1980s has increased the most at the high end and the low end of the skill spectrum. That is, employment in high-wage, high-skilled occupations and in low-skilled, low-wage occupations has been growing relative to middle-tier occupations — such as white-collar clerical work and blue-collar factory work. This trend is known by the non-technical, but descriptive, term “hollowing out.”

Labor economists generally attribute hollowing out in large part to the technology revolution that has brought computers and computer-controlled machines to offices and factories, reducing demand for middle-tier workers, and to developments in international trade — partially enabled by technology — that have moved much middle-tier work elsewhere. But the past 30 years do not, of course, mark the first time that technological change has come to the labor market. In a recent working paper, Lawrence Katz of Harvard University and Robert Margo of Boston University seek to assess whether hollowing out also took place during the manufacturing revolution of the 19th century.

The researchers consider the question in three parts: how the distribution of occupations across different skill levels changed within the manufacturing sector, how it changed within the U.S. economy as a whole, and whether those changes in the broad economy reflected mainly a shift in demand or a shift in supply.

With regard to manufacturing, Katz and Margo divide workers into three categories: high-skilled white-collar workers, middle-tier artisans, and low-skilled operators and laborers. They note that factory owners increased efficiency by simplifying production tasks so as to enable them to replace artisanal labor with unskilled labor plus specialized machines. The adoption of steam-powered machines — and, later, electric ones — gave rise to greater economies of scale, further favoring large factories over artisanal shops. At the same time, the growth in factory size led to growing employment of managers.

Using 19th-century census records from the University of Minnesota’s Integrated Public Use Microdata Series (IPUMS) and elsewhere, Katz and Margo conclude that the skill distribution in manufacturing did hollow out. The proportion of artisans declined from 39 percent in 1850 to 23 percent in 1910. Conversely, the proportions increased at the low and high ends: The unskilled share grew from

58 percent to 65 percent during that period, while white-collar employment grew from 3 percent to about 12 percent.

The researchers point out that “while manufacturing was a growing share of GNP in the 19th century, it was (very) far from the whole economy.” In considering the changes in skill distribution across the economy as a whole, they again divide workers into high skill (white collar), middle skill, and low skill, but they consider alternative definitions for middle skill. When they define the middle tier to include both artisans and farm operators, they find that its share did fall and that the overall economy did see hollowing out.

When they define the middle tier to include only artisans, however, as in their estimates for manufacturing, they find that the skill distribution did not hollow out in the overall economy as it did within manufacturing; in fact, the overall employment share for artisans was slightly higher in 1910 than it was in 1850. They attribute this in part to growth

in construction (which used artisanal labor heavily) and to the fact that although the artisans’ share was declining within manufacturing, manufacturing itself was growing and artisans were still strongly represented in it compared to other sectors of the economy. Thus, instead of hollowing out, the pattern was one of general upgrading in

skill levels: The share of high-skill jobs expanded, that of middle-tier jobs remained around the same as before, and that of low-skill jobs went down.

Katz and Margo use data on wages to determine whether the increase in high-skill employment in the overall economy reflected mainly a shift in demand (as the needs of employers changed) or a shift in supply (as educational attainment increased). They rely on data about wages at army forts; past work by Margo indicated that “wages at the forts were very similar to those in the purely civilian economy in the local labor market.” They find that for white-collar workers, wages rose relative to those of other workers from 1820 to 1880, which was also a period in which the share of white-collar employment increased. “It follows,” they write, “that the relative demand for white-collar workers increased with relative supply over this period.”

Katz and Margo conclude that the rise in the relative earning power of white-collar workers began as long ago as the early years of industrialization and that this trend hit a lull by 1915 — a lull that would continue until 1980, when the skill premium began another ascent that has continued to the present day.

EF

“Technical Change and the Relative Demand for Skilled Labor: The United States in Historical Perspective.” Lawrence F. Katz and Robert A. Margo. National Bureau of Economic Research Working Paper No. 18752, February 2013.

Where Are the Women?

BY JESSIE ROMERO

Women earned 34 percent of economics Ph.D.s in 2011, according to the National Science Foundation's Survey of Earned Doctorates. That might sound like a lot, but it's much lower than the 46 percent of all doctorate degrees earned by women, and the smallest share among any of the social sciences. Women earned 72 percent of all psychology Ph.D.s, for example, and 61 percent of sociology Ph.D.s.

The gender gap in economics gets larger at each stage of the profession, a phenomenon described as the "leaky pipeline." In 2012, women were 28 percent of assistant professors, the first rung on the academic ladder; 22 percent of associate professors with tenure; and less than 12 percent of full professors, according to the 2012 annual report of the Committee on the Status of Women in the Economics Profession (CSWEP), a committee of the American Economic Association.

In part, this might reflect the long lag between earning a Ph.D. and attaining the rank of full professor; if more women are entering the field today than 20 years ago, more women might be full professors in the future. But the share of new female Ph.D. students is actually lower than it was in 1997, when CSWEP first began collecting data — which means women's share of economics faculty could actually shrink.

Donna Ginther of the University of Kansas and Shulamit Kahn of Boston University also found leaks in the pipeline. In several studies, they have shown that women are less likely than men to progress at every stage of an academic career, beginning with landing a tenure-track job and culminating in promotion to full professor. Furthermore, women are less likely to be promoted in economics than in other social sciences, and even than in more traditionally male fields such as engineering and the physical sciences.

In part, the disparity between men and women could be due to different choices, such as having children or focusing more on teaching than on research. Women also tend to publish fewer articles, which can affect the likelihood of getting tenure. To the extent that such factors are the cause, mentoring programs or more family-friendly policies could help to close the gender gap.

But even after controlling for education, ability, productivity, and family choices, Ginther and Kahn found that a gap of about 16 percentage points persists in the likelihood of promotion to full professor in economics — a much larger gap than in other disciplines.

The problem begins at the undergraduate level: Women are less likely than men to major in economics, or even to take an introductory economics course. Proposed explanations have included a lack of female role models in the

Editor's Note: *This article was revised after publication to clarify a quotation from Claudia Goldin.*

classroom or the emphasis on math, but empirical studies have not supported them.

"It's something systemic to the field," says economist Claudia Goldin of Harvard University. That something might be the way economics is taught. "It's like we're the marketing department at Kimberly-Clark, and we suddenly discovered that we haven't translated the diapers package into Spanish, but Hispanics have the highest birthrate. We're teaching economics the same way we did when women didn't matter. But now women do matter. So how do we translate economics into 'girlish'?"

More research is needed to answer that question, but some have suggested using discussion groups in class or making textbooks less abstract. For example, Susan Feigenbaum, Sharon Levin, and Anne Winkler of the University of Missouri at St. Louis developed an introductory microeconomics class that used stories about real-world decisions, such as having a child or going to college, to illustrate economic concepts like opportunity cost and human capital investment. They found that women and minorities were less likely to drop the class and more likely to major in economics than students in a more traditional course.

These efforts beg an important question: Does it actually matter how many female economists there are? Yes, says Susan Athey of Stanford University. "You just don't get the best allocation of human capital" when one category of people is excluded. "Losing out on a chunk of the population is wasteful." (In 2007, Athey was the first woman to receive the John Bates Clark medal, given to the American economist under 40 who has made the greatest contribution to the field.) In addition, a survey by Ann Mari May and Mary McGarvey of the University of Nebraska-Lincoln and Robert Whaples of Wake Forest University found that male and female economists have significantly different opinions on public policy questions such as the minimum wage, labor regulations, and health insurance. As the authors concluded, "Gender diversity in policymaking circles may be an important aspect in broadening the menu of public policy choices."

Although gender parity is some distance off, women do reach the top echelon of the profession. Goldin is president of the American Economic Association this year, and two more women have received the John Bates Clark medal since Athey in 2007. "My view is a young woman going into economics... will face some bumps along the road having to do with being a woman, but they're not going to be career defining," Athey says. "They'll be obstacles that can be overcome." **EF**

Measuring Economic Security

BY CHARLES GERENA

“The Economic Security Index: A New Measure for Research and Policy Analysis.” Jacob S. Hacker, et al., Federal Reserve Bank of San Francisco Working Paper 2012-21, October 2012.

Fear is a powerful force. When a family is afraid of losing what they have, they may decide to cut back on nonessentials and save more. But finding the right way to “get over the hump” is challenging, and an unexpected economic loss can still lead to hardship.

Having an accurate measure of the nation’s economic security — the degree to which individuals are protected against hardship-causing economic losses — could be useful for policymakers trying to determine the best ways to intervene when people get into financial trouble. A group of researchers from Yale University, Ohio State University, the Urban Institute, and the San Francisco Fed are developing an economic security index (ESI) that goes beyond measuring income volatility or resource adequacy.

Their ESI incorporates data from multiple panel surveys into a single measure that represents the share of individuals who experience at least a 25 percent hit to their annual household income and who lack liquid financial wealth to replace this loss. Household income is adjusted for inflation, out-of-pocket medical expenses, and the estimated cost of debt-service for those with negative financial holdings.

Despite some limitations and the need for further research, “the ESI shows that Americans are not only facing greater insecurity than at any time within a generation, but also that they were at heightened risk even before the recent downturn,” note the researchers in their paper. “It also provides a new means of examining the sources of insecurity and the degree to which Americans with different characteristics are vulnerable to it.”

“Why Doesn’t Technology Flow From Rich to Poor Countries?” Harold L. Cole, Jeremy Greenwood, and Juan M. Sánchez, Federal Reserve Bank of St. Louis Working Paper 2012-040A, October 2012.

In an ideal world, the technologies that helped richer countries get rich would eventually find their way to poorer countries. But that transfer doesn’t always happen.

A variety of factors influence a country’s adoption of technology, from the labor or natural resources it has available to government policies that either promote or discourage certain industries. A recent paper published by the Federal Reserve Bank of St. Louis finds that the efficiency of a country’s financial system could play a significant role in technology adoption.

Why? Implementing a new technology requires a signifi-

cant investment with an uncertain payoff, and investors may not have the necessary information to properly assess risks or monitor how their funds are used. “Financial institutions play an important role in constructing mechanisms that ensure investments are used wisely,” note the paper’s authors. “They do this by both monitoring firms and implementing reward structures that encourage firms to truthfully reveal their profits so that investors can be fairly compensated.”

Monitoring firms cannot be done cost effectively in some countries, however, given the state of their financial systems. In these cases, financial intermediaries must use reward structures in place of monitoring; funding is delayed until a new technology is fully implemented and the firm’s performance can be properly assessed. Even with such “backloading” of funds, cash flows generated from technology adoption may not be adequately disclosed.

The paper’s authors model the relationship between the level of technology adoption and the state of a country’s financial system and find that it helps explain differences in income and total factor productivity between India, Mexico, and the United States. The efficiency of the American financial system seems to position it to adopt advanced technology, while the inefficiency of monitoring in Mexico limits that country to implementing intermediate technology that can be funded using a backloading strategy.

“The Agglomeration of R&D Labs.” Gerald A. Carlino, Robert M. Hunt, Jake K. Carr, and Tony E. Smith, Federal Reserve Bank of Philadelphia Working Paper 12-22, September 2012.

Companies engaged in similar work may benefit from agglomerating, or operating in close proximity to each other, even in today’s age of instant communication. That holds true for research and development firms, according to a recent paper published by the Philadelphia Fed.

Economists from the Philadelphia Fed, Ohio State University, and the University of Pennsylvania analyzed the geographic concentration of about 1,000 private R&D labs in 10 northeastern states. “First, the clustering of labs is by far most significant...at very small spatial scales, such as distances of about one-quarter of a mile, with significance attenuating rapidly during the first half-mile,” report the authors. “The rapid attenuation of significant clustering at small spatial scales is consistent with the view that knowledge spillovers are highly localized.”

In addition, they found evidence of significant agglomeration of R&D firms at the metropolitan level. This is consistent with one of the perceived benefits of agglomeration: the pooling and matching of skilled workers. **EF**

For every dollar of goods and services that U.S. producers sell to other countries, Americans import nearly \$1.50. Given the size of the U.S. economy, that creates a trade deficit that, as of 2011, was the largest in the world nearly five times over.

More than 40 percent of that trade deficit comes from trade with the People's Republic of China. To many observers, if it weren't for cheap goods from China, Americans would be spending more of their jobs-sustaining cash at home. And cheap Chinese goods are no accident. Most economists think that China's currency — known interchangeably as the yuan and the renminbi (RMB), or the "people's currency" — has been held artificially cheap by the Chinese government for much of the last 20 years. Currency manipulation, as such a policy is often called, gives a country an artificial edge in world trade, siphoning demand from the rest of the world and preventing production from flowing to the most efficient places. That's one reason it is prohibited under international law.

The backdrop to the debate, of course, is that American unemployment is high, the Fed has already employed extraordinary measures to stimulate the economy, and

the national debt is climbing. Pressuring China to allow its currency to appreciate might seem to be an easy way to address America's jobs shortfall without costing our government a penny in domestic programs. China's success in manufacturing — accounting for more than 90 percent of the country's rapid export growth since it joined the World Trade Organization (WTO) in 2001 — has been a particular sore spot among people concerned about the United States' steady decline in manufacturing as a share of total employment.

But there is more to the story. It is an open question how much demand we have lost to China's currency policy rather than, for example, China's rise as an efficient producer of consumer goods. There are even benefits to a cheap RMB, such as the discount it provides on the billions of dollars in Chinese goods that U.S. consumers buy each year. And the RMB has appreciated considerably since 2005. Economists are no longer so sure that it is undervalued to a worrisome degree.

Still, there are reasons to worry about China's exchange rate policy. It is part of a broader growth strategy that creates some potentially dangerous global imbalances,

SIZING UP CURRENCY MANIPULATION

THE CHINESE GOVERNMENT MAY BE HOLDING DOWN ITS CURRENCY TO INCREASE EXPORTS. BUT IT'S NOT CLEAR WHAT — IF ANYTHING — THE UNITED STATES SHOULD DO ABOUT IT

BY RENEE HALTOM



which economists say can't be maintained forever. That suggests China will eventually be forced to subject its currency to stronger market forces.

When Is It Manipulation?

China's official currency policy for most of the last 20 years has been some version of an exchange rate fixed to the dollar. That's the exchange rate in nominal terms, or the price at which one currency trades with another, as opposed to real exchange rates, which measure goods exchanged for goods. Many economists don't take issue with fixed exchange rates for creating stability for developing countries like China. The charge of "manipulation" comes into play when a currency is held substantially below its equilibrium value, or what it would trade at over the long run with no intervention from governments.

Currency manipulation is hard to spot, however. Exchange rates are meant to reflect the attractiveness of holding one currency versus another. If investment opportunities, purchasing power, or stability become greater in one country relative to another, its currency will probably rise. Since those are subjective concepts, there are different ways to define the equilibrium rate of exchange between two currencies. According to some theories, equilibrium is the exchange rate that balances trade or maintains a stable trade surplus. In others, it's the rate that equalizes prices or labor costs across countries. And those are just the conceptual issues; picking the appropriate measures for costs is another challenge in quantifying manipulation.

"What makes China unusual is that, as of five years ago, pretty much all the criteria gave the same answer," that the RMB was undervalued, says Jeffrey Frankel, an economist at Harvard University. That explains today's widespread belief that China is intentionally holding its currency low. But things have changed in just the last few years. After fixing

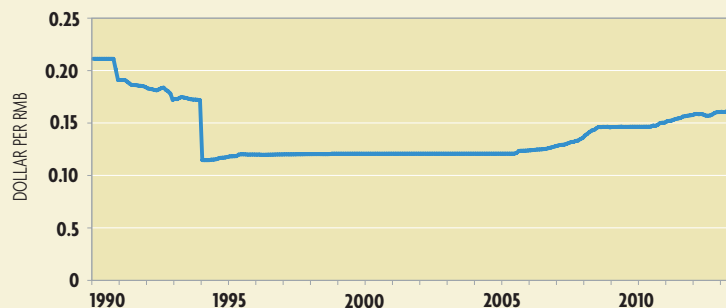
the RMB against the dollar from 1994 through 2005, China announced a new policy in 2005 that included an initial revaluation (a one-time strengthening of the RMB) of 2.1 percent. The RMB was then pegged to an unnamed basket of currencies — among which the dollar was still the most heavily weighted,

Frankel's research with Columbia University economist Shang-Jin Wei has shown — and was allowed to fluctuate by up to 0.3 percent a day. After gradually appreciating, the RMB was re-fixed to the dollar in 2008 during the tumult of the financial crisis, but in 2010 was again allowed to float slowly — very slowly — in the direction of strength. In all, the RMB has risen 35 percent in the last eight years (see chart).

It is no longer clear whether the RMB is substantially undervalued. Conventional

U.S.-China Exchange Rate

The RMB has appreciated by a third since its peg against the dollar was released in 2005. The amount it might be undervalued now is unclear.



SOURCE: Federal Reserve Board. Data through June 2013.

measures indicate a wide range: from a 49 percent undervaluation to even being overvalued, according to a recent paper by economist Yin-Wong Cheung at the University of California, Santa Cruz.

Since one cannot necessarily determine whether a currency has been manipulated just by looking at its price — as a Depression-era central banker put it, “only God could tell” what a currency should trade at — many people point to the Chinese government's interventions in foreign exchange markets as proof of currency manipulation. Hoarding foreign assets is the traditional way in which a country holds down its exchange rate. Most governments hold foreign assets, but buying them in extremely large quantities can shift exchange rates because a government must buy foreign currency to do it, which decreases the relative global demand for its own currency. China's central bank, the People's Bank of China (PBOC), holds almost \$3.5 trillion in foreign exchange reserves. China doesn't reveal how much of that is denominated in dollars, but based on past snippets of information, many economists estimate the number is around two-thirds, held mostly in U.S. Treasury securities. That would be more Treasuries than even the Federal Reserve owns. China holds nearly three times as many total foreign reserves as Japan, the world's second-largest holder, and almost as many as all advanced economies combined.

Effects on America

An undervalued RMB would provide American consumers with a lot of artificially cheap goods. Our top consumption imports from China include small electronics — like telephones, monitors, and ADP equipment — as well as clothing, furniture, and toys, all effectively subsidized by the Chinese government.

The size of that subsidy depends on how much the RMB is undervalued, says Mark Perry, an economist at the University of Michigan-Flint and the American Enterprise Institute. The United States imported \$425 billion in goods from China in 2012. If the RMB was undervalued by



5 percent — and it has most likely been undervalued by much more than that in the last decade — U.S. consumers and businesses saved \$21.3 billion, or about \$68 per person. But Perry emphasizes that’s a rough estimate because fewer Chinese goods would be purchased if the subsidy were no longer present.

In fact, that is the key question in the debate over China’s currency policy: How much has the policy actually boosted China’s trade balance? That’s a hard question to answer because many things affect bilateral trade between nations. Economist Joseph Gagnon at the Peterson Institute for International Economics recently took a novel approach. He looked directly at the dollars that governments spend on exchange rate intervention — purchases of foreign currency, which most governments share openly — and estimated how much showed up in each country’s total trade balance. He found that the effect of currency interventions on trade is large: On average, between 60 and 100 cents of every dollar of currency intervention shows up in the trade balance.

But that doesn’t necessarily mean ending China’s currency policy would send that demand back to American firms. For many goods, particularly the labor-intensive ones that China excels at producing, “if we don’t buy them from China, they’re still not going to be produced here,” Frankel says. And by removing China’s effective subsidy, U.S. consumers could end up paying higher prices by importing more expensive manufactured goods from other major players like South Korea. Moreover, some economists argue that the United States and European governments are also plenty protectionist, hurting foreign producers via ample subsidies to the domestic agriculture industry, among others.

The effects on U.S. jobs might start to look bigger if China’s currency policy encourages its competitors to follow suit. “By keeping its own currency undervalued, China has also deterred a number of other Asian countries from letting their currencies rise very much (if at all) against the dollar for fear of losing competitive position against China,” economist C. Fred Bergsten of the Peterson Institute said in congressional testimony. Bergsten and Gagnon estimated that currency manipulation by more than 20 countries — with South Korea, Hong Kong, Malaysia, Singapore, and Taiwan among the most active — has added between \$200 billion and \$500 billion to the U.S. trade deficit each year.

As for China alone, our bilateral trade imbalance — at almost a third of a trillion dollars last year — is not entirely what it seems. China has become a global platform for the “processing trade,” the name for taking raw materials imported from the rest of the world and assembling them into final manufactured goods. The share of Chinese exports that are produced by foreign-invested enterprises (FIEs) — operations owned by companies outside of China, like factories that assemble Apple’s iPhone — is now almost 60 percent, up from just 2 percent in the mid-1980s. Estimates of the amount in wages, land, and returns to capital that China contributes to that production — its value added — reach 55 percent at most. In other words, foreigners benefit

from production in China sometimes more than the Chinese do. According to a study by Robert Johnson at Dartmouth College and Guillermo Noguera at Columbia University, our bilateral trade imbalance with China would look 40 percent smaller if adjusted for value added.

Pressuring China

In sum, the offsetting effects of China’s currency policy make its net effect on American jobs difficult to assess. Historically, more immediate — some might say political — concerns have tended to drive U.S. action against currency manipulators. Research by Frankel and Wei found that the United States has been more likely to apply political pressure when its bilateral trade deficit with another country grows larger, and in election years when unemployment is high.

Nowadays, action from the United States would probably start with a declaration that China is a currency manipulator, a phrase that gained more notoriety during the 2012 presidential campaign. Since the 1988 Omnibus Trade and Competitiveness Act, the Treasury Department has been required to publish semiannual reports on suspected currency manipulators. The last report, issued in April 2013, declined to apply that label to China, citing the RMB’s gradual appreciation over the last decade. The declaration would open the door to tariffs, capital controls (that could, for example, prohibit China from buying Treasuries), or trade sanctions. At a minimum, the label requires the United States to hold talks with offending governments.

Eight countries have been mentioned in the report since 1988, all of them Asian with the exception of Russia. The reports received less attention during the East Asian financial crisis of the late 1990s, and didn’t even name any offenders in some years of the early 2000s. The United States has ramped up rhetorical pressure on China since 2003, however. Members of Congress proposed tariffs on Chinese goods, and the Treasury reports have once again recommended discussions with the Chinese government. Still, China has not been labeled a manipulator since the early 1990s.

The international path of recourse is less clear. Since the end of Bretton Woods, there have been very few cases of countries successfully pushed into revaluation, and no economically significant ones, Frankel and Wei argued. Membership rules for the International Monetary Fund (IMF) indicate that countries should “avoid manipulating exchange rates...to gain an unfair competitive advantage over other members,” but the words “manipulating” and “unfair” are left undefined, and the rules include no enforcement mechanisms. Some people argue that the IMF could nonetheless publicly criticize manipulators, suspend voting privileges, or even threaten expulsion. The WTO’s rules do include a resolution process, but its list of prohibited activities are limited to trade measures like tariffs and quotas, not so much exchange rates. The WTO process has never been invoked for currency manipulation, and would require the

cooperation of the IMF, which has thus far declined to act.

Enacting countervailing protectionist measures is tricky since tariffs on Chinese goods are equivalent to a tax on U.S. consumers, with skewed distributional effects. Few Americans work in the manufacturing plants that might compete with Chinese sellers, but hundreds of millions of Americans buy Chinese goods. In other words, the benefits of ending currency manipulation would be concentrated on a relatively small set of Americans at a cost to millions of others. For example, a 2009 tariff on Chinese tires saved at most 1,200 jobs but cost U.S. consumers \$1.1 billion in higher import prices — almost a million dollars per job — according to Gary Clyde Hufbauer and Sean Lowry at the Peterson Institute. Slightly higher prices might be considered worthwhile to reduce the severe outcome of job loss, even if for a relatively small set of people. But protectionism could have larger unintended consequences. Another recent IMF study found that the protectionist measures by all countries enacted during the 2007-2009 recession reduced global trade in affected product markets by as much as 8 percent.

“Studies repeatedly show that the consumer cost of trade protection typically exceeds, by a wide margin, any reason-

able estimate of what a normal jobs program might cost,” according to Hufbauer and Lowry.

For China’s Sake

Though the effects on the United States are up for debate, experts mostly agree the currency policy should eventually end — for China’s own sake.

The currency policy creates one direct problem for China: The central bank must accumulate ever more foreign assets to stop the RMB from appreciating. That creates a dangerous mismatch on its balance sheet. The PBOC’s dollar holdings are a significant share of its total assets, and they are mostly invested in low-yielding U.S. Treasury securities. That leaves the PBOC paying out more on its liabilities (denominated in RMB) than it earns on its assets (denominated in dollars). How long this can continue depends on its ability to sustain that funding imbalance. Moreover, it stands to incur huge capital losses if, or when, the RMB eventually does appreciate. With the PBOC now holding possibly more than \$2 trillion in dollar assets, those losses could be extraordinary. The mismatch gets larger each day that the currency policy continues.

More broadly, China’s currency policy is just one compo-

Is the Fed Pushing Down the Dollar?

After the Fed undertook quantitative easing (QE), the name for massive asset purchases to reduce U.S. interest rates and speed the economic recovery, developing countries complained. (The policies began in 2008 and continue today.) The developing countries argued that QE would weaken the dollar. That would not only siphon their exports, but also drive capital to their already inflated asset markets. Brazil’s finance minister, Guido Mantega, warned in September 2010 that the Fed’s policies had sparked an international “currency war” that would lead emerging markets to depreciate their own currencies to neutralize the effects. Japan and Britain have been the target of similar criticisms.

Currency manipulation and large-scale asset purchases are similar in that they are both strategies to stimulate a domestic economy. They could even have some similar byproducts, like a weaker currency and greater exports. But there’s one critical difference, says economist Joseph Gagnon at the Peterson Institute for International Economics: With asset purchases, “you’re trying to increase *total* spending, not just grab someone else’s spending.”

Still, negative spillovers from monetary easing are possible, and they happened during the Great Depression. Many countries supported their economies by expanding the money supply, which required exiting the gold standard. Countries that did so saw weaker currencies, which improved their trade balances at the expense of those that stayed tied to gold, according to a famous 1985 study by economists Barry Eichengreen at the University of

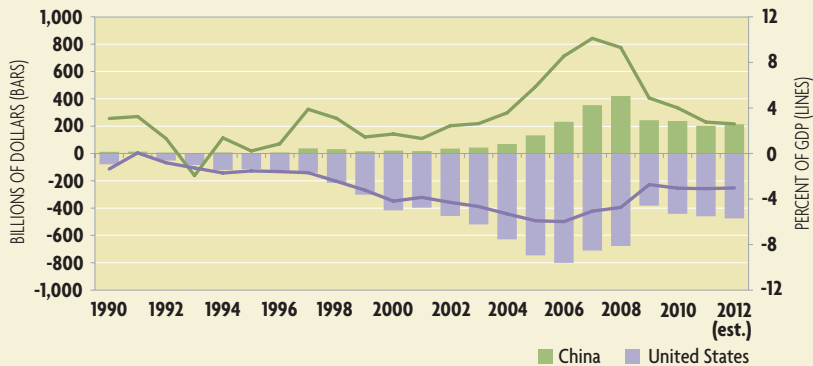
California, Berkeley and Jeffrey Sachs at Columbia University. In that situation, Eichengreen noted in a recent paper, there may have been an argument for matching currency depreciation with currency depreciation — what some now call a currency war, but is more favorably known as policy coordination. That would have given all countries a domestic boost while avoiding “beggar-thy-neighbor” effects on trade.

But it works only if countries have experienced the same shocks. The difference between the 1930s and now is that economic weakness is not global: Many emerging markets are booming. Those booms could be overstimulated by easier U.S. monetary policy, even as it restores global financial markets and developed-country demand for goods from emerging markets. Currency wars might avoid unwanted trade and capital flows, but they could add to economic overheating.

Eichengreen argued that emerging economies should pursue other options, like fiscal tightening, to offset excessive capital inflows — because in the long run, QE has the potential to benefit everyone by restoring developed-country health. A 2011 study by the International Monetary Fund suggested that the net spillover effects of QE on the output of U.S. trading partners were initially positive, especially due to improvements in financial markets that added to growth. In that way, Fed Chairman Ben Bernanke said in a March 2013 speech, QE is not a policy of “beggar thy neighbor” but rather one of “enrich thy neighbor.”

—RENEE HALTOM

Current Account Imbalances: Another Measure of Trade



SOURCE: International Monetary Fund, World Economic Outlook Database, April 2013

ment of a development strategy that some economists argue is widely out of balance. At more than 50 percent of GDP, China's national saving rate is the highest in the world. There are several reasons for it, according to Dennis Yang at the University of Virginia. As growth took off after 2001, government tax revenue nearly quadrupled; what the government does not spend adds to national savings. Also, the effects of China's movement away from its communist heritage amplified corporate profitability, profits which were held as retained earnings, another component of national savings. Meanwhile, household savings are high both due to demographic factors (especially the one-child policy and aging population) and less-developed social safety nets and financial markets. And while investment is very high in China, as in most fast-growing economies, saving is even higher. If more of China's extraordinary economic growth — averaging 10 percent annually since the late 1970s — were used for domestic consumption or investment, its exports would have been substantially lower.

China ensures that exports stay high through more than just the currency strategy. Regulations require that China's substantial foreign direct investment — second only to that of the United States — be oriented toward export production. For goods that are exported, producers are refunded both any tariffs paid on intermediate goods and the value-added taxes paid at each stage of production. The effect of these incentives, many of which have been in place since the late 1970s, were amplified considerably by China's entry into

the WTO, after which its exports soared by 25 percent each year. China's currency policy also plays a role, as does its historically cheap labor.

But these patterns can't go on indefinitely, because growth by exports doesn't create enduring wealth. "Long-term growth will ultimately depend on capital accumulation, size and quality of the labor force, technological advances, and other institutions," Yang says.

Several factors could trigger a rebalancing. China is likely to experience pressure from the international community while large trade imbalances persist. In addition, the risk on the PBOC's balance sheet could prove too great.

Or, the imbalances could be naturally unwound by a maturing economy. For example, wages are rising as China is reaching the limits of how much cheap labor can be drawn out from its rural provinces. That will reduce China's competitive edge in the processing trade. It will also eat away at corporate profitability and put more income in the hands of households, who could use it for consumption or imports, both which would reduce national saving and China's trade imbalance.

Finally, Chinese inflation is rising, a result of the PBOC creating money to accumulate foreign assets. "If you don't allow the currency to appreciate in nominal terms, your prices go up," Frankel says. "You end up getting a real appreciation either way."

The Chinese government is aware of the problems. Its most recent Five-Year Plans — its national development initiatives that are a relic from its central planning days — have indicated a goal of balanced trade, and policymakers have said they want the RMB to be governed more by market forces. These haven't yet come to fruition, but the recession temporarily alleviated the issue. Global demand for Chinese goods fell, trade imbalances eased (see chart), foreign money stopped pouring into China, and the PBOC had less appreciation pressure to offset. Thus, China has recently had the best of both worlds: a stable exchange rate without having to pile up additional reserves. But as China's trading partners regain strength, Chinese goods will once again be in demand. They'll have to make a decision, Gagnon says: "Do we let the renminbi go, or do we go back to the bad old days?"

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Maryland's Full House



More than 1,200 slot machines welcome guests at the Hollywood Casino Perryville in Perryville, Md.

BY JESSIE ROMERO

Tired shoppers at the Arundel Mills outlet mall in Hanover, Md., between Washington, D.C., and Baltimore, can take a break at one of the country's largest commercial casinos. Just feet away from Bass Pro Shops and Burlington Coat Factory, in a building that could hold more than five football fields, Maryland Live! is home to more than 4,300 slot machines and 122 live table games, such as blackjack and craps, with a two-story poker room opening in August. If a gambler isn't feeling lucky in Hanover, he can drive an hour north to the Hollywood Casino Perryville, two and a half hours east to the Casino at Ocean Downs, near Ocean City, or two hours west to the Rocky Gap Casino Resort in Cumberland. Within the next three years, additional casinos are scheduled to open in downtown Baltimore and in Prince George's County, on the border with Washington, D.C. — making the Free State one of the most concentrated gambling markets outside of Las Vegas.

Gambling has been a heated topic in Maryland politics since the early 2000s, when gubernatorial candidate Robert Ehrlich campaigned on bringing slot machines to Maryland. Ehrlich was elected, but failed to persuade the state legislature to pass his bill. In 2008, however, voters approved a referendum, backed by new governor Martin O'Malley, to allow up to five slots-only casinos to open in the state. Just four years later, gambling was once again the subject of special legislative sessions and a fierce political campaign, which eventually resulted in a major expansion of the state's casino industry.

Supporters view casinos as a surefire way to generate tax revenues for the state and jobs for the surrounding communities. Opponents argue that these benefits are greatly overstated, not to mention outweighed by significant social costs. The reality is probably somewhere in the middle, but legislators in Maryland and many other states are hoping that their bets pay off.

MARYLAND JOINS
THE RANKS OF
STATES THAT
HOPE CASINOS
MEAN
EASY MONEY

Going All In

The most expensive political campaign in Maryland history wasn't about a person — it was about a business. In November 2012, voters approved legislation, passed by the General Assembly that August,

authorizing the construction of a sixth casino in Prince George's County and expanding casino gambling to include live table games. Between August and November, supporters and opponents spent more than \$90 million — as much as was spent on the past four governors' races combined — to convince voters of their position on Question 7, as the ballot initiative was known. On the "pro" side was

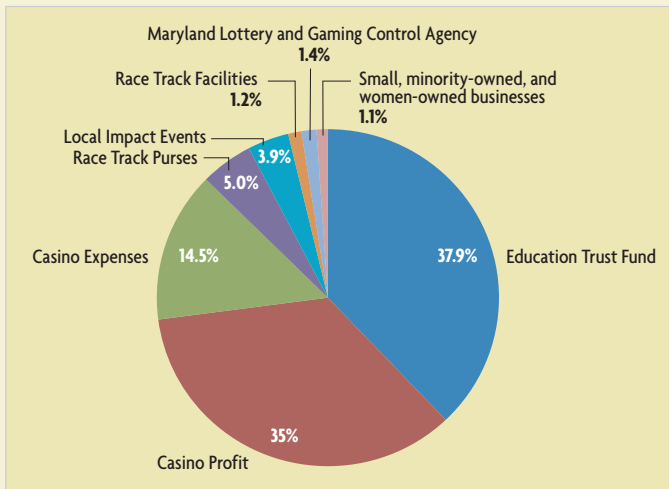
MGM Resorts, which wants to build an \$800 million casino at the National Harbor resort on the Potomac River. On the "con" side was Penn National Gaming, which wants to add a casino to its Rosecroft Raceway, and has argued that the political process is tilted in favor of giving the sixth casino license to MGM and National Harbor. Penn National also owns the Hollywood Casino at Charles Town Races in West Virginia and the Hollywood Casino Perryville.

Maryland's battle was fierce, but it wasn't unique, says James Karmel, a gaming consultant and economic historian at Harford Community College in Bel Air, Md. "It's very rarely the casino interest versus people who just don't like casinos. Almost always it's one casino interest versus another casino interest, because the money is so big."

Consumers spent \$37.3 billion at commercial casinos in 2012, nearly as much as the prerecession peak of \$37.5 billion, according to the American Gaming Association (AGA), a trade association. Commercial casinos include riverboat and dockside casinos, racetrack casinos, and stand-alone casinos. Tribal casinos, which operate on Indian reservations under federal regulation, generated \$27 billion in revenue in 2011, the most recent year for which data are available.

Of course, commercial casino owners don't get to keep a large portion of their revenue. In Maryland, the state keeps

Revenue Shares from Maryland Casino Gambling, April 2013
Gross Revenue: \$68,943,512



NOTE: April 2013 was the first month casinos operated table games.
 SOURCE: Maryland Lottery and Gaming Control Agency

67 percent of the slot machine revenue and 20 percent of the table game revenue, one of the highest rates in the nation. The 2012 law allows Maryland Live! and the forthcoming Baltimore casino — the ones closest to a sixth casino in Prince George’s County — to keep about 8 percent more of their slots revenue as compensation for the added competition. The money that casinos give to the state does not include property taxes or corporate income taxes, which must be paid separately. (Tribal casinos are not subject to state or federal taxes, although the state compacts that govern tribal casinos generally include a revenue-sharing agreement.)

“People think, oh, casinos take in so much money,” says Jennifer Miglionico, director of marketing at Hollywood Casino Perryville. “But they don’t realize how much we give back out.”

The 2008 legislation established an education trust fund, which initially received 49 percent of the total gambling revenue. With the passage of Question 7, the trust fund will receive 39 percent of total gambling revenue, according to projections by Maryland’s Department of Legislative Services (DLS). The remainder of the state’s money goes toward supporting the horse racing industry, local impact grants, and small, minority-owned, and women-owned businesses. Through May 2013, total slot machine revenue was more than \$620 million. (See charts.)

Winning Big...

Casinos have proliferated rapidly in the United States. Before 1989, gamblers had to travel to Nevada or Atlantic City, N.J. But that year, a casino opened in Deadwood, S.D., in a bid to revitalize the struggling town. Today, more than 500 commercial casinos operate in 22 states, with Massachusetts slated to become the twenty-third. Tribal casinos operate on Indian reservations in 28 states, including the Fifth District state of North Carolina.

Maryland and West Virginia are the only Fifth District

states with commercial casinos, but all five states and the District of Columbia operate state lotteries, which combined have generated \$33 billion for their states’ budgets. Maryland’s lottery is the longest-standing, at 40 years, while North Carolina only started its games in 2005.

Whether it’s scratch-off tickets or a glitzy casino, state lawmakers legalize gambling for a combination of three reasons: reducing fiscal stress, keeping gambling revenues and taxes in state, and attracting tourism, according to an analysis of states’ decisions by Peter Calcagno and Douglas Walker of the College of Charleston and John Jackson of Auburn University. And once one state allows gambling, its neighbors tend to follow suit. “[Legislators] realize that people are still gambling, and figure, well, if we can get an extra \$500 million for the budget, let’s let people gamble here as opposed to some other state,” says David Schwartz, director of the Center for Gaming Research at the University of Nevada, Las Vegas.

That was the case in Maryland, where Governors Ehrlich and O’Malley both supported slots as a way to close large budget deficits. Maryland also found itself in the midst of a casino arms race: West Virginia and Delaware began allowing slots gambling in 1995, and Pennsylvania followed suit in 2004. No sooner did Maryland legalize slots than its neighbors responded by allowing table games; recapturing the revenue lost to other states thus became a major impetus for the 2012 expansion. Marylanders spent more than \$1 billion at Charles Town Races and Slots between 2003 and 2012, in effect generating tax revenue for West Virginia instead of Maryland, according to a study by Sage Policy Group, a Baltimore-based economic consulting firm. Sage estimated that if Question 7 did not pass, Maryland residents could spend an additional \$1.5 billion at Charles Town over the next 10 years. (Sage received funding from a pro-Question 7 group.)

The DLS estimated that the addition of table games and the sixth casino would increase gambling revenue to \$1.9 billion by 2017, about \$700 million more than slots alone. The education trust fund would receive \$750 million in 2017 — \$170 million more than would be generated by the five existing casinos.

Gaming industry supporters also point to casino gambling as an effective way to create jobs. The casino industry supported about 820,000 jobs in 2010, according to a study prepared for the AGA by The Brattle Group, a consulting firm. About 350,000 people were employed directly by the casinos, with the remainder employed by suppliers and other support industries. The study also noted that casinos are more labor-intensive — they employ more people per dollar of revenue — than many other industries. A report prepared for Massachusetts by the Spectrum Gaming Group found that casinos have a multiplier effect of about 1.5, meaning that for every job created at a casino, additional spending in the economy generated another 0.5 jobs. The Brattle Group puts the multiplier at 1.92. In Maryland’s case, supporters of Question 7 claimed that the expansion would

generate 2,000 construction jobs and 10,000 permanent jobs across the state. So far, Maryland Live! has hired about 2,400 permanent employees, half of whom were a result of Question 7. Hollywood Casino Perryville has added about 140 employees to its original 300, according to Miglionico. There are no estimates yet of how many indirect jobs might have been created.

... Or Going Bust?

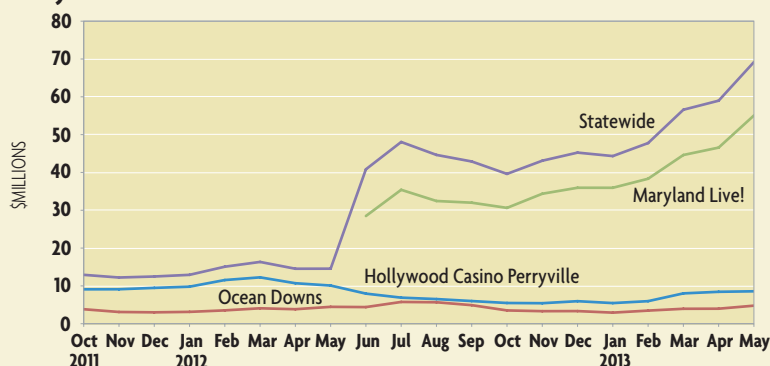
Economic-impact studies on the effects of casino gambling depend, however, on a number of assumptions about how consumers and businesses will respond — and those assumptions might or might not prove to be true. For example, most studies assume that the new casinos will attract out-of-town visitors, but as more states legalize casinos, there is less reason for people to travel out of state to gamble. In addition, research suggests that many of the people who visit casinos are day-trippers who rarely venture beyond the casino, making it unlikely that they generate a large multiplier effect.

Many impact studies also fail to account for the net effect on jobs and tax revenues. As Karmel says, gaming has become “an everyday thing, just part of your routine entertainment options, like going to a restaurant or a movie or a ballgame.” While that has been good for the casino industry, it’s possible that consumers are shifting their spending from other forms of entertainment to casinos, rather than increasing their total amount of entertainment spending. If that’s the case, any job gains or increased tax revenue from casinos could be offset by job losses or decreased taxes from other businesses, according to Earl Grinols, an economist at Baylor University. “When one sector of the economy expands at the expense of another sector of the economy, you’ve merely shifted the location of jobs,” Grinols says. “Casinos don’t create people. They’re merely hiring people who would already be working someplace else.”

Of course, that is less likely to be true when unemployment is high, as at present. In that case, casinos could provide a benefit if they put some people back to work more quickly than would otherwise have been the case. But in the long run, casinos might not have a large effect on economic growth. In a separate study, Walker and Jackson found that casinos do not have any measurable effect on state per capita income. While there might be an initial boost in employment or tax revenue, they conclude that “the average state should not expect any long-term growth effects from legalizing casino gambling.”

Whatever the financial benefits of casinos, it’s possible that they are outweighed by the social costs of pathological gambling and higher crime. Compulsive gamblers tend to commit more crimes and are more likely to commit suicide; they also file for bankruptcy and get divorced at higher rates than the rest of the population. Areas that have a casino within 50 miles have double the rate of problem and pathological gambling, according to the National Gambling Impact Study Commission, which was convened by

Maryland Slot Machines Revenue



NOTE: Data are not included for the Rocky Gap Casino Resort, which opened in May 2013.
SOURCE: Maryland Lottery and Gaming Control Agency; UNLV Center for Gaming Research

Congress in 1996. It’s not certain that these links are causal; people with gambling problems often have other psychological problems, and an already-compulsive gambler might move to an area with a new casino, rather than the casino creating the compulsion. Still, the commission concluded in its 1999 report, “As the opportunities for gambling become more commonplace, it appears likely that the number of people who will develop gambling problems also will increase.”

Casinos also could lead to more crime. Crime rates increase in counties where casinos open, and overall between 5 percent and 30 percent of crime in a county can be attributed to the casino, according to research by Grinols and David Mustard of the University of Georgia. In another study, William Evans of the University of Notre Dame and Julie Topoleski of the Congressional Budget Office found that while employment in the surrounding county increased by 26 percent four years after an Indian casino opened, bankruptcy rates, violent crime, auto theft, and larceny all increased by 10 percent.

Other studies, however, have found that counties with and without casinos have the same crime rates, or that crime increases in some counties while remaining the same in others. Part of the discrepancy stems from the fact that it is difficult to distinguish the effects of casinos specifically from the effects of more visitors generally. Also, differences in population, law enforcement, or casino regulation might affect how a community responds to the introduction of a casino.

Despite the potential costs of gambling, arguments based on the economic impact tend to prevail. “You can easily quantify the benefits; you can say, here’s the gaming revenue, here’s the tax, here’s the employment,” says Schwartz. “When you look at the social costs, that’s a much more nebulous area.”

Breaking Even

So far, Maryland Live! is drawing huge crowds. In March, the casino generated more than \$44 million in slots revenue — more than any other casino in Delaware, Maryland, New Jersey, or Pennsylvania. And anecdotal evidence suggests that Delaware and West Virginia already are losing

continued on page 29

HEALTH in MIND

Why MENTAL ILLNESS is one of the HARDEST SOCIAL WELFARE PROBLEMS TO SOLVE

BY RENEE HALTOM

The nation's first mental hospital, the Public Hospital for Persons of Insane and Disordered Minds, part prison and part infirmary, received its first patient in 1773 in Williamsburg, Va. A century later, 110 mental hospitals around the country were up and running.

The system kept growing. By 1950, well over half a million Americans lived in state mental hospitals — about a quarter as many inmates in the entire federal, state, and local jail system today. Unfortunately, those hospitals were no place to get well. They were often filthy. Psychotropic drugs and tranquilizers hadn't yet hit the market, so the halls were filled with people dazed and rambling from their psychoses. The science of the time offered electroshock therapy, lobotomies, and little else by way of treatment. Most of the staff were unskilled custodians, and many patients were locked away and never expected to reenter society.

That's about when the downsizing of state mental hospitals began. As of 2010, just 46,000 people resided in roughly 240 state and county psychiatric hospitals, according to the Substance Abuse and Mental Health Services Administration (SAMHSA). That's a small number compared to the 45.6 million adults that have some form of mental illness, such as anxiety, mood, or impulse control disorders, and even compared to the 11.5 million adults with serious mental illness, such as schizophrenia, bipolar disorder, psychotic depression, or other debilitating diseases. Thanks to better science on the treatment of mental illness, the vast majority of people with even serious mental illnesses can live full, productive lives, a virtual impossibility 50 years ago.

But it's clear that too many people still lack adequate mental health care. The mentally ill are overrepresented in bad walks of life. One-fifth of the population has a mental illness, according to SAMHSA, but they make up more than half the inmates in jails and prisons, and one-third of the homeless population. Suicide claims more lives each year than car accidents, and more than twice as many homicides. And there are unspeakable costs that the people of Virginia Tech, Aurora, Colo., and Tucson, Ariz., won't ever forget.

People with mental illness have a better chance than ever at thriving. But do we know how to deliver care that maximizes quality of life for the people who aren't?

The Challenge

It's not easy to say what an efficient mental health care system would look like, according to Harvard Medical School economist Richard Frank, co-author of the 2006 book *Better But Not Well* with Columbia University Mailman School of Public Health economist Sherry Glied. One can point to some good signs: "We've virtually doubled the rate at which people who have an illness get treated," Frank says. "We've also increased the chances that people who get treatment get the treatment that is likely to make them better."

Science is responsible for much of that; more treatments are available, and the side effects of medication are more tolerable. But we've also expanded and improved the system's ability to deliver care. Before the 1950s, treatment was mostly limited to state mental hospitals and about 7,000 psychiatrists, many located in small private practices in urban areas, Frank and Glied wrote. There were also 13,500 psychologists and 20,000 social workers, but most didn't provide mental health care. Today, there are more than half a million licensed psychiatrists, psychologists, counselors, family therapists, nurses, and social workers working across 4,800 public and private mental health organizations that provide varying intensities of care. More than 31 million people get mental health treatment each year. In addition, society is more respectful of patients' rights, and the stigma of mental illness is gradually eroding.

An ideal system creates opportunities for as many people as possible to live independently, Frank says. "On the other hand, for both humane reasons and externality reasons, you don't want to let them fall too far."

It would be prohibitively expensive, in all likelihood, to reduce the number of people who fall through the cracks to zero. Still, most people would agree that the sheer volume of bad outcomes makes it clear that our system needs improvement. The number of mentally ill people in jails and prisons is now orders of magnitude larger than the number in mental hospitals. To some extent, that's because the mentally ill are twice as likely to abuse drugs, which can lead to jail. But they are unlikely to get better there. Only a third of inmates with mental illness receive any treatment — hospitalization, medication, or therapy — once incarcerated.

Potentially even worse off are those who don't enter any system of care. Two out of five people with serious mental illness receive no treatment. In 2010, more than 38,000

people committed suicide, according to the Centers for Disease Control and Prevention. In 2011, more than 1 million people attempted it, and 8.5 million had thoughts of it. A third of the homeless population is mentally ill, according to the Treatment Advocacy Center, a nonprofit that advocates involuntary treatment for some severely ill people.

In economics terms, involuntary treatment is justified in part by the externalities associated with mental illness — the fact that people who fall through the cracks tend to become society’s problem, whether through crime, homelessness, or the drain on public resources. Externalities aside, it is also thought to be justified by the fact that individuals with some severe mental illnesses lack the capacity to make rational decisions about treatment that could improve their lives. In an attempt to safeguard against overuse of involuntary treatment, many state laws require that a person have already exhibited dangerous behavior in order to receive treatment against their will.

Critics such as the Treatment Advocacy Center argue that overly high standards for involuntary commitment could cost the system resources down the line. A famous 1999 study out of Duke University found that programs like court-ordered outpatient therapy and medication reduced hospital admissions among people with schizophrenia and other psychotic disorders by 72 percent. Critics also contend that in the absence of involuntary commitment, some of the mentally ill are, in effect, sentenced to life in the streets. But to other advocates, patients’ liberties outweigh the public and private benefits of commitment.

Even in a system that brought all mentally ill people into treatment, it would be a challenge to treat all people effectively because the diseases are so complex. People with identical diagnoses can have vastly different symptoms and needs. “Even if you know the genes, the environment and early life experiences all figure into it,” Frank says.

Health care markets in general have problems that prevent buyers and sellers from coming together to negotiate services efficiently. The science on this goes back to economist Kenneth Arrow in 1963, who was the first to explain why efficient health care systems are so scarce. Uncertainty is a key component: No one knows his chances of getting sick, so people pool their risk through insurance. But the health insurance market is riddled with adverse selection (sicker patients will tend to buy more insurance, and insurers can’t immediately identify them) and moral hazard (once insured, people overuse service).

Market failures for mental health care are the same, only worse. Adverse selection is more pronounced, and studies show that uptake of services when someone else pays is at least twice as high for mental health than for other health services. As many as 8 percent of people who seek mental health treatment have no diagnosable condition at all.

Insurers counteract market failures by providing better coverage for minor psychological conditions to attract low-risk consumers. Many insurers ration care, but more dramatically for mental health. Since the 1990s, that has

been done through caps on service facilitated by managed care organizations — HMOs and other intermediaries between patients and doctors. States, in turn, have counteracted rationing with parity laws. These laws force plans to cover a certain level of mental health service, different in every state. The result is that almost all private insurance plans cover mental health services, but private insurers cover just over one-quarter of the total expenditure on mental health.

In most cases, private insurance doesn’t even enter the picture. Many disorders can make it difficult to hold a job, and life stressors can exacerbate genetic conditions. A recent study in the *Journal of Mental Health Policy and Economics* found that households with a severely mentally ill person are three times as likely to be poor, and they fall further below the poverty line. For a variety of reasons, “having a severe mental illness makes you poor, and being poor also increases your chance of having a mental illness,” Frank says.

That means Medicaid, Medicare, and Social Security disability programs are more likely to be involved. Public payers cover 58 percent of mental health spending, compared to 46 percent for overall health (see chart). The majority of public funds for mental health come through Medicaid, a federal program run by the states. Most mental health services are considered optional under Medicaid rules, meaning states get to decide which services are covered. The funds are matched dollar for dollar by the federal government, or more in poor states. For people who don’t qualify for Medicaid, states use general mental health funds to pay for treatment. (For a quick look at how recent health care reform is expected to affect mental health care, please see the online supplement to this article.)

Shifting Payers and Priorities

Entitlement programs were never intended to be a major provider of mental health services — they just came along at the right time. Medicare and Medicaid were created in 1965, and Social Security’s Supplemental Security Income (SSI) program was created in 1972. This was just as state mental hospitals were in steep decline.

State mental hospitals downsized mostly because care got better. The first antipsychotic drugs hit the market in the mid-1950s, which for the first time allowed people to be stabilized, rehabilitated, and discharged. The average hospital stay of six months in 1954 dwindled to just 23 days by 1980. That meant fewer beds and smaller hospitals. By 1980, the number of long-term residents in state mental institutions had dropped from 559,000 to just 154,000.

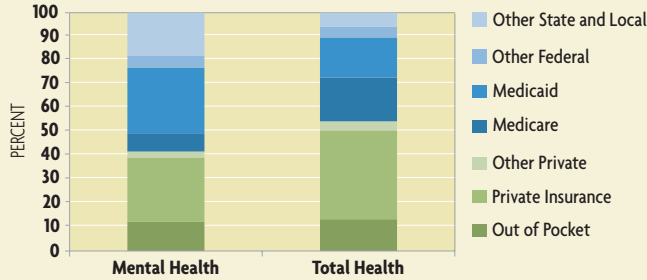
At the time, there were few alternatives for care. That began to change in 1963, when President Kennedy launched a system of community-based mental health care. Before then, mental health care was almost entirely a state issue. States were legally responsible for funding, so state legislators effectively set mental health policy by allocating their budgets, mostly devoted to state mental hospitals. Kennedy tripled federal funds to build a system of community mental

Who Pays Health Care Dollars and How They're Spent

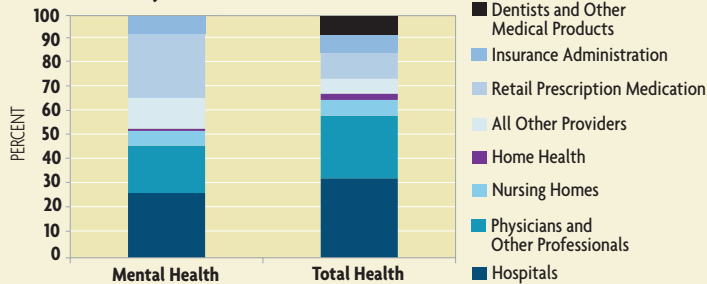
Mental Health
\$112.8 billion (2005)

Total Health
\$1,850.4 billion (2005)

Who Pays



Where the Money Goes



SOURCE: *Mental Health United States, 2010*. Substance Abuse and Mental Health Services Administration

health centers (CMHCs). Within 15 years, there were 650 CMHCs covering 43 percent of the population and serving 1.9 million people per year.

Though they were never intended to be used that way, entitlement programs made the federal government a permanently bigger player in mental health. When hospitals downsized, entitlement programs stepped in to fill the void. Medicaid and Medicare funded medical needs, and SSI provided income for food, housing, and other nonmedical services. Entitlement programs were designed to make it hard for states to shift the funding burden on to the federal government. Most notably, Medicaid cannot be used for treatment in state mental hospitals. States got creative; they shifted patients to nursing homes and general hospitals. The latter doubled their psychiatric beds in barely more than a decade of Medicaid's launch. Within six years of its creation, Medicaid accounted for 16 percent of all mental health spending, and it was 28 percent in 2005 (see chart). The share of state spending fell from more than half in the 1950s to less than a quarter by the early 1970s, where it has stayed.

The federal government's larger role has also helped determine the focus of care, says Howard Goldman at the University of Maryland School of Medicine. The old state mental hospitals focused on the sickest and most disabled people. Kennedy's community system, by contrast, was focused on overall "mental health," which the World Health Organization defines as mental wellness, not just the lack of an active disorder. For many people, this was a great thing. For the first time, even people with mild depression or anxiety had treatment options.

But it proved difficult for people with serious illnesses to

navigate the full range of services that they needed — both medical services and nonmedical support like food, housing, help finding and keeping a job, and social lifelines to aid the reintroduction into society. Many resided in nursing homes and slum apartments. In 1977, the Government Accountability Office wrote a scathing report of the CMHCs' lack of support for people with chronic mental illness, and federal and state mental health services began to focus again almost exclusively on people with the most debilitating conditions. The gentrification of cities in the late 1970s and early 1980s brought many of them into the streets, creating a visible problem that sapped the remaining public support for the community system. Appropriations to CMHCs were pulled under President Reagan's deficit reduction efforts, and replaced with smaller block grants. Today, the vast majority of federal spending on mental health services comes through Medicaid.

The pendulum has started to swing back, Goldman says. "There has been a drive over the last 20 years to expand the scope of who has a mental illness."

The profession follows the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders*, known as the DSM, to diagnose patients and assign treatments. It now includes behavioral conditions, like attention deficit disorder. The fifth release, issued in May 2013, is even more expansive, including conditions like bereavement and caffeine withdrawal. Although public mental health services are not directed at the same expanded list of conditions, there is a greater interest in early intervention and bringing people into the system, Goldman says.

Dwindling Funds

As the definition of mental illness is expanding, funding is being drained by the ongoing state revenue crisis that has afflicted state governments since the onset of the Great Recession.

At \$37.4 billion, mental health expenditures were 2.3 percent of total state budgets on average in 2010 (see chart). But those numbers are falling. States cut \$4.35 billion from mental health spending from 2009 to 2012, according to the National Association of State Mental Health Program Directors, which represents the states' mental health agencies. Over the same four-year period, the state system saw a nearly 10 percent increase in utilization in publicly financed inpatient and outpatient behavioral health treatment services. South Carolina cut funding more than any other state; its general fund budget for mental health dropped by 39 percent between 2009 and 2012, according to a separate study by the National Alliance on Mental Illness (NAMI), an advocacy group. Washington, D.C., was among the top 10 at 24 percent. Nine other states cut funding by more than 10 percent.

"The states are devastated by the budget cuts. There's just no nice way to say it," says Lisa Amaya-Jackson at Duke University's School of Medicine.

The poor are the most vulnerable, but budget problems spill over. Non-Medicaid spending tends to be cut first, since cuts to Medicaid lose the federal matching funds too. That happened when stimulus funds ran out in June 2011 and pulled \$14 billion from state Medicaid programs. One hospital in Phoenix, Ariz., reported a 40 percent spike in emergency room psychiatric episodes after services were eliminated for 12,000 people with serious mental illnesses who did not have Medicaid, NAMI reported.

Agencies are starting to use evidence-based treatment (EBT) as a way to protect services from budget cuts. The EBT philosophy emerged in the 1990s for overall health care, but has amassed wide support in mental health in just the last decade. The approach is based on rigorous follow-through of each step of a scientifically validated regimen.

As the name suggests, not only is EBT arguably more effective, but it is perceived as such by state legislatures deciding where limited state funds should go. Amaya-Jackson is the director of Duke's Evidence-Based Practice Implementation Center (EPIC), which trains clinicians on EBT. After following through on the training program, EPIC puts the clinician's name on a public roster. Amaya-Jackson says that agencies in North Carolina have become more eager to partner with EPIC in lean times because appearing on that roster signals accountability to legislatures. It has also created a network of clinicians within the state that third-party payers — Medicaid and insurance companies — want to work with, maximizing the clinicians' reimbursement rates.

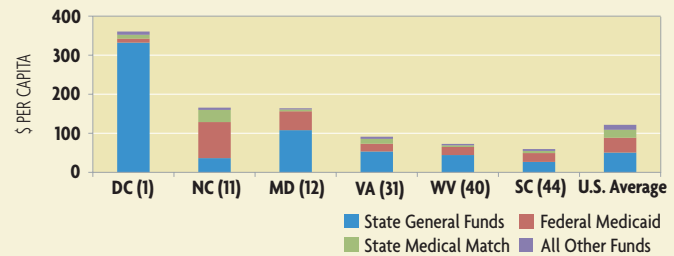
Searching for Welfare Gains

It is not clear what overall level of spending for mental health would be optimal. Among countries that spend about what we do on mental health as a share of GDP, some do better and some do worse, as measured by homelessness, incarceration rates, and the number of people who get EBT, Frank says. Australia matches our spending levels, and is known for its effective system.

With any social welfare problem in which resources are scarce, there are usually ways to squeeze blood from a turnip by distributing resources more efficiently. For example, effective treatment could prevent many of the socially destructive behaviors that land people in prison. North Carolina had 3,300 public and private inpatient psychiatric beds in 2007. But the previous year, more than 5,500 inmates

Per Capita Spending by Fifth District States

State mental health agencies spent roughly \$37 billion on care in 2010. Here's where the funds came from in the Fifth District.



NOTE: State's rank for total mental health agency spending in parentheses.
SOURCE: National Association of State Mental Health Program Directors Research Institute, and author's calculations

in the states' prisons — 14 percent of the state's prisoners — had a serious mental illness. Budget cuts have already removed well over 3,000 of the nation's psychiatric beds, more than 6 percent of the total.

The combination of mental illness and substance abuse is a particularly vulnerable area, Frank says, responsible for many of the mass shootings in recent history. "Someone with schizophrenia is more likely to be a victim than a perpetrator, and they are no more likely to be perpetrators than the rest of us." But if you combine schizophrenia with substance abuse, they are much more likely to inflict harm. "The issue is that, unfortunately, people with schizophrenia are more likely to abuse substances."

In many cases, the difficulty is getting people into the treatment system in the first place. That means treating illnesses before they snowball into bigger problems, especially for children; the average onset of mental illness is at just 14 years old. There are also big gains from treating mothers with depression, since children with depressed mothers do worse in school and are more likely to become depressed themselves. "That's a cheap fix," Frank says. "It's maybe \$1,200 to get effective treatment for depression. It's not very expensive to get people decent treatment for your common mental illnesses."

Though there is no obvious wholesale fix to the system, here's the good news: A lot of progress has been made in a very short amount of time. We have good ideas of how to treat mental illness, and how to enable people to live controlled, productive lives, and we have greatly improved the rate at which people enter the system. By further improving the ability of markets to allocate care, there is hope of further driving down the number of people with mental illness who are imprisoned by their diseases. **EF**

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GREEN JOBS

Not a Black and White Issue

Is saving the environment the best way to boost employment?

BY JESSIE ROMERO

Most scientists agree that the Earth is warming and the oceans are rising — a fact they attribute largely to carbon dioxide emissions. The United States emits roughly 6.7 billion metric tons of carbon dioxide each year, about one-fifth of the world's total. At the same time, 12 million people are currently looking for work, and millions more are either underemployed or have dropped out of the labor force entirely. So why not put those people to work building a new, green economy? It is a compelling vision: millions of people employed building wind farms, retrofitting buildings to make them more energy efficient, or designing electric cars.

Investing in such “green jobs” is viewed by many as a win-win-win situation. Green industries will create more and better jobs relative to other industries; investing in new technologies will plant the seeds for future innovation and productivity gains; and these new industries will help conserve natural resources and reduce greenhouse gas emissions.

Green jobs were a centerpiece of the \$787 billion American Recovery and Reinvestment Act of 2009 (ARRA), and many federal, state, and local policies are premised on the link between environmental policy and economic results. But that link isn't entirely clear, and policies that

attempt to achieve both economic and environmental goals might not be the most effective way to achieve either of them.

What Does “Green” Mean?

Before you can create a green jobs policy, you have to know what a green job is. But that's not a simple task. “If we think about someone putting solar panels up on roofs, you could say, ‘Well sure, for sure that's a green job,’” says Robert Pollin, an economist at the University of Massachusetts Amherst. “On the other hand, that person is probably an electrician who is spending 70 percent of his or her time doing something other than putting up solar panels.” Another question: If a job is not directly related to green output — such as the accountant at a solar panel firm — should it be counted as green?

The answer is “yes,” according to the Bureau of Labor Statistics (BLS), which began collecting information on green jobs in 2010. (The BLS ended the program in March 2013 in response to mandatory budget cuts.) The BLS has defined two categories of green jobs: “green goods and services” jobs and “green technologies and practices” jobs. The former are “jobs in businesses that produce goods or provide services that benefit the environment or conserve natural resources” — including that accountant. The latter are “jobs in which workers' duties involve making their establishment's production processes more environmentally friendly or use fewer natural resources.” About 3.4 million people, amounting to 2.6 percent of total employment, had green goods and services jobs in the United States in 2011 (the most recent year for which data are available). About 850,000 people were employed in green technologies and practices jobs. Because these data are gathered via different surveys, there is some overlap between the groups; for example, someone working on a green process at a company that produces a green good would be counted in both surveys.

Thus, green jobs aren't all solar panels and windmills. According to the green goods and services survey, the largest green occupational category, with about 475,000 jobs, is “transportation and warehousing.” The category includes nearly 300,000 city and school bus drivers, who are considered green because they reduce the number of individual drivers on the road. (See chart.) More than 350,000 people are employed in “administrative and waste services,” a category that includes garbage collectors, who in many cities also



Green jobs aren't just solar panels and windmills. In many cities, garbage collectors who pick up recycling are considered green workers.

PHOTOGRAPHY: SHUTTERSTOCK

pick up recycling. Green workers also are found on organic farms, at nuclear power plants, and at steel mills. Only about 5 percent of green jobs are in the renewable energy sector, according to a 2011 analysis by Mark Muro, Jonathan Rothwell, and Devashree Saha at the Brookings Institution, which used a green jobs definition similar to the BLS. The Brookings researchers counted 2.7 million green jobs overall.

More than 350,000 green jobs are in “public administration,” including administering and enforcing environmental regulations — which explains why Washington, D.C., has the highest share of green jobs in the country, 5.1 percent. (California has the highest absolute number of green jobs with 360,000.) In Maryland, about 3.7 percent of jobs are green, and in the rest of the Fifth District the share is close to the national average of about 2.6 percent.

Nearly half of green jobs are held by workers with a high school degree or less, compared to 37 percent in the United States overall, according to the Brookings report. At the same time, the Brookings researchers found that median wages in the “clean economy” were 13 percent higher than median U.S. wages overall. Green firms don’t necessarily pay more for the same work, but green jobs tend to be in better-paying industries and better-paying occupations, according to Brookings, which suggests that green jobs might offer better opportunities for lower-skilled workers.

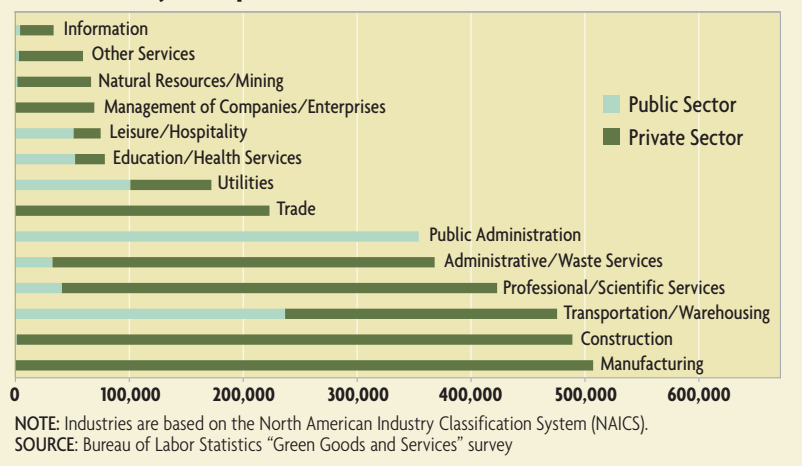
Green Policy

Interest in green jobs was especially high during the recession of 2007-2009, when numerous studies proposed green jobs as the cure for a flagging labor market. In 2008, for example, Pollin and several colleagues estimated that \$100 billion allocated to energy efficiency and renewable energy, split among tax credits, direct government spending, and loan guarantees, would generate 2 million new jobs. A 2009 report published by the Peterson Institute for International Economics, a nonpartisan research institution, projected that every billion dollars invested in “green recovery” would generate more than 30,000 jobs. Many other studies were similarly optimistic.

The ARRA stimulus legislation did include about \$90 billion for a variety of environmental initiatives. The chief components were \$20 billion for energy efficiency measures, such as weatherizing homes; \$27 billion in tax credits and loan guarantees for renewable energy; \$18 billion for transit improvements, including building high-speed rail lines; and \$11 billion for modernizing the electric grid. The remainder of the money went toward advanced vehicle development, green job training, and other programs.

It is difficult to determine precisely what effect the stimulus had on the economy, much less what effects can be traced to specific provisions. According to a report by the liberal Economic Policy Institute and the BlueGreen Alliance, an association of labor unions and environmental organizations, the green portions of the bill saved or created 1 million jobs, including indirect and induced jobs. One key assumption of the report’s model, however, was that all

Green Jobs by Occupation, 2011



\$90 billion of the authorized funds actually made their way into the economy. But only about half of the money actually has been spent; many agencies and potential recipients found it difficult to comply with the application and reporting requirements. “The stimulus was coming into a situation where the level of government investment was negligible. To go from spending one or two billion to \$90 billion is really hard,” Pollin says. “The standards were pretty high; it took six months just to figure out how to write a spreadsheet.”

Although direct government spending toward green jobs was relatively low prior to the ARRA, the linking of environmental and economic objectives predates the Great Recession. In 2007, for example, Congress created the Advanced Research Projects Agency within the Department of Energy, known as ARPA-E. The agency was modeled after DARPA, the research arm of the Department of Defense, which supported the research that led to the development of the Internet, among other technologies. ARPA-E provides funding to energy projects that are not yet ready for private sector investment. First among the agency’s listed goals is not protecting the environment but rather enhancing the United States’ economic prosperity.

Since 2007, the Department of Energy also has run a loan guarantee program devoted to helping renewable energy projects reach a scale “sufficient to contribute meaningfully to the achievement of our national clean energy objectives,” the first of which is job creation. The program also aims to enhance national competitiveness by ensuring that the United States is at the forefront of developing any new energy technology. Many people point to China’s dominance today in producing solar panels as an example of a missed opportunity for the U.S. manufacturing sector. (See “American Made,” *Region Focus*, Fourth Quarter 2011.) In addition, many experts believe that innovation in one sector lays the groundwork for future innovation in other sectors. “This is a tremendous opportunity for technical innovation, and integrating innovation into the economy,” Pollin says.

The federal government also supports renewable energy industries via production and investment tax credits, which help producers recoup their investment costs. (Oil and gas companies also receive a variety of tax allowances.)

The 20-year-old production tax credit, which covers producers of geothermal, biomass, and wind energy, among other technologies, has been renewed multiple times, most recently at the end of 2012. The fortunes of these industries appear closely tied to the tax credit; Congress has let it expire four times since 1992, and investment fell sharply during each year before it was renewed. Prior to the credit's anticipated expiration in 2012, manufacturers had begun laying off workers; the credit's renewal saved as many as 35,000 jobs, according to Sanjay Mazumdar, an industry analyst and chief executive officer of the consulting firm Lucintel.

An investment tax credit for solar power was established in 2005 and renewed for eight years in 2008. Solar installations doubled the year after the investment tax credit went into effect, and have doubled four more times since then, according to the Solar Energy Industry Association, a trade organization. Consumers also are eligible for a federal tax credit for installing renewable energy products in their homes, which may boost demand for these industries.

All 50 states and the District of Columbia have pursued green business as an economic development strategy, offering some mix of business and consumer tax credits, renewable energy mandates, and green job training programs. In the Fifth District, for example, Maryland has four different incentive programs for businesses toward its goal of creating 100,000 green jobs by 2015. Even West Virginia, one of the nation's largest producers of coal, offers corporate and residential tax credits for wind and solar power.

It's Not Easy Being Green

The relationship between environmental policy and economic growth is far from straightforward, however. One issue is that "green jobs" is a very broad category, as economists Jon Strand and Michael Toman of the World Bank explained in a 2010 paper. For example, labor-intensive policies that can be implemented quickly, such as environmental cleanup projects or energy efficiency retrofits, are effective for short-term stimulus but might not have a large effect on long-term growth. Projects with long-term environmental and economic potential, such as investments in renewable energy or transportation infrastructure, take a long time to scale up and are unlikely to create a lot of jobs in the near term.

The mix of projects in the ARRA illustrates this trade-off. Workers who were hired to weatherize homes or to clean up hazardous waste sites were laid off when the funding for the projects ended. On the other hand, \$8 billion was allocated to 22 states and Washington, D.C., to construct high-speed rail lines, but construction on the nation's first high-speed line won't begin until later this year.

In addition, job gains in the renewable energy sector could be offset by job losses in the fossil fuel industry, as the Congressional Budget Office noted in a 2010 report. It takes time for the labor market to adjust to new conditions; workers might have to move to new locations or acquire new skills, and some workers might not be able to adapt at all.

"Whenever government encourages job creation in one sector of the economy, there's usually going to be job loss in another sector," says John Whitehead, an environmental economist at Appalachian State University in Boone, N.C.

Some critics of green job creation policies agree that green technologies yield relatively high rates of job creation — but they don't agree that this is good for the economy. At present, for example, renewable energy is much more labor-intensive than traditional energy. The jobs created thus are low-productivity jobs, and the high labor content contributes to the energy's high costs. Mandating renewable energy, according to this argument, could decrease productivity and raise costs throughout the economy as a whole.

A large number of green jobs could even be a sign of poor environmental policy. Many green jobs involve cleaning up pollution, "and to a certain extent, this is a very unproductive activity," Whitehead says. "Look at the *Exxon Valdez* oil spill. It created a lot of green jobs. But if firms could get the proper incentives to clean up the pollution before it gets in the air or the water, then it's not going to create many jobs and that would be a good thing."

"It's An Externality, Stupid"

Job creation, long-term economic growth, and environmental protection are all important goals — but that doesn't mean they should necessarily be addressed with the same policies. According to the "Tinbergen Rule," named for the late Jan Tinbergen, a Nobel laureate and economist at the Netherlands School of Economics, for each policy goal there must be at least one distinct policy instrument. Trying to achieve multiple goals with a single tool might prevent policymakers from choosing the most effective tools for each goal. For example, other sectors of the economy might be better targets for short-term job creation, and the best policy to help the environment might not be one that creates a lot of jobs. "Employment policy should be employment policy and environmental policy should be environmental policy," Whitehead says.

Crafting effective environmental policy is complicated, but at base the economics of the problem are simple. In the words of Carlo Cottarelli, the director of the fiscal affairs department at the International Monetary Fund: "It's an externality, stupid — so price it."

An externality is a cost or a benefit that isn't reflected in the price of a good, and thus accrues to a party other than the buyer or seller of the good. For example, the private sector can't fully monetize the benefits of a cleaner environment — a positive externality — so it is unlikely to invest in a socially desirable amount of clean energy. Manufacturers don't bear the cost of the pollution they produce — a negative externality — and thus are likely to produce more of it.

Most economists agree that the government has a role to play in correcting such "market failures." But not all interventions are created equal. With respect to the environment, for example, the government could address

positive externalities by subsidizing new energy technologies. But subsidies often create inefficiencies and unintended consequences in other markets, and are subject to the criticism that the government is attempting to pick winners and losers, a task better left to the market. One way to address negative externalities is via regulation, such as fuel efficiency standards or limits on the use of certain hazardous products. While such regulations can be effective, they could also encourage firms to change their behavior only to the regulated level.

Instead, economists of all stripes agree that the government could have the greatest effect on the environment by putting a price on large negative externalities. A carbon tax, for example, would raise the price of goods and services that use fossil fuels to reflect the high costs of pollution. Demand would shift to other sources of energy, and firms would have an economic incentive to continue reducing their use of fossil fuels. “Basic economics tells us that when you tax something, you normally get less of it. So if we want to reduce global emissions of carbon, we need a global carbon tax,” Gregory Mankiw, an economist at Harvard University

and the chair of the Council of Economic Advisers under George W. Bush, wrote in a *New York Times* editorial. (A carbon tax is an example of a “Pigovian tax,” named after British economist Arthur Pigou, who developed the idea of using taxes to correct negative externalities.) Another way to put a price on pollution is via a “cap-and-trade” system, which limits the total amount of pollutants and issues emissions permits to firms. A cap-and-trade bill passed the U.S. House of Representatives in 2009, but failed in the Senate.

It’s possible that policies to reduce greenhouse gas emissions or conserve natural resources will create more jobs or spur long-term economic growth. Certainly, people and the planet will be healthier for them, and “to the extent that improved air quality or improved water quality will have a positive impact on human health, then that will have a macroeconomic impact through labor productivity,” Whitehead says. But measuring the success of environmental policy by the number of jobs created, rather than by the effect on the environment, could make it more difficult to achieve either goal. **EF**

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FULL HOUSE *continued from page 21*

customers to Maryland, primarily to Maryland Live!. “It’s a phenomenon we’ve seen throughout the Northeast,” says Schwartz. “As casinos have proliferated, new jurisdictions have done well but the old jurisdictions have definitely suffered.”

It’s an open question, however, whether or not Maryland can support all the casinos that are scheduled to open. When Maryland Live! opened in June 2012, gambling revenues fell noticeably at Hollywood Casino Perryville and Ocean Downs. The Rocky Gap casino opened in May with about 300 fewer slot machines than originally planned, and Hollywood Casino Perryville recently reduced its number of slot machines by almost 350. “We have too much supply for the demand we have,” general manager Bill Hayles said in a statement. But even Maryland Live! might take a hit; a 2012 study by the DLS with PricewaterhouseCoopers calculated

that nearly half of the revenues from a new casino in Prince George’s County would come at the expense of those in Anne Arundel County and Baltimore.

While the proliferation of casinos poses challenges to the casinos themselves, it could be good for consumers. “For most people who like to gamble, and who view it as a recreation, there is a benefit to being able to gamble closer to home rather than having to travel to Las Vegas,” says Grinols.

Lawmakers tend to be less interested in consumer utility than in creating lots of jobs and tax revenue. In this respect, the evidence is mixed. Still, the fact that casinos might fall short of expectations for economic development doesn’t necessarily mean that they shouldn’t be legalized — but policymakers must carefully weigh the costs and benefits for their own communities. **EF**

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INTERVIEW

John Haltiwanger

Editor's Note: This is an abbreviated version of EF's conversation with John Haltiwanger. For the full interview, go to our website: www.richmondfed.org/publications

Policymakers, economists, and the public pay close attention to statistics such as GDP, productivity growth, and the unemployment rate. But those aggregate statistics mask the tremendous amount of churning that takes place in the economy: Every month, millions of jobs are created and destroyed as firms expand and contract, or as new companies enter the market and old companies go out of business.

Until the 1980s, few economists, and especially few macroeconomists, paid attention to these “microdata.” John Haltiwanger was one of the first to recognize their value for our understanding of the labor market and business cycles. Since the 1980s, he has worked closely with the Bureau of the Census and other statistical agencies to build new longitudinal business datasets and develop new methodologies for analyzing such data. Those efforts spurred a new line of research into how firms create and destroy jobs, including Haltiwanger’s seminal 1996 book *Job Creation and Destruction*, co-authored with Steven Davis of the University of Chicago and Scott Schuh of the Boston Fed. Economists in a wide variety of fields have built on Haltiwanger’s work to study topics ranging from tax policy to international trade.

Haltiwanger has continued to study the microdata that underlie aggregate statistics to examine the importance of young and small businesses to job growth, cross-country differences in productivity, and how firms find workers. Recently, he has documented a decline in the volatility and dynamism of the U.S. economy, which may help to explain the United States’ sluggish recovery from the 2007-2009 recession.

Haltiwanger joined the University of Maryland faculty in 1987 and was named Distinguished University Professor of Economics in 2010. In 2013, Haltiwanger was awarded the Julius Shiskin Memorial Award for Economic Statistics for his decades of work with government statistical agencies to develop new datasets and methodologies for measuring firm dynamics. Jessie Romero interviewed him in his office in College Park, Md., in July 2013.



EF: Your book *Job Creation and Destruction* has been credited with “fundamentally altering” our view of the labor market. What was the prevailing view prior to its publication, and how did that view change?

Haltiwanger: We’ve known for a long time from household data that workers move across jobs quite a bit. When you’re a young worker, you’re trying to figure out what kind of job you’d like, so you switch jobs a lot. And obviously people have children or get more education or retire. So there’s long been a sense that there were a lot of worker flows. But before the work that Steve Davis and I did, and that Timothy Dunne, Mark Roberts, and Larry Samuelson did, we didn’t know that a large fraction of those flows are actually not because the worker is moving, but because the jobs themselves are moving. My guess is if you actually talked to the typical worker, they’d say, “Yes, of course, that’s exactly my experience.” But we didn’t have a good metric for it, because we didn’t have access to the data that allowed you to measure job creation and destruction. Once we got the data, though, we found it was really huge. And second, we found that not only was it large, but it varied over the cycle too. So that was part of what changed things in macroeconomics. One view is, sure, there’s a lot of this heterogeneity, but it’s just in the background; it’s not so clear it’s important for business cycles. Maybe it just cancels out. But actually, no, it doesn’t cancel out.

EF: How did you get access to the data that allowed you to measure job creation and destruction?

Haltiwanger: Steve Davis and I met back in the mid-1980s, and we had this idea that to understand how the labor market works, it would be critical to understand the ongoing process of what we called job creation and job destruction. In the mid-1980s, we got to know Dunne, Roberts, and Samuelson, who were using lower-frequency Census data to study the entry and exit of firms and firm dynamics. We asked them if they thought it was possible to get access to the data to look at higher frequencies, say monthly or quarterly. And they said, “Well, we don’t know, but why don’t you call these guys up?”

So Steve and I called up the Census Bureau. Robert McGuckin, the director of the Bureau’s Center for Economic Studies (CES) at the time, invited us to come give a seminar. We got two reactions. Bob McGuckin was incredibly enthusiastic. But some of the folks said, “You guys are nuts!” They kept saying that the data were not intended for this task, that we were pushing them in a way they weren’t meant to be pushed. Steve and I were cognizant of that, but we started working with the data and realized their potential, and that led to us developing these concepts of job creation and destruction and how to measure them.

Over the years, one of our most satisfying accomplishments was to convince the statistical agencies that this was important. The Census Bureau and the Bureau of Labor Statistics (BLS) now have regular programs where they are turning out the kind of statistics that we developed. Back in the 1980s, there were only a handful of people working with the firm-level data. We literally were in basement rooms without windows. Now the CES has 100 staff members and 15 research data centers spread across the country — and most of the staff work in rooms that have windows! Those of us who worked with the CES in the early days recognized that it was important to improve data access because you just don’t make much progress in science unless other people can replicate what you’re doing and be creative with the data themselves. So when I was chief economist at the Census Bureau in the 1990s, it was important to me and the research director of CES at the time, Tim Dunne, to expand the research data centers. Many people contributed to this effort over the past 30 years, but I am proud to have been part of it.

EF: You’ve studied aspects of the search-and-matching process (which describes how workers and firms find each other) that don’t typically get a lot of attention. What do we learn from studying factors such as firms’ recruiting intensity?

Haltiwanger: We’ve learned an enormous amount from the kinds of approaches that Dale Mortensen and Christopher

You just don’t make much progress in science unless other people can replicate what you’re doing and be creative with the data themselves.

Pissarides developed. At the core of their model is this black box called the “matching function.” It’s a mathematical function that relates hires to labor market tightness, vacancies, and unemployment. There are lots of stories about what that represents, but we just don’t know very

much about how firms and workers meet, how they match, and what the process is.

In terms of data development, first we had data sets that allowed you to track whether firms were growing or shrinking — that’s job creation and destruction. More recently, we’ve been able to integrate what’s happening to the workers at the firms that are expanding and contracting.

There’s a very nice new survey that BLS developed called JOLTS [Job Openings and Labor Turnover Survey]. For each establishment, JOLTS provides information on hires and separations, and breaks the separations into quits and layoffs. It also gives you vacancies, so you’ve got all the ingredients to begin looking at how hiring occurs.

As usual, Steve Davis and I and our co-author on this work, Jason Faberman, didn’t want to look just at the aggregate data. So we got access to the JOLTS microdata by working directly at BLS and integrated it with the data BLS has developed on job creation and destruction. Our main focus in this work is to understand the hiring process. We were struck by the fact that there was a pattern in the job-filling rate that was not consistent with the standard search-and-matching model: Businesses that were very rapidly expanding filled their jobs much faster than other kinds of businesses. In the standard search-and-matching model, if you want to expand quickly, you just post more vacancies. We found that was true — businesses that were expanding rapidly did post more vacancies — but we also found that they filled them much more quickly.

So what’s going on there? The model that we came up with is that firms don’t just post vacancies, they also spend time and resources on hiring people. So if you want to hire more people, you can raise the wage you offer, or you can change the way that you screen workers — these are just two examples of the variety of margins that a firm can use. As shorthand, we’ve called these margins “recruiting intensity.”

We also found that recruiting intensity dropped substantially in the Great Recession and has been slow to recover. Firms posted many fewer vacancies in the collapse, and that’s exactly what you’d expect from the theory. But then as we went into the recovery, vacancies started to come back, but hiring didn’t. People were puzzled by that. How can this be? Why don’t the patterns of hires, vacancies, and unemployment fit the matching function? Why are we off the Beveridge curve? [The Beveridge curve describes the relationship between vacancies and hiring; for the past few years, the unemployment rate has been higher relative to the number of vacancies than would be predicted by historical trends.] Our explanation is that our index of recruiting

intensity has dropped significantly and it hasn't recovered. We don't explain all of the departures from the matching function and the Beveridge curve during the Great Recession and slow recovery, but it appears that recruiting intensity explains a nontrivial fraction of it.

EF: Your research makes a distinction between aggregate shocks, such as the financial crisis in 2008, and allocative shocks, such as technological change that reduces the demand for manufacturing workers. What role have these two types of shocks played during and since the Great Recession?

Haltiwanger: We're still struggling with how to disentangle this. And there's a third kind of shock: uncertainty. If you're in a sector where businesses are facing fundamentally different conditions — changing technology, changing costs, changing international competition — it's as though the rug has been pulled out from underneath you. You can't do things the way you did them last decade. And I think that we're increasingly recognizing that those kinds of events lead to greater uncertainty. Allocative shocks and uncertainty go hand in hand. In many early models, it was assumed that the economy was hit by a certain pace of idiosyncratic shocks every period. But then Nick Bloom and others came along and said, well, there's no reason that pace can't change over time. That research has helped make the case that changes in the dispersion of idiosyncratic shocks, which generate uncertainty, are important. So now we're struggling to disentangle the relative importance of aggregate shocks, allocative shocks, and uncertainty.

We're also struggling with causality. Something Steve and I spent a lot of time on, and are still worrying about, is the "cleansing effect" of recessions. One idea is that recessions are times in which things slow down, which makes them a good time to reorganize and reallocate. That suggests that the causality arrow could run from aggregate shocks to reallocation. But on the other hand, a period of very high idiosyncratic shocks could be a period where we've got to do lots of reorganization. Reorganization takes time and resources, which could cause a recession itself, so the causality might be running the other way. Then you add uncertainty shocks to this mix. So, as usual, drawing causal inferences is a continued challenge.

EF: What are the implications of findings on reallocation for employment policy or industrial policy?

Haltiwanger: That's a hard question. What we've found, in the United States at least, is that all this reallocation is largely productivity-enhancing. The job destruction we observe usually occurs in the less productive businesses, and all the job creation and entry of new firms usually occurs in the more productive businesses. A large fraction of aggregate productivity growth is moving resources away from less productive to more productive firms.

Eric Bartelsman, Stefano Scarpetta, and I started to look at the connection between reallocation and productivity around the world. We've found that in some countries, that process doesn't work so well. Allocative efficiency — the ability to move resources from less-productive to more-productive businesses — differs pretty dramatically across countries. We first hypothesized that things were so distorted in emerging economies that they had very low rates of reallocation. But actually, there is a lot of entry and exit going on, it's just not particularly healthy. For example, there's lots of entry of street vendors, but street vendors don't grow. They just churn: They come in, they go out, they come in, they go out. But it's not productivity enhancing.

How is this related to the policy question? What we're beginning to see in the cross-country evidence are things that distort this reallocative process. But here's the problem. It's not as though we can't come up with policy recommendations — we can come up with too many. There are 101 (plus) possible distortions to the ongoing dynamics of reallocation. We are still trying to figure out which ones are the most important. For example, is it distortions that primarily impact the entry margin? If it is on the entry margin and it's young businesses, is it that they can't get access to credit? I think we've got lots of hypotheses out there, but I don't think we've got a good way yet of saying which are the most important and how they vary across countries, and how they vary within countries across time.

EF: How do countries find a balance between allowing the necessary reallocation to occur and minimizing the costs of that reallocation to workers and firms?

Haltiwanger: That's one of the hardest questions countries face. I think the evidence is overwhelming that countries have tried to stifle the destruction process and this has caused problems. I'm hardly a fan of job destruction per se, but making it difficult for firms to contract, through restricting shutdowns, bankruptcies, layoffs, etc., can have adverse consequences. The reason is that there's so much heterogeneity in productivity across businesses. So if you stifle that destruction margin, you're going to keep lots of low-productivity businesses in existence, and that could lead to a sluggish economy. I just don't think we have any choice in a modern market economy but to allow for that reallocation to go on.

Of course, what you want is an environment where not only is there a lot of job destruction, but also a lot of job creation, so that when workers lose their jobs they either immediately transit to another job or their unemployment duration is low. In the United States in the 1990s, the last time we experienced really robust growth, there was a high pace of job creation and job destruction, and a lot of it was workers moving directly from one job to another. That's what you want. But what are the ingredients for efficient, productivity-enhancing reallocation? There are many factors. But I think it's clear that you have to make sure that

there aren't barriers to entry or exit, and then that there aren't barriers to post-entry growth or contraction.

Having said that, I think lots of countries hear this advice from economists or from organizations like the International Monetary Fund or the World Bank, so they open up their markets, they open up to trade, they liberalize their labor and product and credit markets. And what happens is, job destruction goes up immediately, but job creation doesn't. They realize that they've got a whole bunch of firms that can't compete internationally, and they're in trouble. So the question is, does the economic environment have the ingredients that allow businesses to come in and start up? On the one hand, there is lots of evidence that countries that distort the destruction margin find themselves highly misallocated, with low productivity and low job growth. On the other hand, it's difficult to just let things go without having well-functioning market institutions in place — it's not easy to snap your fingers and become the United States. And even here this process is at times distorted.

EF: You've written about a long-term decline in volatility in the United States; the job creation and destruction rates, for example, have been declining steadily since the 1990s. What's behind that decline?

Haltiwanger: There is now substantial evidence from a wide range of sources that volatility is declining in the United States. One of the markers is a decline in the pace of job reallocation. But there's also something going on with new businesses. We've always known that young businesses are the most volatile. They're the ones experimenting, trying to figure out if they have what it takes to be the next Microsoft or Google or Starbucks. But now we're seeing a decline in the entry rate and a pretty stark decline in the share of young businesses. The latter isn't surprising given the decline in the entry rate — it's equivalent to seeing that when the birth rate declines, you have fewer children. But it's also important to recognize that the decline in the share of young firms has occurred because the impact of entry is not just at the point of entry, it's also over the next five or 10 years. A wave of entrants come in, and some of them grow very rapidly, and some of them fail. That dynamic has slowed down.

Should we care? The evidence is we probably should, because we've gotten a lot of productivity growth and job creation out of that dynamic. A cohort comes in, and

John Haltiwanger

➤ Present Position

Distinguished University Professor of Economics, University of Maryland, College Park

➤ Other Positions

Chief Economist, Bureau of the Census (1997-1999); Associate Professor, Johns Hopkins University (1986-87); Assistant Professor, University of California, Los Angeles (1981-1986)

➤ Education

Sc.B., Brown University (1977)
Ph.D., Johns Hopkins University (1981)

➤ Selected Publications

Author of six books and numerous articles in journals such as the *American Economic Review*, *Quarterly Journal of Economics*, *Review of Economics and Statistics*, *Journal of Monetary Economics*, and *Journal of Economic Perspectives*

amongst that group, a relatively small group of them takes off in terms of both jobs and productivity. So the concern is, have we become less entrepreneurial? If you're not rolling the dice as often, you're not going to get those big wins as often. Then the question is why? What happened? One idea that some have suggested recently is that culturally we've become more risk-averse. That's an interesting hypothesis but only one of many possible hypotheses.

In terms of what we know, we've clearly seen a shift in activity toward large national and multinational businesses. In retail trade, that shift is overwhelming. The big guys dominate. That's not necessarily a bad thing; maybe what we've done is move resources toward the big firms because they are the more productive and profitable. But there might be a trade-off between economies of scale and flexibility and innovation. A

strong young business sector is flexible. If an economy needs to shift resources from one place to another, the young business is a good margin of adjustment.

Also, there's the question, what's the role of entrepreneurs in innovation? This question is much harder. But suppose the hypothesis is correct that you really do need all this experimentation to get new ideas out there, and that young businesses are where lots of this experimentation occurs. Then the decline in the share of young businesses is concerning. It's not that the big guys don't innovate, but it tends to be an adaptation of what they already do.

But coming back to the facts, there's no doubt that there has been a decline in volatility, and it's of some concern. The benign view is, maybe it's possible to get the same gains in productivity without all this churning of businesses and jobs. If so, that would be a good thing. But if it was really nothing but good news, I ask, why aren't we recovering more quickly? Why isn't productivity surging? Even the recovery from the 2001 recession was nowhere near the recoveries of previous years. We have been pretty sluggish at least since 2001. And this is the period of time when the decline in entrepreneurship accelerated.

EF: Do you view the decline in volatility as the cause of the slow recovery?

Haltiwanger: I think there is some causality, but I can't say for sure. I think we could make a case that this more-sclerotic, less-dynamic economy affects the pace of recoveries. The decline in volatility predates the Great Recession. It has been going on for decades, although it

accelerated after 2000. In terms of job flows, we never recovered from the 2001 recession. Job reallocation never returned to the late-1990s levels. Something similar seems to be going on following the Great Recession. Job destruction is somewhat lower than during the 2004-06 period, and job creation is a lot lower. The decline in young businesses appears to be playing a role in these dynamics.

EF: Early research found that small businesses create the most jobs. But more recent work, including your own, has shown that's not the whole story. What does that mean for policy?

Haltiwanger: If you just cut the data by business size, there is some evidence that net growth rates of small businesses are higher than net growth rates of large businesses. There are some statistical issues here, involving regression to the mean, but there is some truth to this conventional wisdom in an accounting sense. But our recent work has asked, wait a second, who are those small businesses that are creating jobs? It turns out it's not old small businesses. It's all coming from the entry of new firms and young businesses, which happen to be small businesses. We didn't realize this until recently because we didn't have good measures of firm entry and young businesses. I started studying this with Steve Davis and Scott Schuh, and recently I've been working with Ron Jarmin and Javier Miranda from the Census Bureau to develop data that allow us to study the role of startups and young businesses.

So the grain of truth is that it's all coming from entry and young businesses. I do think it's important to recognize that if you're trying to advocate a policy to help small businesses to stimulate job creation, and it's not especially relevant for entry or young businesses, then it's possible the policy is completely mistargeted. But we don't view our evidence as saying we should inherently target young businesses. Instead, it flips things around to ask, what are the barriers that young small businesses face? That's the right question to ask, and we're starting to ask it better.

Young small businesses got hit especially hard in the Great Recession. The evidence suggests that financial markets and access to credit played some role in that. I've been studying this with Teresa Fort, Ron, and Javier, and we've got some interesting evidence that housing prices played a role here. Young small businesses got hit especially hard in states with very large declines in housing prices, even taking into account the extent of the cyclical slump in the state. California is the poster child for these patterns. California had a bad recession but it had an especially bad decline in housing prices, and young small businesses got hit especially hard there. What's the connection between housing prices

and young small businesses? One possible channel is that young small businesses use houses as collateral. An alternative but related channel — there's some very nice work on this by Atif Mian and Amir Sufi — is the housing price/aggregate demand channel. Housing comprises the net worth of the household, so when prices drop households have less to spend. If there's a local spending shock, young small businesses might get hit especially hard if they're the most vulnerable businesses. Another possible mechanism is that local financial institutions were hit especially hard in the areas where housing prices fell the most. If local financial institutions are especially important for startups and young businesses, this might have been an important factor.

EF: That vulnerability is part of what you've described as the "up or out" dynamic — most young small businesses fail, but those that survive are likely to grow very rapidly.

Haltiwanger: We've been struck by how rare success is for young businesses. When you look at normal times, the fraction of young small businesses that are growing rapidly is very small. But the high-growth firms are growing *very* rapidly and contribute substantially to overall job creation. If you look at young small businesses, or just young businesses period, the 90th percentile growth rate is incredibly high. Young businesses not only are volatile, but their growth rates also are tremendously skewed. It's rare to have a young business take off, but those that do add lots of jobs and contribute a lot to productivity growth. We have found that startups together with high-growth firms, which are disproportionately young, account for roughly 70 percent of overall job creation in the United States.

This is related to the policy challenge: It's a needle-in-a-haystack problem. Can you say the high-growth companies are going to be in particular sectors? No. Sector is not a very great predictor of where the next best thing is going to come from, even though governments would love to be able to predict it, and they want to be able to help the high-growth businesses. Theory suggests that you can set up an environment that allows high-growth businesses to be successful, but you can't target them. It's just too hard. Did we really know that Apple would take off? And it's not just tech companies; it's in mundane industries too. It's the Hair Cuttery. It's Starbucks.

Most entrants fail. Even conditional on survival, most surviving young businesses don't grow. But a small fraction of surviving young businesses contribute enormously to job growth. A challenge of modern economies is having an environment that allows such dynamic, high-growth businesses to succeed.

EF

ECONOMIC HISTORY

Mother of the Domestic Slave Trade

BY KARL RHODES

Delia Garlic was born in Powhatan County, Va., in the 1830s, the height of the domestic slave trade. She was sold, along with her mother and brother, to a speculator who resold them to the highest bidders in Richmond, Va. The sheriff of a nearby county purchased Delia and her mother, but they never again saw Delia's brother.

Delia worked in the sheriff's house, suffering abuse at the hands of his wife and daughter. One night the sheriff came home drunk and flew into a rage at the dinner table. He called an overseer and told him to take Delia outside and beat her. Delia bolted out of the house and into the darkness, but later that night, she followed her mother's voice home.

"Right away they came for me," Delia recalled. "A horse was standing in front of the house, and I was taken that very night to Richmond and sold to a speculator again. I never saw my mammy anymore."

On her second visit to the slave pens of Richmond, Delia was sold to a hotelier from Georgia. After his business failed, she was sold to a planter in Louisiana, where she worked in the cotton fields until the Civil War set her free.

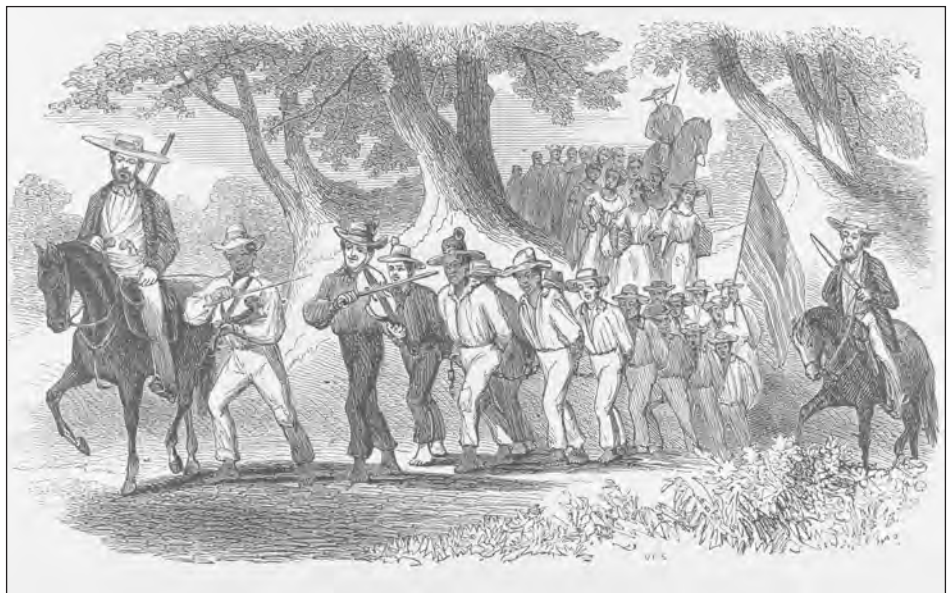
Delia told her story to Margaret Fowler as part of the Federal Writers' Project in the late 1930s. Delia was among approximately 1 million slaves who were forced to migrate from the upper South (mostly Virginia, Maryland, and the Carolinas) to the Deep South from 1810 to 1860.

"As many as two-thirds of these 1 million or so people were carried south by slave traders, whose daily business resolved the diverging fortunes of the declining upper South and the expanding lower South into mutual benefit," wrote Harvard historian Walter Johnson in *Soul by Soul: Life Inside the Antebellum Slave Market*.

Slaves were worth substantially more in states such as Georgia, Alabama, Mississippi, and Louisiana because labor was the limiting factor of the Deep South's highly profitable agricultural expansion. This dramatic price differential and the declining supply of slaves from the trans-Atlantic trade, which was outlawed in 1808, produced a thriving domestic slave trade in the United States.

"By the 1830s, Virginia's largest export was human property," says Steven Deyle, associate professor of history at the University of Houston and author of *Carry Me Back: The Domestic Slave Trade in American Life*. Slaves were worth more than the land and, unlike real estate, they were highly portable and easily sold. Many Virginia slaveholders, it seems, knew roughly how much each of their slaves was worth to the speculators who scoured the Virginia countryside offering quick cash for human assets.

Virginia's human exports fueled the Deep South's expansion



"The Coffle Gang," a print by Van Ingen & Snyder, appeared in The Suppressed Book about Slavery, an abolitionist book that was completed in 1857, but not published until 1864. The print depicts slave traders driving 40 men and 30 women through Kentucky toward New Orleans. Slave drivers commonly commanded members of coffles to play musical instruments and sing.

“Master used to say that if we didn’t suit him he would put us in his pocket quick — meaning he would sell us,” recalled William Johnson, a Virginia slave who escaped to Canada. More than the whip, slaves feared being sold south, forever separated from their families, friends, and homes.

The Supply Side

Virginia outlawed the importation of slaves during the American Revolution, but the state’s number of slaves increased steadily from 165,000 in 1776 to 347,000 in 1800. This rapid growth rate continued in the 19th century, prompting abolitionists and others to call Virginia a “breeder” state. Most modern historians find little credible evidence of forced breeding operations, but they note that slave owners in all states routinely encouraged — and sometimes participated in — procreation among their slaves.

By the 1830s, Virginia’s oversupply of forced labor was obvious and widespread, but the issue had been evident in the eastern part of the state for several decades. “George Washington was typical in his frustrations at having ‘more working Negroes by a full moiety, than can be employed to any advantage in the farming system,’” Deyle wrote. (In other words, Washington believed he had twice as many slaves as he needed.) Overplanting of tobacco had exhausted Virginia’s soil, and the price of tobacco had fallen, partly due to new competition in Kentucky, Tennessee, and the Carolinas. As a result, many Virginia growers transitioned from tobacco to grain crops, which required fewer slaves.

While the rewards of slave labor continued to decline in Virginia, the risks suddenly became more apparent. In 1831, Nat Turner led a slave revolt in Southampton County, Va., killing 59 white people before local militias quashed the insurrection. A few months later, the General Assembly convened a special session to consider gradual emancipation, colonization, and other ways to rid Virginia of its slaves.

James Gholson, a young delegate from Southside Virginia, summed up the pro-slavery argument succinctly, according to Deyle. “Gholson reminded white Virginians that no matter how much they might fear another slave revolt, they no longer had any real choice in the matter. Their state had become too economically dependent upon the institution of slavery to ever give it up, especially through some form of emancipation. He noted that ‘our slaves constitute the largest portion of our wealth, and by their value, regulate the price of nearly all the property we possess.’” Abolition was more palatable to delegates from the state’s western counties, where there were far fewer slaves, but the Virginia House of Delegates ultimately rejected a proposal — by 15 votes — to phase out slavery.

While some Virginia planters debated emancipation and colonization, others simply moved to what was then the Southwest (Alabama, Mississippi, and Louisiana), taking their slaves with them. This trend accounted for a significant portion of the forced migration, especially in the early years of southwestern expansion. But in later years, selling slaves south became the more prevalent method of forced

migration. Quite often slave trading and planter migration overlapped, notes Edward Baptist, a historian at Cornell University. “If you were brought down south by one owner who immediately sold you to raise cash to expand his operations,” then that sale was essentially part of the interstate slave trade.

Some paternalistic planters refused to sell slaves under any circumstance, while others claimed to sell slaves only when they had little choice. “Slaveholders always had some reason for selling a slave — an estate to divide, a debt to pay, a transgression to punish, a threat to abate,” Walter Johnson wrote. “What they rarely had when they sold a slave, it seems from the accounts they gave of themselves, was any direct responsibility for their own actions.” Instead, they blamed the evils of the trade on their favorite scapegoats — the lewd, crude slave traders. But the size and scope of the domestic slave trade — in bad times and in good times — explodes the myth of benevolent masters who sold slaves only with great reluctance. University of Liverpool historian Michael Tadman estimated that from the 1830s through the 1850s, slave owners’ sales to traders in the upper South generated receipts equivalent to between 15 percent and 20 percent of receipts from the region’s staple crops.

As slave prices soared to all-time highs in the 1850s, slave speculation became widely accepted in the upper South as a necessary evil to protect the region’s economic interests. Colorado State University historian Robert Gudmestad observed in his 2003 book, *A Troublesome Commerce: The Transformation of the Interstate Slave Trade*, that “the need for the trade conquered most slaveholders’ qualms about the negative consequences of the peculiar institution.”

The Demand Side

A number of factors drove up demand for slaves in the Deep South in the late 1700s and early 1800s. Agricultural innovations, most notably the cotton gin, and surging international demand for cotton greatly enhanced returns to investment in slaves on cotton plantations. While this was happening, the United States purchased the Louisiana territory in 1803 and outlawed the trans-Atlantic slave trade five years later. The rapidly expanding nation then began to push American Indians westward, making more land available for cotton cultivation.

The soil and climate of the Deep South were ideally suited to growing cotton, especially in Alabama, Mississippi, and Louisiana. Cotton production was labor intensive, so the domestic slave traders began moving slaves there — slowly at first, but quite rapidly as cotton prices recovered following the Panic of 1819.

In addition to field hands for cotton, there was strong demand for “sturdy adult males” to work the sugar plantations of Louisiana. Those plantations often were supplied via markets in Baltimore, Alexandria, Va., Norfolk, Va., and especially Richmond.

There also was lascivious demand for attractive young female slaves with light brown skin. These “fancy maids” or

“fancy girls” often were raped by traders and sold in New Orleans to work as sex slaves — either in brothels or for exclusive exploitation by owners who paid up to \$7,000 to flaunt their wealth, power, and audacity.

Compared with the number of slaves purchased for cotton production, the number of slaves purchased for sex was very small, Baptist concedes, but it was “significant in terms of the way it injected sexuality into all of the discussions of female slaves who were for sale,” he says. “Men for sale were always being discussed in terms of their labor capacity. Women were usually discussed with some reference to their physical attractiveness.”

Deep South planters also viewed slaves as objects of finance. They frequently secured loans with human collateral, as did planters in the upper South. After the demise of the Second Bank of the United States, which had provided substantial funding for slave trading and cotton expansion, upstart banks in the Southwest offered easy credit to planters based on the number of slaves they could mortgage. The banks packaged these loans into mortgage-backed securities that they sold to banks in London, Amsterdam, and New York. London-based Baring Brothers, the leading merchant bank of the day, even persuaded the Louisiana legislature to guarantee the bonds.

“It really seemed that these bonds were risk-free for the immediate lender and the immediate borrower,” Baptist says. “They were virtually identical to mortgage bonds as we know them in more recent times, and the outcome was very similar.”

The confluence of easy credit, abundant land, and a steady supply of slaves eventually led to overproduction of cotton, and when cotton prices collapsed, “nobody was able to make the interest payments on their mortgage loans, which meant the banks couldn’t make the interest payments

on their bonds,” Baptist says. “And that was, as far as I can tell, the cause of the Panic of 1837.”

The Middle Men

Planters from Mississippi often made buying trips to Virginia, where they could purchase slaves one-third to one-half cheaper than in the Southwest, according to Joseph Ingraham, a self-described “Yankee” who wrote *The Southwest*, a book about his experiences in Mississippi and Louisiana in the 1830s.

Some planters in the upper South offered discounts to fellow planters, relative to the prices they charged slave traders, so speculators sometimes posed as Deep South planters. Upper South slave owners assumed they could easily distinguish between a genteel Southern planter and an uncouth slave trader, but often there was not much difference.

A slave trader is “very much like other men. He is today a plain farmer with 20 or 30 slaves endeavoring to earn a few dollars from the worn-out land,” Ingraham wrote. “He is in debt and hears he can sell his slaves in Mississippi for twice their value in his own state.” So the farmer drives his slaves, and perhaps a few of his neighbor’s slaves, to the Southwest. “He finds it profitable; and if his inclinations prompt him, he will return home, after selling his slaves, and buy, with ready money, from his neighbors, a few here and a few there, until he has a sufficient number to make another caravan.”

These caravans, or “coffles,” were common sights in Virginia. They ranged from 10 to 300 slaves who traveled about 20 miles per day. The male slaves typically were shackled two abreast with a long chain or rope running down the middle of their column tying all their shackles together. The women were bound by ropes, if at all, and some traders and planters allowed women, children, and sick or injured men to ride in wagons.

The Devil’s Half Acre

In the 1850s, slave trading thrived in Richmond’s Shockoe Bottom, just a few blocks from Capitol Square.

Most of the trading occurred not in public auctions but in slave pens run by resident dealers. Historically, Robert Lumpkin is the most infamous of these Richmond dealers. In addition to trading slaves himself, he owned and operated Lumpkin’s Jail — also known as “the devil’s half acre” — on Richmond’s “Wall Street.”

At the end of the Civil War, as the Confederate government was fleeing Richmond, Lumpkin tried to put one last shipment of 50 slaves on a train to Danville, Va., according to an account given by abolitionist Charles Coffin in his memoir, *The Boys of ’61*.

“This sad and weeping 50, in handcuffs and chains, was the last slave coffle that shall tread the soil of America,” Coffin wrote triumphantly. They were “trampling the bonds of the Confederate States of America in the mire, as they

marched to the station.” The coffle made it to the depot, but sentinels guarding the train turned them back because the cars were reserved for Confederate officials and government documents. What happened next is uncertain, but presumably Lumpkin’s last coffle went free after Union forces took control of the city.

Lumpkin died in 1866 and willed his former slave-trading complex to Mary, a light-skinned slave he had purchased and eventually married. In 1867, Mary leased the complex to the American Baptist Home Mission Society, which converted it into a school for former slaves that evolved into Virginia Union University. In an 1895 history of the school, James Simmons, a leader of the Baptist society, recalled his visit to the converted complex after the Civil War.

“The old slave pen,” he wrote, “was no longer ‘the devil’s half acre’ but God’s half acre.”

—KARL RHODES

During the 1820s, Virginia's domestic slave trade evolved from a loosely organized network of itinerate traders into a leading example of America's market revolution. Major trading centers emerged in Richmond, Washington, Baltimore, and Norfolk. From these centers, slaves could be shipped around Florida on specially outfitted sailing vessels and later on steamers that could reach New Orleans in 19 days. Large slave-trading organizations also emerged. Alexandria-based Franklin and Armfield, the biggest of these firms, kept its ships moving from November to April, picking up slaves in Richmond and Baltimore and taking them to depots in New Orleans and Natchez, Miss. Traders continued to use overland routes because they were cheaper, but time was money, and in the 1840s and 1850s, traders increasingly took slaves south on trains. The quicker the traders could deliver one coffle of slaves, the sooner they could pay their bankers, borrow more money, and assemble another coffle. So Richmond's growing rail connections to the lower South enhanced the city's position as the upper South's largest slave market.

"The domestic slave trade was not simply a consequence of the [market revolution] but a central component in propelling it," Deyle wrote. In addition to employing the latest modes of transportation, slave traders rapidly adopted new business practices, such as newspaper advertising, standardized pricing, and international finance.

The most sophisticated traders even managed to elevate themselves socially above the employees and agents who did their bidding. Partners Isaac Franklin and John Armfield, for example, used their enormous wealth to "distance themselves from the foul odor of speculation," Gudmestad concluded. Franklin married into a "respectable" Nashville family, and Armfield "was instrumental in establishing the University of the South at Sewanee."

Most slave traders, however, remained the pariahs of Southern society. They deserved their reputations for greed-fueled cruelty, but they created neither supply nor demand. They simply facilitated the movement of slaves from willing sellers in the upper South to eager buyers in the lower South.

"The rhetoric of the evil slave trader enabled Southerners to explain a problematic aspect of their society: the cruel treatment of slaves," Gudmestad wrote. "Once speculators were to blame for the worst abuses of slavery, Southerners could remain committed to the institution as a whole."

The Movie Version

In the aftermath of the Civil War, Southerners struggled to make sense of the massive loss of life and property. "Unfortunately, making sense of it meant recasting it," explains Christy Coleman, president of the American Civil War Center in Richmond. "Wasn't it romantic? Wasn't it wonderful? Wasn't it cool? And the rest of America got sucked up in it."

Between 1875 and 1900, there was a concerted effort to reunite the country, Deyle adds. "There was this decision — conscious or unconscious — by white Americans to forget about it all and let white Southerners write what they wanted to believe and what they wanted the rest of the country to believe. So they retold the story by sort of ignoring what the real cause of the war was, and slavery didn't get talked about."

The cover-up was perpetuated in part by plantation romance novels, which sold more copies in the North than in the South, Deyle notes. While Margaret Fowler was interviewing former slave Delia Garlic, Margaret Mitchell was receiving rave reviews for *Gone with the Wind*. Fowler's true story gathered dust in the Library of Congress, while Mitchell's fanciful fiction won a Pulitzer Prize and 10 Academy Awards.

Misleading images of Old South slavery persist today, but in recent years, historians have replaced the myths of benevolent masters and happy slaves with candid accounts of how the domestic slave trade callously connected the economic interests of the upper South with those of the lower South. Tearing apart families and selling people south clearly troubled some slave owners, but they did it anyway, Coleman says. "We are talking about people's pocketbooks, and I hate to say it, but greed is greed is greed." **EF**

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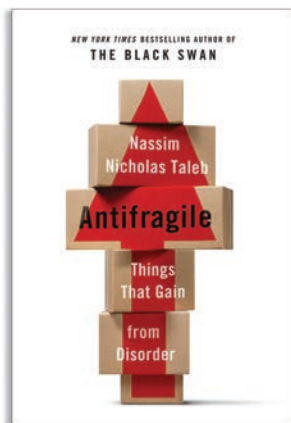
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ANTIFRAGILE: THINGS THAT GAIN FROM DISORDER

BY NASSIM NICHOLAS TALEB
NEW YORK: RANDOM HOUSE,
2012, 544 PAGES

REVIEWED BY CAROLINE TAN

It's easy to conjure up an image of "fragility" — a teacup, eggshells, wine glasses. But what's the opposite of fragility? According to New York University's Polytechnic Institute professor and former derivatives trader Nassim Nicholas Taleb, there isn't quite a word for that. Words like "resilient" and "robust" don't work. Since fragility describes things that break under pressure, the opposite would refer to things that thrive under pressure, not just resist it. To fill this gap in terminology, Taleb offers the term "antifragile": things that benefit and improve from volatility.

In a follow-up to his 2007 book *The Black Swan*, Taleb's *Antifragile* argues that despite our aversion to unpredictability and shocks, they are often beneficial. Small environmental disturbances may harm the individual, but Taleb says they are good for the species, which grows as it is forced to adapt. Random mutations in the genetic code, for example, can lead to a healthier gene pool. Small mistakes can provide useful information outside of nature as well: Entrepreneurs learn from failed startups and small plane crashes provide data that can help avoid larger accidents.

In addition to yielding information, unpredictable variations also act as purges, Taleb writes. Small forest fires remove the most flammable material from the system, and occasional market setbacks prevent hidden risks from accruing with impunity. "When a currency never varies, a slight, very slight move makes people believe the world is ending," he continues. "Injecting some confusion stabilizes the system."

Taleb seems to have a problem with what he calls "modernity," which he defines as humans' tendency to smooth out the world's natural jaggedness. Humans, he says, have "fragilized" their environment by removing randomness from it. Doctors overtreat patients at the risk of increased medical error, politicians support "rotten regimes" in the name of stability, and overbearing parents eliminate all elements of danger from their child's life — classic examples of "naïve interventionism" that Taleb says has become a core element of modernity. The problem, he contends, is that this quest for stability inhibits the buildup of immunity and makes humans more vulnerable to large shocks — or, as he calls them, "black swan" events. The steps that we take to avoid fragility may actually end up creating more of it.

BOOK REVIEW

Embracing Shocks

One of Taleb's biggest issues with modernity is the "malignant transfer" of fragility from one party to the other — in other words, the asymmetric exposure to risk that benefits those who "steal a free option from society." To guard against this problem, Taleb argues for "skin in the game," a risk management principle that says people should be exposed to any negative consequences that may result from their actions. He notes, for example, that bankers receive compensation for positive performance, but do not have to pay reverse bonuses for poor performances, an asymmetry that creates an incentive to hide risk.

Taleb makes a good point, but he runs into trouble when trying to apply it across a broad range of industries. In *Antifragile*, he presents a table that categorizes different professions into three groups: "skin in the game for the sake of others" for the most valorous, "skin in the game" for those in the middle, and "no skin in the game" for the most selfish. Soldiers and entrepreneurs are placed in the highest category, while, predictably, bankers, politicians, and corporate executives are in the lowest. But it's unclear whether Taleb's categorization always holds. For example, he puts politicians in the lowest category, meaning he believes they suffer no consequences for their risky actions. But to the extent that politicians are held accountable to their constituents via election cycles and the media, one must wonder whether Taleb's categorization generalizes too much and ignores important nuances.

While Taleb's ideas are attractive in some respects, Taleb himself is less appealing in these pages. He makes *ad hominem* attacks on individuals, including many economists, "tie-wearing abhorrent" bankers, and the "fragilista journalist" Thomas Friedman, who, Taleb claims, makes him "nauseous" upon eye contact. In many instances, Taleb is outright condescending. He writes that traders are "overeducated if they could spell their street address correctly," and wonders whether "people without practical sense usually manage to get the energy and interest to acquire a Ph.D. in the fictional world of equation economics." At the same time, he does not refrain from self-inflicted praise: "I just get disturbed when I see wrong and do nothing about it," Taleb writes at one point. "It is biological." While his irreverent tone offers the occasional reading break and has become a trademark style of Taleb's writings, it mostly detracts from his argument.

Taleb presents an interesting idea that will inspire many readers to rethink the role of risk in their lives. Though he overstretchs his argument by several hundred pages — violating his own "less is more" rule — his book is ultimately worth the read, especially for those who can overlook his grandiose and self-satisfied style. **EF**

State Corporate Income Tax and Multistate Corporations

BY SANTIAGO PINTO

The relative importance of state corporate income tax (SCIT) revenue has been declining over the last few decades. State corporate taxes as a percentage of total state tax revenues declined from 6.6 percent in 1992 to 5.3 percent in 2011. As a percentage of before-tax corporate profits, state corporate taxes declined from 4.4 percent to 2.2 percent during the same period. (See chart below.) As expected, these indicators show a cyclical behavior, but the underlying trend is downward. These trends have been taking place even as corporate profits as a share of national GDP have been rising.

The SCIT plays different roles in different states of the Fifth District. In Maryland, Virginia, and South Carolina, the participation of the SCIT in the state tax revenue is below the state average for the whole country; in North Carolina and the District of Columbia, it is about average; and in West Virginia, it is generally above the average. The long-run behavior also differs by states. The trend has been toward a reduced role for the SCIT in North Carolina and South Carolina, an increased role in Maryland, and an essentially constant one in Virginia and D.C. West Virginia also exhibits a downward trend after controlling for the exceptionally high values achieved during the period of 2005-2009. (See chart on page 41.)

Why has the role of the SCIT been declining nationally and in most Fifth District states? To understand the answers to this question, it may be helpful to have some background on this type of tax.

Understanding the SCIT

Most large corporations consist of a group of related businesses. Typically, there is a parent corporation and a number of subsidiaries owned by the parent. When these corporations operate in multiple states, measuring income earned within each region raises a difficult conceptual problem: How should states determine the appropriate amount of tax to impose on the incomes of such businesses?

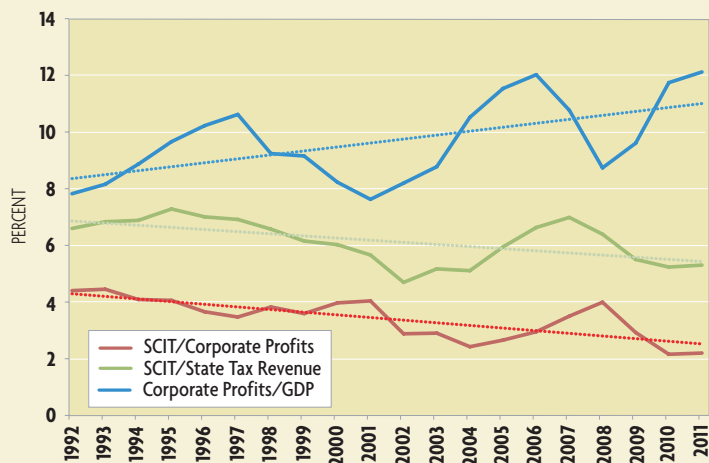
Federal court decisions have limited the power of states to tax out-of-state corporations. A corporation is subject to income tax in the state in which it is organized and in every state where it conducts activities that are sufficient to create what is called a “nexus.” Once nexus is established, the state has the right to impose a tax obligation on the corporation.

The determination of nexus for a multistate corporation can be a major challenge and is a highly contentious issue in state taxation. The “physical presence” standard dictates that a multistate corporation has nexus in the state where it produces — that is, the state where the company has offices and production facilities, in addition to local employees. More recently, however, states have shifted toward the adoption of the “economic presence” standard in determining whether in-state activities create nexus for tax purposes. According to this principle, a company also has presence in the states where it sells its products. The economic presence standard has become the subject of widespread litigation in state courts and the rulings on this matter have been far from uniform.

Reporting methods for multicorporate groups vary across states. While some states require corporations to file separate or consolidated tax returns, a growing number of states are moving toward combined (or unitary) filing. Under the separate entity method, a company with nexus in the state must file its own separate return, ignoring the existence of the corporate group. Each entity is treated as a separate taxpayer. In principle, a company cannot offset profitable subsidiaries with subsidiaries with losses. Since intercompany transactions (that is, transactions between subsidiaries or sister corporations) are treated similarly to transactions between the corporation and third parties for tax purposes, the company has some control over its taxable income. Typically, a separate entity state accepts the company’s statement of its taxable profits derived from its own books, but states have the right to make adjustments if they believe intragroup sales are deliberately used to avoid taxes (transfer pricing). In a few states, including Maryland, separate reporting is the only filing option.

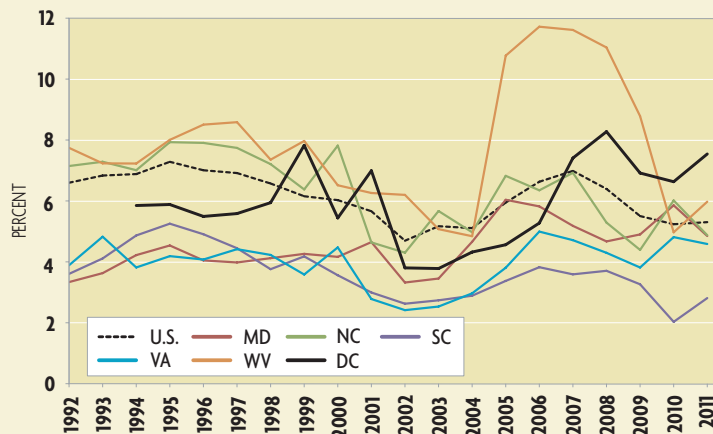
Some states allow corporations that belong to an

State Corporate Income Tax Revenue and Corporate Profits



SOURCES: Bureau of Economic Analysis and U.S. Census Bureau

State Corporate Income Tax Revenue as a Percentage of State Tax Revenue



SOURCE: U.S. Census Bureau

affiliated business group to file one single consolidated tax return (consolidated filing), rather than having each separate entity file a separate return. Generally, companies can only choose this option if they satisfy certain conditions. For instance, the parent company must own at least 80 percent or more of each affiliate, and only the affiliated entities that have nexus with the state can be included in the consolidated return.

Combined or “unitary” filing focuses on the “unitary” economic unit and treats related corporations as one entity. The profits of the parent company and subsidiaries are added together, ignoring geographic boundaries, and the state then taxes a share of the combined income. Combined filing requires the determination of whether a group of corporations can be legally considered a unitary business. This area has also been highly contentious due to the lack of consistency across states.

Supporters of consolidated and combined reporting claim that these options alleviate some of the distortions created by separate-unit filing and reduce tax-avoidance opportunities. Opponents, however, claim that by aggregating the income of all the businesses with different economic profitability regardless of their geographic location, consolidated and combined reporting may not accurately attribute the corporation’s income to the correct state.

Irrespective of the filing requirements, states allow a corporation that operates in multiple states to apportion its business income among the nexus states using a prescribed formula. This method, known as formula apportionment, assumes that the proportion of a multistate corporation’s income earned in a given state is a weighted average of the firm’s total sales, property, and payroll shares in that state. Each state has the ability to choose the weights attached to these factors. The formula apportionment

method is popular in other countries as well, such as Canada, mostly because it is relatively easy to administer.

For tax purposes, a sale must be assigned to one single state. For tangible property, most states follow the “destination rule” principle, which imputes sales to the state where they take place. If the destination states lack the authority to tax the seller (either because there is no nexus or the formula does not weigh the sales portion), sales assigned to those states are not included in the state of origin’s sales factor. When this occurs, a portion of that company’s profits remains untaxed. The untaxed profit is referred to as “nowhere income.” To address this issue, several states have implemented a “throwback rule,” which uses an alternative approach to calculate the sales share of the apportionment formula. Suppose as before that a firm sells part of its production in a

destination state and these sales are not subject to taxation in that location. If the company’s host state has a throwback rule, then the sales in the destination state are added or “thrown back” to the sales share in the formula apportionment of the host, increasing the taxable income in the host state.

About half of the states with corporate income tax have legislated throwback rules. New Jersey and West Virginia use a variant of this rule, but with similar implications, known as the “throwout” rule. Instead of assigning all sales to the states in which the company operates, the throwout rule simply excludes from aggregate sales those sales that are not assigned to any state.

The economic rationale of the throwback rule is questionable, though. From a practical standpoint, it is unclear why the design of the state tax system should depend on whether other states appropriately tax business activities. Additionally, differences in the implementation of the throwback rule can create economic distortions and tax avoidance opportunities. To the extent that some states do not impose throwback rules, companies can reduce their state taxable income by locating their property and payroll in states with no throwback rule and then selling in states where the company does not have nexus.

As of December 2012, all states in the Fifth District had adopted formula apportionment methods that weigh the sales share heavily. Concerning filing options, some states still permit separate filing. However, at the present time these states are planning on shifting toward combined reporting. Finally, most states in the Fifth District do not have a throwback (or throwout) provision, with the exception of West Virginia. (See table on page 42.) The case of North Carolina is atypical in the sense that there is no statutory throwback rule. Still, corporations with nexus in North Carolina that sell their products in

QUICK FACT

The widespread use of the SCIT as an instrument of economic development to attract businesses and jobs has negatively affected state tax revenue in the short run.

State Corporate Income Taxation in the Fifth District

	DC	MD	NC	SC	VA ⁽¹⁾	WV
Tax Rate	9.975%	8.25%	6.90%	5.00%	6.00%	7.75%
Apportionment Formula	Double-weight sales	Double-weight sales Single-sales factor for manufacturing	Double-weight sales	Single-sales factor	Double-weight sales	Double-weight sales
Filing	Combined	Separate	Separate	Separate (consolidated is allowed under certain conditions)	Combined	Combined
Throwback Rule	None	None	No statutory throwback rule, but similar procedure is used for sales in states in which the corporation is not required to file a tax return	None	None	Throwout

NOTE: ⁽¹⁾Virginia also has a gross receipt tax in addition to the state corporate income tax forms.
 SOURCES: Tax Foundation, state corporate income tax forms

tion, other states may feel compelled to do the same, initiating a “race to the bottom” in which all states end up imposing the same (lower) tax liability. Supporting this view, an empirical research study published in 2009 by economist Sanjay Gupta, also of Michigan State University, and several of his colleagues found that states with a double-weighted sales factor experience lower SCIT revenues than states with an equally weighted sales factor.

An additional issue with the formula apportionment method that may affect the SCIT revenue arises when states are allowed to choose their own formulas. If all states adopt the same formula, then

states where they are not required to file a tax return must add those sales to the sales taking place in North Carolina; essentially, this provision works as a throwback rule for that specific situation.

Explaining the Drop in SCIT Revenue

The decline in the SCIT revenue is generally attributed to a variety of factors, including the use of the SCIT for economic development purposes, the development of more aggressive state tax planning methods, and changes in state and federal tax laws. Recent research lends some support to these explanations.

The widespread use of the SCIT as an instrument of economic development to attract businesses and jobs has negatively affected state tax revenue in the short run. Concessions offered through the SCIT system differ by state and include property tax reductions, and investment and employment tax credits. Even though these are common practices, there is no conclusive evidence of their effectiveness in the long run. The tax competition literature offers one possible explanation for this outcome. John Douglas Wilson, an economics professor at Michigan State University, summarized the findings of this literature in an article published in 1999 in the *National Tax Journal*. The main argument is that state competition for businesses triggers a process that leads to a “race to the bottom,” where all states end up imposing inefficiently low tax rates.

A more recent strand of literature focuses on other ways of attracting businesses such as the manipulation of the apportionment formula. In 1967, the Multistate Tax Compact established that the three factors considered in the apportionment formula (property, sales, and payroll) are to be weighted equally. In spite of this recommendation, most states have been systematically deviating toward a formula that weighs the sales portion more heavily. Currently, most states use a formula that assigns a double weight to the sales portion. As more states pass such legisla-

tion, exactly 100 percent of a corporation’s income will be apportioned across states. Nonuniformity, however, can result in more or less than 100 percent of a corporation’s income being subject to state income tax.

Two related studies — one published in 2005 by William Fox, an economics professor, and LeAnn Luna, an accounting professor, both at the University of Tennessee, and the other one published in 2010 by Luna and Matthew Murray, an economics professor at the University of Tennessee — contended that recently corporations have been adopting more aggressive tax avoidance measures and engaging in what is known as “state tax planning.” The decline in SCIT revenue as a proportion of corporate profits may be indicative of such behavior. Most multistate income tax planning involves various forms of income-shifting among state jurisdictions through intercompany transactions or relocation of production processes to avoid nexus in states with higher taxes. To a large extent, this kind of behavior is encouraged by the separate-entity reporting requirements.

State tax planning also includes other more sophisticated strategies. For instance, companies react to state policies by choosing legal arrangements that would reduce the corporation’s tax exposure. The recent proliferation of S-corporations, partnerships, and LLCs is consistent with such practices. These organizations, unlike shareholders in a corporation, are not taxed as a separate business entity. Instead, profits and losses are “passed through” the business to each member of the corporation, who eventually report profits and losses on their own personal income tax returns. A widespread shift toward legal arrangements of these types is expected to affect the SCIT base negatively.

Another common practice has been establishing holding companies in states with no corporate income tax. This strategy allows corporations to separate the revenues generated by their physical activities from the revenues obtained from intangible property (trademarks, trade names, or other intellectual property). Specifically, the parent company

incorporates a wholly owned subsidiary as an “intangible holding company” in a tax-favored state. Then, the holding company enters into licensing arrangements under which the operating entity pays royalties to the holding company for the use of intangible assets. The operating entity deducts the royalty payments from its taxable income in the states where it files, and the holding company pays no income tax on the royalty income.

Other changes in state laws, such as combined filing and the introduction of throwback rules, may have also contributed to the evolution of the SCIT. In recent years, states have been shifting toward combined reporting. As more and more states adopt this method, it becomes less profitable for companies to engage in tax-avoidance strategies. The net impact of combined reporting on SCIT revenue is ambiguous, however. If the subsidiaries operating out of state incur losses, then the amount of income apportioned to a unitary state could be reduced.

The empirical literature is inconclusive in this respect. While Gupta and his colleagues did not find any significant association between combined reporting and SCIT revenue, Fox and Luna found that combined reporting tends to increase SCIT revenue. Concerning the throwback provision, the conclusions from Gupta and his colleagues indicate that the implementation of this rule has a positive impact on SCIT, but in a 2010 report commissioned by the National Conference of State Legislatures, Fox and Luna claimed that the revenue effects tend to decline as the SCIT rate is higher.

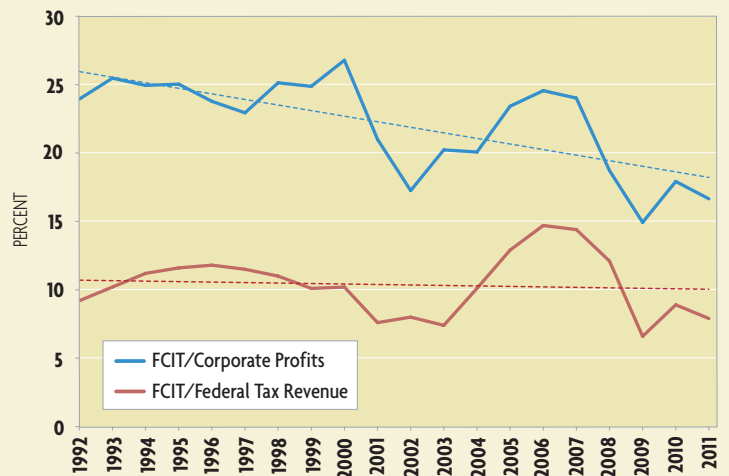
Finally, changes in federal tax laws ultimately affect the SCIT revenue. The calculation of state taxable corporate income generally begins with the amount of federal taxable income reported on the corporation’s federal tax form. States introduce certain adjustments, but state taxable income mostly conforms to the federal tax base. As a consequence, any amendment to federal tax rules (for example, the enactment of more accelerated depreciation methods) would have an effect on state tax collections as well.

During the period 1992-2011, the federal corporate income tax revenue decreased from 9 percent to less than 8 percent as a percentage of total federal tax revenue, and from approximately 24 percent to 17 percent as a percentage of pretax corporate profits. (See chart.) Such behavior does not seem to fully explain the declining importance of the SCIT, however. Research on this topic published in 2005 by Gary Cornia, dean of the Marriott School of Management at Brigham Young University, and some colleagues suggested that changes taking place at the federal level do not appear to be the cause of the decrease in state corporate income taxes.

Implications for the Future

As the SCIT tax base erodes and the performance of the SCIT weakens, state governments are pushed to evaluate alternative ways of financing government expenditures. Pressed by financial needs and state balanced-budget

Federal Corporate Income Tax



SOURCES: Bureau of Economic Analysis, U.S. Census Bureau, Office of Management and Budget

requirements, however, states are unlikely to eliminate the SCIT completely, at least in the short term. If they did so, states would face the major challenge of compensating for the loss in state revenue (in 2011, the SCIT accounted for 5.3 percent of the total state revenue), and there would be no assurance that the new financing alternatives would be less distortive. Moreover, from a political standpoint, the SCIT is still attractive to the extent that it grants state authorities the opportunity to export part of the tax burden to out-of-state residents.

In such context, states have chosen to introduce partial modifications to their SCIT systems. As noted earlier, the literature is ambiguous about the net impact of these changes in SCIT revenue. For example, the recent shift toward a double-weight sales factor tends to reduce tax revenue, the implementation of throwback appears to raise tax revenue, and combined reporting does not seem to affect tax revenue. At the same time, it is not obvious that all states would be willing to adopt the same tax policies. Clearly, a formula that gives a relatively large weight to the sales factor (and, consequently, a low weight to the property or capital portion) essentially penalizes those companies with higher in-state sales, and benefits those that operate and produce within the state’s borders. In contrast, the throwback rule, regardless of its validity, tends to penalize those companies that sell out of state more. Depending on the states’ objectives, some policies may be more appropriate than others.

In the Fifth District, states have already adopted a double-weight sales factor formula, and with the exception of West Virginia (and, to some extent, North Carolina), states do not have a throwback provision. In light of current research, the state governments in the region seeking to increase SCIT revenue could do so by choosing a more balanced apportionment formula and by adopting a throwback rule.

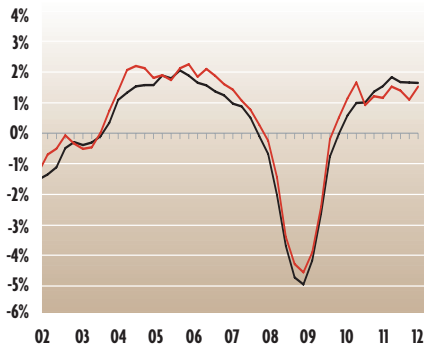
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STATE DATA, Q4:12

	DC	MD	NC	SC	VA	WV
Nonfarm Employment (000s)	734.3	2,586.3	4,022.2	1,872.4	3,744.0	766.9
Q/Q Percent Change	0.6	0.5	0.9	0.9	0.5	0.3
Y/Y Percent Change	0.7	1.3	2.2	1.9	1.1	0.5
Manufacturing Employment (000s)	0.9	105.5	441.8	221.0	232.4	49.1
Q/Q Percent Change	-6.9	-2.9	0.4	0.6	-0.2	0.9
Y/Y Percent Change	-10.0	-5.1	1.9	1.5	0.7	-0.9
Professional/Business Services Employment (000s)	154.5	414.0	538.8	231.9	682.8	65.2
Q/Q Percent Change	1.2	0.9	0.8	-1.9	0.7	0.7
Y/Y Percent Change	1.7	2.2	3.3	0.3	1.8	1.0
Government Employment (000s)	241.7	505.1	715.5	350.7	715.1	154.8
Q/Q Percent Change	0.2	0.1	0.3	1.2	0.7	0.3
Y/Y Percent Change	-1.3	0.1	0.5	2.6	0.2	0.6
Civilian Labor Force (000s)	369.3	3,138.8		2,168.1	4,216.8	807.8
Q/Q Percent Change	1.4	0.5	0.6	0.2	0.3	0.2
Y/Y Percent Change	5.7	1.2	1.7	0.0	0.0	0.5
Unemployment Rate (%)	8.5	6.7	9.4	8.7	5.7	7.5
Q3:12	8.9	6.9	9.6	9.1	5.9	7.6
Q4:11	9.8	7.1	10.0	10.0	6.3	7.5
Real Personal Income (\$Mil)	41,264.2	267,487.5	316,753.3	141,640.5	337,257.0	55,568.0
Q/Q Percent Change	1.3	1.4	1.5	1.3	1.4	0.9
Y/Y Percent Change	2.6	2.8	3.8	3.4	2.7	1.8
Building Permits	1,562	3,886	12,867	4,571	6,847	486
Q/Q Percent Change	20.0	4.4	12.5	-0.9	2.9	8.0
Y/Y Percent Change	1.9	25.0	61.3	7.9	60.3	15.4
House Price Index (1980=100)	598.8	408.1	302.2	305.2	398.0	214.5
Q/Q Percent Change	1.6	0.3	0.4	0.0	0.4	0.2
Y/Y Percent Change	4.5	-0.8	-0.8	-1.3	-0.1	0.1

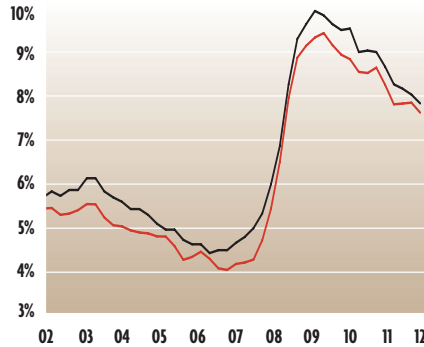
Nonfarm Employment

Change From Prior Year
First Quarter 2002 - Fourth Quarter 2012



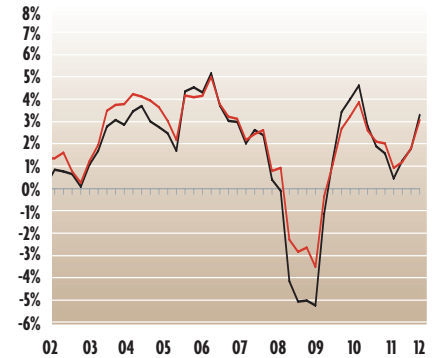
Unemployment Rate

First Quarter 2002 - Fourth Quarter 2012



Real Personal Income

Change From Prior Year
First Quarter 2002 - Fourth Quarter 2012

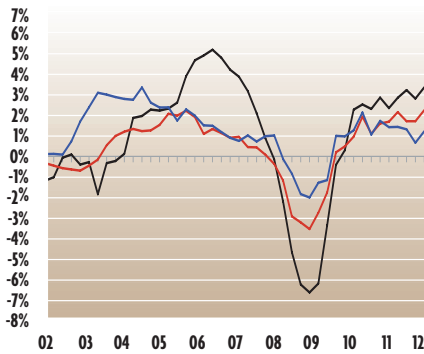


— Fifth District

— United States

Nonfarm Employment Metropolitan Areas

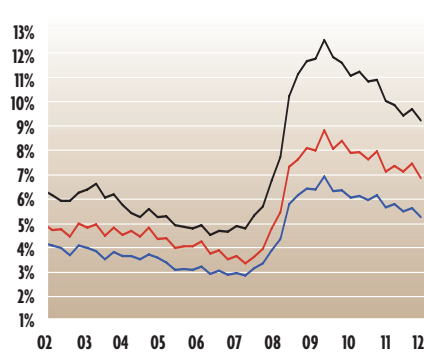
Change From Prior Year
First Quarter 2002 - Fourth Quarter 2012



— Charlotte — Baltimore — Washington

Unemployment Rate Metropolitan Areas

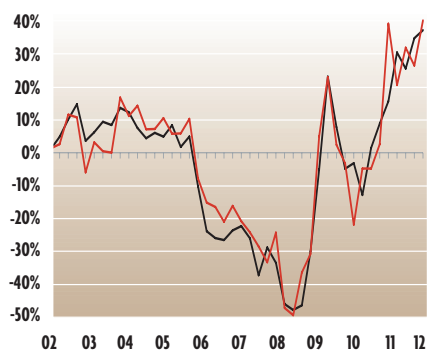
Change From Prior Year
First Quarter 2002 - Fourth Quarter 2012



— Charlotte — Baltimore — Washington

Building Permits

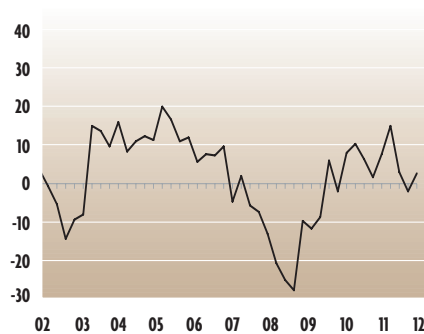
Change From Prior Year
First Quarter 2002 - Fourth Quarter 2012



— Fifth District — United States

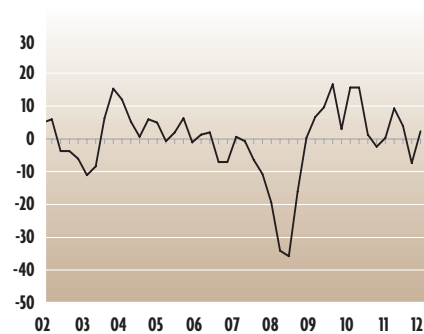
FRB—Richmond Services Revenues Index

First Quarter 2002 - Fourth Quarter 2012



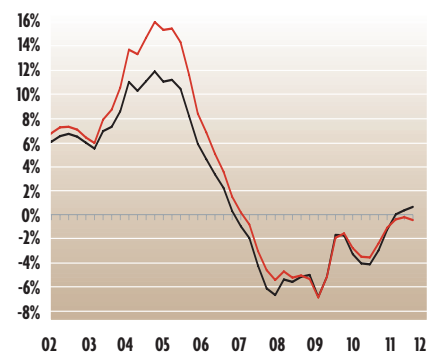
FRB—Richmond Manufacturing Composite Index

First Quarter 2002 - Fourth Quarter 2012



House Prices

Change From Prior Year
First Quarter 2002 - Fourth Quarter 2012



— 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, Q4:12

	Washington, DC	Baltimore, MD	Hagerstown-Martinsburg, MD-WV
Nonfarm Employment (000s)	2,498.2	1,341.2	104.4
Q/Q Percent Change	1.1	1.9	1.1
Y/Y Percent Change	1.2	2.2	2.1
Unemployment Rate (%)	5.5	7.1	7.7
Q3:12	5.5	7.2	7.8
Q4:11	5.9	7.5	8.5
Building Permits	6,397	1,714	252
Q/Q Percent Change	15.6	-1.6	26.6
Y/Y Percent Change	43.2	12.8	93.8
	Asheville, NC	Charlotte, NC	Durham, NC
Nonfarm Employment (000s)	174.4	868.6	286.6
Q/Q Percent Change	2.3	2.8	1.6
Y/Y Percent Change	2.4	3.3	1.9
Unemployment Rate (%)	7.6	9.4	7.2
Q3:12	7.7	9.5	7.3
Q4:11	8.2	10.3	7.8
Building Permits	265	3,110	519
Q/Q Percent Change	-31.0	-1.3	-55.7
Y/Y Percent Change	21.0	120.1	-19.0
	Greensboro-High Point, NC	Raleigh, NC	Wilmington, NC
Nonfarm Employment (000s)	345.8	528.4	139.7
Q/Q Percent Change	1.7	0.8	0.9
Y/Y Percent Change	0.5	2.8	3.3
Unemployment Rate (%)	9.9	7.6	9.6
Q3:12	10.0	7.7	9.7
Q4:11	10.4	8.4	10.4
Building Permits	396	4,833	674
Q/Q Percent Change	10.0	87.3	-19.7
Y/Y Percent Change	-35.2	183.6	62.0

	Winston-Salem, NC	Charleston, SC	Columbia, SC
Nonfarm Employment (000s)	208.2	306.3	357.7
Q/Q Percent Change	2.1	-0.2	1.6
Y/Y Percent Change	1.6	2.3	1.3
Unemployment Rate (%)	8.9	7.0	7.6
Q3:12	8.9	7.3	8.0
Q4:11	9.4	8.2	8.6
Building Permits	159	1,042	877
Q/Q Percent Change	-8.6	-6.5	-2.0
Y/Y Percent Change	-64.3	-15.9	41.9
	Greenville, SC	Richmond, VA	Roanoke, VA
Nonfarm Employment (000s)	311.2	629.3	160.3
Q/Q Percent Change	1.8	0.3	0.9
Y/Y Percent Change	1.5	1.5	1.6
Unemployment Rate (%)	7.1	6.1	5.9
Q3:12	7.5	6.3	6.0
Q4:11	8.1	7.0	6.6
Building Permits	678	1,245	105
Q/Q Percent Change	15.9	0.1	11.7
Y/Y Percent Change	65.8	86.1	16.7
	Virginia Beach-Norfolk, VA	Charleston, WV	Huntington, WV
Nonfarm Employment (000s)	751.1	147.8	115.3
Q/Q Percent Change	0.3	0.0	2.4
Y/Y Percent Change	1.4	-0.8	0.0
Unemployment Rate (%)	6.3	7.1	7.3
Q3:12	6.5	7.1	7.3
Q4:11	7.1	6.9	7.9
Building Permits	1,120	38	8
Q/Q Percent Change	-24.1	-2.6	33.3
Y/Y Percent Change	13.1	111.1	-68.0

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Watching Labor Force Participation

BY JOHN A. WEINBERG

A central concept in evaluating economic performance is how fully an economy is using its resources. Of particular interest in this regard is the utilization of labor resources, both because labor accounts for the bulk of production and because labor income is the key to the broad well-being of households. Accordingly, the unemployment rate, as a measure of unutilized labor resources, has always received considerable attention from policymakers, politicians, and the general public.

Like most of our efforts to measure the economy, however, the unemployment rate is an imperfect indicator of how effectively our labor markets are working. First, the nature of labor markets — the fact that employment is usually the result of a process by which workers and employers search for a match between workers’ skills and employers’ needs — means that there is always some amount of unemployment. And the amount of unemployment arising from that process may vary over time, depending on shifts in the supply and demand for different types of skills. The extent to which persistently high unemployment in the wake of the Great Recession is the result of increased difficulty in finding good matches — many refer to this as an increase in “structural unemployment” — has been the subject of considerable debate.

A second aspect of the unemployment rate that makes it hard to interpret as a measure of labor market performance lies in its definition. We define the unemployment rate as the fraction of the labor force that is not employed. The labor force, in turn, is defined as all employed people plus those in the working-age population who do not have jobs but are seeking employment. The unemployment rate is silent on people who, for whatever reason, are neither working nor searching.

Another measure of labor-market activity is the labor force participation rate — that is, the share of the population in the labor force. Unlike the unemployment rate, this measure does provide information about those who are not working or searching. Changes in this measure are usually dominated by demographics and other trends that play out over time periods longer than the typical business cycle. For instance, from the 1970s through the end of the 20th century, the participation rate rose from around 60 percent to 67.3 percent as women increasingly entered and remained in the workforce. But this shift had largely played itself out by 2000, and participation has been trending down since then, standing at 66 percent at the end of 2007.

Then, during and since the recession, the pace of decline sped up, with participation currently at 63.3 percent, about where it was in 1980.

There are a number of reasons why potential workers might leave the labor force or remain outside of it. They may be pursuing education or caring for family members. They may be disabled or retired. Also, an individual is classified as not in the labor force if he or she is not searching for work out of a belief that it isn’t possible to find a job. For example, the person may have tried to find work and gave up. These so-called discouraged workers are in some ways more similar to the unemployed than they are to others who are not in the labor force: They represent potential labor supply that might be expected to quickly flow back into the labor force as conditions improve.

Like most of our efforts to measure the economy, the unemployment rate is an imperfect indicator of how effectively our labor markets are working.

The behavior of labor force participation is central to how one interprets the evolving outlook for labor market performance. Suppose economic growth were to continue at the roughly 2 percent annual pace that it has averaged since the end of the recession. That pace of growth would likely continue to produce net employment gains similar to the post-recession

average, around 180,000 jobs a month. If labor force participation remains low, or even continues its recent decline, such a pace of job growth might cause the unemployment rate to fall relatively quickly. If, on the other hand, participation picks up as discouraged workers flow back into the market, then for a given pace of job growth, the unemployment rate will fall more slowly or may even rise.

Determining the sources of nonparticipation is difficult. Some recent work has suggested that a substantial share of the decline in participation is a product of the recession, which tends to be more consistent with the notion of people withdrawing from the labor force because of poor employment prospects. But a cyclical decline of the magnitude suggested by that work would be unusual in the historical record.

Regardless of whether the decline in labor force participation is rooted mainly in the recession or in structural changes in the economy, it is an important phenomenon, one unprecedented in our postwar experience. The behavior of labor force participation is likely to remain a challenging aspect of the economic data — for forecasters and policymakers alike — for some time. **EF**

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

Digital Currency

In 2009, Bitcoin launched as a purely digital currency — it exists only as bits and bytes. Bitcoins aren't backed by any government or any physical commodity, yet they are accepted as payment at several dozen businesses in the United States and traded for dollars through online exchanges. Are digital currencies the next evolutionary step for money or something else entirely?

Is College Becoming a Riskier Investment?

Hundreds of studies agree: College is the most reliable way to increase your earnings. But what happens when the payoff becomes less certain? New research suggests that the returns to college might be smaller and more variable than they used to be — but that it's still a better investment than not going.

The High Point Initiative

For decades, High Point, N.C., was plagued by open-air drug markets and violent crime. In 2004, the police decided they needed a new strategy — so instead of putting drug dealers in prison, they offered some a second chance. Today, the drug markets are gone, and cities nationwide are adopting the High Point model.

Jargon Alert

Analysis of “present value” is important — not just to winners of the lottery, but to anyone facing a major financial decision. This analysis helps people evaluate trade-offs between receiving income now versus later.

The Profession

Some say the review process at economics journals has become longer and more cumbersome, but economists have more ways to disseminate their research before the articles are formally published.

Interview

John Cochrane of the University of Chicago discusses financial regulation, monetary policy following the Great Recession, and the effect of fiscal stimulus on economic growth.

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Is America the Land of Opportunity?



The Richmond Fed's *2012 Annual Report* features an essay entitled, "Land of Opportunity? Economic Mobility in the United States."

The essay suggests that economic mobility has decreased in recent years, particularly for people born at the top and bottom of the income distribution. Many factors contribute to the retention and attainment of economic status. But for nearly everyone, advancement depends on opportunities to obtain cognitive and noncognitive skills, and those opportunities are not as good for children born to poor families. Initiatives that focus on early childhood education seem to yield high returns on investment, although their feasibility on a large scale is unknown. Nonetheless, these efforts may have the potential to help the United States achieve a more inclusive prosperity.

In addition to the essay and the Bank's financial statements, the *Annual Report* includes a summary of the region's economic performance in 2012 and an overview of how the Bank's regional information and analysis contribute to monetary policy deliberations.

The *Annual Report* is available on the Bank's website at http://www.richmondfed.org/publications/research/annual_report/