

Forefront

New Ideas on Economic Policy from the FEDERAL RESERVE BANK
of CLEVELAND

State of Employment: Are Fourth District Labor Markets Tight?

The people on both sides of any paycheck have a vested stake in what's changing in the labor market, but for different reasons.

INSIDE:

The Innovation Roundtable: A Discussion of Growth in Northeast Ohio • Banking on the Cross-Sale • The Adversary Will Get In

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Presidential Pulls

Loretta J. Mester, president and chief executive officer of the Federal Reserve Bank of Cleveland, has spoken frequently in recent months about her views on the strengthening labor market and data-dependent policymaking. Here is some of what she's had to say.



ACCOMMODATIVE POLICY

"The actual path the fed funds rate will follow will depend on the economic outlook as informed by incoming information, but according to the FOMC's [Federal Open Market Committee's] current assessment of the outlook, monetary policy is expected to remain accommodative for some time to come, with rates expected to move up only gradually to more normal levels."

—From a speech in San Francisco, California, January 3, 2016

IMPROVING CONDITIONS

"Until we see further evidence to the contrary, my expectation is that the US economy will work through the latest episode of market turbulence and soft patch to regain its footing for moderate growth, even as the energy and manufacturing sectors remain challenged."

—From a speech in New York, New York, February 4, 2016

DATA-DEPENDENT POLICYMAKING

"Oil prices cannot continue to decline indefinitely, nor can the dollar continue to appreciate forever. At some point, both will regain some stability and the effect of previous changes on inflation will dissipate. As that happens, with inflation expectations remaining stable and economic growth continuing, it is reasonable to expect that inflation will move back slowly to 2 percent; it just might take a bit longer now."

—From a speech in New York, New York, February 4, 2016

RESILIENCY

"[T]he message I take from US economic performance is that despite financial market volatility, despite the pain inflicted on the energy sector from falling oil prices, and despite the relatively weak growth abroad, the US economy has proven to be remarkably resilient."

—From a speech in New York, New York, April 1, 2016

HOUSEHOLD BUDGETS

"The fact that consumer lending is rising is an indication that, in general, consumers are feeling pretty positive about their earnings prospects. This is a very reasonable view, reflecting the cumulative progress that has been made in the labor market."

—From a speech in Sarasota, Florida, February 19, 2016

STRENGTHENED COMMUNICATIONS

"[In] my view, an important goal of FOMC [Federal Open Market Committee] communications is to explain the rationale of our decisions to the public so they will have a sense of how policy is likely to change, in response not only to expected changes in economic conditions but also to unforeseen changes in conditions. I believe that the FOMC statements have been evolving along these lines."

—From a speech in Sarasota, Florida, February 19, 2016

STEADYING THE PACE

"I wouldn't be surprised if the pace of job gains slowed somewhat, based on demographics and the stage of the business cycle, but the gains should be strong enough to put additional downward pressure on the unemployment rate and support broader acceleration in wages."

—From a speech in Sarasota, Florida, February 19, 2016

Beige Book Updates

The Fourth District's outlook is once again mixed, according to contacts consulted for the March 2, 2016, *Beige Book*, a report that summarizes commentary regarding current economic conditions. While there's been some improvement in consumer spending and general retailing across the region, which comprises Ohio, western Pennsylvania, the northern panhandle of West Virginia, and eastern Kentucky, manufacturing is becoming a tale of 2 supply chains.

The first 8 months of 2015 saw disappointing results for general retailers, but since Labor Day weekend, same-store sales have been increasing, and retail contacts'

outlook is more upbeat, though mixed. Of note is that consumer shopping preferences are shifting from brick-and-mortar stores to ecommerce outlets and mobile technologies. And while consumers appear to be gaining confidence that lower energy prices may be more than transitory, it may take a year or longer of low energy prices for people to start spending with more confidence.

Manufacturers are experiencing a mixed bag, as well, depending on whom they are supplying. The low energy prices help to maintain manufacturing margins, but they haven't completely offset the impact of the strong dollar. Those manufacturers whose final products

are sold primarily to industrial customers and to international markets have been experiencing flat to sluggish growth. In contrast, suppliers to the motor vehicle, construction, and aerospace industries are seeing elevated activity.

The *Beige Book* covers 6 industry sectors—manufacturing, real estate and construction, consumer spending, banking, energy, and freight transportation—and is published by the Federal Reserve Board of Governors 8 times per year. For the current *Beige Book*, as well as archived releases, visit federalreserve.gov/monetarypolicy/beigebook. ■

—Tasia Hane-Devore

Connecting with the Community

In a meeting that grew out of a connection on Twitter, Cleveland Fed President Loretta J. Mester met with members of 3 groups on January 14, 2016: Common Good Ohio, The Center for Economics and Policy, and Policy Matters Ohio.

Paul Kaboth, vice president and community affairs officer, said that Mester and members of Community Development listened to the nonprofit advocacy and policy research organization representatives, who covered such topics as the strength of the economic recovery, Federal

Open Market Committee policy, Federal Reserve System governance, and the selection of Reserve Bank presidents and directors. Conversation about organizing a meeting began over the groups' Twitter accounts.

"Under [President Mester's] leadership, we are committed to listening to the widest range of voices on the governance and performance of the Federal Reserve System and our Bank," Kaboth said. "We communicated this sentiment to our visitors, who welcomed our response. We may not always agree, but we are

interested and willing to listen—not only to our supporters, but also to our critics."

The Bank was pleased to meet with Common Good Ohio and had been attempting to do so since June 2015. The group is aligned with others that comprise Fed Up, a movement that advocates for low interest rates, full employment, and other issues. ■

—April McClellan-Copeland



Banking on the Cross-Sale

As financial institutions reach to do more business with existing customers, Cleveland Fed examiners say institutions must keep an eye on growing concentrations and the risks they pose.



Michelle Park Lazette
Staff Writer

It's clear in billboard ads, help-wanted descriptions, and financial institutions' publicly disclosed strategies: Banks are hungry to be *the* one-stop shop for their customers.

The strategy is called "relationship banking," a way of doing business that can both reduce risk and increase it, Cleveland Fed banking supervisors say.

For many firms, it's meeting a customer's needs across multiple financial products, for example, having a business owner's commercial checking account plus his or her mortgage, investment account, and more.

The desire for multiple-touch-point customer relationships isn't new, but Federal Reserve Bank of Cleveland examiners say an increasing number of institutions are spending more resources and hiring relationship-focused personnel to achieve it.

Heightened competition is one reason. The low interest rate operating environment is another.

"Many banks are trying to grow to realize operating efficiencies," says Jenni M. Frazer, a Cleveland Fed vice president. "There's more competition, but still a relatively finite pool of customers.

"It used to be that customers just came to banks," she adds. "But now, banks have had to get better at sales and marketing. More recently, the low interest rate environment has certainly made that more important. Banks are spending money in ways that they

hadn't before to get a greater share of the customers' relationship."

And that investment is unlikely to slow in the near term: Frazer and other supervisors say relationship banking is a strategy they expect will have staying power based on what they glean in the course of their regulatory work.

Making 1 call instead of 7

The Cleveland Fed supervises 270 financial institutions headquartered in the Fourth Federal Reserve District, which covers Ohio, western Pennsylvania, the northern panhandle of West Virginia, and eastern Kentucky.



Jenni M. Frazer

“Banks are spending money in ways that they hadn't before to get a greater share of the customers' relationship.”

Cross-functional conversations and expertise are important as banks deepen relationships with single customers, be they individuals or businesses.

Banks in the District are among those deploying relationship banking strategies.

Cleveland-based KeyCorp describes the practice in its 2015 annual report: “Our 2015–2016 strategic focus is to grow by building enduring relationships through client-focused solutions and service. We intend to pursue this strategy by growing profitably; acquiring and expanding targeted client relationships; [and] effectively managing risk and rewards.”

Columbus-based Huntington Bancshares Inc. discloses in its 2015 report that a key strategic emphasis is “for our business segments to operate in cooperation to provide products and services to our customers and to build stronger and more profitable relationships.” A specific objective? To target prospective customers who may want multiple products and services with the bank.

Pittsburgh-based PNC Financial Services Group Inc., too, identifies in its most recent annual report that it seeks revenue growth by “deepening our share of our customers’ financial assets, such as savings and liquidity deposits, loans and investable assets, including retirement assets.”

When customers have multiple touch points with one institution,

“they tend to stay with you longer,” says Kip Clarke, executive vice president and Cleveland market president for KeyBank.

Kurt Kappa, senior vice president and market leader for the Northeast Ohio region for Westfield Bank, agrees that a many-pronged relationship leads to likelier client longevity. Following 2 recent acquisitions, Westfield Center-based Westfield Bank has hatched and is deploying plans to expand the relationships it has with its broadened customer base.

“Everybody’s flush with capital,” Kappa says of banks. “Everybody’s fighting for the same customer. Keeping those customers is easier if they have multiple products with you. If you have your checking account [with one bank] and your direct deposits, your car loan, your mortgage loan, it’s a lot harder to switch overnight. It’s more of a hassle to go to the other bank.”

And, Kappa asserts, relationship banking strategies can save marketing dollars, too.

“You already know that current customers are qualified or not qualified, so you’re not wasting your time going out to the masses,” he explains. “You have specific knowledge of their creditworthiness, their

income. You can see what kinds of accounts they have at your bank. It’s more profitable all around.”

Increased profitability is a definite advantage in doing more business with existing customers, Clarke notes.

“Instead of calling on 7 different clients, if we’re working with that 1 client in 7 different ways, it’s fewer meetings, it’s deeper relationships,” Clarke says. “It’s geometrically more profitable. If you do 2 or 3 more products for 1 client, your profitability is more than just 2 or 3 times greater.”

For the small-business owner, consultation on various products and services is a real value-add delivered through the relationship banking strategy, according to Glenn D. Leveridge, market president for the Winchester market of Central Bank, headquartered in Lexington. He cites the example of a new commercial client for whom Central Bank is now handling credit card processing, direct payroll, and more, freeing up the businessman to focus on his core business.

“Now I can do what I do best,” Leveridge quoted the businessman as saying. “I don’t have to worry about this stuff.”

Two sides to the coin

While bank examiners note that bankers’ having multiple eggs in a single customer basket can increase risk, they say it can improve risk management, too.

“The focus on relationship banking can reduce risks for particular institutions because with relationship banking, the bank focuses on really knowing the customer, knowing their needs, knowing their profiles,” Frazer notes. “So the banks know things like deposit activity, cash flow



Kurt Kappa

“Everybody’s fighting for the same customer. Keeping those customers is easier if they have multiple products with you.”



Glenn D. Leveridge

“For the small-business owner, consultation on various products and services is a real value-add.”

transactions. It should allow for a more accurate customer profile, risk assessment, and better pricing for what the risk of that customer is.”

The assumption therein, however, is that the institutions deploying relationship banking strategies have the capability to connect all of those dots and are doing it, Frazer says. That’s particularly important in the current landscape of increased bank mergers and acquisitions because those doing deals are at risk for acquiring new customers they don’t know.

“From a supervisory perspective, if you’re going to focus on relationship banking, we expect you to have the infrastructure to really know the customer, to have information to aggregate the exposure and aggregate the risk, to have the right tools to price that risk, and, if you don’t like what that risk profile is telling you, to move that customer out of the bank,” she explains. “One big risk is if a bank isn’t able to quantify and aggregate its total exposure to a customer, then the bank is at risk of having a greater exposure to a customer than what it wants or should have.”

Banking supervisors also are watchful that banks maintain the appropriate tolerances and limits, adds Anulekha Mohanty, a Cleveland Fed supervisory examiner.

“Sometimes through relationship banking where you have more information around a client there

can be a tendency to think, ‘Hey, I understand the client,’ and there can be the willingness to take exceptions [when it comes to underwriting],” Mohanty says. “We are keeping the pulse of whether there is loosening of underwriting practices.”

Cross-functional conversations and expertise are important as banks deepen relationships with single customers, be they individuals or businesses, sources say.

“No longer is risk going to be siloed in 1 portfolio,” Mohanty explains. “To do a good job of understanding the global risk of that particular customer, let’s say a retail customer with private banking needs, both sides need to talk through the risks presented. The risk that the client brings forth from a private banking perspective may be different than [that from] a mortgage perspective. It is important to ensure risk is evaluated holistically and for any correlations.”

KeyBank’s Clarke is among those who say relationship banking can mean a financial institution better manages risk.

“I would argue that if you have deeper relationships with your clients that you understand your risks better,” he says.

Central Bank’s Leveridge agrees.

“If I’m a good personal banker, I’m going to have access and see every product and service that you have with me,” he explains. “Wouldn’t

that be better if I’ve got them and can monitor them rather than you having other products elsewhere?”

There are other risks to mitigate beyond client concentrations.

A sharpened focus on relationship banking poses cultural and operational risks, too, Clarke adds. For one, transitioning a banking team from product-focused to relationship-focused, a switch which can entail directing “product people” not to call on clients because relationship managers will, can cause friction between bank employees. Plus, when one person or one team is tasked with delivering varied solutions to one customer, the setup can require additional cross-product and cross-services training.

Another matter that banks need to address is how people are compensated, he says.

“Suddenly, you have a bunch of people who are used to selling in one way, and they’re thinking, ‘How do I get paid here?’” Clarke explains. “You’ve got to work through that.” ■

SUM AND SUBSTANCE

As relationship banking strategies gain popularity, bank examiners expect bankers to use appropriate measures to monitor how their relationships with individual customers are growing and to address the risks that growth may pose.

State of Employment: Are Fourth District Labor Markets Tight?

The people on both sides of any paycheck have a vested stake in what's changing in the labor market, but for different reasons.



Mark Schweitzer
Senior Vice President



Christopher Vecchio
Senior Research Analyst

Many District contacts have been reporting tighter labor market conditions. (p. 9)

Job seekers' odds of finding employment are better in a tighter labor market, and in such a market employees are better able to bargain for wage increases. But a tightening labor market also means that employers may be challenged to fill vacancies and may see their labor costs rise. As it does for the nation, here in the Fourth District, which comprises Ohio, western Pennsylvania, the northern panhandle of West Virginia, and eastern Kentucky, labor market tightness varies.

Federal Reserve policymakers have their own reason to be interested in labor market tightness.

The Federal Reserve's "dual mandate" is price stability and maximum employment. The Federal Open Market Committee (FOMC), which sets the stance of monetary policy for the United States, recently reaffirmed that in its view price stability is achieved when the longer-run inflation rate is 2 percent.

Maximum employment is a harder concept to nail down. In the language of the FOMC, the maximum employment level is "largely determined by nonmonetary factors" that "may change over time and may not be directly measurable." It's inappropriate, then, to set a specific unemployment rate as an objective.

But when are labor markets at their maximum sustainable level, or, more colloquially, "tight"?

The unemployment rate is the primary indicator of the tightness of labor markets, and, indeed, the national unemployment rate has dropped considerably, from 10 percent in 2009 to just 5 percent at the end of 2015. So here's the question: What rate of unemployment is the natural outcome of normal movement in and out of jobs, movement that continues even when the economy is operating at its potential?

This "natural rate of unemployment" is a difficult concept to define, and it's even harder to estimate. The first quarter 2016 "Summary of Economic Projections" released by the FOMC shows that a median projection of longer-run normal unemployment would be 4.8 percent in a healthy economy. This number suggests that the national labor market is at least close to the FOMC's current estimate.

However, the decisions households make pose challenges in determining what a normal unemployment rate in a healthy economy would be. For instance, there may be people who are not currently looking for work but who *might* take jobs as the labor market tightens, thus affecting the rate.

The unemployment rate is the primary indicator of the tightness of labor markets, and, indeed, the national unemployment rate has dropped considerably.

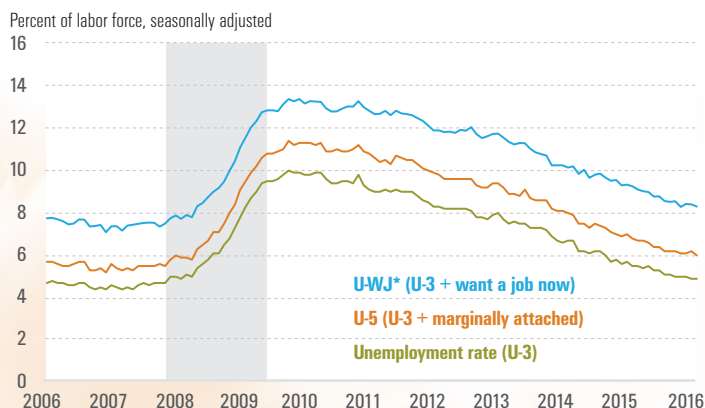
Following the Great Recession, unemployment numbers have risen in part because they include a rise in the number of people who are not looking for or who are otherwise unavailable for work. If growth in the economy can bring those individuals back into the labor market, then there would be less tightness associated with today's unemployment rate (that is, more available workers).

There are many categories of potential workers, and while "potential workers" may sound an amorphous and difficult to calculate assembly, the Bureau of Labor Statistics (BLS) does publish alternative unemployment rates based on including some of the people who fall into this category.

In one case, adding "marginally attached workers"—a group that includes, among others, people who were discouraged in their prospects of finding a job and have thus stopped looking—produces a more inclusive measurement of unemployment. In general, these are people who are most likely to enter the labor force once prospects open up. Taking the calculations a step

further, we could include anyone who expressed a desire for full-time work, even if they have not looked for work in the last year or are not currently available to work. People in this group often have significant impediments in their ability to work.

The number of potential workers has declined largely in parallel to the official unemployment rate.



Note: Shaded bar indicates a recession.

Sources: Bureau of Labor Statistics, authors' calculations.

Two conclusions can be reached from accounting for people who are not working but not included in the official unemployment rate.

First, there are potential workers who could re-enter the labor force, and the number of those individuals rose during the Great Recession. Second, the number of these potential workers has declined largely in parallel to the official unemployment rate since early 2010, with the number nearly returning to 2007 levels by the end of 2015.

These conclusions show why we should be cautious about a single statistic such as the unemployment rate, but also why using more-inclusive measures of labor market tightness leaves today's market in the rough vicinity of the hard to define concept of maximum employment, or a median value of 4.8 percent.

An alternative approach is to think about the effects of a tight labor market: wage growth.

Nationally, we have seen relatively mild compensation increases. The most encompassing compensation measure, the Employment Cost Index (ECI), shows relatively little compensation growth during the last year—just 2 percent—including all benefits costs such as health insurance and paid time off. In past recoveries, the ECI has been considerably higher, suggesting that

We should be cautious about a single statistic such as the unemployment rate.

today's labor market is not as tight as the unemployment rate alone would indicate.

These national challenges are apparent, too, in the Fourth District.

Regions have very distinct workforces and industries, and these distinctions mean that they vary in the level of unemployment rates they can sustain. Rural northwestern Ohio counties often have an unemployment rate under 4 percent, a rate that, at least in part, reflects older workers in more stable employment relationships that come with experience.

On the other side of the spectrum within the District, many eastern Kentucky counties have persistently higher unemployment rates that in part reflect the low education outcomes of residents. Individuals with lower education levels have higher unemployment rates nationally.

And, of course, in any county there can arise a significant mismatch between sought-after skills and occupations and the experience and schooling of the workforce. Issues such as these make it very difficult to assess what level of unemployment could be achieved in a region through a stronger national economy.

The District shows promise, though.

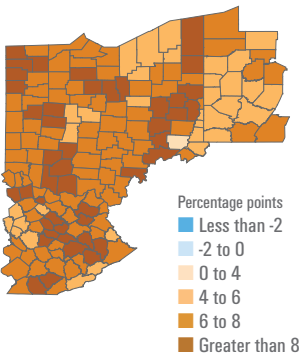
One way to see labor market progress within the region is to compare today's unemployment rates to the pre-recession levels of 2006, when the nation's unemployment rate was last near where many economists might define maximum employment. Doing so can give us a broad sense of whether local unemployment rates are getting objectively low.

During this pre-recession period, unemployment was quite low in the District. But by 2010, most counties in the District were at least 4 percentage points over their 2006 levels, with many counties experiencing rates more than 6 percentage points higher. These numbers are largely consistent with the national rise of 5 percentage points in the unemployment rate during the same period, from a 4.6 percent to a 9.6 percent annual average.

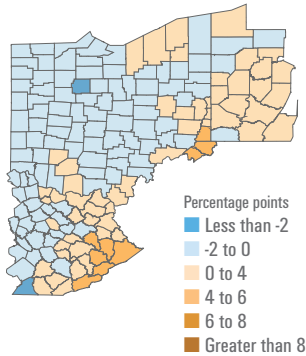
The decline in unemployment rates in the District since 2010 has been steep, as well. In 2015, many District

counties were between 0 and 2 percentage points lower than the levels they sustained in 2006. And 2 counties, Wyandot County, Ohio, and McCreary County, Kentucky, had unemployment rates more than 2 percentage points lower than their 2006 levels.

By 2010, most District counties had unemployment rates at least 4 percentage points higher than the pre-recession rates of 2006.



By 2015, unemployment rates for most District counties had returned to pre-recession levels or better.



Sources: Bureau of Labor Statistics, authors' calculations.

It remains impossible to tell how much lower District counties' unemployment rates might fall, but it's clear that many counties are seeing tighter labor market conditions than they've experienced in the last decade.

Reflecting this downward trend, many District contacts have been reporting tighter labor market conditions.

Of course, one would expect those conditions to result in a gradual boost of compensation for affected workers. While local compensation figures comparable to those in the ECI are not available, the Cleveland Fed has asked District contacts about their expected wage costs for new employees. As of last December, only about 18 percent of our contacts who were hiring "were raising wages and/or salaries for most job categories." Almost 50 percent of our contacts who were hiring reported making adjustments to only selected job categories, while roughly 30 percent reported no change in wages or salaries.

There is certainly evidence of a tighter labor market in the District, but generally District contacts have not witnessed a broad-based increase in wage rates, a situation consistent with the national data on compensation growth. ■

SUM AND SUBSTANCE

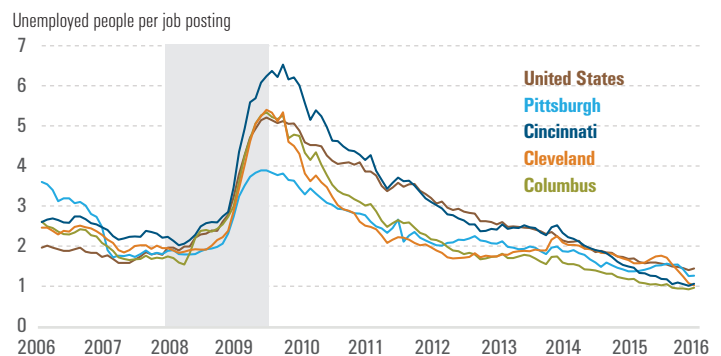
National and regional unemployment numbers have fallen markedly since the Great Recession, and while compensation levels have risen in some areas, that rise hasn't been seen across the board.

Conference Board Help Wanted Online (HWOL)

Another way to examine the tightness of labor markets is to compare the number of unemployed individuals to the number of job vacancies. In general, the easier employers find it to fill positions, the greater the number of unemployed.

The Conference Board's HWOL program collects data on online advertised job demand from over 16,000 online sources. Before the recession, major metropolitan areas within the Fourth District had about 2 unemployed individuals per single job opening, a number similar to the national average. Those figures all rose substantially during the Great Recession but are now nearly 1 to 1.

The number of unemployed per online job posting has declined since the Great Recession's end.



Note: Shaded bar indicates a recession.

Sources: Bureau of Labor Statistics, authors' calculations.

This type of data should be a great way to examine labor market tightness going forward. Over the recent past, though, the nature of job postings has changed dramatically from newspaper advertisements as the primary approach to online advertisements for open positions, skewing the comparative data. This trend tends to increase the number of "counted" job postings, but it doesn't necessarily affect the number of people looking for jobs. This is true even if the overall number of postings, including newspapers and other traditional methods, has not changed.

Read more



Pennsylvania's exposure to the oil and gas industry is affecting its jobs numbers. For a look at employment growth in the state, check out "State of the State: Pennsylvania," the first of a 4-part series on state economies within the Cleveland Fed's region: [page 15](#).

For more information on the Conference Board HWOL, see tinyurl.com/zfwv3td.



The Adversary Will Get In

The stakes are high when it comes to cyber-attacks. The new Northeast Ohio CyberConsortium, of which the Federal Reserve Bank of Cleveland is a founding member, is committed to helping companies better defend themselves through cross-sector sharing.



“If you talk to CEOs or their boards, they all recognize cybersecurity within their top 3 risks—if not their top risk.”
(p. 13)

When James B. Comey, the director of the FBI, was asked to identify which industries are at greatest risk of cyber-attacks, he didn't hesitate to name the top: “Obviously the financial industry, because that's where the money is,” Comey replied, speaking at the inaugural Cyber Security & Resiliency Conference in Cleveland, Ohio.

Carole S. Rendon, first assistant US attorney for the Northern District of Ohio, understands why he started there.

“Financial institutions have a tremendous amount of information about their clients, which in and of itself is incredibly valuable,” says Rendon. “But then, they also have everybody's money. And so for the criminal, if you can get in and divert money from the bank, that is a huge windfall. For hackers, if you can shut down a bank with a denial-of-service attack,” making a resource or network unavailable to its intended users, “you can terrify the entire economy very quickly.”

This is precisely why Rendon says it's important that the Federal Reserve Bank of Cleveland has been involved from the beginning in the formation of the new Northeast Ohio CyberConsortium.



Michelle Park Lazette
Staff Writer

It's important that the Federal Reserve Bank of Cleveland has been involved from the beginning in the formation of the new Northeast Ohio CyberConsortium.

Unlike some information-sharing centers that facilitate collaboration around cybersecurity in a narrower, sector-specific way, the Northeast Ohio CyberConsortium is purposely cross-sector, and its founders, including Goodyear, the Cleveland Clinic, and the US Attorney's Office for the Northern District of Ohio, which prosecutes criminal and civil matters across the 40 Ohio counties north of Columbus, reflect that cross-sector makeup.

One role the Federal Reserve Bank of Cleveland can play in the local consortium is that of facilitator, and it's motivated to do so, and not just because the financial sector is at risk, notes William D. Fosnight, senior vice president and general counsel for the Bank.

"Obviously, confidence in your financial services is of paramount importance," Fosnight begins. "Nobody wants to see money being stolen from within the financial system. Maybe equally as important, though, is we as the central bank are concerned about the economy, about economic growth. Cyber threats pose a real and serious problem for the economy if a company can lose all of its intellectual property in a matter of seconds."

Globally, cyber-attacks cost businesses at least \$315 billion over a 12-month span, according to a Grant Thornton survey released in September 2015.

In addition, Fosnight notes, it can take a long time for a business to recover from the reputational damage of a hack, and it's sometimes only a matter of days before class-action lawsuits are filed against organizations that lose people's information to criminals.

One aim of the new consortium is to eliminate the potential that one local company becomes aware of a new threat but doesn't share that information with another down the street, organizers say. Instead, participants want face-to-face sharing of such information, as real-time as possible.

"What we've learned is that what hits us in financial services today is very likely to be applied against our friends in medical care," said James Caulfield, an assistant vice president with the Federal Reserve Bank of Richmond who spoke on a panel about combatting cyber intrusions. "It's part of our DNA as security

Globally, cyber-attacks cost businesses at least \$315 billion over a 12-month span.

people to not necessarily share. We share war stories from 1 year ago, 2 years ago."

But, Caulfield said, organizations need to share more with one another about what's happening today. Rendon agrees.

"If we could have someone be the canary in the coal mine, they could warn everyone in our region, and the consortium could work to create a defense, could encircle our region with a level of protection that doesn't exist in other parts of the country," she says. "Cyber intrusions are happening every day across America. There is no sector of our nation and of our economy that is not affected."

Top-of-mind risk

Cyber-attackers can be nation states, hacktivists, or insiders, both malicious and unintended. The threat they pose takes many forms, from malware to data exfiltration to distributed denial-of-service attacks.

FBI Director Comey's identification of the financial sector as one of those facing the greatest risk likely comes as no surprise to those responsible for protecting banking assets against such attackers and such threats.

It was probably the year 2012 when the sophistication of cyber-attacks became clearer to the financial sector, according to Jason Tarnowski, an assistant vice president with the Cleveland Fed. Between 2012 and 2014, a number of distributed denial-of-service attacks became public knowledge, raising bankers' awareness of offenders' abilities and how quickly their tactics were evolving.

Following that, the Federal Reserve System and other financial sector regulators increased oversight of the cybersecurity efforts of the companies they regulate. Handbooks were updated and guidance letters and alerts published, all to illuminate the increasing risk, notes Tarnowski, who plays a role in establishing cybersecurity intelligence and incident management for the Federal Reserve System.

Some of the ways in which people bank today didn't exist 5 years ago. Large and small institutions alike now own and operate websites. Electronic banking and electronic bill pay are increasingly prevalent. More mobile apps connect customers to the cash they deposit in banks.

And not only has banks' collective web expanded, but so, too, has the constellation of vendors that bankers use to make it all a reality. There are more cooks in this kitchen today, and that creates risk.

From a regulatory vantage point, the concern is certainly not isolated to the impact of a cyber-attack on single institutions; there is a broader impact to mitigate, the impact on payment systems and financial stability.

"If you have a successful attack on the financial sector, that could jeopardize consumer confidence and overall financial stability," Tarnowski explains. "Imagine not being able to get your money out of the bank."

Institutions in the Fourth Federal Reserve District, which is the region the Cleveland Fed serves and comprises Ohio, western Pennsylvania, the northern panhandle of West Virginia, and eastern Kentucky, are building their budgets and expertise to protect themselves.

"If you talk to CEOs or their boards, they all recognize cybersecurity within their top 3 risks—if not their top risk," Tarnowski says.

Those polling the industry's people know it to be true: In mid-October, for example, a survey by Wolters Kluwer Financial Services revealed that 66 percent of respondents, when asked about escalated risk priorities for 2016, cited cybersecurity as their top concern. Conducted in August 2015, the survey generated 539 responses among banks, credit unions, and other lenders.

Building resiliency

Though the risk of cyber-attacks may be shared, the approaches and needs for mitigating it are not.

"Each financial institution is different," Tarnowski notes. "What works at one institution might not work at another. If you have a wholesale type of institution that doesn't deal with [retail] customers, you're not going to have the exposures that you'll have with mobile banking and electronic banking. That looks a lot

different than a retail-focused institution that's dealing with a lot of customers."

What's important, he adds, is ensuring that a bank's cyber-informed are embedded early when business decisions are being made. That way, the experts can vet the risks a product, strategy, or service carries and ensure that an institution's operations center can monitor those risks.

It's also important that companies undertake cyber-event exercises to ensure that those who bear responsibilities in the event of an attack know how to react, Tarnowski asserts.

The tone at the top of an organization is important to regulators, he adds. Do a company's people, from the C-suite on down, understand the level of cyber risk and their responsibility for protecting the institution's assets and customer information? Is the institution proactively engaged in threat intelligence and monitoring?

One aim of the new consortium is to eliminate the potential that one local company becomes aware of a new threat but doesn't share that information with another down the street.

"The landscape is always changing, and the individuals who are perpetrating these events are very persistent and continue to refine their capabilities on carrying out these types of attacks," Tarnowski says. "They [institutions] have to have intelligence coming in, they have to have their cyber operations center monitoring the risks affecting the institution, and they should have an inventory of their assets and data management systems so that they can take appropriate steps to address vulnerabilities."

All of it requires banks to clear a hurdle that every sector faces: the reported scarcity of people with the cyber-related skill sets companies need. And it's especially hard in districts such as the Cleveland Fed's region, Tarnowski asserts, to compete for that talent with cities such as New York or Chicago.

There is a broader impact to mitigate, the impact on payment systems and financial stability.

Among the workforce-development frustrations shared by attendees of the Cyber Security & Resiliency Conference in October were limited cybersecurity curricula in the region and a lack of people who think creatively about cybersecurity.

The timing of the conference and the consortium likely has a lot to do with the news of attacks on the likes of Anthem, Sony Pictures, and the Office of Personnel Management, Rendon notes.

“I’m not sure that people were as focused 5 years ago on the dangers that exist on the Internet as they are now,” she says.

If the conference’s more than 300 registrants provide any indication, people seem well aware of the dangers now. In fact, Dr. Toby Cosgrove, president and chief executive officer of the Cleveland Clinic, called cybersecurity “the most urgent security issue of our time.”

“They’re going to get in,” one speaker later said of cyber-attackers. “They’re going to get a beachhead. What you need to do is think about this in terms of a good baseball team. You don’t have the expectation [that the pitcher] will throw a perfect game. You can let people get on first base. You can walk somebody. Keeping their team from crossing the [home] plate is how you win the game.

“You want to be the ones who are resilient in this world,” the speaker said. ■

SUM AND SUBSTANCE

Given the risk of cyber-attacks to both the financial sector and the broader economy, the Federal Reserve Bank of Cleveland is collaborating with other leading organizations to strengthen Northeast Ohio’s collective cybersecurity.

Fortify Your Organization

Grow what you know

- When an organization falls prey to a particular type of attack, ask yourself this: Are you vulnerable to the same type of attack?
- Bring your cybersecurity folks to the table to have conversations on a more ongoing basis. Ask them to identify what policy changes they’d make to improve your firm’s cybersecurity.

Deepen your defenses

- Segregate your human resources information from your intellectual property information, and so on, so that if an attacker successfully infiltrates your system, said access doesn’t give her or him everything.
- Educate your employees about threats such as phishing. And practice good cyber hygiene: Encourage or require employees to keep passwords strong and to change them periodically, and urge them to restrict access to the equipment they use.
- Remember that what really matter are the data you possess. Too often, companies defend entryways and operating systems. Defend the data your enemy wants. Ask yourself this: Who and what touches my data now?
- Detect what’s unusual such as abnormal file transfers or an employee’s taking too much data from the server. A number of automated products can do this for you.
- Know that it’s not only your own defenses that you must safeguard, but also those of your third-party vendors. Make demands of your supply chain.

Don’t be frozen

- When you find the tendrils of a compromise or anomalies, hunt for who or what is behind them.
- Evolve. Hackers do, and so must you. High-level adversaries aren’t going to use the same tradecraft they used to exploit someone else in order to exploit you.
- Don’t bury breaches and other problems in order to protect your reputation or out of fear of law enforcement. Own it when you have an issue, and work with law enforcement so that the frequency of the prosecution of cyber-attackers improves. There has been too much reward and not enough risk to cyber-attackers.

Source: Cyber Security & Resiliency Conference participants and attendees.

The Federal Reserve Bank of Cleveland serves the Fourth Federal Reserve District, which comprises Ohio, western Pennsylvania, the northern panhandle of West Virginia, and eastern Kentucky. Like the other Federal Reserve Banks, the Cleveland Fed collects anecdotal reports and analyzes data about the region it serves in order to inform national monetary policy. The Bank's State of the State series will share some of what regional researchers find.

State of the State: Pennsylvania

Pennsylvania's employment growth in 2015 trailed that of most other states. The state's exposure to the oil and gas industry as well as demographic trends have a good deal to do with it.



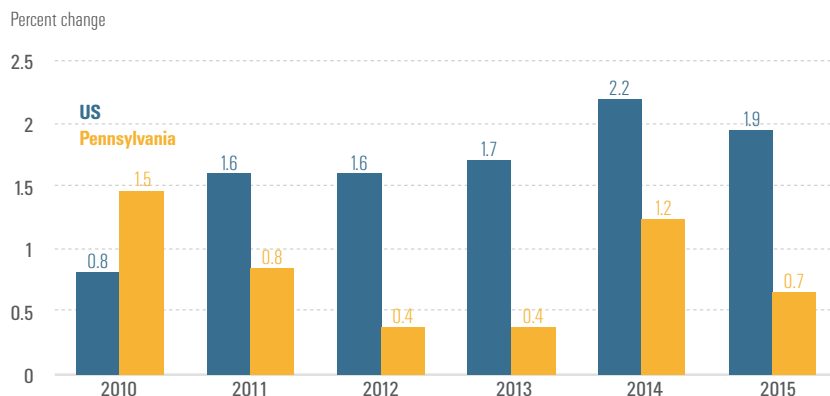
Guhan Venkatu
Vice President and
Senior Regional Officer

Employment growth in 2015 in Pennsylvania trailed that of most other states and the nation, according to recent data, and that modest growth is very likely driven by the commonwealth's exposure to the oil and gas industry plus demographic trends.

Employment in Pennsylvania grew 0.7 percent in 2015, less than half the employment growth posted nationally (1.9 percent), according to recent Bureau of Labor Statistics data. That 0.7 percent placed the commonwealth in the bottom quartile among the 50 states and also marked a deceleration from its employment growth the year prior (1.2 percent in 2014).

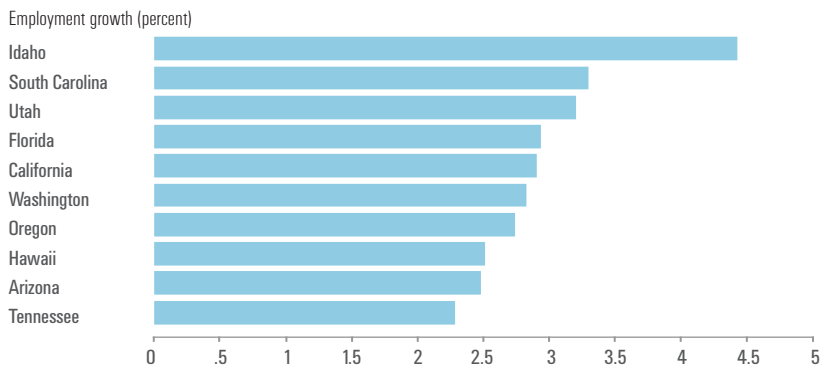
One of the developments driving recent employment changes is, of course, related to energy. Given Pennsylvania's status as one of the largest producers of energy in the country, it's perhaps not surprising that the recent downturn in energy markets has had an outsized impact on Pennsylvania.

For 5 consecutive years, Pennsylvania's annual payroll employment growth has trailed the US growth rate by sizable margins.



Source: Bureau of Labor Statistics.

All 10 states with the highest employment growth from December 2014 to December 2015 are in the South or West.



Source: Bureau of Labor Statistics.

According to the US Department of Energy, Pennsylvania was the second-largest producer of natural gas in 2014, behind Texas. Its production roughly doubled between 2012 and 2014 and was more than 20 times higher in 2014 than in 2008. The state also ranked fourth in coal production among states in 2013.

The mining industry, which includes activities related to the extraction of both coal and natural gas, experienced an employment decline in Pennsylvania of nearly 11 percent in 2015, after growing about 4 percent in 2014, thus returning employment in the industry to levels not seen since early 2011.

While mining numbers don't tell the full employment story anywhere, it's clear that those states that enjoyed a boom in recent years as natural gas and oil development took off are now sharing in the misfortune of retreating numbers.

Of the 7 states that saw their total employment decline in 2015, all were among the top 10 energy producers in 2013 except Alaska, which—though not among the top 10—is still a major energy producer. The states among the top 10 in energy production that avoided employment declines in 2015—Texas, Pennsylvania, Colorado, and New Mexico—did so, in part, because of better-diversified economies.

Then there are demographics. If local labor resources are close

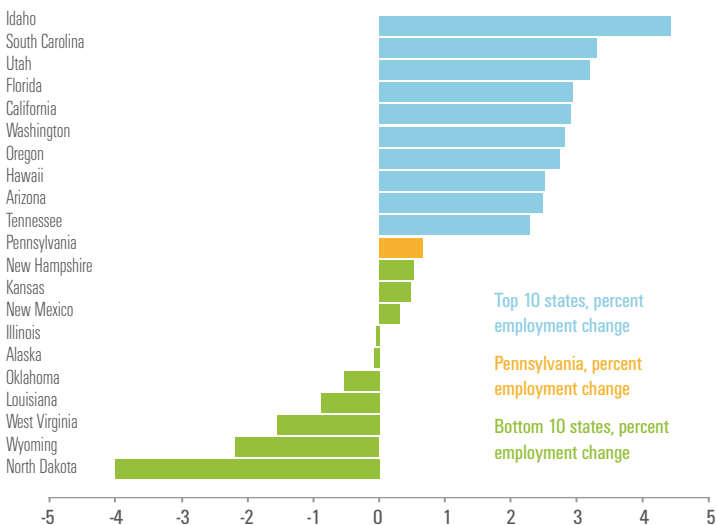


State of the State: Pennsylvania

Pennsylvania's employment growth in 2015 trailed that of most other states. The state's exposure to the oil and gas

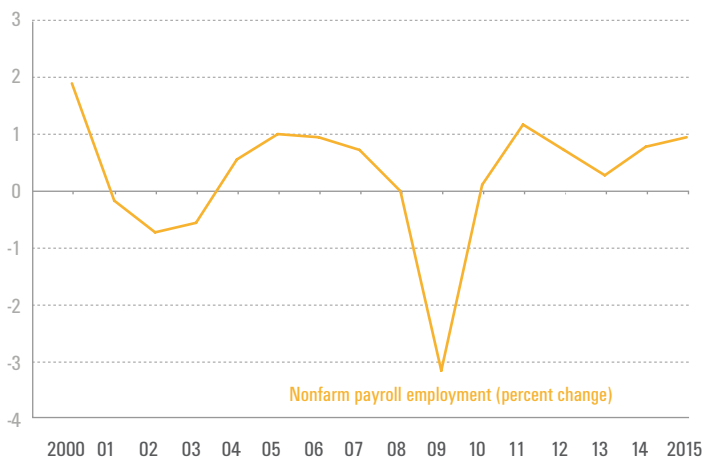
1 The good news is there was job growth in Pennsylvania in 2015. But that growth rate was not as high as the rate experienced by most other states.

Pennsylvania's employment growth from December 2014 to December 2015 ranked 39th of 50.¹



2 If Pennsylvania is compared only to itself, it's clear there's been some improvement in employment year over year.

The year-over-year increase in Pennsylvania's employment in 2015 marked the state's highest growth rate since 2011.¹



to fully employed (Pennsylvania's unemployment rate was 4.8 percent in December, similar to the US's unemployment rate of 5.0 percent), then employment growth will come largely from new entrants to the labor market, and thus employment growth will roughly parallel population growth.

Population growth in this neck of the woods pales in comparison to that in some others. According to the Census Bureau, "From 2000 to 2010, regional growth was much faster for the South and West (14.3 percent and 13.8 percent, respectively) than for the Midwest (3.9 percent) and Northeast (3.2 percent)."

It's not unusual to see stronger employment growth in states to which people tend to move. As

such, we shouldn't have the same employment growth expectations for Pennsylvania that we do for a state such as Texas, and we would expect employment growth in Pennsylvania over the longer term naturally to be slower than that for the US as a whole. And that's precisely what we've seen in this expansion. Over the 78 months of the current expansion, employment in Pennsylvania has grown at an annual rate of 0.7 percent while US employment has grown at twice that rate, 1.4 percent. This 1:2 ratio roughly holds for the 2 previous expansions, as well.

Discussions about Pennsylvania's employment trends occur regularly at our regional advisory council meetings. Our sources confirm that entities in manufacturing and oil

and gas face headwinds because of supply issues and concerns about global growth. ■

SUM AND SUBSTANCE

Pennsylvania's employment growth in 2015 trailed the national growth rate, something likely driven by energy-related job losses and demographic trends.

Read more



Despite the weakening sentiment of Cleveland Fed District contacts' reports, 3 Cleveland Fed officials continue to expect growth across the District in coming months. They explain why here: ow.ly/YKsui.

For more information about our regional advisory officers and boards, please visit ow.ly/YKsEi.

industry as well as demographic trends have a good deal to do with it.

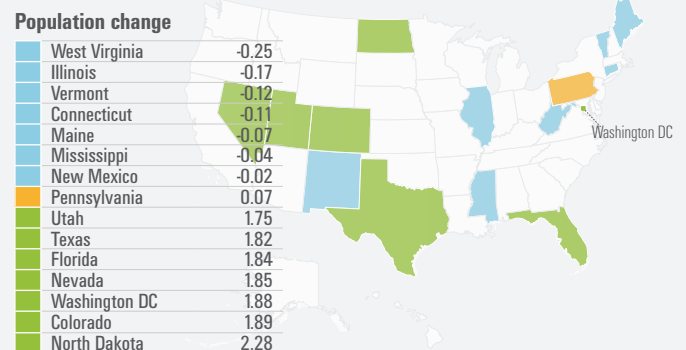
3 The recent downturn in energy markets has had an outsized impact on Pennsylvania and other large energy-producing states.

Pennsylvania's mining employment spiked in 2010 and 2011, but growth has slowed and even reversed in recent years.¹



4 Demographic trends influence employment's trajectory. Population growth in the Midwest and Northeast was much slower from 2000 to 2010 than that in the South and West,² and it's not unusual to see stronger employment growth in states to which people tend to move. Seven states experienced declines in population from 2014 to 2015. With a growth rate of 0.07 percent, Pennsylvania narrowly avoided a decline in population.

On the other end of the spectrum, North Dakota led the country in population growth, and 5 of the 7 places where such growth was greatest were, indeed, in the South and West.



Sources: ¹Bureau of Labor Statistics; ²US Census Bureau. BLS data as of January 2016. Census data as of December 2015.



PART

1 Eastern Kentucky: A Region in Flux

Part 1 of a 4-part Forefront series examining eastern Kentucky's transition away from a coal-centric economy.



Matt Klesta
Policy Analyst

A recent Bloomberg headline says it all: “Coal’s decline is choking Appalachia towns.”

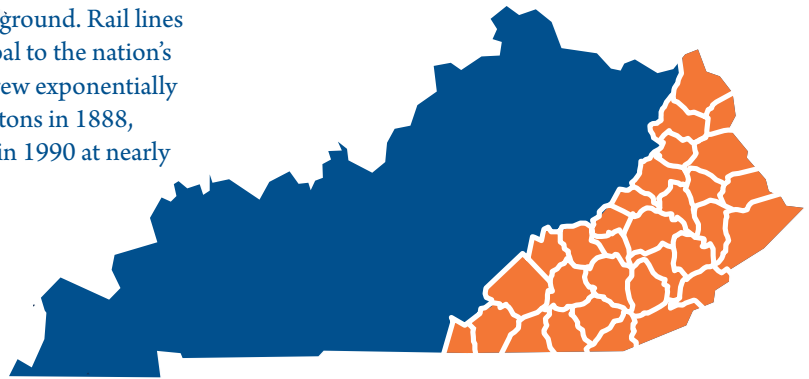
Eastern Kentucky has a long and storied history, with coal mining the principal player. The spectacular fall and subsequent bankruptcies of some of the largest coal mining firms in the country may come as a surprise, but recent events in eastern Kentucky have been years in the making. The confluence of cost, competition, and regulation has accelerated the economic decline, yet at the same time it’s stimulated action to counter it.

In this region, 26 of 31 counties are considered “distressed” by the Appalachian Regional Commission, a designation based on continued high unemployment rates, low per capita income, and high poverty rates. While headlines continue to tout the region’s dire present state, others are imagining a “post-coal” Appalachia.

A little history

Eastern Kentucky is a tangled landscape of mountains and valleys with a hardscrabble reputation and a long history with coal dating back more than 200 years to the first recorded commercial production: 20 tons in 1790. Production didn't truly take off until after the Civil War when land speculators crawled across the region purchasing leases for the coal below the ground. Rail lines constructed in the late 1800s ferried loads of coal to the nation's growing industrial markets. Coal production grew exponentially as eastern Kentucky mines produced 1 million tons in 1888, surpassed 10 million tons in 1913, and peaked in 1990 at nearly 131 million tons.

Roughly 31 counties make up eastern Kentucky coal country.



Four things to know

1 Coal production in eastern Kentucky has been declining for a quarter century

The eastern Kentucky coal industry has seen its share of booms and busts, but none as long as the current 25-year slide, which since its peak has seen production drop 79 percent. At first, the impact was felt primarily in the coal mines of Central Appalachia, which includes eastern Kentucky, but more recent developments have since impacted coal production nationally.

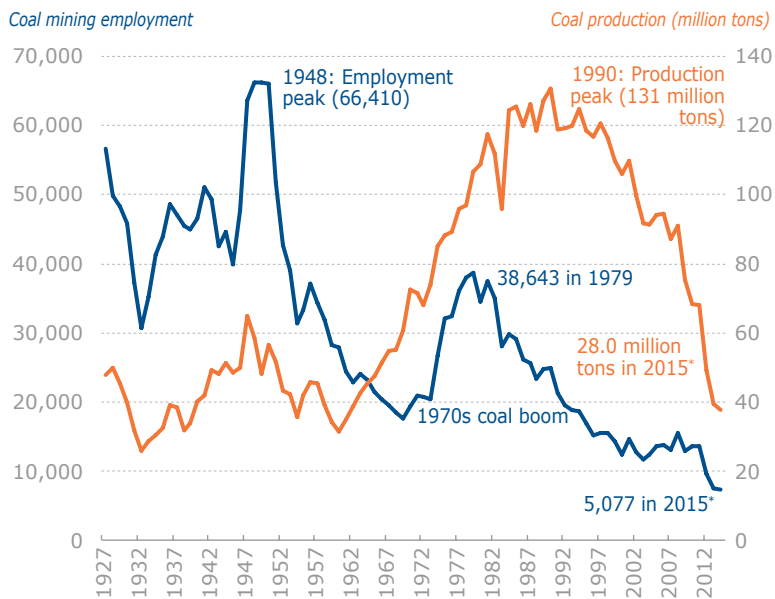
Early on, accessibility was an issue, as easier to reach coal seams were exhausted, leaving harder to reach deposits. This contributed to higher coal production rates in western states such as Wyoming, where production costs were lower.

The national share of coal produced in eastern Kentucky declined from 13 percent in 1984 to 4 percent in 2014, while Wyoming's share increased from 15 percent to 40 percent over that same period. However, recent more stringent emission regulations have caused many coal-fired electrical power plants across the country to either shut down or convert to natural gas. This decline in demand has led some of the largest US coal producers to declare bankruptcy, affecting coal mines across the country.

Source: *Kentucky Coal Facts: 1989-1990 Pocket Guide*, prepared by the Governor's Office for Coal and Energy Policy and the Kentucky Coal Association, November 15, 1989.

Note: Defined as 31 counties that produced coal in 1988.

Coal production and coal mining employment have seen decades of decline (1927–2015)



Source: *Kentucky Coal Facts*, 15th edition, prepared by the Kentucky Energy and Environment Cabinet, the Department for Energy Development and Independence, and the Kentucky Coal Association, August 28, 2015. *Preliminary data.

2 Coal mining employment has been declining for more than 60 years, but it's still important to the region

Around 1950, eastern Kentucky's coal production and employment decoupled and began moving in different directions. Production continued to surge, while employment, aside from a brief resurgence in the late 1970s, declined as a result of improved mechanization and the increased use of surface mining that requires less labor.

All told, coal mining employment declined 92 percent in eastern Kentucky from its 1948 peak, a loss of more than 61,000 jobs, or 900 jobs per year since 1979.

Yet, even with this constant decline, the state still contains an above-average share of coal mining jobs. In 2014, the state of Kentucky had a location quotient (the comparison of the share of an industry in one region against that of a larger geographic area) of 11.20 for coal mining employment, 11 times greater than the national average. Although a decline from the 2001 rate of 15.34, it still indicates the coal mining industry's importance to the state economy.

This impact of the sustained loss of coal jobs ripples through the local economy. While the rest of the state and nation recovered from the Great Recession, eastern Kentucky didn't, and it's been declining the past 4 years. Incomes have been impacted, too. In 2014, the average annual income in eastern Kentucky was \$35,982, while the average coal miner earned \$72,809 per year, nearly double the region's average. The loss of thousands of high-paying coal mining jobs represents a significant decline in local spending power.

3 The decline in production and jobs is hitting local governments hard as coal-related tax revenue declines

Decreasing coal production has led to a dramatic decline in severance tax revenue for the state, nearly 40 percent, from \$298 million collected in 2011–2012 to \$180 million collected in 2014–2015, straining city and county budgets that have become dependent on the tax revenue for maintaining services.

Letcher County, for example, until a few years ago had been receiving payments in excess of \$1 million per quarter, but lately that number has dropped to \$350,000. Kentucky collects a severance tax, a tax imposed on a nonrenewable resource that is "severed" or extracted within a specified taxing jurisdiction, on coal at a current rate of 4.5 percent of the gross value of mined coal in the state. Revenue from this tax goes in a few directions:

- 50 percent, Kentucky's general fund
- 35 percent, local government economic development fund, where it's available as grants for eligible counties to use on projects helping to diversify their economies
- 15 percent, local government economic assistance fund, a revenue-sharing fund that cities and counties in coal-impacted regions receive automatically

One additional related strain is population decline. According to US Census Bureau estimates, from 1996 to 2009 eastern Kentucky's overall population was essentially unchanged. Since 2009, though, it's declined by nearly 14,000 people, shrinking the tax base cities rely on to maintain services.

Working toward a Post-Coal Economy

While the slow, steady decline in coal employment and production has exacerbated the region's economic malaise, there are numerous groups, partnerships, and projects looking to a post-coal economy. Here are a few examples.

Shaping Our Appalachian Region (SOAR)

SOAR began as a partnership between the Kentucky governor's office and Hal Rogers, the US congressman serving eastern Kentucky. Its annual conference and ongoing working committees seek to bring together organizations and stakeholders to discuss the region's future.

The Appalachian Funders Network (AFN)

On the philanthropic side is the Appalachian Funders Network (AFN), a collection of 80 grant makers focused on Central Appalachia, which includes eastern Kentucky. Its goal is to build stronger relationships among grant-making participants in order to help the region transition economically. A recent project is the Just Transition Fund, designed to help communities impacted by the declining coal industry to develop economic and workforce development plans.

Eastern Kentucky Concentrated Employment Program (EKCEP)

In a region where thousands of unemployed coal miners need retraining for new careers, the Eastern Kentucky Concentrated Employment Program (EKCEP) manages workforce development, job training, and unemployment programs in a 23-county region. Formed in 1968, it was one of 87 Concentrated Employment Programs (CEPs) developed during the Johnson Administration. CEPs were designed to focus on employment programs and related services in areas with high unemployment rates. Of note is the Hiring Our Miners Everyday (H.O.M.E) program, which retrains unemployed miners and their spouses in hopes that they will be re-employed in the region.

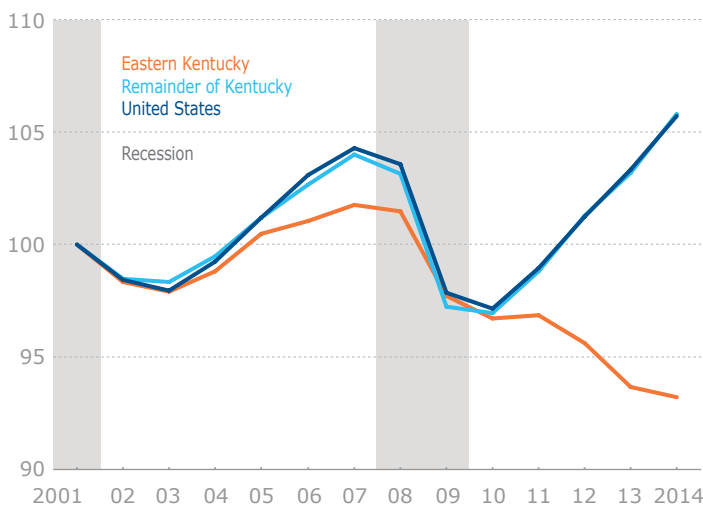
Arts and culture as economic development

The idea of using arts and culture to stimulate a local economy is not new, but in eastern Kentucky, it has become another tool in the economic development toolbox. From 1998 to 2015, grants from the National Endowment for the Arts have averaged nearly \$150,000 annually to fund art- and culture-related projects in the region.

Broadband

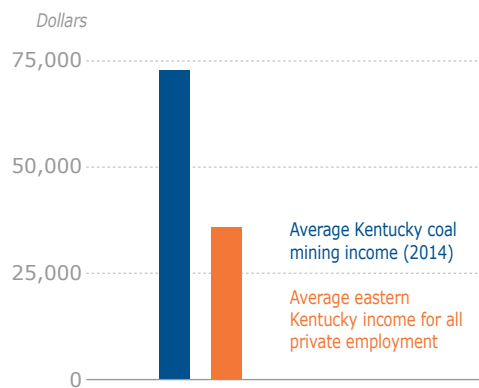
Infrastructure typically conjures up images of roads, bridges, and sewers, but broadband Internet access falls into this category, as well. KentuckyWired, a state initiative, is committed to bringing Internet access to every county in the state by 2018. Such a feat is of particular importance to eastern Kentucky, where it is hoped that broadband access will stimulate job creation and entrepreneurship to help diversify the economy.

Total private employment hasn't rebounded in eastern Kentucky.



Source: Quarterly Census of Employment and Wages – Bureau of Labor Statistics.

There are few alternatives in the region that pay as well as coal mining.



Source: Quarterly Census of Employment and Wages – Bureau of Labor Statistics.

All told, coal mining employment declined 92 percent in eastern Kentucky from its 1948 peak, a loss of more than 61,000 jobs, or 900 jobs per year since 1979.

4

Eastern Kentucky is a region with deep-rooted social issues

This is what makes finding a solution to eastern Kentucky's economic problem so difficult.

It's not as simple as attracting new jobs: The region has been wracked with a host of social issues spanning generations. The poverty rate for eastern Kentucky has declined from a staggeringly high 61 percent in 1960 to 26 percent in 2010, but that's still nearly double the national average of 15 percent—and is 9 percentage points higher than that of the state, which comes in at 17 percent.

Drug abuse, too, is becoming a bane across the country, and eastern Kentucky is firmly in its grasp. According to an analysis by the Kentucky Injury Prevention and Research Center, in 2013 Kentucky had the second-highest number of drug overdoses per 100,000 people in the US. West Virginia, its neighbor to the east, had the highest. In fact, total statewide drug overdose deaths in Kentucky have increased a stunning 347 percent, from 241 in 2000 to 1,077 in 2014. Rates in eastern Kentucky counties are some of the highest in the state, with the majority of overdoses there caused by prescription drugs commonly used to treat pain, anxiety, and insomnia.

Pulling it together

So what is eastern Kentucky? It's a region tied to coal—economically, personally—for more than 200 years. It has seen coal production and employment decline for decades. The boom and bust cycle inherent to natural resource extraction caused many to hope the next boom was just around the corner. Both international and domestic changes in energy production, pricing, and policy make the next boom increasingly improbable, and communities are suffering financially as tax revenue lags and more residents become unemployed. All of this is occurring in a region that suffers historically from a slew of social issues such as high poverty and drug abuse rates. What can turn this around that hasn't already been attempted? ■

SUM AND SUBSTANCE

Decreasing coal production in eastern Kentucky has exacerbated the region's difficulties.

Stay tuned



We have more work focusing on eastern Kentucky planned for this year, including future articles on ways regions can diversify their economies and a look at migration data to see what trends are occurring in eastern Kentucky.

Research in the Works

Banking panics, wage rigidity, neighborhood dynamics, and more. Explore recent work produced by Cleveland Fed researchers.

How Did Pre-Fed Banking Panics End?

Gary Gorton and Ellis W. Tallman

WP 16-03 | January 14, 2016

How were financial crises resolved in the United States when the country had no central bank? Between 1863 and 1914, the New York Clearing House Association ended panics by taking actions similar to those taken by central banks and fiscal authorities during modern crises. The authors argue that ending a financial crisis requires convincing depositors that the banking system is solvent, not just their own banks. The Clearing House made loans to member banks, cut off information about the condition of individual banks, and issued public statements about member solvency. These actions effectively united member banks into a single entity and led depositors to focus on the solvency of the Clearing House rather than of individual banks. Similar actions by the Federal Reserve in 2007 through 2009 were the anonymous lending programs (TAF, TSLF), the prohibition on short sales of financial firms (information suppression), and stress tests to indicate bank solvency. This explicit support of the banking system by the Federal Reserve System and the US Treasury after the Lehman failure reduced the risk of generating additional runs.

bit.ly/1OkUzED

Downward Nominal Wage Rigidity in the United States during and after the Great Recession

Bruce Fallick, Michael Lettau, and William Wascher

WP 16-02 | January 6, 2016

Are employers and workers reluctant to lower wages when changing economic conditions would warrant it? For example, wage rates should, in theory, fall when the economy sours sufficiently. But evidence suggests employers choose other options first, such as cutting workers. The authors of this study analyze data obtained from surveys of businesses to determine whether such rigidity in wages exists and whether rigidity is more severe at low rates of inflation or during bad economic times. They find evidence that wages are more rigid than economic conditions would warrant. They also find some evidence that wages may have become even more inflexible during the Great Recession, when the labor market experienced a high degree of stress.

bit.ly/1Tz2FJA

Industrial Composition and Intergenerational Mobility

Stephan Whittaker

WP 15-33 | December 31, 2015

Industries such as healthcare and education are college degree-intensive, meaning the share of the industry's employees with a college degree is greater than the average in the labor force. Children whose parents did not finish college are more likely to earn an undergraduate degree if they live in a metropolitan area with a higher fraction of adults working in degree-intensive industries. For more recent cohorts, employment in manufacturing is also associated with more young people rising above their parents' education level. Thirty years ago, children of parents without college degrees were less likely to obtain a degree if they grew up in a manufacturing center.

bit.ly/1JusL1N


Neighborhood Dynamics and the Distribution of Opportunity

Dionissi Aliprantis and Daniel Carroll

WP 15-25 | October 21, 2015

This paper brings a new set of tools to bear on William Julius Wilson's highly influential hypothesis that racial equality under the law would not ensure equality of opportunity because of neighborhood effects. Neighborhood effects refer to influences that the community has on the individuals living there. The authors offer insight into Wilson's hypothesis by predicting how neighborhoods change in the presence of laws designed to achieve racial equality such as those allowing people to move where they choose or those improving neighborhood institutions including schools and police. The authors find that permitting households to move where they want has negative effects if the neighborhoods differ in the quality of their institutions. On the other hand, improving the institutions in a neighborhood can lead to good results for residents in terms of their incomes, even when residents are free to move out of the neighborhood.

bit.ly/1k7Eck9



"[A] real strength in the regional economy, according to roundtable participants, is research and development by large established firms." (p. 26)

The Innovation Roundtable:

A Discussion of Growth in Northeast Ohio



Jessica Faith Ice
Senior Research Analyst

Innovation may be a buzzword among the business community, but what does it mean for economic growth?

Late last year, the Federal Reserve Bank of Cleveland brought together leaders from the medical and technology sectors and educational and financial institutions to discuss both this question and up-and-coming drivers of the Northeast Ohio economy. The conversations centered on workforce development and education and on research, financing, and commercialization.

Workforce development and education

Roundtable participants said finding and retaining high-skilled employees was one of the major challenges for growth in the region. Within the biomedical and tech sectors—electrical and biomedical and software engineers—data scientists were the most difficult employees to find. In addition, finding enough human resource organizational specialists has become a challenge for these sectors because of increased recruiting efforts and thus increased need for such specialists. In the newly developing additive manufacturing sector, contacts cited machinists, welders, and even hourly factory workers as hard to attract.

The reason participants think there is scarcity? A skills gap.

More than 1 roundtable participant suggested an increase in work-based learning, internships, and co-op opportunities to fill that gap, or at least help minimize it. Although educational institutions are eager to partner with firms to provide their students these hands-on opportunities, such opportunities are often costly and difficult to administer.

One source of optimism, though, is the growth in numbers of highly educated individuals in the region. The data argue that more than 33 percent of individuals aged 25 to 34 in Northeast Ohio have obtained a bachelor’s degree, compared to 27.3 percent for all individuals over 25, suggesting that the educational attainment rate has been increasing in recent years. Although Northeast Ohio has made progress in this arena, it still lags behind some nearby metro areas and the nation.

PERCENT WITH A BACHELOR’S DEGREE OR HIGHER		
	AGES 25+	AGES 25-34
Akron	29.9	34.9
Canton	21.3	28.7
Cleveland	29.5	35.2
Youngstown	20.4	26.5
NEO MSAs*	27.3	33.1
Cincinnati	31.4	37.7
Pittsburgh	31.6	44.9
Columbus	34.7	41.2
Dayton	27.3	29.1
Nation**	33.5	37.2

**Population-weighted average of the NEO MSAs.
**Population-weighted average of the top 100 MSAs.
Source: 2014 American Community Survey.*

Company culture is an important factor for attracting and retaining talent.

Some in Northeast Ohio are making efforts to form partnerships between educational institutions and industry to facilitate research, development, and commercialization of new technologies.

For instance, local universities have partnered with the Cleveland Clinic to provide joint graduate programs. Case Western Reserve University launched think[box] in 2012, a makerspace for students, faculty, alumni, and members of the community to learn about 3D printing, industrial design, woodworking, and a range of other skills. Think[box] has partnered with business innovation and product design firm Nottingham Spirk to help bring ideas from the space to fruition. It doesn't stop with Case Western, however.

The Liquid Crystal Institute at Kent State University served as the birthplace of liquid crystal technologies and has sponsored research programs, and Lorain County Community College has developed a Fab Lab open to students, faculty, nearby high schoolers, and members of the public. The college has partnered with several organizations dedicated to supporting and advancing the manufacturing industry, including Weld-Ed, MAGNET, and the National Association of Manufacturers. Programs like these help bring new skills to future graduates and also serve to retrain and familiarize existing workforces with new technologies and career paths.

There are efforts underway in Northeast Ohio to close the skills gap, it's clear. But this gap wasn't the only issue up for discussion at the Innovation Roundtable.

Company culture is an important factor for attracting and retaining talent, as well. Smaller firms and startups noted that it was easier to recruit millennials who are attracted to the startup culture. There's a caveat, though: Startups will often have to pay a wage premium over established firms for more experienced talent. Larger firms have also been thinking critically about their corporate cultures and have made investments to improve the work environment to attract the best talent. But some participants noted that it's slow going.

Research, financing, and commercialization

Another real strength in the regional economy, according to roundtable participants, is research and development by large established firms. Manufacturing still plays a very important role in research and commercialization, and the industry has undergone a transformation to become more high-tech than ever.

The evolution of 3D, or additive, printing and polymer science has facilitated partnerships between the traditional manufacturing sector and biomedical researchers. These partnerships have resulted in a vibrant and growing medical device industry. Public financing for research and development in the medical sector has been traditionally funded by federal and state sources, the National Institutes of Health and Ohio Third Frontier, respectively.

The growth in research centers in Northeast Ohio has led to strong patenting activity across the region, as is shown in data from the US Patent and Trademark Office. From 2009 through 2013, Northeast Ohio developed 6,382 patents and had a patenting rate of 0.34 per 1,000 people, the second highest patenting area in the Fourth District after Cincinnati. Both Akron and Canton have patenting rates that exceed the national average.

TOTAL PATENTS AND PATENTS PER 1,000 CITIZENS BY METRO AREA			
	Total Patents (2009–2013)	MSA Rank*	Patents per 1,000 Citizens
Akron	1,728	55	0.49
Canton	783	87	0.39
Cleveland	3,592	27	0.35
Youngstown	279	153	0.10
NEO MSAs*	6,382		0.34
Cincinnati	4,376	22	0.41
Pittsburgh	3,693	26	0.31
Columbus	2,282	48	0.24
Dayton	1,001	78	0.25
Nation**	553,414	N/A	0.35

*By total patents

Sources: US Patent and Trademark Office, author's calculations.

Although the importance of manufacturing in innovation and patenting is still substantial, in the past 5 years healthcare and education institutions in the region have increased their patenting volume as they continue to invest in research and development.

TOP PATENTING ORGANIZATIONS IN NORTHEAST OHIO METROS, 2009 THROUGH 2013			
AKRON	CANTON	CLEVELAND	YOUNGSTOWN
Goodyear Tire (166)	Diebold* (302)	Rockwell Automation (160)	Delphi Technologies (63)
Bridgestone (164)*	Goodyear Tire (45)	Cleveland Clinic Foundation (148)	Werner Co. (27)
Cisco Technology, Inc (73)	Timken Company (31)	Lincoln Global (131)	R & L Marketing and Sales (9)
INDIVIDUAL PATENTS PER METRO AREA			
AKRON	CANTON	CLEVELAND	YOUNGSTOWN
146	121	432	80

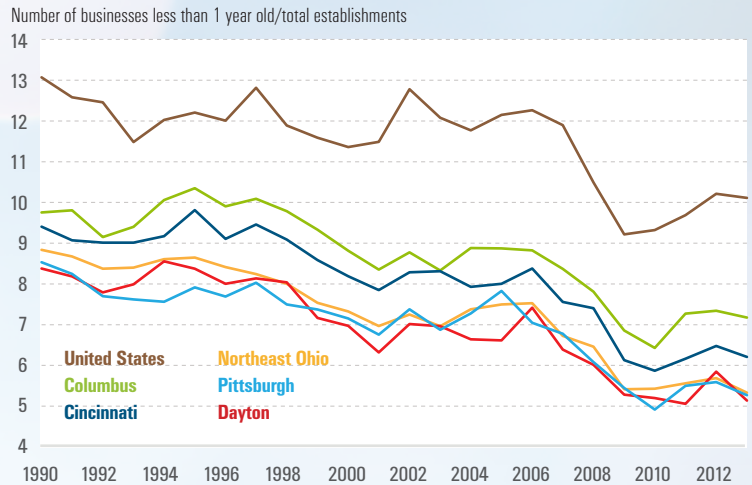
Note: The number in parentheses is the total patents for this time period.
**Total of all patenting activity across multiple legal entities.*
Sources: US Patent and Trademark Office, author's calculations.

Participants noted that technological change includes but is more than just new inventions. It can also come in the form of new and improved services and processes. These innovations might not be patented, but can manifest in the form of new businesses. The total business-creation rate in Northeast Ohio has trended downward since the 1990s. In 2013, new firms accounted for about 5.3 percent of total firms in Northeast Ohio, down from around 8.6 percent in 1995. But this decline is roughly equivalent to the decline seen in nearby metro areas.

Participants also reminded everyone that finding funding can be difficult, as well.

A major challenge facing startups in the region is the availability of Series A funding by local venture capital and angel investors.

The total business-creation rate has trended downward since the 1990s in Northeast Ohio, the region, and the nation.



Sources: Business Dynamic Statistics, US Census Bureau.

A major challenge facing startups in the region is the availability of Series A funding by local venture capital and angel investors. Startup capital in the region tends to be tied to more traditional industries such as manufacturing, so many new businesses have had to seek their startup funding from entities outside the region.

Several initiatives promote startup creation through incubator and co-working spaces in Northeast Ohio such as JumpStart Inc., BioEnterprise, Youngstown Business Incubator, BlackRock, LaunchHouse, and StartMart.

On the public side, participants viewed Ohio Third Frontier, a \$2.1 billion technology-based economic development initiative by the State of Ohio, as a positive source for growth funding in established firms and as seed-stage funding for new firms.

Overall, Innovation Roundtable participants were optimistic about future growth opportunities for Northeast Ohio. ■

SUM AND SUBSTANCE

Participants at the Cleveland Fed's second Innovation Roundtable believe there are many opportunities—and some challenges—for growth in Northeast Ohio.



Learn more

High-growth enterprises comprise only a small portion of new business creation. Traditional new and small businesses will have different financing challenges. Read "Protecting Small-Business Borrowers" for more information: ow.ly/Y5xJJ.

Intersections of Place, Productivity, and Profit

Stuart S. Rosenthal sheds light on why businesses locate in tall buildings and urban centers and how policymakers can use that knowledge.

“In order to have any chance of proactively attracting and retaining quality jobs in your town, you need to understand what it is that businesses care about and what causes cities to be productive in the first place.” (p. 31)

Skyscrapers’ mammoth scale can change city skylines, and they house an enormous number of people, but it’s only recently that academic researchers began to uncover the way businesses organize within them and why.

If access to the top floor of tall buildings is far more costly and cumbersome than lower floors, why do companies pay significantly more to locate higher? Are rents within commercial office towers driven not just by employment outside their four walls, but also by employment inside?

The audience of a workshop this year at the Federal Reserve Bank of Cleveland had a front-row seat to hear from Stuart S. Rosenthal, a prominent urban economics researcher.

The 2-day Workshop on Public, Urban, and Regional Economics drew a maximum-capacity crowd to focus on how city policies and the structure of cities—such as where business districts are and the ease of transportation within cities—affect the productivity of local economies.

Rosenthal keynoted the event, presenting the findings of his paper “The Vertical City: Rent Gradients and Spatial Structure.” He and his co-authors, Crocker H. Liu and William C. Strange, used novel data, including confidential offering memoranda information, to reveal more about the spatial patterns within tall buildings.

Forefront sat for an exclusive interview to ask Rosenthal how policymakers might use those findings and, given Rosenthal’s prominence in urban economics, how cities and what we know about them are changing. An edited transcript of our conversation follows.

Forefront: *You describe the research you presented during the workshop as work that's not been done previously. What did you find?*

Rosenthal: The urban field has devoted extensive effort to understanding why we have different spatial patterns of development and land rent within cities, why cities are productive places and by how much, and what contributes to city skylines. But all of that has mostly been done in a 2-dimensional plane. We understand that there's more densification in the downtown than farther out into the suburbs. We have lots of papers that have sought to understand better why we have stratification of types of activity: residential versus commercial versus industrial. But almost all of that research has ignored the vertical, 3-dimensional aspect of cities.

Nobody until now has really dug into what is happening inside these tall buildings: What is the spatial pattern of activity within tall buildings? Are there meaningful differences in commercial rents?

It's important to recognize that tall buildings are huge. The amount of space in the World Trade towers that came down was roughly 10 million square feet. The number of people employed was on the order of 50,000. These were like small cities themselves.

So what do we find when we look within these tall buildings? First, it's not the case that there's a single cost of space at a given latitude and longitude. There's a whole family of rents present. That's a new insight. The commercial developers have known this, but the academic world has overlooked it. There's a very systematic and substantial vertical rent gradient, with a very sharp rent premium for ground-level activity, after which rents fall and then they rise gradually and at an increasing rate.

We see important stratification of activity when we look at location vertically within tall buildings. Companies have better access to the street, of course, at ground level, and perhaps intuitively we see a lot of retail concentrating at ground level, with office-oriented activities above.

As you move up in a tall building, the cost of accessing the space increases. What we observe and document for the first time is a positive rent gradient. Once you get up above the 2nd floor, rents rise, and they rise at an increasing rate.

The only way that can happen in a commercial office building that is populated by for-profit companies is if there's something about being high up off the ground that is valuable. One possibility is the amenity effect:

Workers value the spectacular view from the 50th floor. Another possibility is a signaling effect. Anecdotally, we've heard if you're anybody, you want that office high up. It's more impressive.

We see that nearby employment has a very compelling impact on commercial rent. We also see that your location vertically has a compelling impact on rent. The vertical location is as important for the cost of space as is the horizontal location. And what we also find is the impact of employment inside the building is a couple times larger on commercial rent as compared to employment of the zip code outside.

Forefront: *You write that this verticality you studied matters. Why? How should its significance influence policymakers and civic decision makers?*

Rosenthal: The more we understand about what it is that makes a location attractive in a world where local government officials would love to have better-quality employment nearby, the more effective the policymakers are going to be. Otherwise, they're shooting in the dark.

Is there something about being high up that is going to attract high-end headquarters, for instance? Do you want those companies to be present in your town?

There's a very systematic and substantial vertical rent gradient, with a very sharp rent premium for ground-level activity, after which rents fall and then they rise gradually and at an increasing rate.

From the city's perspective, one question arises: Is this going to enhance employment opportunities in the community, or are we going to simply generate a massive amount of unoccupied vacant commercial space that is going to be a boondoggle and undermine the health and vitality of other buildings nearby? How about, instead of an 80-story tower, two 40-story towers?

So understanding what different companies seek when they look for space in an urban area is important if you are the town official who has the authority to say, "We're going to grant that permit" or "We're not going to grant that permit."

There are serious for-profit motives at work here, and that means somebody who is willing to put up his or her investment capital and the town officials who are willing to authorize the building permits are hoping this is going to be a source of enhanced productivity and greater and better-quality employment opportunities for the local community.

Forefront: *Name a significant insight we've gained about city structure and policies in the past 5 years.*

Rosenthal: Cities are, of course, expensive places. And you could ask yourself, why would a for-profit company ever want to do business where it's so expensive? Space is expensive, labor is expensive.

The answer is we get something back in exchange for operating in that space, in that location. There's something about cities that is enormously productivity enhancing that makes it easier for businesses to get the job done. If that wasn't the case, companies would move away from cities.

One of the really important sets of insights in the last 20 years has been to better understand the nature of what is it about cities that causes labor and causes businesses to be that much more productive. The same worker is going to be a lot more productive in Manhattan than in Syracuse. So then there's the question of why. What's driving that? And we are increasingly learning about what those mechanisms are and how important they are.

A very fanciful but real mechanism is that we learn from each other. When we are in proximity, we see each other more readily. It's easier to have face-to-face interactions.

One possibility is that if I'm operating in an area where there are other innovative companies in my industry nearby, maybe I'm a little quicker at learning new ways to get the job done. One place where we hear this sort of story quite frequently is in the high-tech area, research and development, computer technology. Silicon Valley is the most famous example, but it's not the only one.

Part of it also is about the ability to tap into a pool of skilled workers. If you lose your key technical worker and you need to replace that person—if you are trying to operate a facility that has industry-specific skill requirements, and you're in the middle of North Dakota—you're probably out of luck. There's no one else nearby. If you operate that facility in an urban area, where there are other companies similar to yours, you have a much greater chance of being able to replace that key individual.

In the last several years, the academic literature surrounding what is it that makes cities productive places has been increasingly successful at providing evidence of both the nature and the magnitude of these sorts of underlying factors.

So understanding what different companies seek when they look for space in an urban area is important if you are the town official who has the authority to say, "We're going to grant that permit" or "We're not going to grant that permit."

The same worker is going to be a lot more productive in Manhattan than in Syracuse. So then there's the question of why.

Every town mayor has a desire to bring more effective employment to his or her community. If you have good quality employment opportunities in the community, all kinds of things are easier. Income is going to be higher. There's going to be less stress socially, more resources to fund local services, including schools, fire, crime protection, you name it. In order to have any chance of proactively attracting and retaining quality jobs in your town, you need to understand what it is that businesses care about and what causes cities to be productive in the first place.

Forefront: *You are the managing editor of the Journal of Urban Economics. We wonder what you see as the key policy issues in the near and/or long term for urban economics. Why?*

Rosenthal: I think climate is one factor that's going to come up. There is a paper in the *Journal of Urban Economics* called "The Greenness of Cities" that argues that densification is an energy-efficient way, a low-impact way for us to organize ourselves. Those sorts of energy and climatic issues are going to remain

important and grow in importance over time, concerns about CO₂ emissions, for example. How we organize ourselves spatially makes a difference for the environment.

There are enduring challenges for cities that include the downside of cities. They are, by definition, congested places. We tend to have higher crime rates in cities. That's going to be a challenge for every city going forward.

Technology is going to continue to impact the function of cities. If you go back in time, cities began primarily as manufacturing centers. As technology has changed, as our ability to move people and products has changed, manufacturing has moved away from the downtown cores, and the function of cities has changed and become much more information oriented. So any policies associated with urban development are going to be influenced by the nature of the activity that takes place in cities. ■

—Michelle Park Lazette

SUM AND SUBSTANCE

Understanding what drives businesses to locate in tall buildings and in cities can arm policymakers with important information to consider when making decisions.

Stuart S. Rosenthal

Position

Maxwell Advisory Board Professor of Economics, Department of Economics and Center for Policy Research, Syracuse University

Editor, *Journal of Urban Economics*

Education

Bowdoin College
BA in Economics, May 1980

University of Wisconsin–Madison
MA in Economics, December 1984

University of Wisconsin–Madison
PhD in Economics, May 1986



On the reel

Two questions in fewer than 4 minutes: Stuart S. Rosenthal shares what he thinks are the best and worst things policymakers can do as cities evolve.
tinyurl.com/z28ghbs



PART

2

From Coal to Craft: Eastern Kentucky's Changing Economy

Part 2 of a 4-part Forefront series examining eastern Kentucky's transition away from a coal-centric economy.



Bonnie Blankenship
Regional Community Development Advisor

Swiftly changing economic conditions, highly competitive trade growth, and a future relying on evolving technology, a transition is taking place in eastern Kentucky.



Artisan Center in Knox County, Kentucky. Photo courtesy of Timothy D. Hudson.

The decline of the coal industry and loss of thousands of mining jobs creates a need to reexamine a new economic direction for eastern Kentucky. One option is through “creative placemaking” in which partners from disparate sectors use arts and culture activities to strategically shape the character of a region or neighborhood. It’s an integrative approach to neighborhood planning and economic development, encouraging local communities to use their distinctive resources, cultural diversity, and unique attributes to stimulate their economies.

The economic impact of creative placemaking

Creative placemaking is a significant economic development tool and can be highly transformative for a region in terms of income generation and job creation. The Arts and Cultural Production Satellite Account (ACPSA) is a partnership between the National Endowment for the Arts (NEA) and the Department of

Creative placemaking is a significant economic development tool and can be highly transformative for a region in terms of income generation and job creation.

Commerce’s Bureau of Economic Analysis. This partnership produced the first federal in-depth analysis of the impact that arts and culture have on economic conditions.

In 2012, the ACPSA reported that arts and culture production contributed more than \$698 billion to the US economy, or 4.3 percent of the US gross domestic product. To put this in perspective, that’s more than either the construction (\$586.7 billion) or the transportation and warehousing sectors (\$464.1 billion). There were 4.7 million

Creative placemaking is broader than just an organization or an artist. It's about community transformation. And it's about dollars and cents—and what makes sense.

workers employed in the production of arts and culture activities, generating \$334.9 billion in compensation.

Arts and culture spending has a ripple effect on the overall economy, boosting ancillary businesses. The ACPSA calculated that for every 100 jobs created in the arts, 62 additional jobs are also created in fields such as retail, information technology, manufacturing, and food service, to name just a few. That's a big impact.

The creative industry ranks on the same level with many other sectors, for instance, information technologies, communications, transportation, distribution, and logistics. Within Kentucky's creative industry, according to the 2014 Creative Industry Report issued by the Kentucky Arts Council, there are approximately 60,000 direct jobs, a number which places the creative industry ahead of other key industries such as bioscience and auto and aircraft manufacturing in terms of employment. Including creative occupations, indirect jobs associated with suppliers, and spending by those employed within the creative industry, creative occupations add up to 108,500 jobs.

A case for investment: two examples

Creative placemaking has occurred in communities throughout eastern Kentucky for some time. The region traditionally has been known for its

creative assets, but during the past few years new funding mechanisms have been created by the NEA, ArtsPlace, and Kentucky Arts Council to stimulate economic development in rural communities.

Berea College

Berea College is a small liberal arts college recognized nationally for its labor program in which all students participate in work study. Aptly termed "work colleges" offer students enhanced learning opportunities by integrating work, learning, and service during students' college experience. Located in Berea, Kentucky, Berea College is distinctive among post-secondary institutions for providing free education to students from selected counties: Every admitted student from an Appalachian county is provided the equivalent of a 4-year full-tuition scholarship.

Late in 2015, the college received a \$100,000 Our Town grant from the NEA to help spur economic development for rural communities in eastern Kentucky. The award is given to projects that could make communities more lively, beautiful, and resilient with the help of the arts. Berea College's project goal is to map out areas of rural Kentucky where a creative culture may be used to help create economic development. The college is partnering with 8 rural communities, the Kentucky Arts Council, and Kentucky Highlands Investment Corporation. This initiative is relatively new, enacted as coal production in the region has declined.

The college will focus its project efforts within several HUD "Promise Zones," communities with high poverty rates where the federal government and local leaders work together to increase economic activity, improve educational opportunities, leverage private investment, reduce violent crime, enhance public health, and address other priorities. The counties of Bell, Clay, Harlan, Knox, Letcher, Perry, and Whitley, some of the hardest hit economically by the downturn in coal production, comprise Berea College's zones. Overall, they have a poverty rate of 30 percent, with 2,724 direct coal jobs lost since 2002.

Appalshop

Appalshop was founded in 1969 as a project of the US government's War on Poverty and is located in Letcher County, Kentucky, a region hit hard by the loss of coal jobs and is battling high unemployment. The organization is 1 of 10 Community Film Workshops conceived through a partnership between the Federal Office of Economic Opportunity and the American Film Institute.

In 1974, the initial worker-operated organization evolved into a nonprofit company now called Appalshop and established itself as a hub of filmmaking in Appalachia. Since that time, it's produced more than 100 films covering subjects such as

The Major Players

In the last 2 years, strategic partners from a group of foundations and government agencies have jointly invested in creative placemaking initiatives across the eastern Kentucky region.

The National Endowment for the Arts (NEA)

The NEA is a federally funded organization. Its funding provides individuals and communities the chance to participate in the arts on many levels, be it creative or experiential. In its first round of grants for fiscal year 2016, the NEA has awarded \$200,000 total to 8 Kentucky arts organizations. Grantees include Berea College in Berea and Appalshop in Whitesburg. It also requires a creditor to notify the applicant of its decision within 30 days from receipt of a completed application.

ArtPlace America

ArtPlace is a 10-year collaboration among a number of foundations, federal agencies, and financial institutions. Its mission is to position arts and culture as a core sector of comprehensive community planning and development in order to strengthen the social, physical, and economic fabric of local communities. Since 2012, it has awarded approximately \$1.2 million to 4 communities in eastern Kentucky. These 4 grants will incorporate landscape design, public art, spaces for performance, and temporary installations alongside a walking path in a rural Appalachian coalfield county. Grantees include the River Arts Greenway in Hazard, the Higher Ground Project in Cumberland, Mining the Meaning in Whitesburg, and LuigART Makers Spaces in Lexington.

The Kentucky Arts Council

A state government agency responsible for developing and promoting support for the arts in Kentucky, the Council awarded 73 grants totaling over \$415,000 in eastern Kentucky in 2015.

coal mining, the environment, traditional culture, and the economy. It has branched out to include theater, music and spoken-word recordings, radio, photography, multimedia, and books. Appalshop's goals are to increase arts, media, and technology training opportunities for young people in the mountains and to strengthen longstanding cultural institutions in the county. In addition, it contributes to diversifying Letcher County's economy by helping develop tourism opportunities celebrating place-based traditions and creating conditions that can support entrepreneurs building creative businesses in the community. Selected from a pool of nearly 1,300 applicants, Appalshop received a grant of \$450,000 from ArtPlace America's 2015 National Grants Program.

Making dollars and sense

Creative placemaking is broader than just an organization or an artist. It's about community transformation. And it's about dollars and cents—and what makes sense.

Artisans bring new life into the community. Foot traffic from arts and culture events is a bonus for secondary businesses, restaurants, bars, and hotels. Creative placemaking stimulates public and private spaces, revitalizes structures and streetscapes, and improves local business sustainability. It brings diverse people together to celebrate, inspire, and be inspired in small towns.

The creative culture is an enticement for tourism through the promise of a unique regional experience. Data presented at the Kentucky Travel Industry Association's annual conference in October 2015 indicate that travel and tourism in Kentucky is larger than ever: The industry

increased by more than \$2.2 billion over the past 5 years and has reached \$13 billion.

The story continues to emerge from Kentucky's rising creative industry, developing from the data and narrative of Kentucky's artists who participate in the sector. The story is one of an entrepreneurial drive and the role artists play in the development of Kentucky businesses. It emerges from the challenges present in rapidly evolving new technologies and the transition from a regional economy dependent upon natural resource extraction to one that will draw upon more diverse assets, talents, and skills. And the story's not over yet. ■

SUM AND SUBSTANCE

Creative placemaking is reinvigorating eastern Kentucky's economy and communities.

Stay tuned



We have more work focusing on eastern Kentucky planned for this year, including future articles on ways regions can diversify their economies and a look at migration data to see what trends are occurring in eastern Kentucky.

Financial Stability Work Continues

The third annual Financial Stability Conference highlights research and advances in data requirements for macroprudential policy, systemic risk measurement, and forecasting tools.



Karen Malec
Communications Advisor

Approximately 160 attendees from around the world convened on December 3 and 4 in Washington DC to attend the third annual Financial Stability Conference, co-sponsored by the Federal Reserve Bank of Cleveland, the Office of Financial Research, and the *Journal of Financial Stability*.

The conference brought together a variety of speakers, panelists, and participants, including members of academia, economists, and banking supervisors. The program organizers reviewed nearly 140 submissions from researchers in Europe, Africa, Asia, North America, and South America.

The theme for this year's conference was "Financial Stability: Policy Analysis and Data Needs." The event highlighted research and advances in data requirements for macroprudential policy, systemic risk measurement, and forecasting tools.

Several topics that have been discussed in past conferences came to the forefront this year, and topics had enhanced depth and sharpened focus. One such topic related to the global implementation of LEI, or Legal Entity Identifier, which is used to uniquely identify entities that engage in financial transactions. Richard Berner, director, Office of Financial Research (OFR), reinforced in his welcome speech the need for the global implementation of LEI and also elaborated on ways in which the OFR is looking across financial systems to measure and to analyze risks. Some of that work, including related papers, is featured on the OFR website (financialresearch.gov).

Communication between researchers and banking supervisors is growing. This dialogue and information sharing is expected to improve policy recommendations and banking supervision. Federal Reserve Bank of Cleveland President and Chief Executive Officer Loretta J. Mester thanked the audience in her welcome remarks, letting them know their participation in the discussion of papers and panel presentations was crucial to the success of moving forward the dialogue on financial stability.

Better models and data are needed, both by policymakers and researchers, to understand the interconnections between the banking system and nonbanking institutions.

Mester reflected on the theme of the conference and said that “the field of financial stability is actually a relatively new one in terms of microeconomic and macroeconomic foundations and modeling, yet policymakers, regulators, and supervisors have had to devise and implement tools for monitoring and mitigating risks, even as the models and theories are being developed.”

Mester discussed how this work came alive as she participated in a tabletop exercise undertaken by the financial stability subcommittee of the Fed’s Conference of Presidents, the group representing the heads of the 12 Reserve Banks: “The idea of the exercise was to investigate the use of various macroprudential policy tools, as well as monetary policy, in a macroeconomic-financial scenario that incorporated financial stability risks.” Mester elaborated that the exercise underscored the need for the work that is being done by the authors, presenters, and discussants participating in the conference.

Stanley Fischer, vice chairman, Board of Governors of the Federal Reserve System, spoke of how financial-system vulnerabilities have been greatly reduced from those of a decade ago. That being said, he noted that regulators still lack the data that are needed to illuminate important segments of the financial system such as activities by asset managers and other nonbanking areas.

Fischer noted that better models and data are needed, both by policymakers and researchers, to understand the interconnections between the banking system and nonbanking institutions. He felt that these linkages are critical to continue oversight and regulation of all areas of the financial system.

“The essential element of that infrastructure is learning the lessons of history—both the lessons of what happened and the fact that supervisors and regulators will on

occasion be surprised.” Fischer felt that learning those lessons was “certainly a far more important task than it sounds.”

Stephen J. Ong, Cleveland Fed vice president, Supervision, thought that Fischer’s perspective has a relevancy that is current: “One of the Cleveland Fed’s focus areas in 2016 will be on risks to the banking sector and financial system from nonbank financial firms, so Vice Chairman Fischer’s remarks are a very timely precursor.”

Trent Reasons, director of analysis, Financial Stability Oversight Council, US Department of the Treasury, spoke about “Financial Stability and Improvements in Risk Analysis: Lessons for Cybersecurity.” Reasons talked about the lessons learned about cyber risks and was encouraged that cyber legislation is currently working its way through Congress. He noted that there is no anonymized central repository for capturing all information regarding cyber breaches (for example, customers will be notified by their institution, but the federal government may or may not be notified). Reasons stated that the benefits of a central repository would be huge and that modeling the data could cascade into information on how to prevent breaches and/or to mitigate risks.

Attendees walked away from this year’s conference with insights into the progress that has been made in developing models to identify and measure risks to the financial system and financial stability, despite the data needs that still are present. ■

Watch for yourself



The Board of Governors’ Vice Chairman Stanley Fischer delivers his luncheon keynote speech. Check it out here: ow.ly/XnmMz.

Read more



Conference papers are available at ow.ly/Xnn6x.

Also look for a special issue forthcoming from the *Journal of Financial Stability* containing research papers from this conference.

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Next in **F**orefront, online and in print:

Economic Changes

Population and migration trends are shifting in eastern Kentucky. Check out parts 3 and 4 of a 4-part series on Kentucky's changing economy.

Save the Date

The Cleveland Fed's Regional Workforce Development Forum occurs on June 1. The forum will provide a comprehensive picture of the region's labor market as well as successful programs that address workforce needs in innovative ways. Register by May 25, 2016, on clevelandfed.org.

Small-Business Survey

In our next issue, we discuss the results of the 2015 Small Business Credit Survey and whether credit has become more readily available to small businesses.

To subscribe, email forefront@clev.frb.org

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