CoBANK

KNOWLEDGE EXCHANGE

2020

THE YEAR AHEAD:

Forces That Will Shape the U.S. Rural Economy

December 2019

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The Year Ahead: **Forces That Will Shape the U.S. Rural Economy**

To Our Customers and Business Partners

By Tom Halverson

FOR THE LAST SEVERAL YEARS, CoBank has been publishing a year-ahead report in which we do our best to describe the forces that will shape the U.S. rural economy in the coming 12 months. It is always a difficult exercise given the innate unpredictability of the geopolitical environment and the direct ties that many rural industries have to a broad and volatile global marketplace.

For 2020, the challenge is even greater than usual. The upcoming U.S. presidential election promises to be as divisive and uncertain as any in modern memory. From today's vantage point, a continuation of the status quo or a change in power both seem equally plausible. Since federal policy exerts an outsized influence over the rural economy, the November 2020 election will clearly be among the most consequential events for rural America in the coming year, as well as for the nation as a whole. The above notwithstanding, our staff economists in CoBank's Knowledge Exchange division have once again endeavored to describe how the rural economy will perform in the year ahead. They've done so with a particular focus on the industries CoBank finances – agriculture, power, water and telecommunications. Together, these sectors form the backbone of the rural economy and play a vital role in the well-being of individual rural communities. All have varying degrees of exposure to GDP growth, international trade, monetary policy, government regulation and a host of other complex factors and influences.

In general, our view is that the rural economy will continue to face headwinds in 2020 – and underperform relative to the economy of urban America. It will be a continuation of a 5-year-old

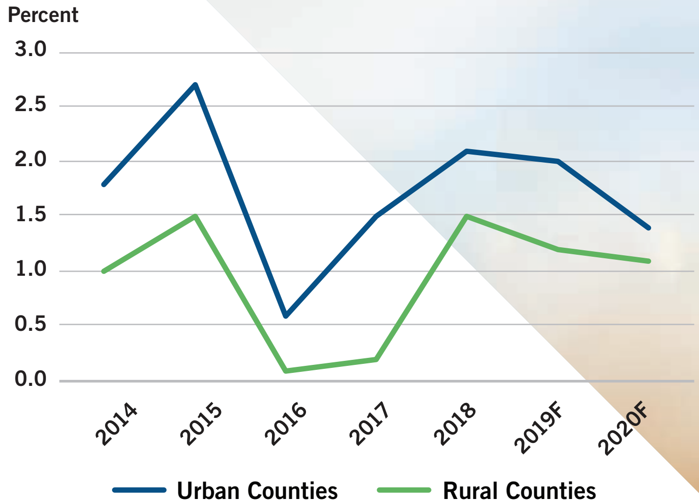
The last couple of years have demonstrated the resilience of the U.S. farm economy in the face of trade wars, extreme weather and other disruptive events.

trend, with GDP growth in rural counties averaging almost 1% less than in urban counties since 2014 *(Exhibit 1)*. It is hard to envision a material change in the trend line, absent a significant upswing in agricultural commodity prices, energy exploration, rural manufacturing and other industries upon which rural economic growth depends.

Despite that bearish prognosis, there is also a compelling argument for optimism. The last couple of years have demonstrated the resilience of the U.S. farm economy in the face of trade wars, extreme weather and other disruptive events. American agriculture remains the global leader in its ability to produce plentiful, safe, nutritious food for a growing world population. Rural America is also home to abundant sources of energy that the broader economy depends on. In addition, innovation and advances in technology continue to reshape rural industries and make them more efficient and competitive every day.

We hope you find the report valuable as you navigate the market and position your own organization for continued success. At CoBank, our goal is always the same – to provide value to you and your business and to serve as your dependable financial partner. We deeply appreciate the relationship we have with you, and we look forward to serving you in the year ahead.

EXHIBIT 1: Average GDP Growth – Urban vs. Rural Counties



Source: CoBank Knowledge Exchange

With warmest regards,

Tom Halverson

Tom Halverson
President and Chief Executive Officer

THE GLOBAL ECONOMY:

Less Trade, Slower Growth

By Dan Kowalski

AFTER A YEAR OF GDP-SLASHING TRADE tensions, and the slowest global economic growth since the depths of the financial crisis, the world's leading economies hope to turn the page in 2020. The prognosis, however, offers little to support such optimism.

The probability of a 2020 China-U.S. trade deal that meaningfully reduces tariff levels remains low. And while the worst of the trade impacts may be behind us, we don't see a catalyst ahead that will cause the global economy to turn sharply upward. The combination of expansionary fiscal and monetary policies in the first half of the year, however, should stabilize the world economy and build momentum for the second half of the year. Full-year 2020 GDP growth is likely to be between 2.5% and 2.75% – similar to our expectation for 2019 *(Exhibit 2)*.

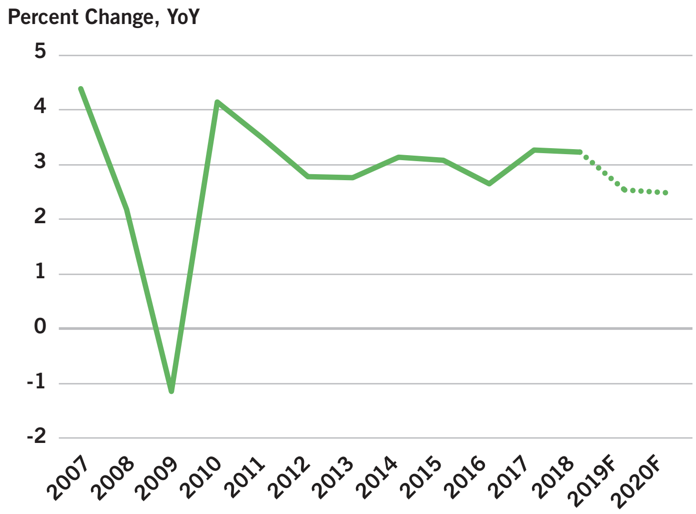
Consumer strength the world over has prevented further slowing in the global economy. Without that strength, several European countries and Japan would most likely have fallen into recession by now. The powerhouse economies of Europe, Japan, and China depend heavily on manufacturing and exports, and have been hit exceptionally hard as global trade growth has plumbed decade lows *(Exhibit 3)*.

We expect business investment and exports in all three economies to continue slowing through early 2020. Europe's growth will be weighed down by risks of a no-deal Brexit, along with the potential for U.S. automobile tariff tensions to resurface. Japan will try to keep consumers spending and prevent economic contraction despite another increase in its national sales tax, this time from 8% to 10%. China will make good on its goal to double the size of its economy between 2010 and 2020, but it will do so while growing at its slowest pace since 1990. Its GDP growth will fall below 6% as Beijing attempts to balance the need for credit while containing financial risks.

Of the regional emerging markets (EM), greater Asia is best positioned to survive the downturn with the least damage. The pain experienced in China will continue to be felt in the Pacific Rim, but lower debt and higher central bank interest rates in EMs translate into sufficient capacity for fiscal and monetary stimulus. The same cannot be said for EM economies in Latin America; several have experienced social unrest and also suffer from lower growth rates, larger debt burdens, and fiscal imbalances.

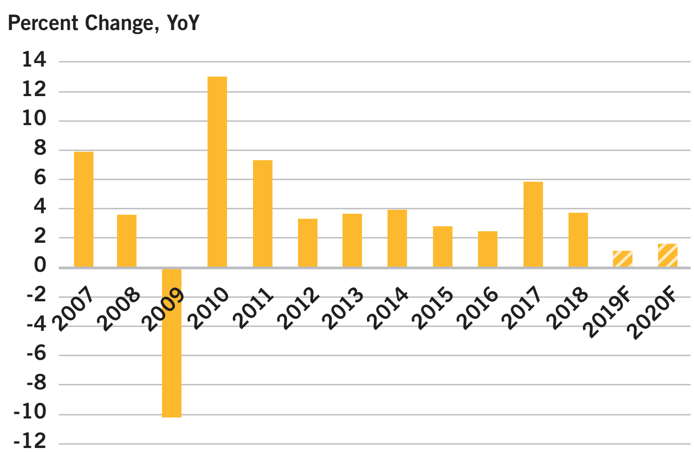
The direction and severity of the U.S.-China trade dispute will continue to have the most significant influence on the world economy in 2020 and is the factor we have the least confidence in forecasting. Negotiators may strike a phase one deal, but we expect that it would be light on substance and will not yield a meaningful reduction in tariff levels. A leveling off of trade tensions would allow global economic growth to bottom out in early 2020 before showing signs of life later in the year. However, the vulnerable state of the global economy makes it susceptible to contraction if trade conditions worsen. That would increase the risk of global recession from the current forecast of 30% to 50%. ■

EXHIBIT 2: Real World GDP



Source: Oxford Economics, CoBank

EXHIBIT 3: Global Goods and Services Trade



Source: OECD, CoBank

THE U.S. ECONOMY:

Expansion for Those Left Behind

By Dan Kowalski

THE LONGEST U.S. EXPANSION in modern history isn't over just yet. The U.S. economy will enter 2020 decisively split – powered by a resilient and confident consumer, but hamstrung by a risk-averse business sector that has stopped investing. And now that the stimulus effects from the 2017 tax reform and the 2018 spending bill have faded, the expansion will show its age, losing steam in the coming year.

Most current signals indicate that the domestic economy is on firm footing, thanks almost exclusively to the consumer. Real wage gains have soared *(Exhibit 4)*, as have equity and home values, and consumers are spending that cash. But reasons to temper forward expectations are numerous, including a declining trend in monthly job gains, weakness in manufacturing and construction, increased personal debt and corporate leverage, and a slumping economy outside the U.S. Stimulus effects from the Fed's three recent rate cuts will linger into Q1 2020, but will largely offset tariff impacts rather than spur incremental growth.

In 2019, tariffs shaved roughly 0.5 percentage points off of U.S. GDP, or $97 billion of economic activity. We cannot yet assess long-term U.S. trade gains that may come from the trade dispute, but in 2020 we assume that U.S. tariffs will remain unchanged, with a similar negative economic impact. If additional tariffs are imposed, they will drag even more on the economy. The impact will be particularly acute if new tariffs are redirected from industrial and commercial product imports to consumer good imports.

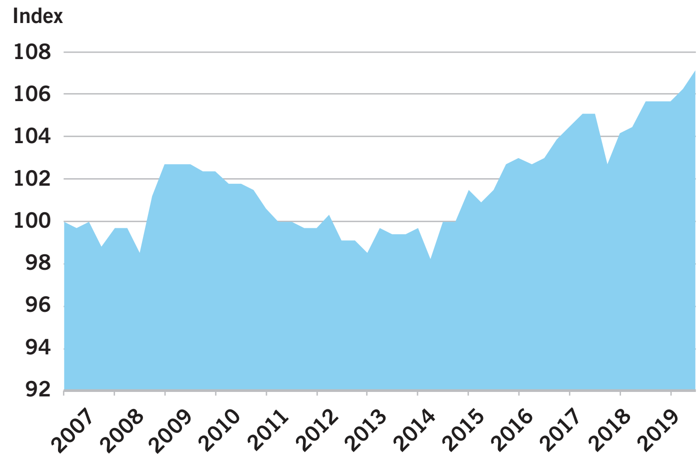
In contrast to other export-driven economies, only about 12% of U.S. GDP is generated through the export of goods and services *(Exhibit 5)*. U.S. agriculture is a major exception to this rule and has been devastated by Chinese tariffs. Most other industries have felt a limited impact and the U.S. unemployment rate has actually fallen since the beginning of the trade war, holding steady for several quarters at about 3.5%.

Despite the lowest unemployment rate in 50 years, there still appears to be slack in the labor market. Job openings have far exceeded the hire rate since mid-2017 and the labor force participation rate is still well below its pre-crisis level.

The Federal Reserve has increasingly focused on the extent to which the economic recovery is benefiting different populations of consumers. Chair Powell has acknowledged that not all consumers experienced the early benefits of the expansion equally. He has also stated that sustaining the expansion is key to extending those benefits to lower-skilled workers, those in rural areas, and others who were largely left out of the recovery for several years. There is evidence that since 2017 more people have broadly shared the benefits of economic growth, despite the continual rise in wealth inequality *(Exhibit 6)*. Four more quarters of growth will advance these gains and bring more sidelined workers into the labor pool.

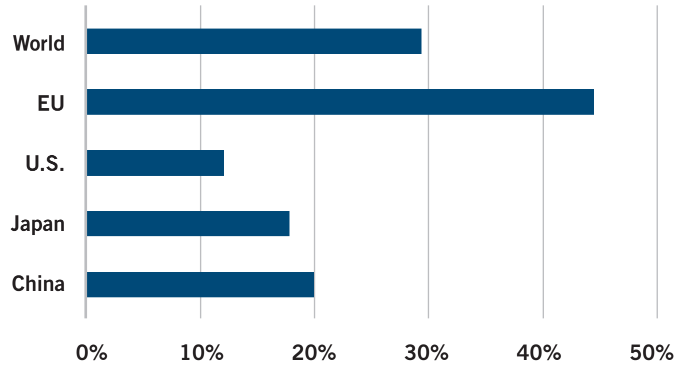
Another full year of positive economic growth is not certain, as the risk of recession in 2020 stands at roughly 25%. However, that risk has receded since October when the yield curve normalized after being inverted for five months. For decades now, a multi-month inversion has been our most reliable recession warning signal. But after the use of quantitative easing around the globe and the current use of negative interest rates in Europe and Japan, it's possible that an inversion could now be a false warning. Other poignant economic indicators would corroborate the false warning narrative, as employment, inventories, financial conditions, and consumer spending all point to blue(ish) skies in 2020. We expect GDP growth to slip only modestly in 2020, to a range of 1.75% to 2%. ■

EXHIBIT 4: Index: U.S. Inflation-Adjusted Wages



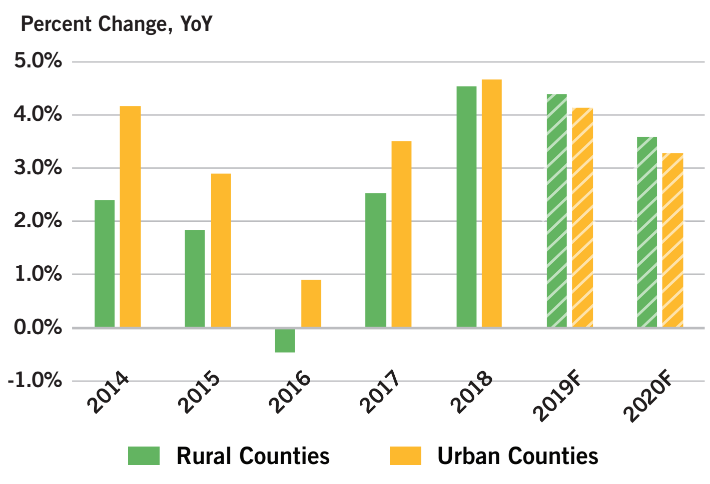
Source: Federal Reserve Bank of St. Louis, CoBank

EXHIBIT 5: Exports of Goods and Services (Percent of GDP)



Source: World Bank, CoBank

EXHIBIT 6: Personal Income Per Capita



Source: CoBank, Oxford Economics

MONETARY POLICY:

Sustain and Prepare

By Dan Kowalski

AS THE WORLD INCHES CLOSER to the end of the longest economic growth period in history, all eyes are on the central banks. These are unprecedented times, as Japan and Europe are still stimulating their economies with negative interest rates and quantitative easing. After three rate cuts in 2019, the U.S. Federal Reserve is holding a more conservative stance with its target rate near 1.5%. China has the most room to maneuver with its short term rate just under 3%.

All of these accommodative stances are made possible because inflation remains inexplicably low despite tightening labor markets. In the U.S., inflation has been well under the target of 2% since the 2008-09 financial crisis, and Fed officials are increasingly concerned about low inflation becoming a semi-permanent trap like it's been in Japan for decades. Secular stagnation (or "Japanification," as it's been termed) is now viewed by the Fed as a significantly greater risk than excess inflation.

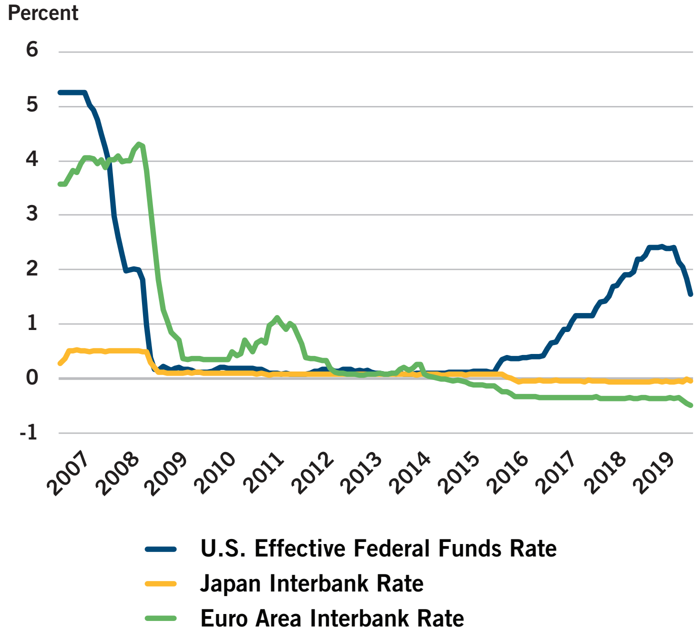
Heading into 2020, the Fed plans to hold rates steady. But if U.S.-China trade tensions worsen, the yield curve inverts, or the global downturn begins to infect the U.S., the Fed will cut rates as needed. Our baseline forecast is for no rate changes in 2020 – but given our expectation for slowing growth in the U.S. and the rest of the world, the chance of a rate cut far outweighs the risk of a rate hike. With steady rates, and U.S. economic growth predicted to be stronger than the rest of the developed world, we also expect the value of the U.S. dollar to remain near current elevated levels. We do not see a catalyst that will drive it significantly higher, however.

Chair Powell's role in 2020 is to keep the late inning expansion going and simultaneously prepare for the recession that will arrive sooner or later. The Fed and other economists have been studying the effects of quantitative easing and negative interest rates. Preliminary findings indicate that quantitative easing has a much greater impact when carried out in tandem with interest rate cuts. Thus, QE is likely to be less effective during the next downturn. Early results of negative interest rates are also uninspiring. A recent private sector analysis[1] concluded that negative rates slow growth, raise risks, make financial markets inefficient, and do not boost inflation as anticipated. These assessments will force the Fed to dig deeper into its toolbox and devise policy that could be deployed when necessary.

For now, neither Japan, Europe, nor the U.S. possess the monetary firepower needed to counteract a recession should one develop – historically, the antidote has been a reduction in interest rates of about 500 basis points combined with stimulative fiscal policy *(Exhibit 7)*. Government deficits and debt levels have surged since 2008, which also makes fiscal policy less dependable *(Exhibit 8)*. For the first time in modern history, the U.S. federal budget balance has decoupled from the unemployment rate. This means that rather than reducing our deficits while times are good, we are increasing them.

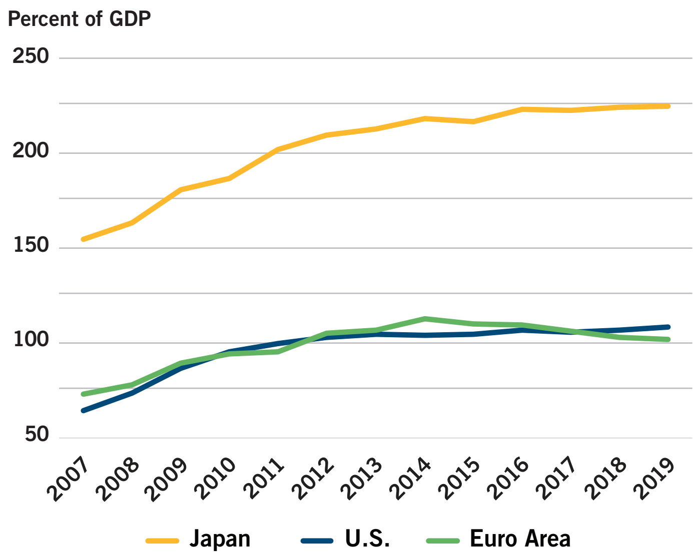
All of this leaves the developed world vulnerable to a low probability, high impact risk for 2020. We expect that the Federal Reserve, the European Central Bank, and the Bank of Japan will all have another year to prepare for the next recession. But in the meantime, the central banks will need to develop even more creative, and potentially coordinated, solutions than those used in the last downturn. ■

EXHIBIT 7: Overnight Central Bank Rates



Source: Federal Reserve Bank of St. Louis, Bank of Japan, European Central Bank

EXHIBIT 8: Central Government Gross Liabilities as a Share of GDP



Source: OECD

[1] *Kotok, David R. "NIRP, Lagarde, Trump, Dickens & Holidays." Cumberland Advisors Market Commentary. Nov. 25, 2019.*
http://www.cumber.com/cumberland-advisors-market-commentary-nirp-lagarde-trump-dickens-holidays/

U.S. GOVERNMENT:

Policy and Trade Up in the Air

By Brian Cavey

WHILE AGRICULTURE POLICY at the federal level has been wrought with uncertainty and volatility, Market Facilitation Program payments to farmers helped make up for persistently low commodity prices in the last year. The policy front for American agriculture, though, remains highly unclear in the run up to the 2020 presidential election.

The trade environment for 2020 remains hazy as well. Beyond a possible U.S.-China phase one deal, more progress with China will be a challenge. As a result, it is difficult to see trade as a bright spot in 2020.

Typically, domestic politics will slow the agenda in a presidential election year. However, the Trump administration continues to be anything but typical, with an aggressive trade agenda embroiling our biggest trading partners, including China, Canada, Mexico, South Korea, and Europe. Numerous headlines suggest that negotiations with China will move slowly and may even stall if China decides to wait out the president until after the election. Nonetheless, U.S. farmers and ranchers largely remain supportive of the president and his aggressive trade agenda heading into still greater uncertainty in 2020.

Congress will leave Washington around Dec. 20 with unfinished business. First, it is likely that Congress will have again passed a continuing resolution rather than the 12 annual appropriations bills to fund discretionary spending for the remaining nine months of fiscal 2020 due to the difficulty of reaching bipartisan, bicameral support on these measures. And, the House will likely have voted, by a close margin, to impeach the president on one or more counts, giving the Senate an early Christmas present – an impeachment trial with which to start 2020. To predict the impact those actions will have on legislating and for the election, we really only have two similar scenarios to read in the last 100 years – 1974 and the 106th Congress of 1999-2000. And there were important differences between the impacts on the legislating environment.

The three months between President Nixon's resignation and the 1974 elections saw nearly 150 public laws enacted, including appropriations measures and major retirement security and campaign finance reform legislation. And, the Vietnam War ended with the fall of South Vietnam. This productivity occurred with a GOP president who had not been elected to office and with Democrats controlling Congress. Even so, the following election saw the House and Senate Democratic majorities increase significantly while Jimmy Carter narrowly won the White House, consolidating Democratic control of government.

Fast forward to 1999 after President Clinton was impeached in the House and acquitted by the Senate. In the subsequent and final two years of his presidency, Clinton secured peace agreements in Ireland and the Middle East and secured international debt forgiveness for poor countries. He worked with both parties to enact legislation to put 10,000 police officers on the ground, improve the Head Start early childhood education program and federal workforce incentives, facilitate transition for youth aging out of foster care, and reauthorize the rules for trade with China. Some argue it was the most productive of his eight years.

The toxic atmosphere in Washington today has given way to a resolution on USMCA, and we could see resolution on agricultural labor legislation consistent with the post-impeachment collaboration between President Clinton and a Republican Congress. But that pathway is less likely than a protracted partisan fight over impeachment in the Senate. This rancor makes it difficult to advance legislation that helps agriculture, which would give either side a win for the hotly contested 2020 election. ■

U.S. FARM ECONOMY:

Trade Uncertainty Lingers

By Tanner Ehmke

IN THE ABSENCE OF A MEANINGFUL U.S.-China trade deal, the U.S. agricultural economy will continue to struggle with trade uncertainty in 2020 as questions linger as to whether USDA will continue to soften the blow of the trade war for farmers and ranchers with government payments.

Government assistance kept many farmers afloat in 2019. Producers of approved agricultural commodities benefited from two rounds of Market Facilitation Program (MFP) payments during the calendar year amid the loss of access to foreign markets, specifically China. U.S. net farm income in 2019 otherwise would have declined YoY had it not been for the expanded program payments *(Exhibit 9)*. USDA says a third round of payments may be issued in January 2020, depending on market conditions and trade progress.

Unplanted acres were not eligible for MFP payments in 2019, so agricultural producers will keep a close eye on trade negotiations between the U.S. and China. Should the president direct more MFP funding to farmers in 2020, acreage balances may shift between crops as farmers seek to maximize payments depending on timing of an announcement.

While trade impacts will remain severe for many, some agriculture sectors will see stronger exports and higher prices. Rising animal protein and dairy exports will be a bright spot for producers in 2020, with African Swine Fever outbreaks abroad causing a sharp culling of the world's swine herd and more import demand for alternative proteins.

U.S. farmers and ranchers, though, will continue to struggle against stubbornly steady or rising production and living expenses. According to an October 2019 survey by *Land Owner* newsletter, 66% of respondents expect their local area cash rents to remain stable in 2020.

Meanwhile, rising health insurance costs continue to eat into farm income. According to the Kansas Farm Management Association, average health insurance costs for Kansas producers doubled from 2008 to 2017, adding further financial stress.

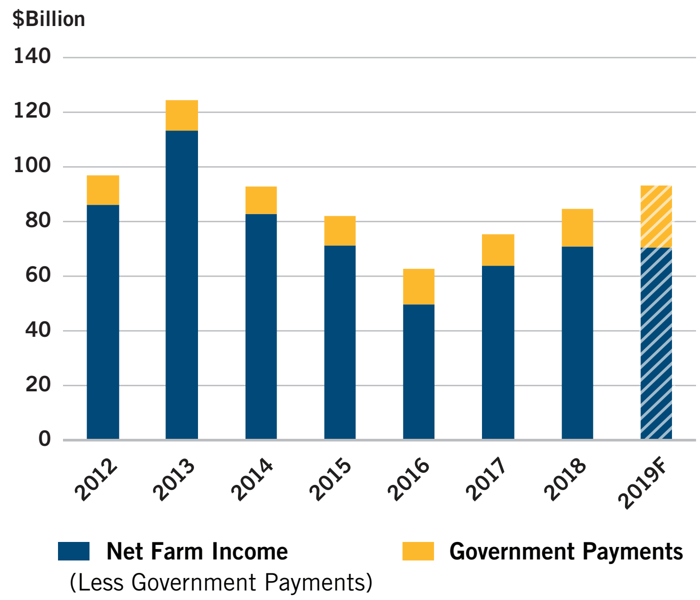
Amid persistently low commodity prices and rising costs, we expect U.S. farmers and ranchers to continue struggling with low and declining working capital *(Exhibit 10)*. We expect farm debt, already at record levels, to continue climbing, as credit quality in farm loans declines, particularly for grain and dairy producers.

However, stable farm real estate values have helped farmers. The resiliency of farmland values, despite the steep drop in net farm income over the years, has allowed farmers to restructure debt and address tight cash flow and liquidity crunches. The *Land Owner* survey found that 55% of respondents expect land values will remain unchanged in 2020. Kansas City Federal Reserve's recent surveys of agricultural lenders found that stable farm real estate values have supported farm finances and will help determine credit conditions in 2020. Most surveyed bankers expected a modest increase in asset liquidation amid tighter borrower liquidity.

Farmers are also benefiting from the Fed's three interest rate cuts in 2019. The low interest rate environment also supports the value of assets like farmland, helping preserve farm equity.

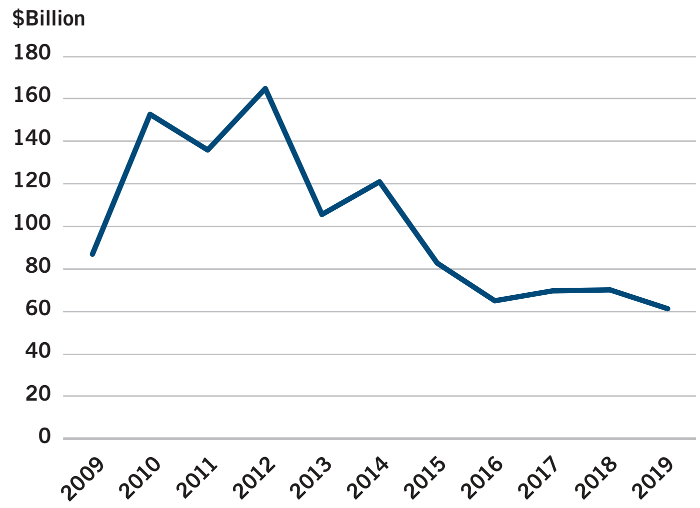
In August 2019, Congress passed the Family Farmer Relief Act, expanding the Chapter 12 bankruptcy debt limit for farmers and fishermen to $10 million, up from the previous limit of $4.3 million. It allows family farmers to avoid liquidation or foreclosure, and instead repay all or part of their debts over three to five years. Filings for the year ended September 2019[1] reached the highest level since 2011, led by Wisconsin, Georgia, Nebraska, and Kansas. The expanded bankruptcy debt limit will help some farmers stay in business in the year ahead. ■

EXHIBIT 9: U.S. Net Farm Income



Source: USDA-ERS. Data as of November 27, 2019

EXHIBIT 10: U.S. Farm Working Capital



Source: USDA-ERS. Data as of November 27, 2019

[1] *https://www.uscourts.gov/statistics-reports/caseload-statistics-data-tables*

SPECIALTY CROPS:

Water and Labor in the Spotlight

By Crystal Carpenter

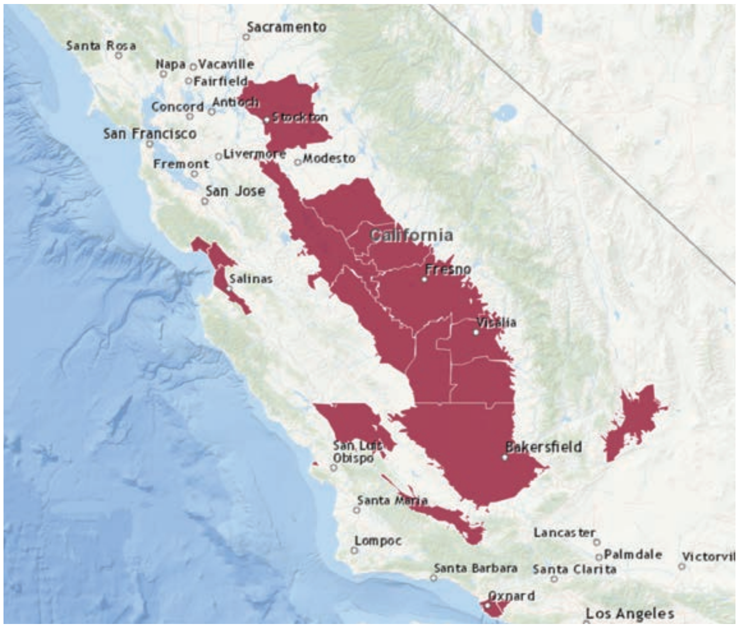
OVER THE NEXT YEAR, the fruit, nut, and vegetable markets will continue to face rising production costs from mounting regulations, particularly as they relate to controls over groundwater in California.

2020 will be a watershed year in California. Regulations under California's Sustainable Groundwater Management Act (SGMA), which passed in 2014, are about to go into effect. SGMA requires local governments and water agencies of high and medium priority basins *(Exhibit 11)* to halt overdraft and bring groundwater basins into balanced levels of pumping and recharge. Jan. 31, 2020 is the date when critically-over drafted high and medium priority basins are to be managed under a groundwater sustainability plan (GSP). A GSP will be required for all other high or medium priority basins in January 2022.

Local control in each of the hundreds of small sub-basins will be held under a Groundwater Sustainability Agency (GSA) that develops and implements GSPs to manage the groundwater within the basin. While the exact impacts are unknown, highly debated, and could be highly variable between regions, SGMA could potentially cause acreage shifts between crops of varying water needs and between geographical areas with varying levels of groundwater dependence. It also has the potential to reduce the overall acres in California crop production, raise production costs for farmers, and limit yield prospects.

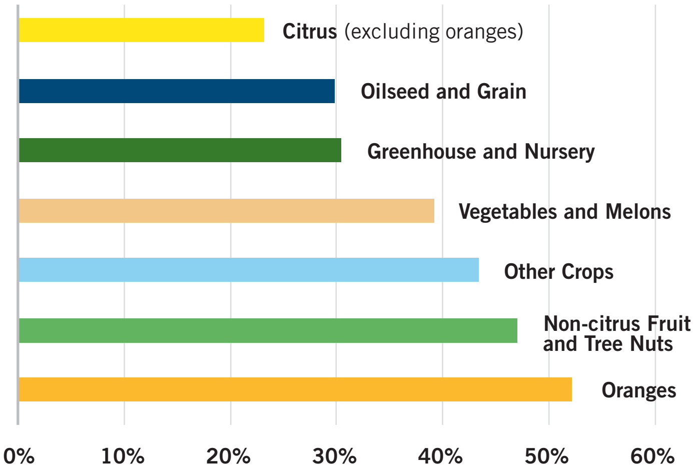
Other government action in 2020 could have a favorable impact on specialty crop growers. The Farm Workforce Modernization Act currently being debated in Congress is a hopeful sign for an improved regulatory environment for agricultural labor. If passed, it would help ease the tight labor supply plaguing agriculture. The federal legislation would provide pathways to legal status for agricultural workers, improve the availability of farmworker housing, limit wage fluctuations, and streamline the H-2A guest worker program for agricultural employers. It would also create an additional 40,000 green cards per year for agricultural workers. The bill comes at a time of growing tightness in the U.S. labor market and ever-rising costs of labor in production agriculture, particularly in specialty crops *(Exhibit 12)*. ■

EXHIBIT 11: Critically Overdrafted Basins



Source: Department of Water Resources, State of California

EXHIBIT 12: Growth in Average Annual Wages for Agriculture Workers by Crop, 2008-2018



Source: Quarterly Census of Employment and Wages, Bureau of Labor and Statistics

GRAIN, FARM SUPPLY, BIOFUELS:

Time to Transform

By Ken Zuckerberg

FOLLOWING A YEAR OF INTENSE COMPETITION, 2020 will likely be another challenging year for the grain, farm supply, and biofuels complex. The sector has been negatively impacted by trade uncertainty, continuing shifts in demand, a strong dollar, weather volatility, and financial stress in the farm economy. For some, these structural challenges offer an opportunity to reinvent business models to ensure long-run resiliency.

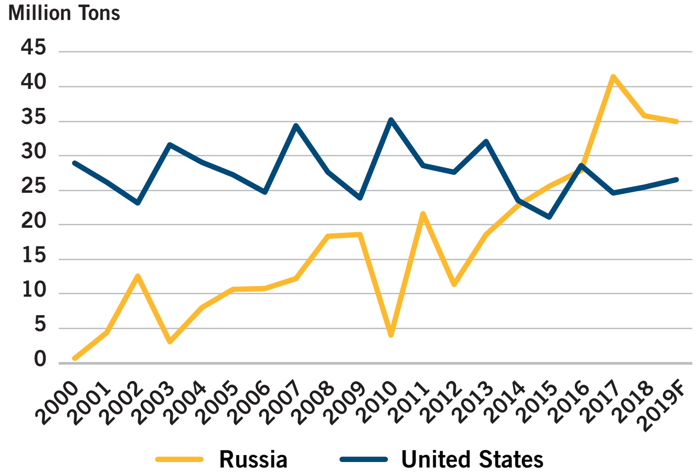
Challenges for the grain sector will persist in 2020, fueled by commodity price pressure, policy uncertainty, and export weakness amid growing global supply abundance, especially for corn and soybeans as South America continues to expand acreage. Brazil in particular is expected to produce record corn and soybean crops that will vie for export market share, especially into China. U.S. wheat producers and exporters, though, may benefit from an improved export pace in 2020 with the Russian wheat crop struggling with an ongoing drought that may hamper Russian export competitiveness *(Exhibit 13)*.

China's importance to U.S. agriculture in general – and soybean exports in particular – is difficult to overstate. Ongoing tensions and lack of a comprehensive deal remain major risk factors for U.S. grain producers and exporters. The future of U.S.-China trade relations and other key agriculture trading partnerships will be critical for future competitiveness. While it is impossible to predict the outcome, the near-term outlook on China trade is tenuous and raises concerns of long-term loss of market share for U.S. grain and oilseed exports *(Exhibit 14)*. Growing domestic demand remains the bright spot for U.S. grains and oilseeds in the year ahead.

Biofuels also face challenges in 2020. In October, the Environmental Protection Agency and USDA agreed to address waivers to the Renewable Fuel Standard for so-called "hardship" cases. The agreement's net effect is an annual blending floor of 15 billion gallons of conventional ethanol beginning in 2020, while also requiring the industry to meet the volume obligation for biomass-based diesel fuel. EPA will also retain authority to exempt small refineries from the annual blending requirements. Trade tensions continued to negatively impact an already struggling domestic biofuel industry during 2019. U.S. ethanol production, according to the U.S. Energy Information Administration, is expected to fall by 1.9% in 2019 to 15.8 billion gallons and remain flat in 2020 *(Exhibit 15)*.

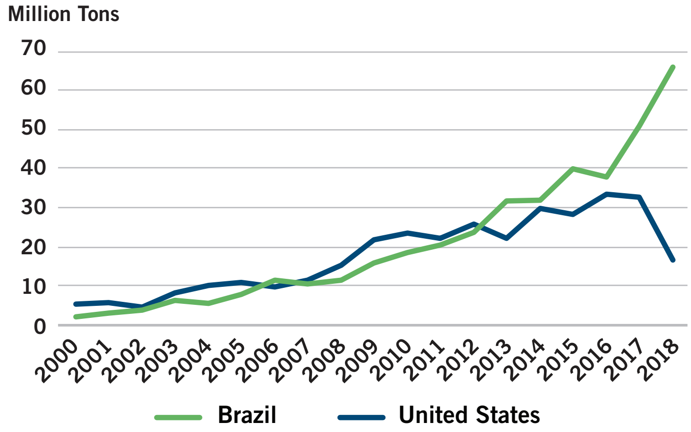
The outlook for farm supply companies is mixed and continues to be heavily influenced by weather. Agronomy departments in 2019 struggled with a difficult growing season wrought with weather complications that compressed margins across the farm supply sector. Financially strapped farmers are also increasingly becoming price conscious as online retailers seek to grow their footprint. To improve its value proposition, this sector is actively pursuing vertical and horizontal consolidation. The major seed and agrochemical companies will face continued headwinds in 2020 due to value-based input purchases by cash-constrained producers. Ag retailers in the meantime are anticipating more acres to shift to corn and out of wheat and soybeans in 2020 as farmers seek to recover from the difficult 2019 growing season. ■

EXHIBIT 13: Wheat Exports



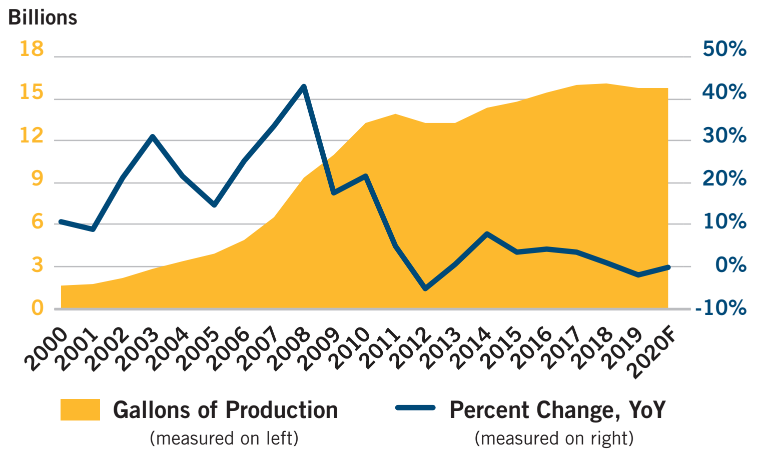
Source: USDA-FAS

EXHIBIT 14: Soybean Exports to China



Source: Customs Data via Global Trade Tracker

EXHIBIT 15: U.S. Fuel Ethanol Production



Source: Energy Information Administration (EIA) and Gro Intelligence

ANIMAL PROTEIN AND DAIRY:

Exporting Your Way to Success

By Will Sawyer and Tanner Ehmke

IN RECENT YEARS THE U.S. DAIRY and animal protein sectors have become increasingly dependent on demand abroad to alleviate oversupply situations. With dairy and animal protein production looking toward another year of increased production in 2020, a rebound in exports next year will be critical to profitability in both sectors.

From 2015 to 2018, dairy exports increased by 22% *(Exhibit 16)* and animal protein (beef, pork and chicken) exports increased by 18% *(Exhibit 17)*. That trend has sputtered this year with beef and dairy exports below year-ago levels and pork and chicken up only modestly. The impact of retaliatory tariffs with a number of key export customers and a strong dollar have taken their toll.

The outbreak of African Swine Fever (ASF) in China and Asia broadly is a double-edged sword for U.S. animal protein and dairy sectors. In animal protein, the Asian market is experiencing a shortfall in pork supplies to the tune of over 10 million tons which will only expand over time. China's protein shortage is already driving increased pork exports from the U.S. that will likely continue, barring additional political disruptions between the U.S. and China. Conversely, the decline in China's hog herd from ASF, coupled with burdensome retaliatory tariffs, has cut U.S. whey and lactose exports as a feed additive to that market by over half. Again in 2020, U.S. trade policy will have a significant direct impact on sector profitability.

The trade environment for 2020 is looking up. The trade agreement with our largest agricultural trading partners, Mexico and Canada, will finally see resolution with the Congressional approval of NAFTA's replacement, USMCA. While the trade agreement has few changes for animal protein compared to NAFTA, the passage means more for securing dairy's market access as Canada and Mexico represent roughly 40% of the export market. Passage of USMCA will also increase U.S. market share into Canada with reforms to

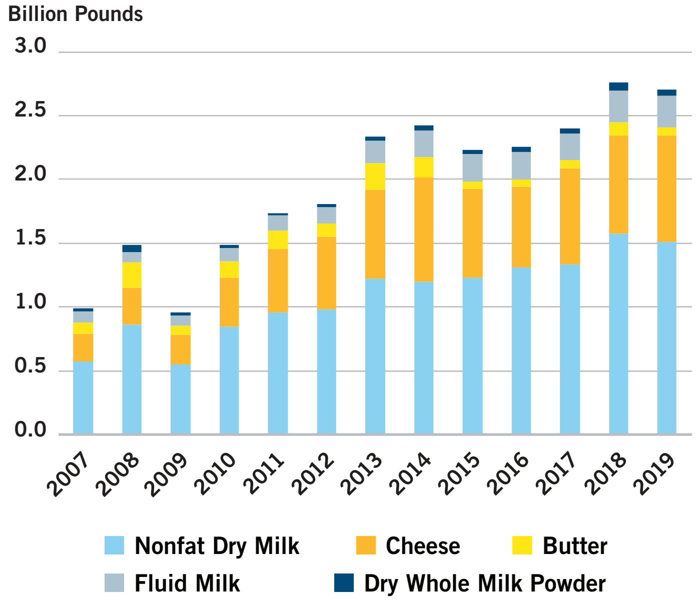
Canada's pricing program. Japan and the U.S. have also agreed to a new trade deal that will enable U.S. animal protein exporters to compete with CPTPP countries when it goes in to effect in January 2020.

Future domestic consumption growth will be a major question for the beef, pork and chicken sectors next year. Per capita consumption of animal protein will likely set a new record in 2019 of nearly 205 pounds on a retail weight basis, surpassing the previous peak of 2006. With the average American now consuming an extra 20 pounds of animal protein annually versus five years ago, we struggle to see a scenario where protein consumption can do anything but plateau going forward.

Overall dairy consumption in the U.S. will remain strong in 2020 as Americans continue eating more cheese and butter, but fluid milk will likely continue its long-term decline – with the exception of ultra-filtered milk growing at an exponential rate. U.S. processing capacity will be expanding, with the first greenfield cheese plant in many years to be operating by the end of the year. Plant expansions are in cheese, ultra-filtered milk, and niche/specialty products.

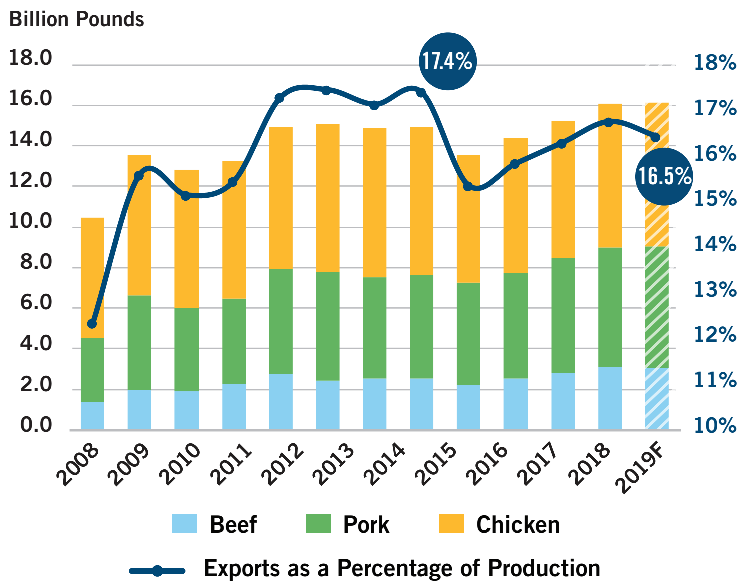
Strong demand and rising exports, though, will not erase financial stress at the farm level. Some producers of beef, pork, poultry, and dairy will experience stress from higher feed costs due to lower regional crop yields this fall. The drop in U.S. dairy farm numbers will likely continue, but at a slower pace in 2020. ■

EXHIBIT 16: U.S. Dairy Exports



Source: USDA-FAS

EXHIBIT 17: U.S. Animal Protein Exports



Source: USDA-ERS

RURAL ELECTRICITY:

Demand Grows for Cleaner, Lower-Cost Power

By Tom Binet

IN 2020, COMPANIES throughout the electricity supply chain are likely to face heightened, simultaneous demands for cleaner and less expensive power generation. These pressures reflect the intense popular concerns about our environment and our economy, two issues that resonate with voters of both parties.[1] These issues are likely to gain even greater prominence in the popular consciousness as presidential candidates amplify their messaging ahead of the election.

To be sure, most utilities are well-positioned to know their respective customers' needs and wants. Yet, as of late 2019, there appears to be a critical mass of national sentiment in favor of a near-term transition to a lower-carbon economy. Electric utilities will be pressured to ensure that their power supply and customer engagement strategies are both aligned with these rising pressures.

While concern about climate change has been ratcheting up for years, it has become a central issue in today's popular conversation. And the conversation isn't just relegated to left-leaning individuals. A survey of over 24,000 American adults suggests that 68% support setting strict limits on CO_2 emissions from existing coal-fired power plants *(Exhibit 18)*. Moreover, such concerns are not relegated to urban city centers.

A similar percentage of survey respondents – 62% on average – support requiring electric utilities to get 20% of their power generation from solar, wind, or other renewable resources *(Exhibit 19)*.

In many rural communities, these concerns are likely to manifest in more numerous and more vehement calls for greater renewable power

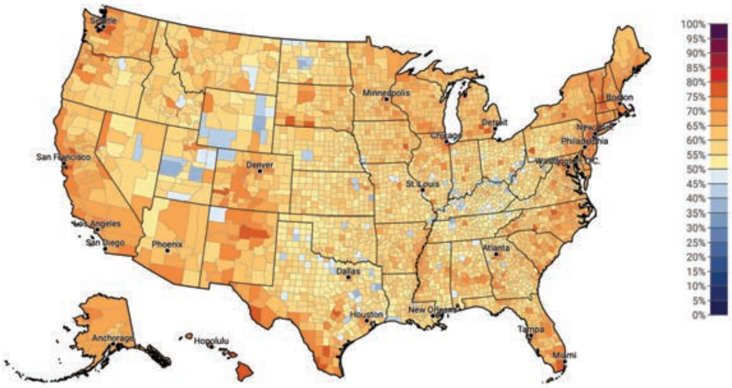
[1]Climate change will be an issue for most voters in 2020 – CBS News poll. Sept. 16, 2019. https://www.cbsnews.com/news/cbs-news-poll-climate-change-will-be-an-issue-for-most-voters-in-2020/

generation. The same customers are also likely to advocate for more incentives for cleaner customer-owned resources, such as behind-the-meter solar and electric vehicles (EVs). While meeting such demands will be rather straightforward for those systems exhibiting robust load growth and economic development, such investments are likely to prove much more challenging in those communities that rely on thermal power generation for significant earned income.

The task of justifying multi-million dollar expenditures on new (front of meter) renewable resources will be easier in 2020 as the unsubsidized costs of solar, wind, battery energy storage, and flexible natural gas-fired resources continue to decline. However, utilities' investments in clean power generation can place some temporary upward pressure on customers' bills. This fact, coupled with the various macroeconomic headwinds on the horizon will mean that utility managers could face conflicting demands from consumers.

To navigate these challenges, utility managers will create and deepen opportunities for customers to understand and engage with their cooperatives. They will continue to anticipate calls for input into resourcing and financial decisions, including scrutiny of utility governance processes, and will do so while keeping the lights on in their communities. ■

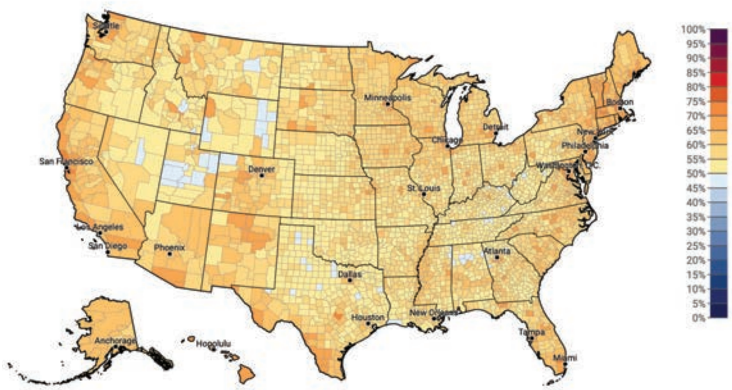
EXHIBIT 18: Estimated Share of Adults who Support Setting Strict CO_2 Limits on Existing Coal-fired Power Plants



Average = 68%

Source: Yale Program on Climate Change Communication

EXHIBIT 19: Estimated Share of Adults who Support Requiring Utilities to get 20% of Electricity from Renewable Sources



Average = 62%

Source: Yale Program on Climate Change Communication

RURAL COMMUNICATIONS:

Investors Have Come to Buy

By Jeff Johnston

RURAL AND REGIONAL telecommunications operators will become take out targets in 2020 for investors and strategic buyers as the number of available mid-sized fiber transport companies dry up. Over the last several years, multi-billion dollar infrastructure funds and strategic buyers have been acquiring mid-sized fiber transport companies. Demand for these companies has been so strong that valuations are reaching levels that were unthinkable a few years ago.

Now that most of these companies have been acquired, investors and strategic buyers are beginning to acquire smaller regional telcos. The aforementioned buyers are looking for operators that have strong cash flows, are invested in fiber, and are near tier two and three cities. In 2020, mergers and acquisition activity in rural markets should be brisk as the growth in data traffic offers attractive returns for investors, and opportunities for strategic buyers to gain scale and access to new markets. Prospective sellers are looking for new sources of capital by partnering with private equity sponsors/ infrastructure funds, or to cash out by selling 100% of their business.

An ongoing rural telecom issue in 2020 will be the Trump administration's ban on Chinese-made telecom equipment, with Congress planning to help pay for the hard costs associated with replacing the equipment. But the opportunity costs associated with it could negatively impact rural consumers and operators.

Bipartisan legislation proposed from the House Energy and Commerce Committee would provide up to $1 billion to help pay for the cost to rip and replace non-compliant equipment from rural networks. If approved, it will go a long way to cover the equipment and labor costs, but rural operators would be forced to buy equipment from non-Chinese suppliers, which have historically been much more expensive. Also, there is an opportunity cost associated with rip and replace. The effort will consume operators' engineering resources and take several years to complete. This will prevent most companies from working on new products and services for their rural customers.

2020 will also bring the launch of the Rural Digital Opportunity Fund (RDOF), the latest broadband incentive program from the Federal Communications Commission (FCC) and its largest effort to close the urban-rural digital divide. RDOF is a $20 billion broadband funding program that will run for 10 years by repurposing legacy landline support from the Universal Services Fund.

The FCC is targeting underserved/unserved areas. Similar to what it used for the Connect American Fund phase II (CAF-II) auction, the FCC will employ a reverse auction to distribute the funds. Electric Distributors and Wireless Internet Service Providers secured a disproportionate amount of funding in the CAF-II reverse auction. For the RDOF, it's possible we could see a similar outcome. RDOF is yet another example of how the FCC is incentivizing broadband network builds versus providing landline support to rural local exchange carriers. ■

Contributors

KNOWLEDGE EXCHANGE is an innovative knowledge-sharing initiative that is designed to provide strategic insights about trends, structural change, and policy directives within the key rural industries served by CoBank. It draws upon the expertise within CoBank and the rest of the Farm Credit System, the broad perspective of outside consultants and academics, and the first-hand knowledge and experience of our customers to enhance our collective understanding of emerging business opportunities and risks.

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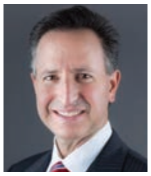

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About CoBank

COBANK IS a $136 billion cooperative bank serving vital industries across rural America. The bank provides loans, leases, export financing and other financial services to agribusinesses and rural power, water and communications providers in all 50 states. The bank also provides wholesale loans and other financial services to affiliated Farm Credit associations serving more than 70,000 farmers, ranchers and other rural borrowers in 23 states around the country.

CoBank is a member of the Farm Credit System, a nationwide network of banks and retail lending associations chartered to support the borrowing needs of U.S. agriculture, rural infrastructure and rural communities. Headquartered outside Denver, Colorado, CoBank serves customers from regional banking centers across the U.S. and also maintains an international representative office in Singapore.

CoBank's Knowledge Exchange Division welcomes readers' comments and suggestions. Please send them to KEDRESEARCH@cobank.com.

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