FEDERAL RESERVE BANK OF KANSAS CITY / FALL 2019

TEN

RURAL HOSPITAL CLOSURES

Towns, workers face ripple effects after facilities shut down

Decline in Bank Branches | Monetary Policy Challenges | Ag's Long-term View

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TEN

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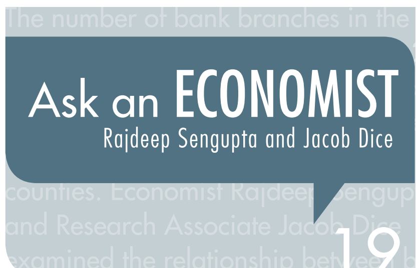
FEATURES



ON THE COVER »
Jeremy Forkenbrock of Horton, Kansas, lost his job of 22 years when Horton Community Hospital closed in March 2019. *Photo by Gary Barber*

From the *President*

ESTHER L. GEORGE

Esther George delivered the following remarks at a forum on "the Silver Economy" in Helsinki, Finland in July.

Long-term trends in the U.S. labor force and implications for policymakers

First, let me thank the organizers: the Finnish government, Governor Olli Rehn and his staff at the Bank of Finland, and the Global Coalition on Aging for inviting me to participate in this very important forum on the Silver Economy. It is an honor to join with these experts who bring insight to both the challenges and opportunities we are going to face with an aging population.

Certainly, demographic trends are reshaping the U.S. labor force, and it is leading economists and policymakers to rethink the key macroeconomic parameters that drive our decision making. Monetary policymakers, like myself, have had to reassess their views about the economy's longer-run growth potential, the natural rate of unemployment, and how we think about interest rates.

Like melting glaciers, the changes in global demographic trends are often difficult to see in the near term, but over time they will reshape the landscape. Looking over the past quarter century at the U.S. economy, structural changes have only gradually reduced the economy's potential growth rate, its natural rate of interest, and unemployment, but they must be considered in the context of how we respond to business cycle fluctuations and potentially underlying inflation.

I'd like to make three brief observations about these demographic trends affecting the labor force's composition, the job market, and the housing market. Then I will briefly describe some of the challenges monetary policymakers face as they confront these trends.

Labor force trends and composition

First, the age of the labor force in the United States has changed significantly over the past 25 years. The share of older individuals (age 55 and up) in the labor force has continued to increase. Twenty-five years ago, older individuals made up roughly 10 percent of the workforce; today, that share has more than doubled to over 20 percent. At the same time, the shares of prime-age (age 25 to 54) and young individuals (age 16 to 24) in the labor force have declined. These demographic factors, particularly the increasing share of the older so-called baby-boom generation that are retiring, continue to put downward pressure on labor force participation.

Starting in the last recession, we saw that labor force participation rates declined steadily. Over the past five years, the participation rate has stabilized as market

Esther George speaks at the Silver Economy forum.

conditions have improved and boosted participation enough to offset some of the downward pull from an aging population.

One of the important implications of these long-term demographic changes relevant for policymakers is related to what is known as the trend unemployment rate. The unemployment rate tells you something about the health of the labor market today, but where it stands in relation to what we think of as a natural rate—or a trend unemployment rate—is far more informative for policymakers. Research by my own staff at the Kansas City Fed shows that the changes in the age and skill composition of the labor force have systematically lowered the trend unemployment rate over the past 25 years.[1]

As these estimates of the natural rate of unemployment have declined, the scope for monetary policy to foster lower rates of unemployment without generating inflationary pressures has increased. Of course uncertainty about exactly where those natural rates of unemployment might currently lie requires us to be cautious, examine a wide range of information and continually update the parameters we use as new data arrive.

Job polarization

My second observation is that this shift in the composition of the labor force to older workers has coincided with dramatic changes in skills demanded by employers. This change, due to technological advancements, has resulted in a phenomenon known as job polarization. More specifically, job opportunities have shifted away from middle-skill occupations that lead to a middle-class standard of living and toward high- and low-skill occupations.

Skills demanded in the labor market are rapidly changing, and technological advancement has rendered the skills of many less-educated workers obsolete. As we've witnessed in the United States, this lack of job opportunity, in turn, may lead to depression and illness

[1]Tüzemen, Didem. "Job Polarization and the Natural Rate of Unemployment in the United States." Economics Letters, 175 (2019): 97-100.

> "TWENTY-FIVE YEARS AGO, OLDER INDIVIDUALS MADE UP ROUGHLY 10 PERCENT OF THE WORKFORCE; TODAY, THAT SHARE HAS MORE THAN DOUBLED TO OVER 20 PERCENT. AT THE SAME TIME, THE SHARES OF PRIME-AGE (AGE 25 TO 54) AND YOUNG INDIVIDUALS (AGE 16 TO 24) IN THE LABOR FORCE HAVE DECLINED."

among displaced workers, and these health conditions may become further barriers to their employment. Equipping workers with the new skills employers are demanding in the face of rapid technological advancements continues to be a key issue for labor force participation and policymakers.

Demographic forces and the housing outlook

Finally my third observation relates to how these demographic forces are interacting with, and influencing the outlook for, key sectors of the U.S. economy. In the housing sector, for example, a combination of forces has resulted in high levels of housing prices and rents. These high prices disproportionately impact younger adults, and as a consequence younger adults are delaying forming their own households. For example, the share of adults in their late 20s through late 30s living with their parents has increased steadily. This delayed household formation is also likely contributing to young adults delaying marriage and having children. Looking forward, downsizing by baby boomers could significantly increase demand for new multifamily construction, especially in metropolitan suburbs. This downsizing, together with the mortality associated with age, would be expected to free up existing single-family homes for re-occupancy. Younger households who move into these homes from rental units will in turn free up multifamily units for newly forming households.

With housing being a key fulcrum of monetary policy and a sector we know can be prone to boom and bust cycles, these developments will require careful monitoring.

Implications for monetary policy

This brings me to the implications of demographic change and other key structural economic relationships for monetary policy. We have already seen this play out at the Federal Open Market Committee in terms of revisiting our estimates of economic parameters. For example, according to the Federal Reserve's Summary of Economic Projections, popularly referred to as the "dot plot," the median projection for the long-run growth rate of real GDP has come down, the median projection for the long-run unemployment rate has also fallen dramatically and the median projection for the long-run interest rate has come down notably.

Understanding of course that considerable uncertainty remains around these estimates, policymakers must remain attuned to changes in macroeconomic trends such as aging demographics if we are to achieve our objectives for the economy.

Esther L George

Notes from around the Tenth District

In an announcement at Kansas City Fed headquarters, Fed Governor Lael Brainard said the Federal Reserve plans to make the FedNow Service available in 2023 or 2024. *Photo by Gary Barber*

Fed outlines plans for real-time payment service

Federal Reserve Banks will develop an around-the-clock real-time payment and settlement service, called the FedNow Service, to support faster payments in the United States.

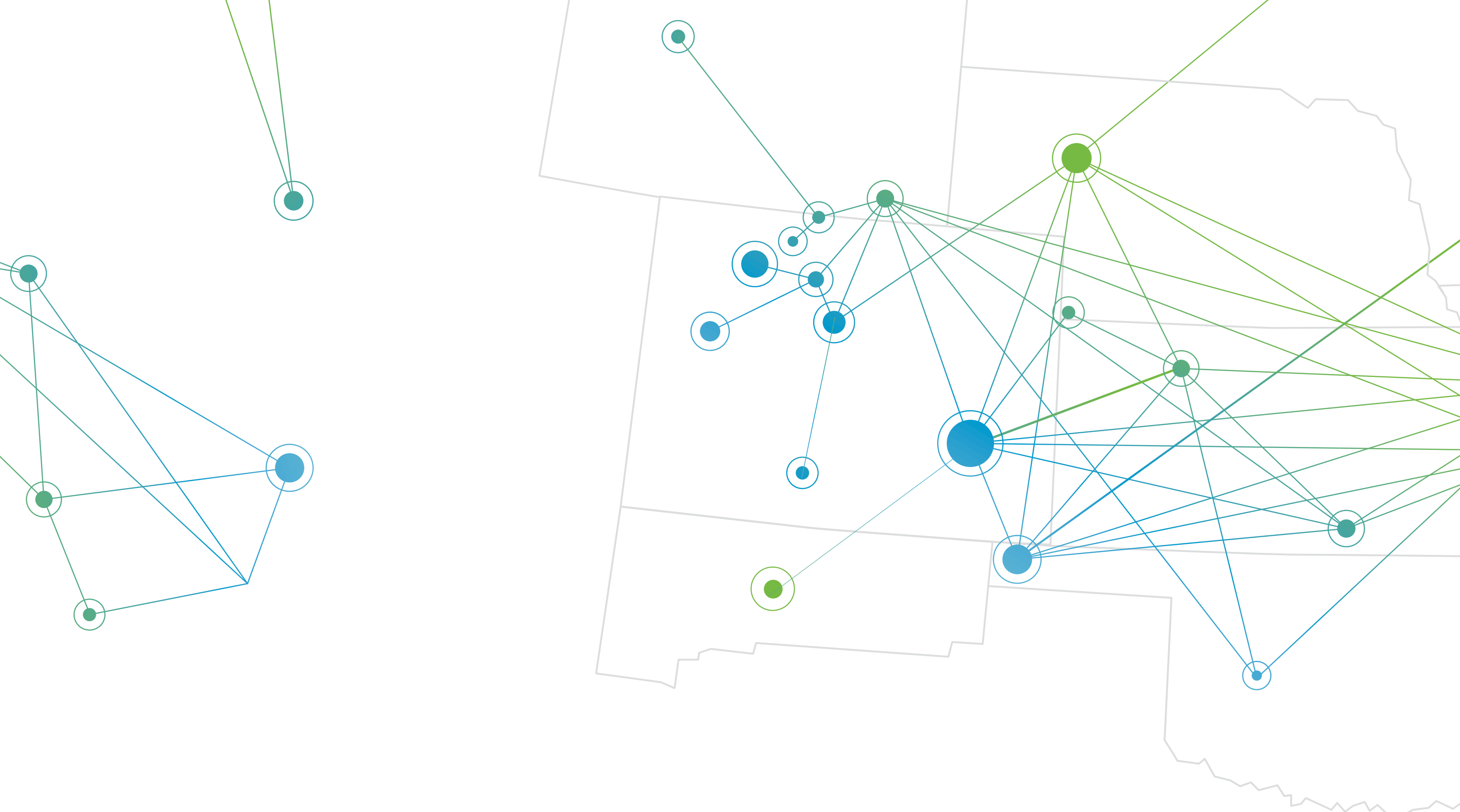
Federal Reserve Board Governor Lael Brainard announced and outlined the plan during remarks Aug. 5 at the Kansas City Fed's head office. Brainard said the Board expects FedNow to be available in 2023 or 2024.

"Everyone deserves the same ability to make and receive payments immediately and securely, and every bank deserves the same opportunity to offer that service to its community," Brainard said. "FedNow will permit banks of every size in every community across the country to provide real-time payments to their customers."

The rapid evolution of technology presents a pivotal opportunity for the Federal Reserve and the payment industry to modernize the nation's payment system and establish a safe and efficient foundation for the future. Faster payment services enable the near-instantaneous transfer of funds day and night, weekends and weekdays. The Federal Reserve believes these services have the potential to become widely used and to yield economic benefits for individuals and businesses by providing them with more flexibility to manage their money and make time-sensitive payments.

Since its founding more than a century ago, the Federal Reserve has provided payment and settlement services, alongside and in cooperation with the private sector, as part of its core function of promoting an accessible, safe and efficient U.S. payment system. The Board of Governors is accepting public comments on the FedNow Service until Nov. 7. For more information, visit *www.federalreserve.gov/apps/foia/proposedregs.aspx* (item OP-1625).

FURTHER RESOURCES
Go to *www.federalreserve.gov/newsevents.htm* for additional details about FedNow.



Kansas City Money Museum unveils origami exhibit

Through Dec. 31, 2019, the Kansas City Fed's Money Museum is showcasing the origami artwork of Steve Robbins, a hobbyist turned artist who creates inventive ways to make art out of currency.

The display, "Into the Fold," includes an array of 3D geometric shapes crafted entirely from folded paper money. Included in the 26-piece exhibit are a Sonobe Ball, a Dodecahedron and a Five Intersecting Tetrahedron. The pieces were inspired by the Platonic Solids, three-dimensional shapes whose faces are symmetrical with the same number of faces meeting at each vertex. Although the history is somewhat technical, the resulting artwork has a lightweight and delicate appearance.

"Plato used special shapes to describe the classical elements of earth, air, fire, water and the universe—that's where I found inspiration," Robbins said. "I'm a math guy, but I like to think I'm creative."

Artist Steve Robbins' 26-piece, three-dimensional origami exhibit "Into the Fold" is on display in the Kansas City Money Museum through the end of 2019. *Photo by Gary Barber*

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FURTHER RESOURCES
Plan a visit and learn more about the Money Museums in Denver and Kansas City at *KansasCityFed.org/MoneyMuseum.*

President Esther George congratulated bank examiners Frank Allen (left) and Dustyn DeSpain, recent recipients of the William Taylor Award for Excellence in Bank Supervision. *Photo by Gary Barber*

Kansas City Fed bank examiners honored with prestigious Taylor Award

Kansas City Fed bank examiners Frank Allen and Dustyn DeSpain have received the William Taylor Award for Excellence in Bank Supervision in the Federal Reserve System. The award recognizes individuals who have demonstrated sustained and extraordinary achievement and professionalism in the performance of their responsibilities.

The Kansas City Fed said Allen and DeSpain "displayed extraordinary leadership and collaboration to deliver transformative policy and technology enhancements for the System's consumer compliance supervision program for community banks."

The Taylor Award was established in 1993 in memory of William Taylor, who was director of the Division of Banking, Supervision, and Regulation for the Board of Governors of the Federal Reserve System from 1984 to 1991. Following that, Taylor was chairman of the Federal Deposit Insurance Corp. He died at age 53. The award commemorates Taylor's integrity and outstanding contributions to both the Federal Reserve and the banking system as a whole, and it represents the supervision function's highest and most prestigious honor.

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FURTHER RESOURCES

Read more about William Taylor's legacy in "Integrity, Fairness and Resolve: Lessons from Bill Taylor and the Last Financial Crisis," available at *KansasCityFed.org/publications/aboutthefed.*

Bank releases digital divide report, convenes broadband leaders

Affordable high-speed internet access, along with the relevant skills and computers to utilize it, has become foundational to participation in our modern world. Education, small business, health care and employment all require digital skills and access. Unfortunately, many individuals and companies lack such access, leaving them on the wrong side of what's known as the digital divide.

In early 2018, based on input from the KC Fed's Community Development Advisory Council, the Bank launched an investigation into the digital divide with two initial goals:

1. Identify key challenges and opportunities to narrow the digital divide and communicate the findings broadly.
2. Identify what, if any, additional role the Bank could serve to narrow the divide.

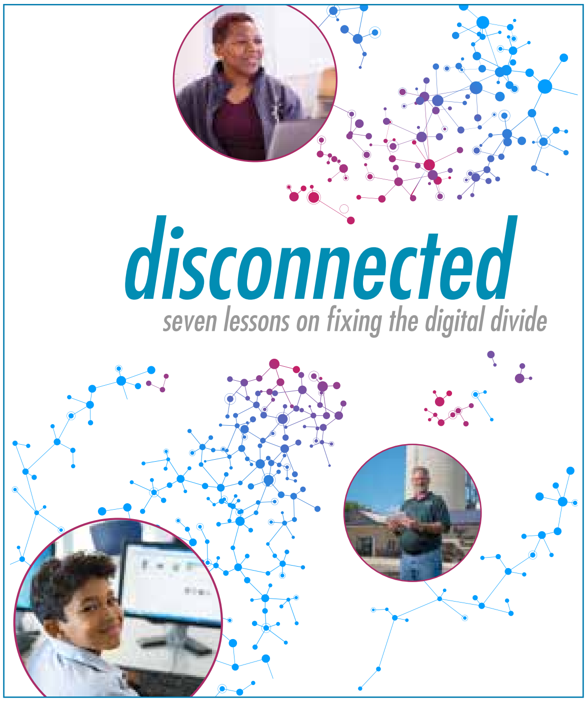
Through a series of roundtable discussions, one-on-one interviews, and an online survey, more than 160 practitioners weighed in. This feedback identified seven common themes that are addressed in a report the Bank recently released: "Disconnected: Seven Lessons on Fixing the Digital Divide." The Bank structured Disconnected to serve as a primer for those with a direct interest in the topic but who lack a holistic understanding of the issues.

Also, on July 31 and Aug. 1, the Bank hosted a conference in Kansas City for state broadband leaders. The conference dove deeply into the issues affecting broadband deployment initiatives, such as mapping actual broadband coverage, effective state regulations and approaches to working with state broadband taskforces. Participants came from as far west as Hawaii and as far east as Maine and Puerto Rico.

Looking ahead, the Bank plans to expand upon a pilot program it launched in October 2018 to donate 25 replaced computers to community development programs. In just six months, the donated computers were:

- Helping low-income students learn how to code and compete in robotics competitions
- Allowing three mothers to continue their education
- Increasing the digital skills capability of teachers in classroom

In 2019, the Kansas City Fed plans to increase the number of its donated computers to 75 and is consulting with other Federal Reserve Banks about launching their own programs.



FURTHER RESOURCES

Learn more about the Community Development Advisory Council and read the Bank's report on the digital divide at *KansasCityFed.org*.

Register for Accounting & Auditing Forum

The Kansas City Fed's Supervision and Risk Management Division is hosting its 27th annual Accounting & Auditing Forum on Nov. 5 in Kansas City and Nov. 6 in Denver.

Accounting subject-matter experts from the Federal Reserve Board's Division of Banking Supervision and Regulation will participate in this year's discussions. From the Kansas City Fed, Paul Oseland, supervising examiner and accounting specialist, will be presenting.

About 200 bankers and accounting and auditing professionals are expected to attend the forum. The primary goal of the forum is to share knowledge about emerging accounting pronouncements and related examination issues while enhancing communication with the Federal Reserve. Attendees also can earn Continuing Professional Education credits

The event is free, but registration is required. Registrations will be accepted through Oct. 30 under "Events" at *KansasCityFed.org/banking*. If you have questions, contact Lisa Aquino at 800-333-1010, 816-881-2491, or by email at *Lisa.Aquino@kc.frb.org*.

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FURTHER RESOURCES
Learn more about the Bank's work in the areas of regulations and guidance at *KansasCityFed.org/banking/regulations*.

Bank Anniversaries

The following banks in the Tenth Federal Reserve District are celebrating one, five, 10, 20 or more years as Federal Reserve members in October, November and December.

Bank of Versailles	Versailles	Mo.	100
First State Bank of Newcastle	Newcastle	Wyo.	89
Grant City Bank	Medford	Okla.	79
Stock Exchange Bank	Caldwell	Kan.	79
Fidelity State Bank and Trust Company	Dodge City	Kan.	76
Farmers State Bank	Pine Bluffs	Wyo.	53
Bankers' Bank of the West	Denver	Colo.	39
Citizens State Bank & Trust Company	Ellsworth	Kan.	39
Citizens Bank & Trust Company of Ardmore	Ardmore	Okla.	28
First Bank of Chandler	Chandler	Okla.	26
Ameristate Bank	Atoka	Okla.	23
Farmers State Bank	Phillipsburg	Kan.	21
Bank of Western Oklahoma	Elk City	Okla.	21
First American State Bank	Greenwood Village	Colo.	20
Bank of Cherokee	Hulbert	Okla.	20
Bank of Elgin	Elgin	Neb.	20
Stanton State Bank	Stanton	Neb.	10
Farmers & Merchants Bank of Ashland	Ashland	Neb.	10
Citizens State Bank	Wisner	Neb.	10
First Bank of Bancroft	Bancroft	Neb.	5
Jones Bank	Seward	Neb.	1

Bank of Versailles to mark 100 years as a state member bank

The Bank of Versailles, in Versailles, Missouri, in December 2019 will become the first bank in the Tenth District to reach 100 years of Federal Reserve membership.

Read about the history of bank chartering in "State Banking and the Dawn of the U.S. Economy," a book published by the Kansas City Fed. Learn more at *KansasCityFed.org/publications/aboutthefed/statebankingandeconomy*.

Making a CONNECTION

In founding the Federal Reserve more than a century ago, Congress recognized the importance of connecting the nation's central bank to the Main Streets of America. The Federal Reserve Bank of Kansas City carries out this role through its president and its programs and activities throughout the Tenth District, and beyond. Here is a glimpse at the recent activities of President Esther L. George and the staff of the Kansas City Fed.

KANSAS, MISSOURI and BEYOND »

» At the Jackson Hole Economic Policy Symposium in August, President Esther George invited female economists and central bankers participating in the annual event to network about increasing the number of women in economics and central banking. *Photo by David Paul Morris*

» In June, Esther George met with students from the Bluford Healthcare Leadership Institute in Kansas City. The institute is an executive leadership development program founded by retired Truman Medical Center chief executive John Bluford.

» In advance of the Bank's annual Agricultural Symposium in July, Esther George and central bank officials from around the world toured Juniper Hill Farms near Lawrence, Kansas.

» In July, while in Reykjavík, Iceland, for a conference of central bankers, Esther George was interviewed by a local journalist. George was a speaker at the conference, which was titled "Looking back and looking forward: How do we preserve monetary and financial stability?"

» In June, Esther George spoke in Jackson, Wyoming, at the 2019 Montana & Wyoming Bankers Convention.

» With Esther George in Kansas City after the FedNow Service announcement (see Notes, page 4) in August were Fed senior officials focused on payments: (from left) Connie Theien, senior vice president, Federal Reserve Customer Relations Support Office-Industry Relations; Susan Foley, senior associate director, Federal Reserve Board of Governors; Federal Reserve Governor Lael Brainard; Kansas City Fed Senior Vice President Kim Robbins; and Shonda Clay, executive vice president, Federal Reserve Customer Relations Support Office.

» In August at Kansas City Fed headquarters, Esther George greeted attendees at the Urban League of Greater Kansas City's Newcomers Reception.

» In June in Farmington, New Mexico, Esther George and other Tenth District staff hosted a roundtable of bankers and government officials that included Jerry Walker, president and chief executive officer of the Independent Community Bankers Association of New Mexico, and Christopher Moya, director of the state's Financial Institutions Division.

COLORADO, NEW MEXICO, WYOMING »

» The Denver Branch Board of Directors, President Esther George, Economist and Vice President and Branch Executive Alison Felix visited Farmington, New Mexico, to learn more about the regional economy. The group had an informative tour of Navajo Agricultural Products Industry, a business enterprise wholly owned by the Navajo Nation.

» Erin Davis, senior public affairs specialist, shared information on budgeting, saving and other personal finance topics with high school juniors and seniors during Junior Achievement's Business Week in Denver.

» Senior Advisor Ariel Cisneros conducted Investment Connection Colorado, including presentations from community development organizations from across the state. Since 2011, Investment Connection has helped educate and inform the funding community and connect organizations with more than $35 million.

OKLAHOMA »

» The Oklahoma City Branch facilitated a roundtable with representatives from some of Oklahoma's Community Development Financial Institutions (CDFIs) and Jodie Harris (right), director of the U.S. Treasury's CDFI Fund. The visit included touring local CDFIs and learning about the economic impact in their community.

» Chad Wilkerson, vice president, economist and Oklahoma City Branch executive, delivered an economic outlook speech to business leaders in Guymon, Oklahoma in July. During the visit, Fed staff toured local industries and hosted a business roundtable with community leaders to learn about the local economy.

» The Oklahoma City Branch hosted an Economic Forum featuring Chad Wilkerson. More than 200 business and community leaders attended the luncheon, held at Vast in Oklahoma City.

NEBRASKA »

» Nathan Kauffman, vice president, economist and Omaha Branch executive, met with business and community leaders in Valentine, Nebraska, to hear firsthand about local economic and business conditions.

» Regional Research Associate John McCoy of the Omaha Branch shared insights on demographics and Nebraska's labor force at the Young Bankers of Nebraska Conference.

» Two middle school teachers from Omaha Public Schools spent an afternoon at the Omaha Branch to learn about technology fields and gain knowledge to take back to their classrooms. Technology Manager Rich Dawe (left) discussed careers at the Kansas City Fed.

2019 AGRICULTURAL SYMPOSIUM

EXPLORING THE PATH to the Long Term

written by OMAHA BRANCH STAFF

Despite a prolonged slump in the price of many agricultural commodities globally, long-range economic prospects in the agricultural sector often have been viewed as positive. Optimism about agriculture's long-term future is based on expectations of steady growth in global populations and incomes.

On July 16 and 17, leading academic and industry experts discussed the links between current conditions in agricultural markets and longer-term prospects during the Kansas City Fed's 10th Annual Agricultural Symposium, titled "Exploring Agriculture's Path to the Long Term."

Agricultural production in recent years has increased significantly, even as commodity prices have remained suppressed. Costs have remained elevated, and profit opportunities have remained limited or fleeting. Across the world, agricultural producers and businesses have sought to adapt to the prolonged downturn in agricultural prices, while at the same time position themselves for longer-term opportunities that might warrant further investment.

Nathan Kauffman, Kansas City Fed vice president and Omaha Branch executive, organized the annual symposium. In his opening comments, he spoke of the importance of global input and understanding.

"As we try to understand agricultural markets within our seven-state region," Kauffman explained, "we do so with the backdrop of recognizing that agriculture is very much a global marketplace."

Near-term developments

The agricultural sector has remained in a prolonged slump as prices and profits have continued to limit the potential for growth. Financial stress has continued to build for many U.S. agricultural producers, and while conditions may not mirror those of the 1980s, the effect on younger producers may be similar.

In the near term, uncertainties connected to trade, U.S. production and African swine fever (ASF) are likely to be significant drivers of agricultural commodity prices and profits.

Long-term economic factors

Two factors often cited as the most significant drivers of demand for agricultural products during the previous decade were growth in U.S. biofuels and strong economic growth in China. However, several symposium speakers recognized that there does not currently appear to be an obvious long-term driver of demand that might provide a significant boost to agricultural commodity prices and farm sector profitability.

Growth in global populations and income is expected to continue in coming years, but it is not yet clear

"AS WE TRY TO UNDERSTAND AGRICULTURAL MARKETS WITHIN OUR SEVEN-STATE REGION, WE DO SO WITH THE BACKDROP OF RECOGNIZING THAT AGRICULTURE IS VERY MUCH A GLOBAL MARKETPLACE."

— *Nathan Kauffman*

whether a larger population in Africa, where much of the population increase is expected to occur, will generate the same kind of increase in demand for agricultural products that occurred in the past decade in China.

Daniel Basse, president of AgResource Co., was one of the speakers at this year's symposium. The company provides global agricultural market news, analysis and consulting services. *Photo by Gary Barber*

Ongoing investments elsewhere in the world also are likely to increase production of agricultural commodities, which could weigh more heavily on agricultural prices and profits. Ray G. Young of Archer Daniels Midland Co., noted during his keynote address that investments in infrastructure will be a critical component underlying competitiveness in global agricultural markets in the years to come.

Transitioning to the future

Speakers noted that the transition to a more economically profitable long-term future for U.S. agricultural producers will require a more business-oriented approach. At the same time, the transition for emerging agricultural production regions such as South America and sub-Saharan Africa will be dependent on the development of infrastructure, research and development connected to production and an overarching supportive policy framework that includes the establishment of key trading partnerships.

In addition to the broad identification of an overarching business strategy such as reduced costs, other factors are also reshaping how producers operate their farm business. The increasing usage of digital technologies, along with changing demographics of producers, is redefining what it means to be a farmer.

changes to ensure a clear path toward long-term growth.

Before the symposium, central bank representatives from several countries joined Kansas City Fed officials for a tour of Juniper Hill Farms near Lawrence, Kansas. *Photo by Gary Barber*

International representatives visit Tenth District

In advance of the Agricultural Symposium, the Kansas City Fed convened central bank representatives from around the world for a discussion on developments in agriculture within their respective regions. In attendance were representatives from Argentina, Canada, Colombia, India, Mexico, Mozambique and Zimbabwe, as well as officials from the Federal Reserve Banks of Atlanta, Chicago, Dallas, Minneapolis, Philadelphia and the Board of Governors. The group also toured Juniper Hill Farms near Lawrence, Kansas.

Uncertainties

Broad increases in demand for agricultural products and productivity gains made possible by technological advancements represent long-term opportunities in the agricultural sector. However, there also are significant elements of uncertainty that are likely to affect global agricultural prospects. Symposium speakers recognized that, over the next 30 years, uncertainties surrounding climate change, water availability, consumer demand and global trade will have a critical effect on the sector.

For much of this century, long-term prospects in agricultural markets have been resoundingly positive. A significant portion of this optimism stemmed from the extraordinary growth of developing economies, such as China, in addition to the emergence of biofuel policy that stimulated demand for agricultural products. Participants at the 2019 symposium generally recognized that there still are reasons to be optimistic about the long-term potential in agriculture due to growth in global populations and income, but also acknowledged that the sector faces a number of headwinds that will challenge its future path.

In the past, the agricultural sector has proved to be both resilient and innovative. As the sector transitions from a prolonged low-price environment of recent years, it will need to be so once again alongside numerous uncertainties and potential structural

Nathan Kauffman, Kansas City Fed vice president and Omaha Branch executive, organized the Agricultural Symposium and delivered remarks. *Photo by Gary Barber*

FURTHER RESOURCES

For additional information about the 2019 Agricultural Symposium, including a complete summary and videos of all sessions, visit *KansasCityFed.org/research/agriculture.*

Ask an ECONOMIST

Rajdeep Sengupta and Jacob Dice

Did local factors contribute to a decline in bank branches?

The number of bank branches in the United States has declined since the 2007-08 financial crisis, reversing a decade-long trend. The pattern appears to be widespread across both rural and urban counties. Economist Rajdeep Sengupta and Research Associate Jacob Dice examined the relationship between bank branches and local conditions over the last 20 years. Their analysis was published in July 2019 in the *Economic Review*.

Which factors have affected bank branches over the years?

The number of U.S. banks has declined since the mid-1980s. Before the financial crisis, much of this decline resulted from mergers and acquisitions. After the financial crisis, however, bank failures and a collapse in the entry of new banks also became prominent reasons.

Multiple factors likely influence banks' branching decisions, but national factors appear to have gained prominence in recent years. For example, interest margins declined industrywide after the crisis, potentially driving banks to contract their branch networks to reduce expenses. In addition, regulation ramped up after the crisis, and several economists and policymakers have argued that this imposed a significant burden, especially on smaller community banks, and contributed to the overall decline in new bank charters. The lack of new bank formation may have led to fewer branches overall. In addition, developments in information technology have had an impact. Banks have invested billions of dollars in online financial technology services over the years, and an increasingly large fraction of banking transactions are now conducted online.

Despite the decline in bank branch numbers, geographical proximity to customers remains relevant to banking. Most depositors who use online banking services still make in-branch visits. In addition, local branches continue to be important to small business lending.

What impact have local factors had since the financial crisis?

Assessing the relationship between bank branches and local factors requires information about branching and local conditions for a given geographical area over time. We defined counties as the geographical units of our analysis. We used annual data from the Federal Deposit Insurance Corp. to count the number of banks, branches, branch openings, and branch closings in each county in the 50 U.S. states and the District of Columbia. For each county, we considered local demographic, economic and competitive factors that are likely to influence bank branching.

Our analysis found a strong association between the number of branches in a county and that county's population, income and employment. In addition, we found that the association between local factors and the total number of bank branches has not changed in a meaningful way since the crisis. However, we found that the relative influence of local competition on branch openings and closings strengthened after the crisis, while the influence of local population, income, and employment weakened.

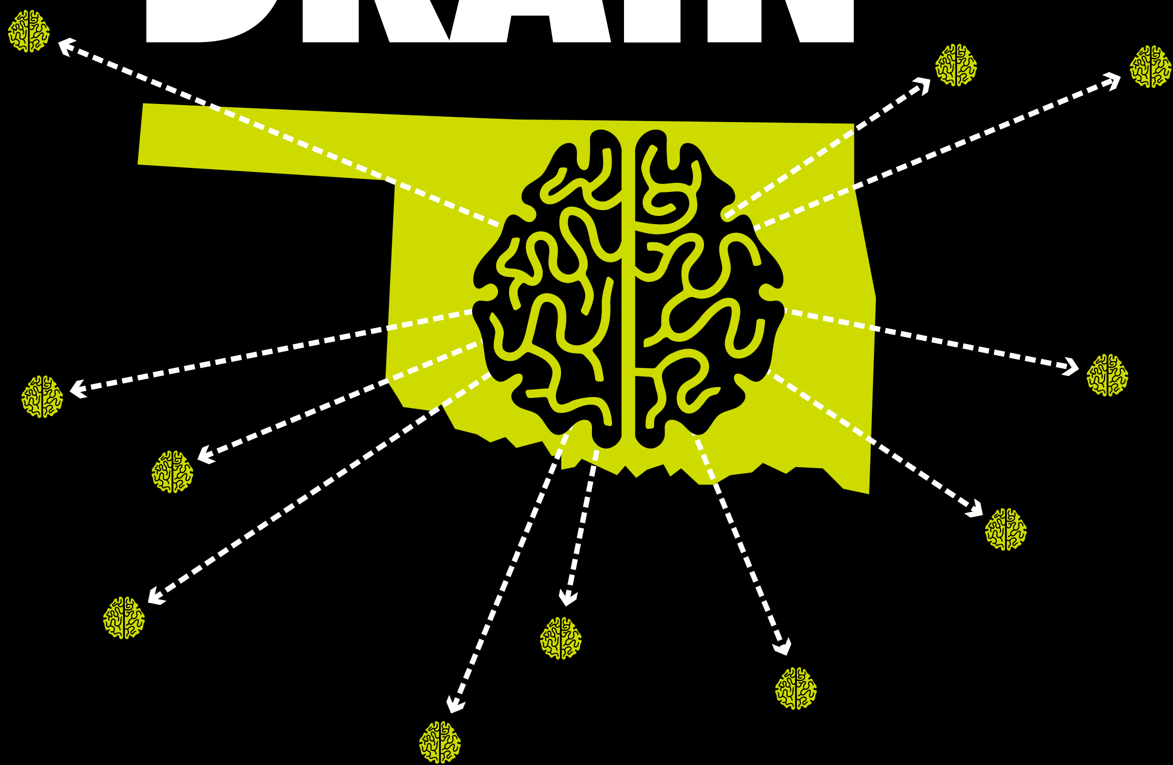
What is the outlook for bank branches?

The future path of bank branches will depend on local and national factors. While trends such as industry consolidation and online banking are likely irreversible, others such as bank performance and bank regulation are more likely to evolve. Improvements in bank profitability and the rollback in post-crisis regulation for small and medium-sized banks might slow or even reverse the current downward trend in branching nationwide. However, local conditions also influence whether a community sheds or retains its local branches, making changes in local policies all the more relevant.

FURTHER RESOURCES
Read the full *Economic Review* article at *KansasCityFed.org/research*.

A CLOSER LOOK AT OKLAHOMA'S

BRAIN DRAIN



RECENT EXODUS OF COLLEGE GRADUATES RAISES CONCERNS, BUT NEWS ISN'T ALL GRIM FOR THE STATE

The first quarter 2019 edition of the Kansas City Fed's *Oklahoma Economist* showed that net domestic migration to Oklahoma has been negative in each of the past three years (2016-18), resulting in the state's slowest population growth since 1990. The research was conducted and published by Chad Wilkerson, vice president, economist and Oklahoma City Branch executive, and Courtney Shupert, research associate. They also noted that residents with bachelor's degrees or higher have accounted for virtually all the recent net outflow from the state.

For the second quarter edition of the *Oklahoma Economist,* published in June, Wilkerson and Shupert analyzed the recent "brain drain" from Oklahoma and compared it with previous net outflows of college graduates from the state and recent experiences of nearby states. Although their findings point out some concerning trends for Oklahoma, they also show that there might be some silver linings.

Oklahoma has been attracting college graduates at roughly the same level since 2000—however, more highly educated Oklahomans have been leaving in recent years, with the most recent net outflow since 2013. On average from 2013-17, over 5,300 more people with a bachelor's degree or higher moved out of Oklahoma every year than moved into the state.

HOW MANY?

College graduates have been moving out of Oklahoma, on net, in every year since 2013. The average net outflow during that period (through 2017, the last year for which detailed data are available) has been more than 5,300 college graduates per year. Although that number of people represents less than 0.2 percent of the state's population, it accounts for more than a half a percent of the population with college degrees. That number also is greater than the annual number of bachelor's degrees granted at either the University of Oklahoma or Oklahoma State University.

HOW EDUCATED?

In most recent years, both residents with bachelor's degrees and those with degrees higher than bachelor's degrees have had net outmigration. This is somewhat different from the outmigration of 2003 to 2007, when more of the outmigration was of Oklahomans with education higher than a bachelor's degree.

HOW MANY YEARS?

The recent net outflow followed a period from 2008 to 2012 when Oklahoma had positive or flat net domestic migration of college graduates in each year. The largest net inflow occurred in 2010, when more than 3,000 college graduates moved into Oklahoma than moved out. However, four of the last five years—2013, 2015, 2016 and 2017—have seen the largest net outflow of college graduates from Oklahoma since at least 1999.

HOW OLD?

Most of the net outmigration in recent years, at least through 2016, was among college graduates of "prime working age"—those 25-34 and 35-54. However, that trend changed in 2017, as slightly more of those ages 25-34 with bachelor's degrees or higher moved into Oklahoma than moved out, for the first time since 2012. At the same time, Oklahomans older than 54 with college degrees moved out in 2017 at their highest rate since 2001, while recent college graduates—those under 25—continued to have increasing net outmigration.

CONSEQUENCES?

The consequences of the Oklahoma brain drain are concerning, especially in regard to Oklahoma's total educational attainment, because that could negatively impact incomes and tax revenue as higher-educated people tend to earn more and spend more.

BRIGHT SIDES?

In terms of net domestic migration of college graduates as well as net domestic migration regardless of educational attainment, Oklahoma as a whole and the Oklahoma City metropolitan area fared better in the most recent year of available data than in the immediately preceding years. Also, Oklahoma's brain drain isn't entirely unique: Several bordering states have experienced similar outmigration flows of college graduates. While Texas, Colorado and Arkansas have seen net overall inflows of college graduates from elsewhere in the United States in recent years, the other three states that border Oklahoma—Kansas, Missouri and New Mexico—experienced trends similar to Oklahoma, with more college graduates moving out than in during each of the past three years for which data are available—2015, 2016 and 2017.

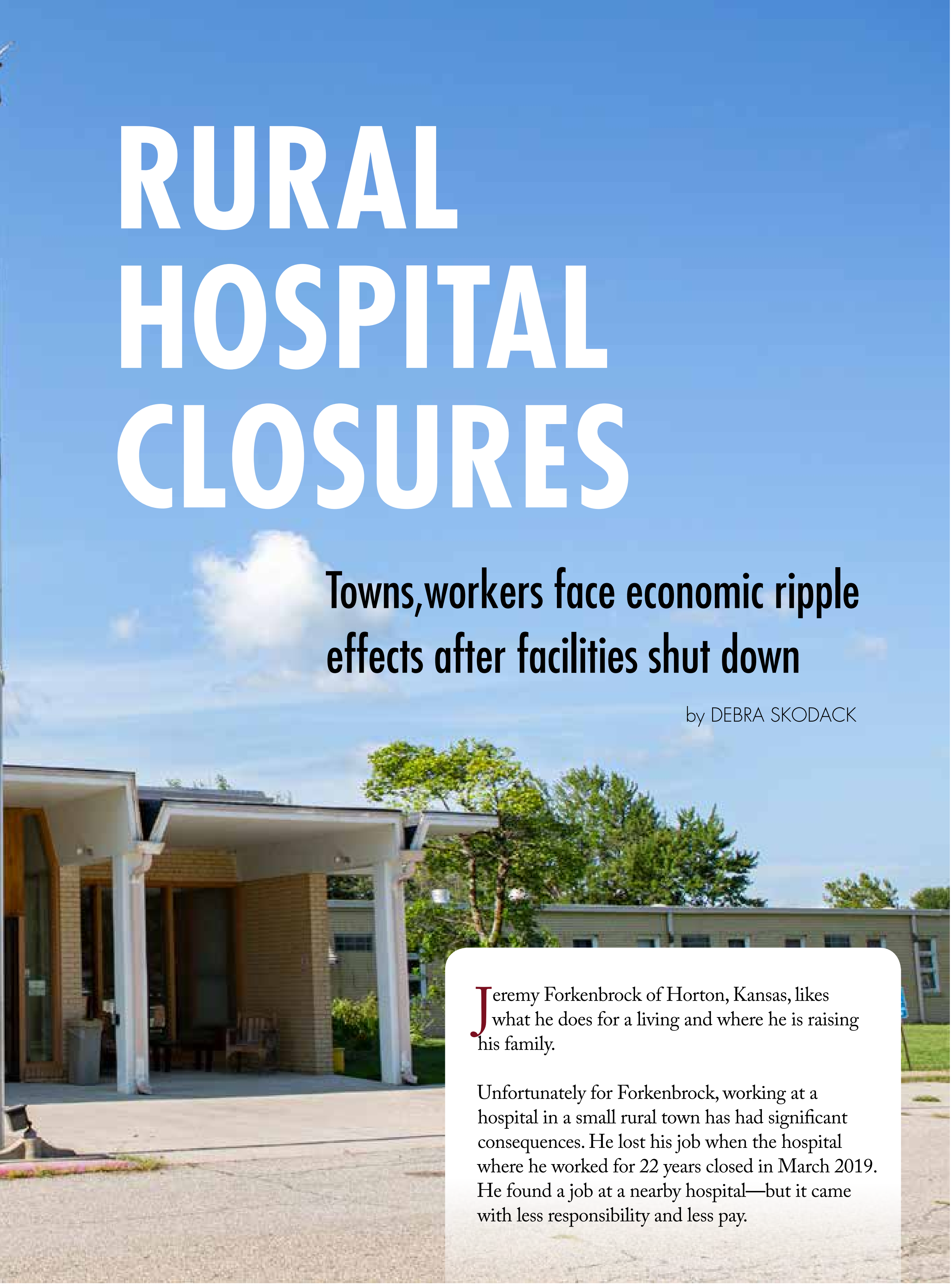
DESTINATIONS?

Although Oklahoma college graduates from recent years are spread across the country, the largest destination by far has been Texas. This is similar to the state's previous "brain drain" from 2003 to 2007, when more Oklahomans with bachelor's degrees or higher moved to Texas, on net, than to the next three destinations combined. The only other state among the top five destinations in both time periods is Washington. In recent years, many Oklahoma college graduates also have moved to Colorado, Arkansas and California, whereas from 2003 to 2007, the most popular destinations in addition to Texas and Washington were Illinois, Kansas and North Carolina.

FURTHER RESOURCES

Read the full *Oklahoma Economist* articles at *KansasCityFed.org/research.*

Horton, Kansas, is among the rural communities in the Tenth District to lose the town's only hospital. Horton Community Hospital closed in March 2019, putting about 50 people out of work. *Photo by Gary Barber*



RURAL HOSPITAL CLOSURES

Towns, workers face economic ripple effects after facilities shut down

by DEBRA SKODACK

Jeremy Forkenbrock of Horton, Kansas, likes what he does for a living and where he is raising his family.

Unfortunately for Forkenbrock, working at a hospital in a small rural town has had significant consequences. He lost his job when the hospital where he worked for 22 years closed in March 2019. He found a job at a nearby hospital—but it came with less responsibility and less pay.

Jeremy Forkenbrock lost his job as director of radiology and EMS services when Horton Community Hospital closed in March 2019. *Photo by Gary Barber*

"We have thought maybe we aren't meant to be here," Forkenbrock said. "But this is our home."

Forkenbrock's situation is an example of developments Kansas City Fed Senior Economist Kelly D. Edmiston examines in "Rural Hospital Closures and Growth in Employment and Wages." The research article was published in July 2019 in the Bank's *Economic Bulletin*.

Edmiston's research found that since 2011, 74 hospitals have closed in rural U.S. counties isolated from larger towns—counties without towns of 10,000 or more residents. His research concludes these rural counties with hospital closures saw meaningfully lower annual growth in employment and aggregate wages three years after the closure than similar counties without hospital closures.

Specifically Edmiston found that employment in counties with hospital closures fell at an annual rate of 0.5 percent in the three years following closure, while aggregate wages grew at a moderate annual rate of 1.1 percent. Similar counties without hospital closures had average annual employment growth of 0.7 percent and annual aggregate wage growth of 3.0 percent.

A hospital closing can be harder on small rural towns where the hospital is one of the largest employers, Edmiston found. Also, longer-term repercussions of hospital closures could further impede economic growth in counties with closures.

"Loss of access to care is arguably the most fundamental concern for communities facing hospital closures," Edmiston wrote. "The effects of access to care on community health are well-documented, and poorer health may lead to economic consequences such as increased worker absences and lower productivity.

In addition, access to quality health care is an important amenity—especially in rural areas—that households and businesses may consider in choosing where to locate."

There are thousands of people in small towns in the Tenth Federal Reserve District and across the country who are experiencing the impact and effects of hospital closures. These people include local residents, displaced hospital workers, business owners, and civic and community leaders in places like Horton, Kansas; Tilden, Nebraska; and Eufaula, Oklahoma. These Tenth District towns are learning how to go on without a hospital.

When a closing hits home

Horton, a town with population of about 1,700, is in Brown County, about 60 miles north of Topeka. Horton had a hospital from 1906 until March 2019 when Horton Community Hospital closed.

When Horton Community Hospital closed, Forkenbrock immediately lost his job as director of radiology and EMS services. But that was only the beginning.

To make up for lost income, which included Forkenbrock working six weeks without pay in hopes the Horton hospital would stay open, his wife returned early from maternity leave to her job as a mammography technologist at nearby Hiawatha Community Hospital.

Hiawatha Community Hospital, about 13 miles north of Horton, is where Forkenbrock eventually was hired as a radiology technologist and safety and preparedness coordinator.

To cope with a smaller paycheck, Forkenbrock had to make decisions that rippled out into the Horton economy: A major home remodeling project was scaled back; there were fewer impulsive purchases made for his three children, ages 4, 2 and seven months; and he no longer could enjoy having four of his five workday lunches at his friend's nearby convenience store.

Forkenbrock was only one of many customers store owner Tim Lenz lost when the hospital closed. In addition to 24-hour gas pumps, Lenz Express has a full-line deli—both popular with staff members of an always-open hospital. The hospital employed about 50 people when it closed.

"These were paychecks from good-paying jobs," Lenz said of the loss of the hospital employees.

City Administrator John Calhoon agrees about the hospital closing's effect on businesses in Horton.

"There were those employees who commuted to our city," Calhoon said. "There were the vendors who were spending money here … buying lunch, purchasing gas."

Longer term, Calhoon is concerned that a decline in business eventually may translate to a big decline in sales tax and real estate property values and taxes.

"Realistically, it's going to happen," Calhoon said.

Forkenbrock has seen how the hospital closure already is affecting real estate. A neighbor has placed a for sale sign outside his home.

"He told me, 'I am of an age that I can't be that far from a hospital'," Forkenbrock said.

Forkenbrock said he told his staff that residents' health likely would be affected not only because the hospital wouldn't be there but because health care would become less convenient.

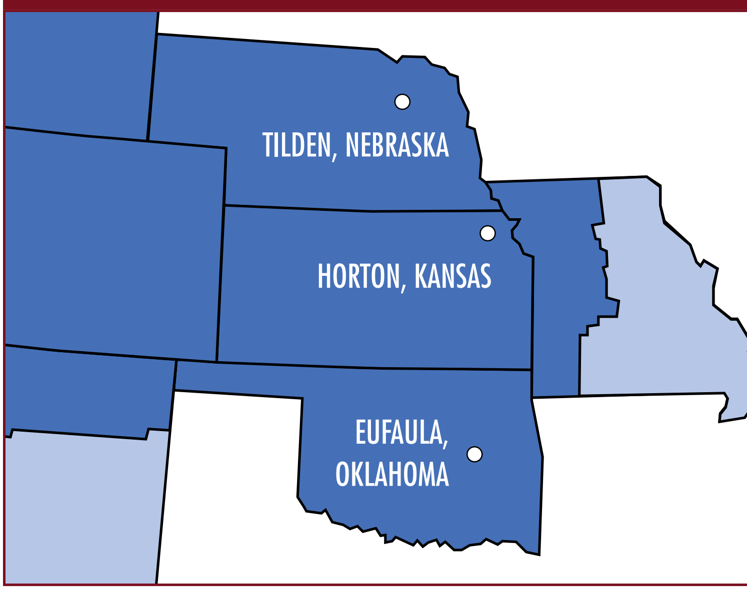
"Having a hospital is a big thing you had," Forkenbrock said. "Maybe our hospital wasn't that big here in Horton—but we had one."

Establishing a new economic center

In the five years since its hospital closed, Tilden, Nebraska, has learned to rethink its economic strategy. Although the town has suffered the loss of one of its biggest employers and jobs, the people have stayed.

When city-owned Tilden Community Hospital closed in July 2014, there were about 70 jobs lost, but the town's population has remained around 1,000, according to Mayor Leo Botsford.

Three towns, three closures



The closing greatly concerned residents, especially because a nursing home with a similar staff size closed just a few years earlier.

"It could have been devastating because we lost our two biggest employers," Botsford said. "We were hurt for a while. It's amazing. We perked up."

Botsford said most hospital employees chose to stay in Tilden and commute to jobs at Antelope Memorial Hospital in Neligh—13 miles west—or Faith Regional Health Services in Norfolk—20 miles east.

Faith Regional opened a clinic in the building that had housed Tilden's hospital. The city now has offices there too. A new assisted-living center since has opened. The amount of city sales tax revenue that was spent on the hospital was retained, and it now funds police, fire and rescue services, Botsford said.

Truthfully, Botsford said, Tilden doesn't have a lot of choices for economic or job growth mostly because it is landlocked by private farms. A new school has opened since the hospital closed, helping secure Tilden's new role of more of a bedroom community.

"LOSS OF ACCESS TO CARE IS ARGUABLY THE MOST FUNDAMENTAL CONCERN FOR COMMUNITIES FACING HOSPITAL CLOSURES."

— *Kelly D. Edmiston*

Of course, Tilden businesses needed to adjust. Tilden Community, for example, was a source of steady business for Thriftway Market, just three blocks away.

"It really was a sad thing for us," said Paul Bichlmeier, who has owned the Thriftway Market for 20 years.

Lenz Express was among the businesses in Horton, Kansas, affected by the closing of Horton Community Hospital. *Photo by Gary Barber*

Bichlmeier customized the small fresh food orders from the hospital, which in turn, was a reliable, steady customer for the grocery store.

"They didn't buy apples by the case, but rather bought 12 at a time," he said.

Thankfully, Bichlmeier said, he didn't have to lay off any employees from his small market in Tilden. That's because he also owns a larger store in nearby Neligh.

"If I just had this one store, it would have been rough," he said. "Overall, we would be a lot better if the hospital was open."

Assuring economic stability, safety

About 580 miles south of Tilden is Eufaula, Oklahoma. Like Tilden, Eufaula lost jobs and wages when its hospital closed three years ago.

Unlike Tilden, Eufaula wasn't looking for a new direction for its economy. The town of about 2,800 sits on the shore of Lake Eufaula, one of the world's largest man-made reservoirs. Eufaula's economy long has been based greatly on tourism and recreation. And, there is an increasing number of people who had maintained vacation homes in Eufaula and are retiring there.

Being on the shores of a large lake presents unique

medical needs, said Pam Rossi, executive director of the Eufaula Chamber of Commerce.

"A hospital rounds out your community and puts people at ease," Rossi said.

Eufaula has worked to address any concerns about medical and emergency medical needs after Epic Medical Center Hospital closed in May 2016.

Rossi said most of the hospital's 15 employees found other jobs or retired.

A medical clinic expanded when the hospital closed. Two doctors have practices there that are open a couple of days a week. There is an area ambulance service. The two pharmacies in town expanded after the hospital closed, offering more medical equipment.

"Other things kicked in when we didn't have anything," Rossi said.

When there are large events at the lake, the clinic stays open late. And, an ambulance is stationed in Eufaula ready to make the 30-mile drive to McAlester Regional Health Center, which serves southeastern Oklahoma.

Rossi said trying to lure other businesses to offset losses from a hospital closure can be tough for small towns.

"You try to hang on with what you can, the best you can and see what incentives you can offer," she said. "There aren't a lot of incentives a small town can offer. You need all the sales tax you can."

Yet securing a financially viable hospital is a worthy pursuit because that hospital can be central to strong economies of small towns and rural counties, Edmiston said.

"In many cases the local hospital is one of the biggest employers in the county," Edmiston said. "Most of the hospital's suppliers would likely be out of town, but there may be some goods and services supplied locally, so there is an effect there. Any income losses, such as would occur in losing one's job, would be expected to affect other local businesses because those with income losses have less to spend in these local areas. This is especially pronounced for providers of servicers, which are usually largely local."

The vitality of rural economies is linked to the access those communities have to health care, said Jon Chiappe, director of research at the Oklahoma Department of Commerce.

He said a robust health-care system includes hospitals, clinics, pharmacies and nursing homes.

"Each of these health-care industries contributes jobs and payroll to the local economy, and, more importantly, they improve health-care outcomes for the local population," Chiappe said. "In turn, these improved outcomes affect the workforce productivity with fewer hours absent from work and can also impact school attendance. It is these broader impacts to productivity that are considered by companies when they assess where they want to invest or expand."

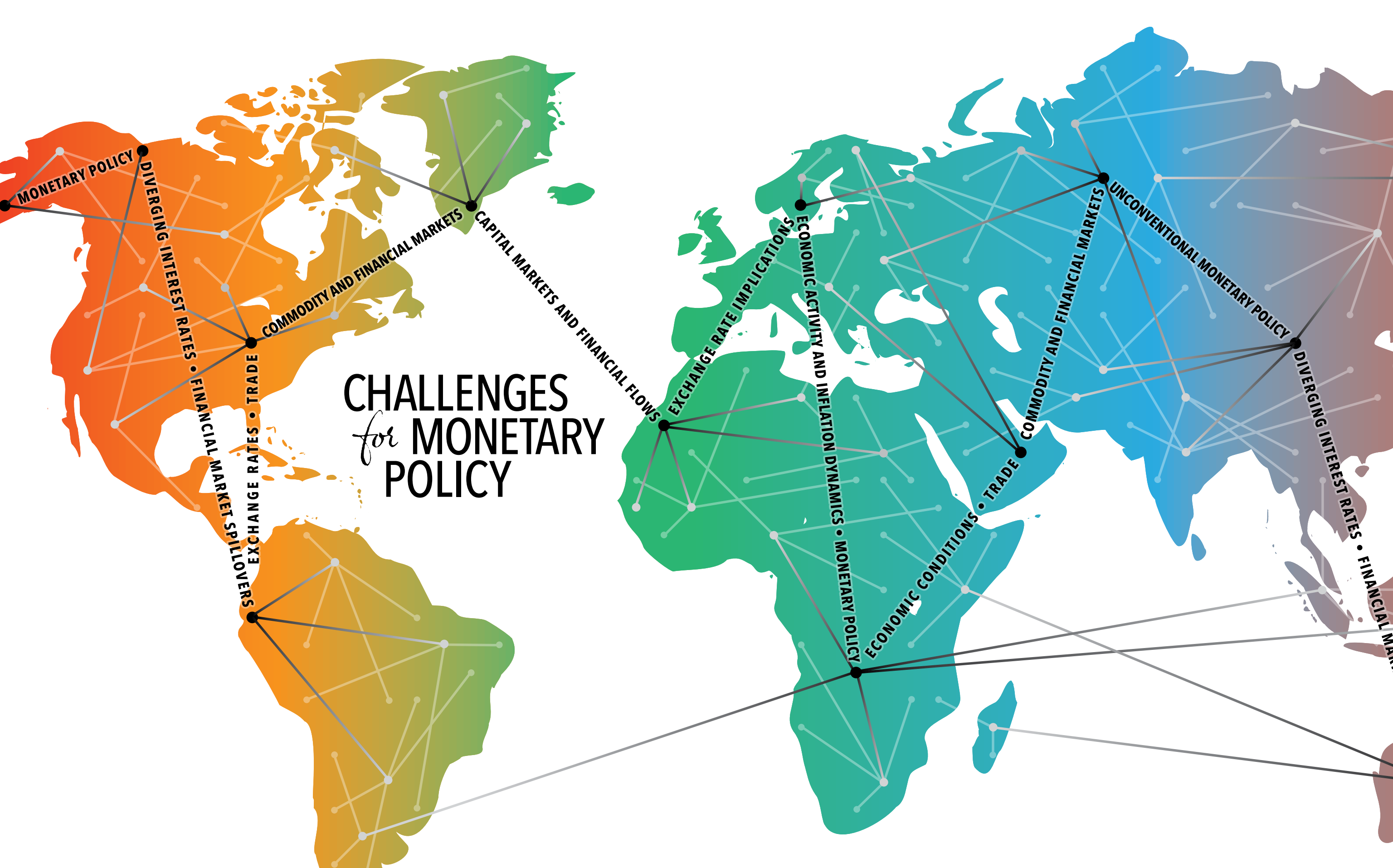
For Eufaula, the land where Epic Medical Center Hospital once sat is being redeveloped into condominiums.

Rossi is, of course, pleased there will be a viable business on the site, which overlooks Lake Eufaula.

"I would also love to have a hospital," she said.

FURTHER RESOURCES

At *kansascityfed.org/research*, read Kelly D. Edmiston's full *Economic Bulletin* article and hear his TEN Talk podcast on the subject at *KansasCityFed.org/tentalk*.



JACKSON HOLE SYMPOSIUM *Aug. 22–24, 2019*

A decade after financial crisis, central banks charting varied courses

In more than 40 previous Economic Policy Symposiums in Jackson Hole, Wyoming, the event hosted by the Federal Reserve Bank of Kansas City has examined a range of topics, including changing market structure related to monetary policy, financial markets and stability, the role of the housing market and other issues important to central bankers worldwide.

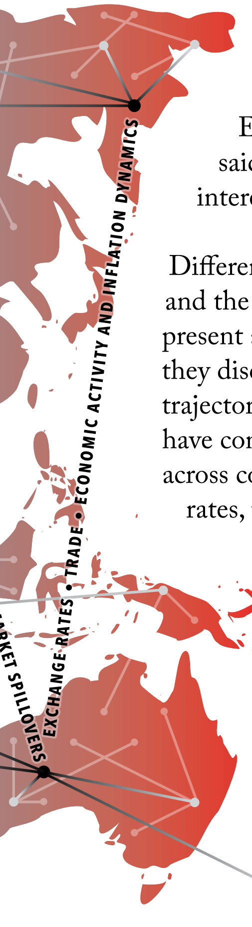
This year's event took place Aug. 22-24 and was titled "Challenges for Monetary Policy." The symposium examined how 10 years after the financial crisis, monetary policymakers still face a range of challenges as they pursue their mandates.

Each year, the Kansas City Fed's Economic Research staff develops the topic and agenda for the symposium in consultation with Bank President Esther L. George, who is the host of the event. The 2019 symposium included 16 presenters and discussants who shared in-depth research and commentary on the challenges policymakers face. More than 35 countries were represented this year.

Among challenges faced by policymakers are different rates of recovery. These differences have led central banks to chart different courses for normalizing monetary policy after utilizing both conventional and unconventional monetary policy tools in response to the Great Recession. Although some central banks are approaching a neutral policy setting, others have yet to start the process of removing policy accommodation.

On the first day of the symposium, George addressed several questions in a wide-ranging interview with CNBC, including "Why are United States interest rates so much higher than Europe, where they're zero?"

"I think if you look at the underlying performance



of those other economies, you will see the U.S. is performing better than, for example, Europe and other parts of the world," George said. "And that accounts for why we have higher interest rates."

Differences in economic conditions across countries and the associated settings for monetary policy present a range of issues for policymakers, which they discussed during the symposium. First, different trajectories of monetary policy paths across countries have contributed to a divergence in interest rates across countries, which has implications for exchange rates, trade and economic activity.

Second, monetary policy actions and the buildup and eventual unwinding of central banks' balance sheets from quantitative easing also have implications for capital markets and financial flows for advanced and emerging market economies as shifts in monetary policy in one country can create spillovers through financial markets affecting others.

Third, the path for policy normalization looks very different relative to previous normalization periods as most policymakers view the natural rate of interest as being lower than in the past.

And finally, policymakers, while charting a course for monetary policy to pursue their mandates, also must account for influences of commodity and financial markets that can provide headwinds or tailwinds to economic activity and inflation dynamics.

FURTHER RESOURCES

To view the papers and presentations from this year's symposium, as well as an archive of papers from previous years, visit *KansasCityFed.org/publications/research/escp.*

Top: President Esther George was interviewed by CNBC's Steve Liesman and discussed her views on interest rates and the economy.

Bottom: On Aug. 23, Fed Chairman Jerome Powell (left) walked the symposium grounds with Bank of England Governor Mark Carney. *Photo by Bonnie Lyons*

Tenth District *by the numbers*

27,902,000

Barrels of crude oil produced for May 2019, the highest recorded value in New Mexico's history, up 39.5 percent from May 2018.

Sources: Energy Information Administration and Haver Analytics

6.46%

Nebraska's agricultural fixed interest rate for operating loans in the state in the second quarter of 2019.

Sources: Federal Reserve Bank of Kansas City - Agricultural Credit Survey

3.7%

Missouri's growth in real nominal gross domestic product in the first quarter of 2019 over the same period in 2018.

Sources: Bureau of Economic Analysis and Haver Analytics

5,885

Oklahoma's year-to-date new privately owned housing permits through June 2019.

Sources: Census Bureau and Haver Analytics

03456431

$30.24

Colorado's average hourly wage in July 2019, 5.1 percent higher than July 2018.

Sources: Bureau of Labor Statistics and Haver Analytics

3.6%

Wyoming's seasonally adjusted unemployment in July 2019, down 50 basis points from the July 2018 level.

Sources: Bureau of Labor Statistics and Haver Analytics

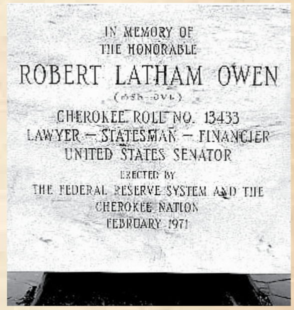
$7.47 billion

Estimated taxes collected in fiscal year 2019 (July 2018—June 2019) for the Kansas general fund, up 6.27 percent from fiscal year 2018.

Source: Kansas Division of the Budget

FROM THE VAULT

Kansas City Fed History



Left: Robert Latham Owen (Library of Congress)
Right: monument at Tahlequah (Kansas City Fed)

Federal Reserve's founding father

On Feb. 3, 1971, Kansas City Fed and Cherokee Indian officials gathered In Tahlequah, Oklahoma, to dedicate a monument honoring the late U.S. Sen. Robert Latham Owen, co-author of the legislation that formed the Federal Reserve System.

According to the *Tulsa World's* coverage of the event, about 250 people were in attendance at "Tsa-La-Gi," the Cherokee Heritage Center, when Bank President George H. Clay and Cherokee Chief W.W. "Bill" Keeler unveiled the marble monument.

Owen, a Virginia native who came to the Oklahoma Territory as a child and later became a banker, was appointed in 1907 as one of the new state's first two U.S. senators. His mother's great-great grandfather was a Cherokee chief, and Owen was one of the country's first senators of Native American descent.

Owen is remembered for being the Senate sponsor of the Federal Reserve Act, working with Virginia congressman Carter Glass. President Woodrow Wilson signed the legislation in December 1913, creating the nation's central bank. Owen served in the Senate until 1924. He died in 1947.

A section about Owen in the Kansas City Fed book "Confidence Restored: The History of the Tenth District's Federal Reserve Bank" notes another historical connection: George Washington was his ancestor, and Owen was said to carry a clip of the first president's hair.

SNAPSHOTS

Summaries of reports and analysis from Kansas City Fed economists and staff

Tracking U.S. GDP in real time

by TAEYOUNG DOH and JAEHEUNG BAE

Kansas City Fed economists have introduced a model for tracking gross domestic product that, compared with traditional methods, is a more timely assessment of the economy.

Economic Review, August 2019

Implementation delays in pension retrenchment reforms

by HUIXIN BI, KEVIN HUNT and SARAH ZUBAIRY

On average, pension retrenchment reforms are phased in over a decade, but age-related reforms can take much longer to implement.

Economic Review, July 2019

The U.S. state default of the 1840s

by HUIXIN BI and NORA TRAUM

A new measure of fiscal information looks at history and shows that fiscal news affects the evolution and contagion of sovereign default.

Research Working Paper, June 2019

Mobile payments in East Asia

by TERRI BRADFORD, FUMIKO HAYASHI and YING LEI TOH

Following the rollout of new chip cards and ongoing growth in e-commerce, merchants and policymakers are seeking ways to blunt a likely surge in remote payment fraud.

Payments System Research Briefing, June 2019

Easing the housing shortage

by JORDAN RAPPAPORT

Escaping the housing shortage likely will require a sustained shift toward multifamily construction, the freeing up of single-family homes and faster relative growth of medium-sized cities.

Economic Bulletin, June 2019

See full reports, papers, data and more at KansasCityFed.org/research.

kcFED SOCIAL SEEN

Social media highlights of our engagement across the region.

Picture this: the Kansas City Fed is now on Instagram. Follow us @KansasCityFed for photos featuring the latest goings on, people and places of the Tenth District. Visit *Instagram.com/KansasCityFed.*

1 **@KANSASCITYFED** Last week, the #KCFed hosted the State #Broadband Leaders Network-2 days of meaningful discussion and learning on effective strategies and needs for narrowing the #DigitalDivide. Thanks for joining us!

2 **KANSASCITYFED** #OKACTE is hopping today with educators learning about economic education and opportunity occupations - we're excited to be a part of this great event! #OKSummit19

3 **KANSASCITYFED** As part of our Community Involvement Program, employees on our Urban Garden team have been working hard to produce a bumper crop! To date, the team has harvested approximately 450 pounds of produce for Harvesters Community Food Network, a regional food bank. *http://bit.ly/2MiXG7M*

4 **KANSASCITYFED** The Student Board offers high-achieving high school seniors a chance to participate in sessions at the Bank throughout the school year to learn professional skills and the functions of the nation's central bank. *http://bit.ly/2J nqtFN*

5 **@KANSASCITYFED** It's a beautiful morning to be out at @kcpublicschools Summerfest 2019! We're sharing resources to help children learn to save & manage money. #Finlit #EconEd

GET SOCIAL» *Find us on Instagram, LinkedIn, Pinterest, Twitter and YouTube to follow Kansas City Fed activities, share your photos and post feedback.*

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