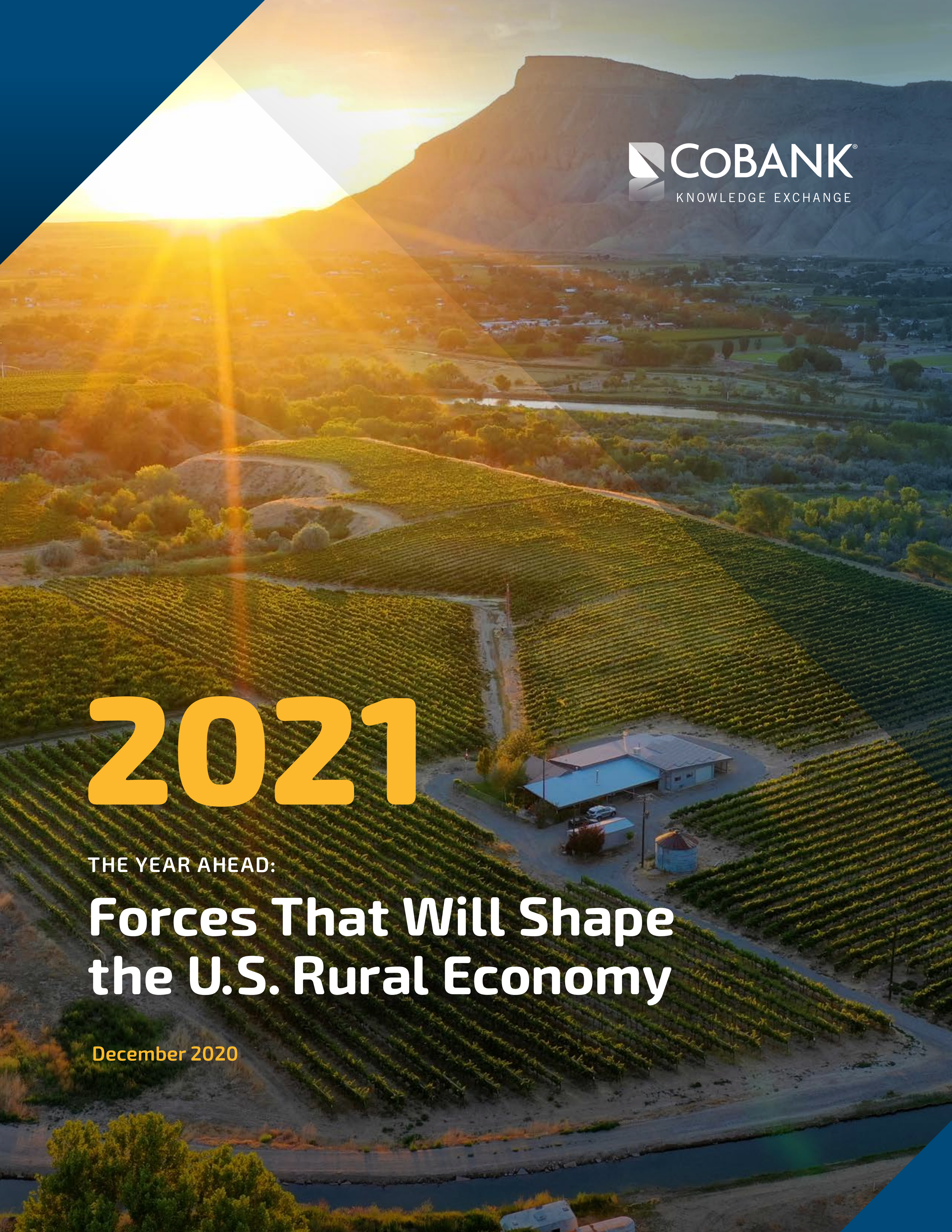


CoBANK
KNOWLEDGE EXCHANGE

2021

THE YEAR AHEAD:

Forces That Will Shape the U.S. Rural Economy

December 2020

2021

THE YEAR AHEAD:

Forces That Will Shape the U.S. Rural Economy

COBANK KNOWLEDGE EXCHANGE

To Our Customers and Business Partners

By Tom Halverson

APPROXIMATELY ONE YEAR AGO, I wrote in the introduction to the 2020 edition of this report that the greatest source of uncertainty facing America's rural economy was the outcome of the U.S. presidential election and the impact it would have on federal policy. COVID-19 had yet to emerge in China, and the idea that a viral pandemic would wreak political, social and economic havoc across the globe wasn't on anyone's radar. It was a tail risk of the smallest order.

Fast forward to today, and the outbreak of COVID-19 has arguably become the single most consequential event in world history since the fall of the Berlin Wall in 1989. Policymakers, industries, companies and individuals struggle every day to adapt in the continuing pandemic environment. While the recent development of new vaccines offers a substantial measure of hope, it remains difficult to foresee from today's vantage point when exactly the virus will be vanquished or fade from the world.

If the experience of the past year has taught us anything, it's that predicting the future is an uncertain business. Uncertainty is not an excuse, however. The end of 2020 is upon us, which means that all business leaders should be looking forward into the coming year and formulating a view about challenges and opportunities that lie ahead. At CoBank, one of the ways we do that is through the publication of this report from our Knowledge Exchange team, which captures thought and perspective from our staff economists about key trends facing the rural economy. For 2021, of course, our primary focus is the continuing impact of COVID-19 on the economy, policy and the various industries we finance. We hope that our customers and other partners find the report useful as they devise strategies and courses of action for the year a head and position their businesses to survive and thrive in the future.

If the experience of the past year has taught us anything, it's that predicting the future is an uncertain business.

In addition to the insights on the pages that follow, I would ask readers to consider and reflect on a handful of key themes that have helped me personally to understand and frame the events of the past year. They are as follows:

- **Tail risks cannot be ignored.** In the first two decades of the 21st century, the United States has experienced three so-called "Black Swan" events that have upended the status quo and sent shock waves through the economy and our political system. The first was the September 2001 terrorist attacks on New York and Washington. The second was the financial crisis of 2008-09. The third is COVID-19. We should all understand by now that such events, though highly unlikely in and of themselves, do occur with regularity over time. Businesses must find ways to incorporate the risk of such events into their financial and operating plans, and ensure they have the financial strength and flexibility to weather unforeseen storms.

- **The United States must address its fiscal imbalances once COVID-19 is behind us.** American policymakers deserve praise for acting swiftly and decisively to inject massive doses of fiscal and monetary stimulus to our economy following the onset of COVID-19. Doing so was the only right answer in the short term. However, those actions have also greatly exacerbated our nation's public debt problem. Federal debt as a percentage of GDP is now as high as it was at the end of World War II, and there is no credible plan on the table to bring it under control. The executive and legislative branches of government must work together soon to find the right combination of spending cuts and tax increases to put us on a sustainable long-term path.

- **Broadband is essential.** It is sobering to imagine what the past year would have been like for the U.S. economy without a mature internet and the ability to manage complex business, government and educational institutions remotely. Broadband access is vital for government, commerce, learning, entertainment and many other aspects of daily life. We must continue to make broadband ubiquitous and affordable, especially in rural communities where access is limited compared to urban areas.

Despite the ravages of COVID-19, America's economy has performed remarkably well throughout the crisis.

- **Our economy remains the strongest and most adaptable in the world.** Despite the ravages of COVID-19, America's economy has performed remarkably well throughout the crisis. Growth and employment have rebounded much more strongly than what was forecast in the early weeks of the pandemic. Asset values, bolstered by low interest rates from the Federal Reserve, have recovered and pushed past pre-pandemic levels. The U.S. financial system, despite taking heavy loss reserves, has remained strong. When you stand back and look at the total picture, it's a remarkable testament to the strength and adaptability of the private sector in this country, and of the resilience that Americans can still bring to bear in the face of adversity.

I'll close this introduction with an expression of gratitude to our customers and all rural business leaders for what they have done over the past year to keep their companies and the rural economy running through the pandemic. It has been a heroic effort on your part, and it is a privilege for all of us at CoBank to serve you and stand by you as your financial partner.

With warmest regards,

Tom Halverson

Tom Halverson
President and Chief Executive Officer

THE GLOBAL ECONOMY:

Recovery is Competition

By Dan Kowalski

AGAINST ALL HOPE that COVID would fade in 2020, the virus will continue to steer the global economy in 2021. Global economic recovery was vastly uneven in 2020, and given the current surge in virus cases, we expect that to remain the case in 2021. For countries still battling the virus and waiting for a broadly-available vaccine, economic recovery will be much stronger in the second half of the year than in the first. Our confidence in GDP forecasts has increased since mid-2020, but uncertainties related to the dissemination and uptake of vaccines mean timing the recovery is still very difficult.

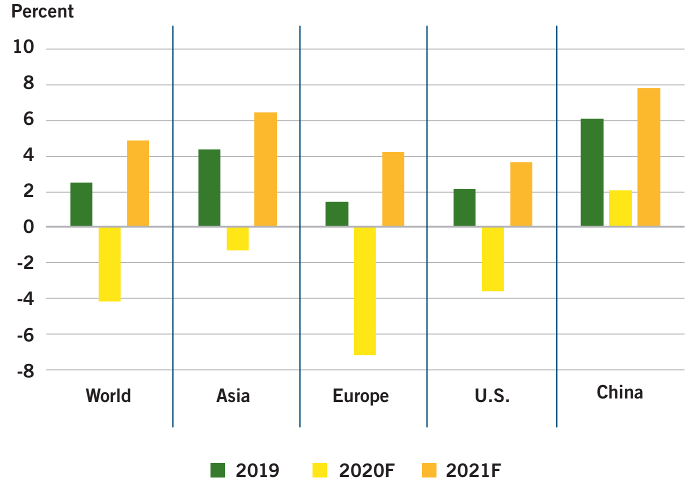
Collectively, the pandemic has had a smaller impact on the GDPs of emerging economies than the advanced economies. This economic growth varies considerably, though, as Asia has significantly outpaced Latin America, Africa, and developing Europe. This will give Asia a demonstrable advantage in 2021.

Of all major economies, China recovered the fastest from the pandemic and will finish 2020 in remarkably good economic shape. China returned to growth in 2020 through state-funded infrastructure projects while its citizens remained cautious and significantly increased savings. That will change in 2021 as consumer confidence rises and restrictions ease. China is expected to account for a full one-third of global growth in 2021, furthering its ambitions to expand its economic power and influence. The longer the Western world takes to recover, the greater the advantage China will seize. We project 8% growth for China next year.

Among the major economies, Europe has suffered the most during the pandemic. The ongoing Asian recovery has supported manufacturing and trade in Europe, but persistent weakness in other European sectors will continue to be a drag into 2021. COVID cases have been declining from their peak since early November, but the economic damage persists. November was the fourth consecutive month of deflation in the eurozone, and the 19-country bloc economy will shrink in Q4 before limping back into the black in Q1 2021. The rollout of vaccines also poses a challenge for the region. Europe's implementation plan allocates vaccines to each country, but each country will choose how to deliver the vaccines to its populace. The open borders and lack of a uniform approach will slow the recovery. We estimate 4% growth for Europe in 2021, but that will not be enough to get the economy back to its pre-pandemic level.

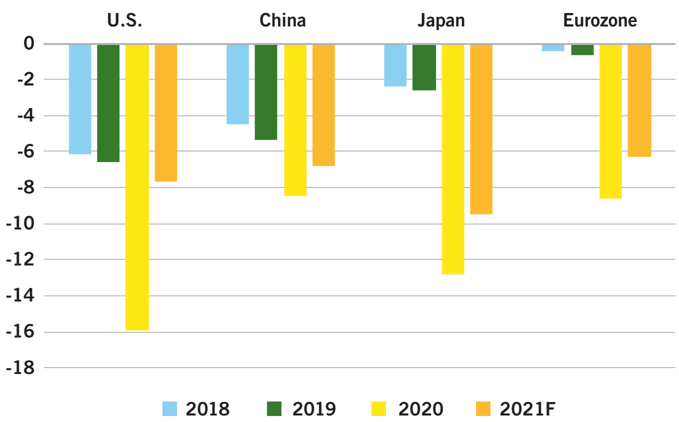
Perhaps one of the longest lingering impacts from COVID will be the mountains of debt absorbed by most governments around the world. Most major economies dipped into deficit spending in 2020 at a level never seen during peace time. While widely viewed by economists as necessary and prudent, this debt could become a serious burden years into the future. Interest rates are very low now, but won't be forever, and thus the risk is deferred to the future. For 2021, deficits (as a share of GDP) are expected to remain sizable, but will shrink to a greater extent in the U.S. than elsewhere. ■

EXHIBIT 1: Annual GDP Growth



Source: U.S. Bureau of Economic Analysis, China National Bureau of Statistics, Oxford Economics

EXHIBIT 2: Government Spending Deficits as a Percent of GDP



Source: St. Louis Federal Reserve, China Ministry of Finance, OECD, Statistical Office of Europe, Oxford Economics

THE U.S. ECONOMY:

COVID is Still the Economy

By Dan Kowalski

A POST-COVID BOUNCE IS COMING to the U.S. in 2021 – but it will likely be a while until it arrives. The current wave of cases may peak before the new year, but the health and economic impacts will last well into 2021. And while stay-at-home orders will be less severe than in the spring, consumers will choose to limit their time (and spending) in public until it feels safer.

Much of the year's economic trajectory will depend on fiscal policy decisions made over the next couple months. Roughly 10 million Americans who lost their jobs early in the pandemic have yet to find work, and many of them are receiving some form of public support. If and how Congress chooses to fund further relief will impact the speed of the recovery.

But the real speed limit for the economy is the arrival and reach of a vaccine. Most scientists now agree that most Americans will have access to a vaccine by the end of Q2 2021. If proven true, questions remain: How many Americans will choose to get the vaccine? And how soon after will Americans feel safe enough to resume pre-pandemic activities? Regardless of the answers, this timeline pushes the expected burst of pent-up consumer demand into the latter half of 2021. In the first half, the economy must recover from a very slow Q4 2020 and many businesses will be just trying to hang on.

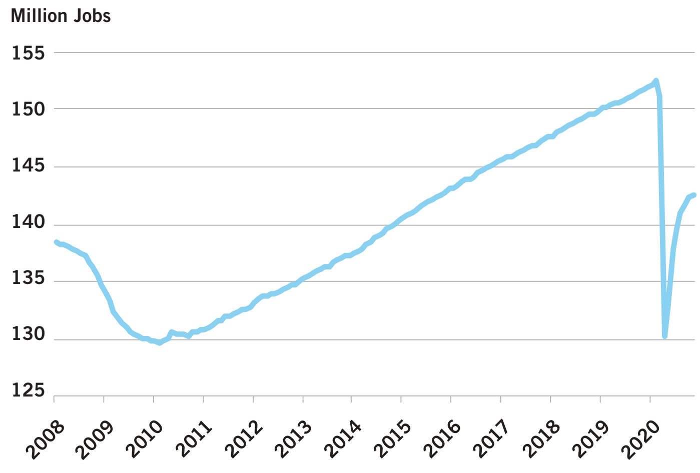
Optimism, however, should spur investment and capex decisions in the first half of the year. Opportunistic firms will attempt to time the comeback with new investments into the leisure and broader services sectors. Not all things will return to the way they were, though. Some industries may never fully recover and many workers will be forced to find their way to a new occupation, similar to the structural employment shakeup that followed the global financial crisis (GFC).

There will be fortunate differences this time around, however. The type of long-term scarring that was so damaging to the U.S. financial and real estate sectors post-GFC should not develop in the wake of the pandemic. So while the services sector will have a lot to recover from, the sector can point to some time later in 2021 and anticipate that the financial system and much of the consumer demand will be there.

The Biden administration will likely need to work with a split Congress, which will limit fiscal spending. President-elect Joe Biden has made it clear that he will focus on the domestic economy first by attempting to create equitable opportunities and shoring up domestic industries. But he will bring a new approach to trade with China, too. Current tariffs will remain in place to start, but we expect Biden will use them to negotiate for new terms and will entice U.S. allies to apply multilateral pressure.

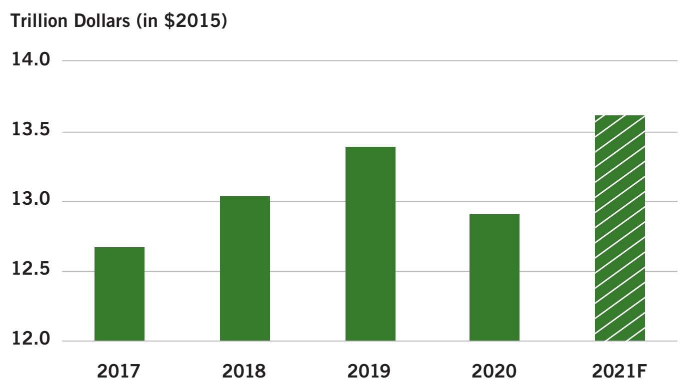
The coming year will be a recovery year for most Americans and the businesses that make up the economy. The early part of the year should look very different than the latter, but in total, the economy is estimated to grow about 4% after a retreat of roughly 4% in 2020. ■

EXHIBIT 3: **U.S. Nonfarm Payroll**



Source: St. Louis Federal Reserve

EXHIBIT 4: **U.S. Consumer Spending**



Source: US Bureau of Economic Analysis, Oxford Economics

MONETARY POLICY:

Less Dramatic but No Less Critical

By Dan Kowalski

IF THERE IS AN ECONOMIC HERO amidst the pandemic, it is most certainly the central banks. The Federal Reserve in particular stabilized the global financial system within weeks of the pandemic taking hold, and it continues to provide massive amounts of economic support. The role of central bank policy in 2021 should be less dramatic but no less important.

With short term interest rates firmly at zero, the Federal Reserve will manage a few levers in the coming year. First, it will keep a close watch on longer-term rates. The Fed has expanded its balance sheet from roughly $4 trillion pre-pandemic to about $7 trillion in December 2020 by purchasing mostly short tenor assets. As the longer end of the yield rises, the Fed will consider shifting some purchases to longer dated assets to tamp down a steepening yield curve.

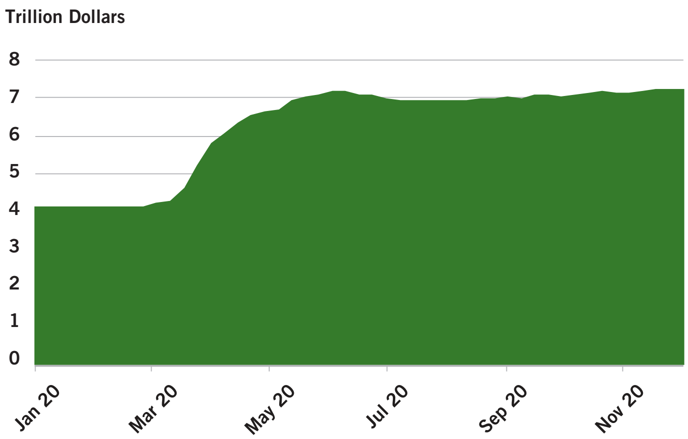
Second, Chair Powell and the Federal Open Market Committee (FOMC) went big early this year by putting trillions of dollars to work to set up lending programs and ratchet up asset purchases. Several of those lending programs will expire at the end of 2020, and asset purchases have been steady and relatively moderate since mid-summer. If the economy stumbles in Q1-Q2 2021, Powell will advocate for lending programs to be reinstated, and Congressional approval will be needed to get the programs up and running again. However, the FOMC will not need Congress to okay a change in asset purchases. If the economy turns for the worse and looks like it will contract, Powell will dial up purchases and make reassurances that the FOMC will do all that's necessary to keep the recovery on track.

Third, the Fed will continue to advocate for more fiscal policy. Chair Powell broke historical norms over the past few months by openly advocating for Congress to increase fiscal spending. He recognizes that any monetary action is significantly enhanced when coordinated with fiscal support. So his warnings and pleas will continue as long as the FOMC feels that further spending is needed.

Inflation will be a hot topic in 2021 as well, especially if Congress agrees to substantive relief spending. If the economy recovers as expected in 2021, we should see an uptick in inflation, but not to the extent that the Fed will consider taking action. The Fed has signaled that it will delay any rate increases until at least late 2023 or perhaps longer, so it is prepared to look past intermittent inflation readings above 2%. If inflation begins to consistently surpass 2.5%, the financial markets will become nervous. While some investment banks are calling for a real bump in inflation in 2021, that scenario is well outside our base case.

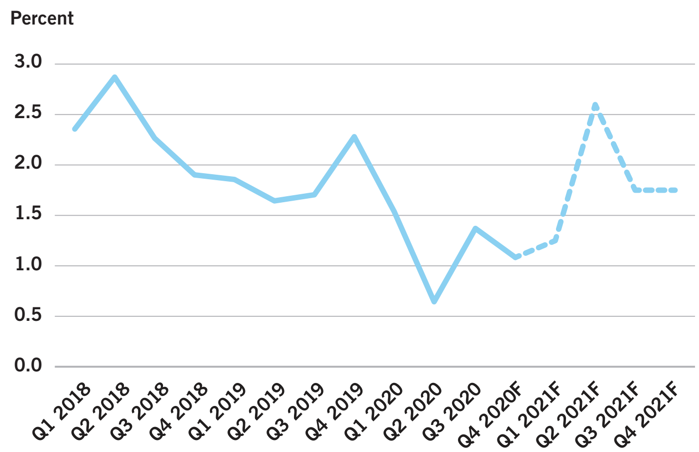
Fed policy will have an impact on the U.S. dollar as well, but to a lesser extent than several other factors. We've seen the dollar weaken as investors look ahead to the end of the pandemic and have increased their risk appetite. The dollar safe haven should be even less attractive as we get further into 2021. We also believe a steadier trade policy under President-elect Joe Biden will dampen the dollar as Asian and emerging market assets improve. And the U.S. economic recovery should also lag that of many Asian countries, and perhaps some in Europe, which would also drag on the dollar. The rapid rise in the U.S. current account deficit will also weigh on the dollar. All in all, we don't expect a collapse of the dollar, but we do expect persistent weakness through the coming year, and a further devaluation in the range of 5%-8%. ■

EXHIBIT 5: **Federal Reserve Balance Sheet**



Source: St. Louis Federal Reserve

EXHIBIT 6: **U.S. Consumer Price Index**



Source: U.S. Bureau of Labor Statistics, Oxford Economics

U.S. GOVERNMENT:

Sweeping Leadership Changes

By Brian Cavey

AS THE 117TH CONGRESS BEGINS, the political landscape is still somewhat uncertain. The Biden administration transition is proceeding apace. The House will remain Democratic with a smaller majority of no more than nine seats, leaving little margin for vote counting error. In the Senate, control will be decided by a January 5 runoff election for both Georgia Senate seats.

In 2021 we will see new leaders in the House Committee on Agriculture. For Democrats, the new chair is David Scott of Georgia. The Scott chairmanship promises a focus on racial justice and economic equality in farming, rural economic development, climate change, and nutrition programs. The Senior Committee Republican retired as well, and has been replaced by Rep. GT Thompson of Pennsylvania. With a closely divided House, the relationship between the chair and the ranking member will be key if the Agriculture Committee is to successfully legislate.

The Georgia contests will determine if there is split government, with the Senate controlled by a GOP majority of 52-48 or 51-49. Or if Democrats win both seats, a 50-50 Senate tilts to the Democrats with the vice president breaking a tie. Recent runoffs in the Peach State have favored Republicans. Republicans tend to turn out better in runoffs than Democrats. The last Democratic presidential candidate to win Georgia before President-elect Joe Biden was Bill Clinton in 1992. So the question of the day is whether the 2020 presidential election was an anomaly or if the electorate has turned bluer.

In the Senate Committee on Agriculture, Nutrition and Forestry, leadership will also change. If Republicans maintain control, John Boozman of Arkansas will replace retiring agriculture stalwart Pat Roberts of Kansas. If Democrats take control, Debbie Stabenow of Michigan will retake the gavel. Neither will push a significantly different agenda than Roberts with a couple exceptions. A Boozman chairmanship will shift support to the southern crops, while a Chairwoman Stabenow would return a focus to urban and non-traditional agriculture and nutrition programs.

The Biden administration cabinet will be more diverse than President Trump's, but is unlikely to shift to its leftward extreme. One indicator is the selection of former USDA Secretary Tom Vilsack to reprise that role. If the Republicans prevail in just one of the Georgia seats, Senate GOP leader Mitch McConnell will be able to stop any nominees he considers too far outside of the mainstream. And even if the Democrats flip both Senate seats they will have just a one-vote margin – the vote of the vice president. That means every nominee needs the support of Sen. Joe Manchin of West Virginia, the most conservative member of that caucus.

That reality will moderate legislation as well. The COVID response will be job one. In addition to finding a strategy to control the surge, the approval and subsequent distribution of a vaccine or multiple vaccines will be a monumental undertaking, particularly with a deeply split electorate. Simultaneously responding to the economic impact of the pandemic will be priority 1A. Having assumed the vice presidency in 2009 with the financial crisis underway, Biden will be tempted to spend big. He will want to create jobs and support local government and healthcare providers. He will want results ASAP. But he will need to negotiate with both the closely divided House and Senate, regardless of the majority, to reach any agreement that can become law.

The good news for that undertaking is that the president-elect has long been a willing negotiator. However, a diverse, closely divided caucus will make deals very complicated. A crisis brings an urgency that emboldens opponents.

This president will have one more wildcard to contend with. What will President Trump do next? Will he start a media empire, mobilizing his base and intimidating those who would question him? Will he focus on returning to the presidency, like Grover Cleveland, after four years out of office? President Trump received more votes than any other candidate ever, except Biden. Will he leave the stage, or cast an outsized influence on the process? This big unknown could really impact Biden's presidency.

The other priorities of the president-elect – re-engaging with the rest of the world, investing in our infrastructure, addressing social justice, climate change and trade, will all depend on getting the virus under control and getting the economy firing on all cylinders, before the end of 2021 shifts the focus to the midterm elections. ■

U.S. FARM ECONOMY:

A Strong 2020 Finish Boosts Potential

By Tanner Ehmke

HIGHER COMMODITY PRICES and low interest rates will be an important financial buffer to net farm income in 2021 with the federal government's role in farm payments expected to greatly diminish.

The federal government was the source of more than one-third of U.S. net farm income in 2020 with USDA providing extraordinary payments through the Market Facilitation Program (MFP), the two Coronavirus Food Assistance Programs (CFAP 1 and 2), and food purchases through the Farmers to Families Food Box program. Farmers and ranchers also qualified for Paycheck Protection Program loans through the Small Business Administration with loans potentially being forgiven. Those irregular sources of funds to farmers and ranchers are expected to be sharply reduced – or eliminated – in a nonelection year.

Crop prices, though, have been bolstered by Chinese robust purchases, dry growing conditions in key growing regions of the world brought on by La Niña, and a weaker U.S. dollar – fundamentals that are expected to support crop prices and farmer revenues through much of 2021. Higher feed prices, though, will pressure feeding margins for livestock, poultry, and dairy and producers, while persistently dry weather in the U.S. Great Plains will curb farmers' crop yields.

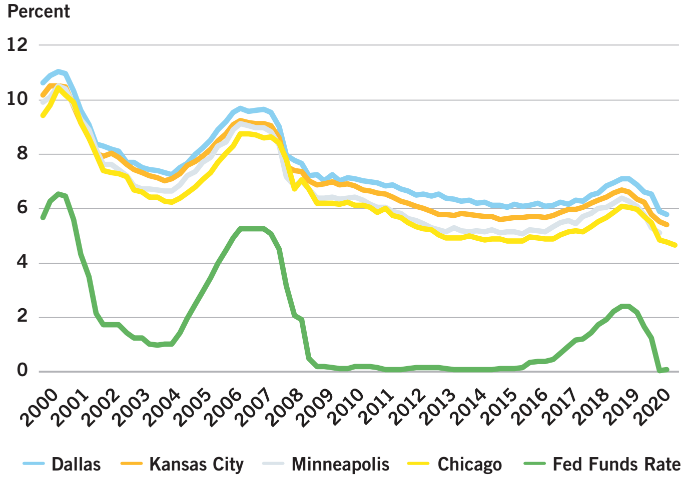
Historically low interest rates, meanwhile, will lower borrowing costs for farmers and ranchers. Fixed interest rates for farm operating loans typically follow closely with trends in the Federal Reserve's overnight lending rate. While farmers benefit from improved commodity prices and lower interest expense, agricultural lenders may see improved repayment capacity and lower rates of nonperforming ag loans in regions not severely impacted by drought. The Kansas City Federal Reserve's recent survey of agricultural lenders found that 25% of bankers in the district reported that loan demand was lower YoY, while the average share of farm loans monitored for potential problems or exhibiting weaknesses reached the lowest level in five years.

The value of farmland, which is an important source of equity for farmers and ranchers, is also expected to remain stable in 2021, supported by low interest rates that encourage farmers, ranchers, and outside investors to purchase land despite the illiquidity of the market.

The improved financial position of farmers heading into 2021 also portends a lifting of cash rents on farmland in some regions, making land a more attractive investment compared to other safe assets like 10-year treasuries offering yields below 1%. Agricultural producers will also upgrade machinery lines after years of trading down for used machinery during periods of lower net farm income.

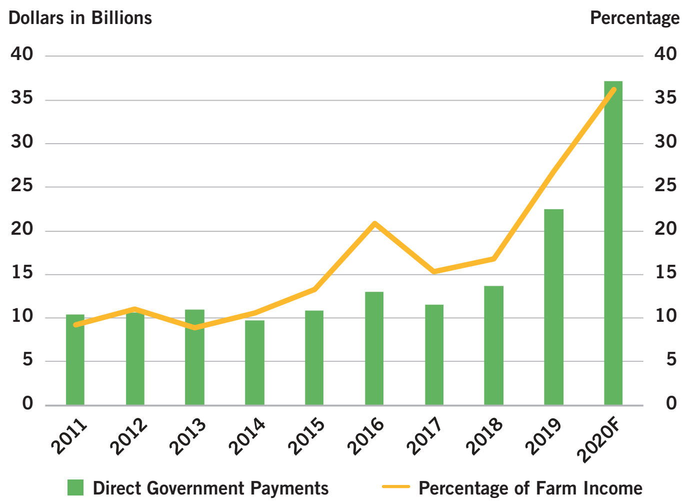
However, with land and machinery costs potentially rising, farmers and ranchers risk elevating enterprise cost structure and risking profitability long-term as commodity prices invariably soften. ■

EXHIBIT 7: Interest Rates Charged on New Farm Operating Loans by Federal Reserve District



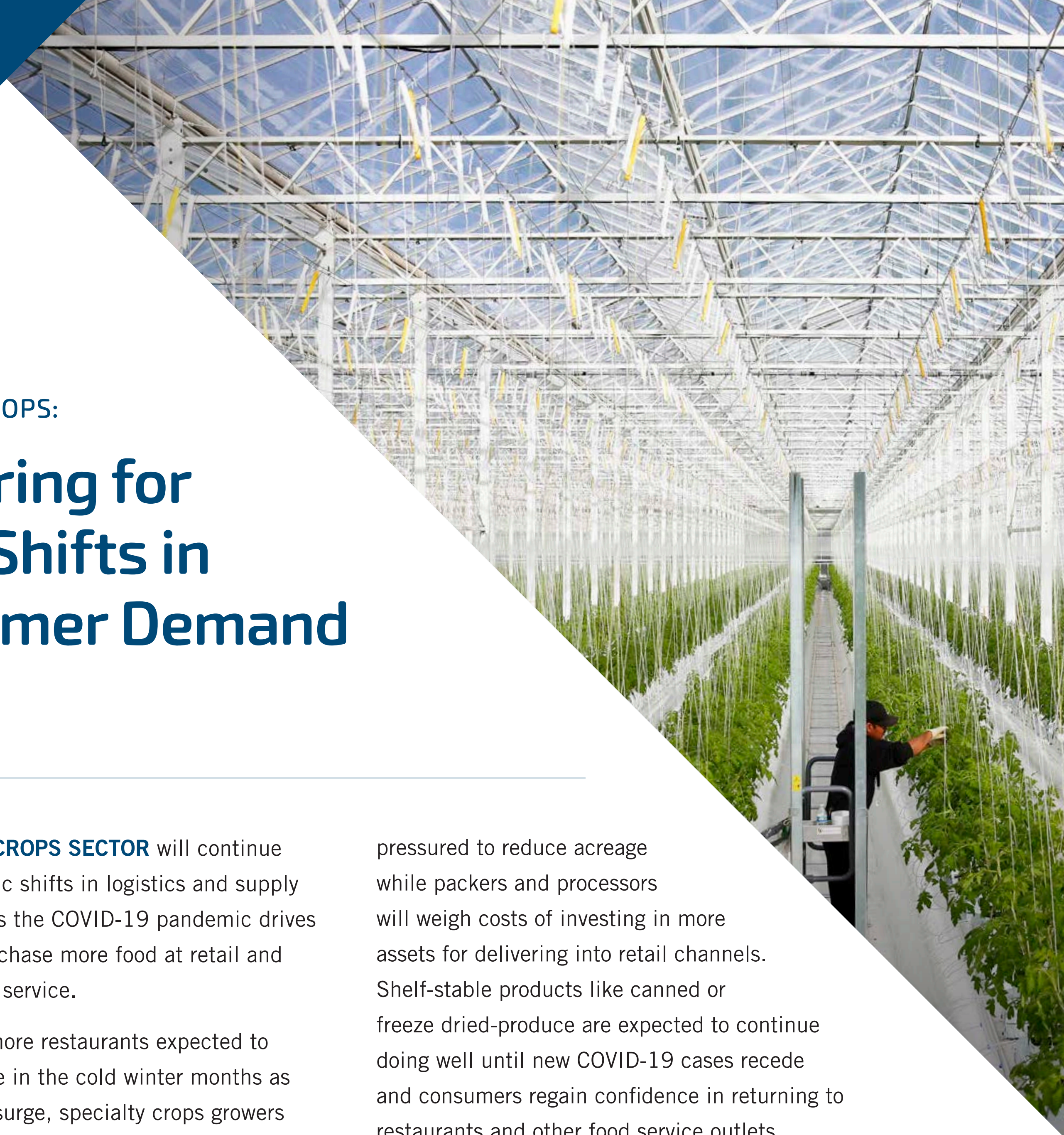
Source: The Federal Reserve Banks of Dallas, Kansas City, Minneapolis, Chicago, and St. Louis

EXHIBIT 8: Direct Government Payments to Farmers



Source: USDA-ERS. Data as of Sept. 2, 2020

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



SPECIALTY CROPS:

Preparing for More Shifts in Consumer Demand

By Tanner Ehmke

THE SPECIALTY CROPS SECTOR will continue to adapt to historic shifts in logistics and supply chains in 2021 as the COVID-19 pandemic drives consumers to purchase more food at retail and less through food service.

With thousands more restaurants expected to permanently close in the cold winter months as COVID-19 cases surge, specialty crops growers and the supply chains that deliver fruits, nuts, and vegetables will have to continue adapting to a consumer eating more at home.

Some growers, packers, and processors have successfully managed to increase or reroute products into retail channels like grocery stores and home delivery of food boxes. However, steep financial losses from the loss of food service contracts will ultimately result in the rationalization of some processing assets and production acreage. Growers who have been unable to find a home for fresh produce will be pressured to reduce acreage while packers and processors will weigh costs of investing in more assets for delivering into retail channels. Shelf-stable products like canned or freeze dried-produce are expected to continue doing well until new COVID-19 cases recede and consumers regain confidence in returning to restaurants and other food service outlets.

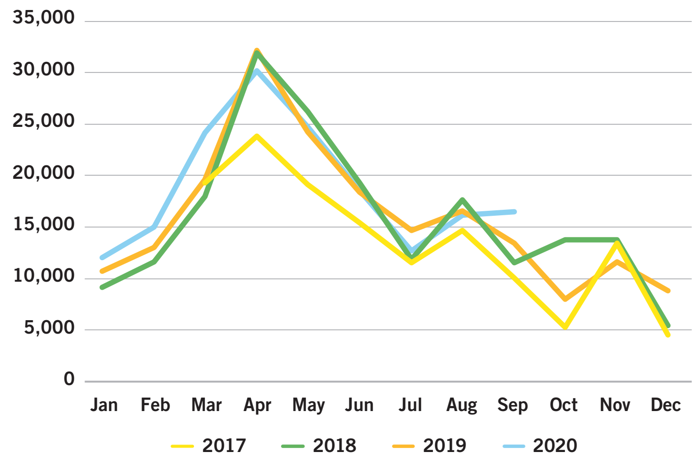
Labor availability in agriculture will be of growing concern as COVID-19 cases rise in rural counties across the U.S. For crops heavily dependent on manual labor, the rise in COVID-19 cases raises the likelihood of workers staying at home to limit exposure risk, particularly with indoor work activities like packing and processing where COVID-19 transmission risk increases. H-2A visas from Mexico risk further declines in 2021 should farm workers decide to look for work locally as the Mexican economy recovers.

With the cost of farm labor rising, growers in the U.S. are being forced to evaluate long-term investments in robotics and automation.

La Niña is forecast to bring drier conditions over the winter in the growing regions of Southern California, the Southwest, and southeastern U.S. In regions like California that struggled with drought conditions and widespread fires in 2020, the outlook for continued dryness raises concern for limited water availability and fire risk to crops like wine grapes that suffered significant losses to smoke damage.

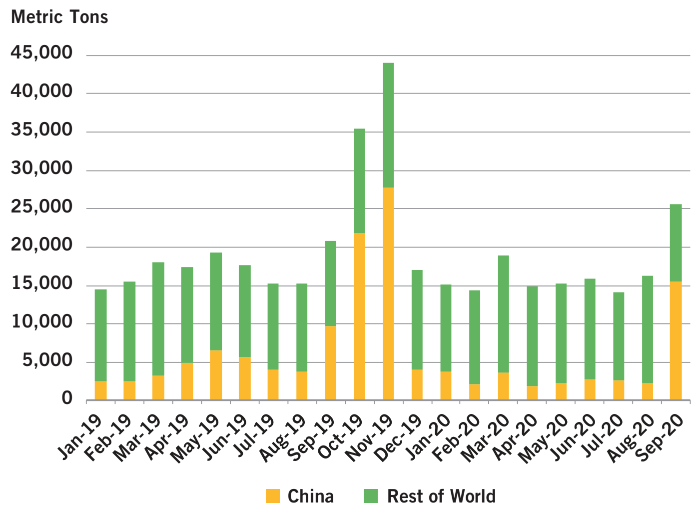
The prospects for a weakening U.S. dollar will be a bright spot for U.S. specialty crop exports in 2021, particularly tree nuts. With more than half of the U.S. tree nut crop exported each year, a weaker U.S. dollar will help move products into major markets like China that has seen a strengthening of the yuan due to the faster economic recovery from COVID-19. A weaker U.S. currency also coincides with the U.S. having harvested a record large tree nut crop with prices on crops like almonds having fallen to multi-year lows. With ample supplies, lower prices, and a weaker U.S. dollar, U.S. tree nut exports are in position to reach new records in the year ahead. ■

EXHIBIT 9: H-2A Visa Issuances to Mexico



Source: U.S. Department of State - Bureau of Consular Affairs

EXHIBIT 10: U.S. Edible Tree Nut Exports



Source: USDA-FAS

GRAIN, FARM SUPPLY, BIOFUELS:

Recovery in Motion

By Kenneth Scott Zuckerberg

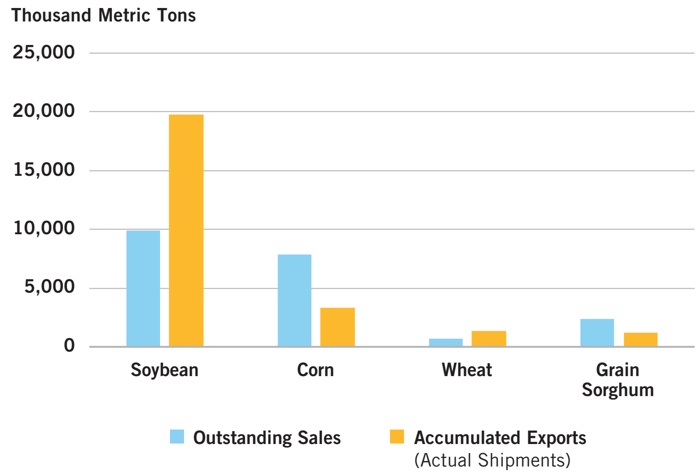
THE GRAIN AND FARM SUPPLY SECTORS enter 2021 on reasonably firm footing supported by rising commodity prices, farmer stability and favorable domestic fuel, feed and food usage, and firm export demand, especially from China.

The outlook for grain is more favorable than a year ago, although carry has evaporated with the inversion of futures prices. On the positive side, elevators are generally in a favorable financial position having bought and sold grain at high prices amidst the recent rally in commodity prices and locking in positive spreads. While this has resulted in greater capital needs as payment receivables increase, the situation is temporary and short-term funding is widely available to fund cash flow gaps. Looking to 2021, the export picture remains very good as China continues to actively contract for U.S. grain, taking advantage of a strong yuan relative to the U.S. dollar. Additional upside exists for exports since the Biden administration will likely focus on increasing trade with our allies via the reduction or elimination of tariffs. On the negative side, the inversion of commodity prices, especially for soybeans, limits grain elevators' opportunities to buy cheap basis and capture carry.

The outlook for farm supply cooperatives is positive for 2021 following a very orderly harvest, rising grain prices and decent farm liquidity (bolstered by recent grain sales and government payments). While below initial spring expectations, growers brought in a very good crop. Grain prices continued their late summer rally supported by strong domestic feed, fuel and food demand, and accelerating export activity to China. Flush with cash, farmers have begun prepaying inputs, which benefits cooperatives' cash flow and liquidity heading into the slow winter months. The looming question is whether the considerable rise in commodity prices will persist – corn, soybean and wheat prices have gained more than 20%, 25% and 15%, respectively, over the past 90 days. While the bull case is strong, with expectations of continued export demand and La Niña weather conditions (favoring dryness) curbing crop size in specific growing regions, the aforementioned inverted futures curves (especially for soybeans) argue for lower prices next year at this time.

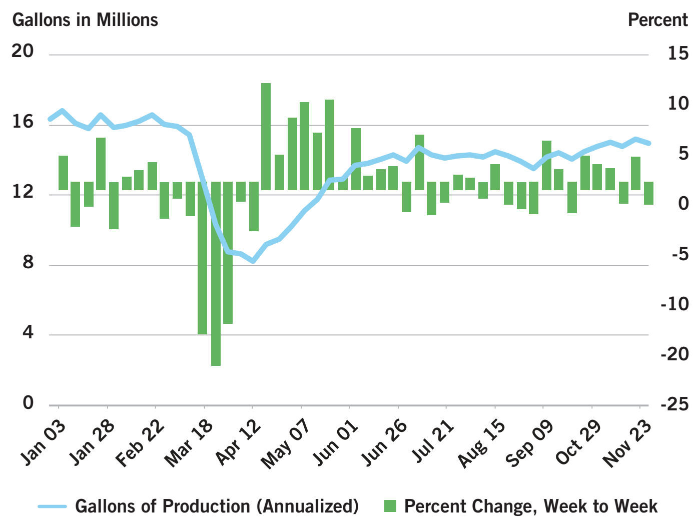
The outlook for ethanol is stable but guarded, with considerable growth and margin opportunities favoring ethanol co-products vs. fuel. After experiencing a near 50% reduction in demand during mid-March to mid-April 2020, fuel ethanol in the U.S. has recovered to about 90% of pre-COVID levels, equating to average annualized production of 14.6 billion gallons. Looking out to 2021, ethanol fuel operating margins (return over operating costs) could compress below the monthly estimated moving average of $0.20 to $0.23 per gallon due to rising prices of corn, a key input. The other lingering near-term risk factor relates to the recent uptick in positive COVID-19 cases, especially in rural communities, which could dampen demand again should there be a return of shelter-in-place restrictions. ■

EXHIBIT 11: **Select U.S. Grain Exports to China - Current Marketing Year**



Source: USDA-FAS

EXHIBIT 12: **Weekly U.S Fuel Ethanol Production - 2020**



Source: U.S. Energy Information Administration

ANIMAL PROTEIN AND DAIRY:

Higher Feed Costs and Restaurant Reboot

By Will Sawyer and Tanner Ehmke

A RISING COST ENVIRONMENT stemming from higher feed prices will challenge the dairy and animal protein sector's ability to return to pre-COVID margin levels in 2021. Corn and soybean meal prices heading into the new year have reached multi-year highs with the futures curves indicating still higher costs in the months ahead, portending a rising cost environment for purchasers of feed.

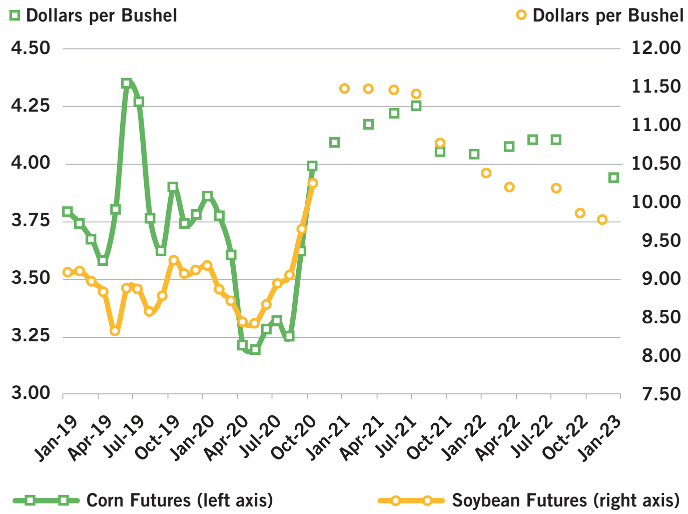
Strong Chinese demand for grain and oilseeds, and stressful growing conditions tied to La Niña in major producing regions like Brazil, are themes widely expected to continue through much of the year ahead. USDA's latest estimates forecast the average annual price for corn at $4 per bushel, up 12% YoY, with the average annual soybean meal price rising to $355 per ton for the 2020-21 crop year, up nearly 19%.

China's rebuilding of the nation's hog herd not only underpins the rise in feed prices, but brings into question China's appetite for foreign protein in 2021 as supplies climb. China has been the standout buyer of pork and chicken in 2020 in an effort to curb rising meat prices following the steep losses to African Swine Fever (ASF) in the world's biggest hog herd. Falling hog prices in China's interior hint at a slowing of imports from major exporters like the U.S. With Chinese demand waning for U.S. animal protein, the performance of the U.S. dollar in 2021 will play an important factor in the U.S.'s ability to move product into other export channels.

The U.S. dairy sector, though, stands to benefit from the rebound in Chinese hog production with dry whey used as a protein supplement in China's hog feeding rations. With a shift of the Chinese hog herd now in commercial production following ASF – rather than backyard production where hogs are fed a diet of table scraps – dry whey from the U.S. stands to be included more frequently as an ingredient in hog feed as the herd grows.

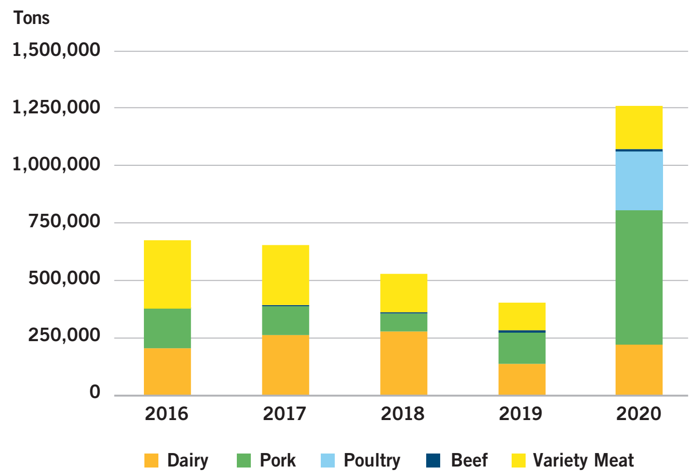
Domestically, the animal protein and dairy sectors will be entering 2021 with still greater uncertainty in food service demand as COVID-19 cases surge to new highs and restaurant closures expected soar in the absence of a meaningful government rescue. Many food producers and processors are struggling with how to adapt long term. Producers and processors with retail grocery contracts have been the winners with products like hamburger and baking ingredients like condensed milk and butter for home cooking. Quick-service restaurant demand will be a bright spot in food service, as cheese producers benefit from skyrocketing demand for pizzas delivered to consumers' homes. As thousands more full-service sit-down restaurants are expected to close in the first winter months of 2021, supply chains will be transitioning to serve rising consumer demand for home meals. While the deployment of a COVID-19 vaccine across the U.S. population will underpin a recovery in the food service sector, widespread economic benefits are not expected until the second half of 2021. ■

EXHIBIT 13: **U.S. Corn and Soybean Futures**



Source: CME, as of November 15, 2020

EXHIBIT 14: **China's Imports of U.S. Dairy and Animal Protein (Jan-Sep)**



Source: USMEF, USDEC

RURAL ELECTRICITY:

From Reactive to Adaptive

By Teri Viswanath

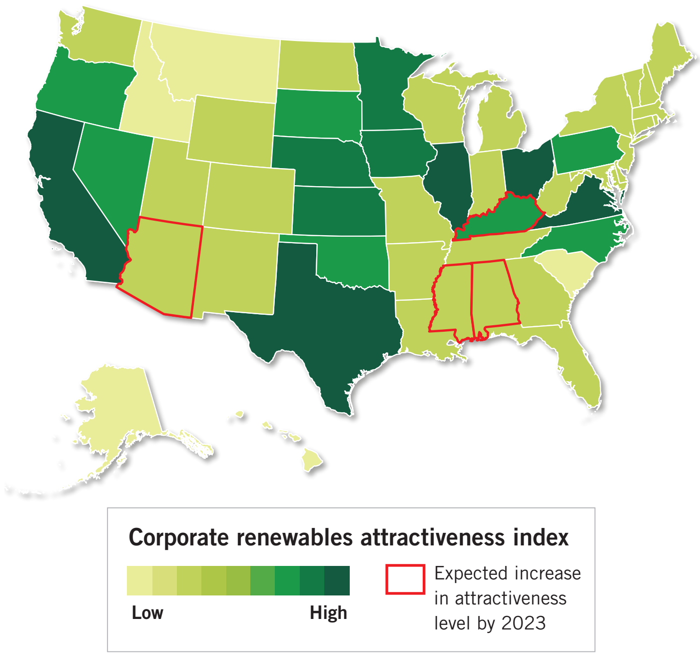
IT'S HARD TO CLOSE THE DOOR on what feels like 365,000 days of 2020, but to be honest, 2021 can't arrive soon enough. The collective need to turn a corner, pivoting from pandemic-reactive to market adaptive, opens the door to a more decisive response from U.S. power suppliers to changed market conditions. Amplifying the call for action are shifts in policy, costs of new technology, and consumer requirements – all of which conspire against a business-as-usual restrained pace to energy transition in 2021.

Policy Shift: What a Biden Administration Means for the Power Industry

President-elect Joe Biden campaigned on one of the most ambitious climate platforms of any presidential candidate. What's more, climate change appeared as one of four top priorities enumerated on Biden's transition website that came online hours after the election was called. His ability to enact "big climate" legislation, however, appears destined to run aground in a majority Republican-controlled Senate.

Nevertheless, there are other open channels that will accelerate the pace of energy transition. For instance, Biden's first 100 days will undoubtedly see a flurry of executive orders – from rejoining the Paris Agreement to rolling back the Trump administration's environmental roll-backs (including the Affordable Clean Energy rule, intended to protect coal plants) and leaning hard into the Clean Air Act. Appropriations and infrastructure funding, with a strong climate angle, are open to the White House. Putting aside the normal channels of executive governance, it is the influence and 'perception' of forthcoming environmental regulation that might prove the most powerful policy tool that the president can wield. Biden's mere presence in the White House can be a unifying force for the momentum already underway at the state and local level, providing a powerful shift toward greater energy transition.

EXHIBIT 15: U.S. Corporate Renewable Procurement Attractiveness as of June 2020



Source: IHS Markit

Technology Shift: Building Renewables is Cheaper than Running Coal Plants

The market commonly looks to Lazard's annual *Levelized Cost of Energy Analysis* report to gauge the economic trade-winds for future power plant development.[1] This year's installment marked a pretty important milestone for the industry, with solar now proclaimed the cheapest form of energy in history. So cheap, in fact, that it is now less expensive to build new solar than it is to operate coal plants. Lazard found that certain renewable energy generation technologies have a levelized cost of energy that is competitive with the marginal cost of existing conventional generation. This is pretty big news and steps behind mere predictions of the resources most likely to get built to figure out which of these resources are likely to stick around.

Consumer Shift: Blurring the Line between Upstream Supplier and Downstream Consumer

This year most of our attention has been focused on pandemic-related demand loss (yes, we too find ourselves in reactive mode). Yet, we sense even greater dislocation looms, as an increasing number of consumers commit to self-generate. U.S. CEOs recently issued their strongest message yet on energy transition, arguing that addressing climate change is now a business imperative for American companies.[2] More to the point, for our assessment on supply, these companies are mobilizing significant capital to hedge against this existential threat by directly purchasing clean energy oftentimes by-passing the traditional supply-chain to fund and build their own renewable resources.

In fact, according to a new report by IHS Markit, U.S. corporate and industrial electricity consumers will contract 4.4GW-7.2GW of new solar and wind capacity annually through 2030, following a projected record of almost 8 GW purchases this year. This roughly translates to 20% of U.S. utility scale renewable additions in the next decade (including direct, virtual, and green tariffs/sleeved purchase power agreements), with the recent trend acceleration suggesting an even greater share.[3] ■

[1]Lazard, "Levelized Cost of Energy and Levelized Cost of Storage – 2020," 19 October 2020. Levelized cost of energy or LCOE determines how much money must be made per unit of electricity to recoup the lifetime costs of the system.

[2]Business Roundtable, "Market-Based Solutions Best Approach to Combat Climate Change," 16 September 2020.

[3]IHS-Markit, "Corporate US renewable procurement outlook: Optimism amid a pessimistic year," 27 October 2020.

RURAL COMMUNICATIONS:

Big Spending Not Likely, But Regulatory Change Is

By Jeff Johnston

Election Impact in 2021

With a new president and a likely split Congress, we expect a good bit of gridlock in Washington in 2021. We think any COVID-related stimulus will focus on near-term economic needs versus investing in projects that take years to produce results. And regarding a potential infrastructure bill, it seems unlikely Congress will be able to find common ground despite bipartisan agreement that the digital divide needs to be closed.

That leaves the Federal Communications Commission (FCC) as the remaining institution in Washington to enact policies that will help rural communication providers. To that end, one of the largest outstanding questions is who will be the next FCC Chair. Commissioner Jessica Rosenworcel is widely considered among the frontrunners to lead the FCC under a Biden administration. Throughout her tenure she has been focused on policies that would bridge the digital divide. Assuming Rosenworcel gets the appointment, we could see the FCC implementing policies that would address some of the shortcomings of the current funding mechanism. Specifically, enacting some version of contribution reform that would broaden the services that Universal Service Fund (USF) fees are applied to. Such reform could include applying USF to broadband bills. While this type of change could go a long way to increasing the amount of federal dollars available to invest in underserved and unserved rural areas, it would likely be challenged in court by the broadband providers.

Fixed Wireless

In 2020 the FCC held its Citizens Broadband Radio Service (CBRS) spectrum auction that was much more rural friendly than any of its past auctions. And as a result, rural operators are now able to build carrier-grade fixed wireless networks at significantly reduced costs. These networks will be far more reliable, have much larger footprints, and will be faster than legacy Wi-Fi networks that many of the Wireless Internet Service Providers (WISP) have built.

By offering CBRS licenses at the county level versus the traditional, much larger Partial Economic Areas (PEA), rural operators were able to participate in the auction, with many walking away with exclusive rights to deploy spectrum. In 2021, look for fixed-line broadband operators to augment their networks with fixed wireless CBRS to serve the edges. We also expect to see new, more unconventional companies (think Deere or farmer cooperatives) to build such networks which will help bridge the digital divide.

Low Earth Orbiting (LEO) Satellites

Proponents of LEO satellites believe it's a silver bullet solution to bridge the digital divide. SpaceX's Starlink constellation started its user trial in late 2020, and we expect the service to generate quite a buzz in 2021. In addition to SpaceX, Amazon's Project Kuiper is expected to grab lots of headlines in 2021. There are still more questions than answers as it's unclear if the satellite economics have improved to where one can make a business case out of a LEO broadband service. But anytime you have the world's richest man interested in a new market, you can be sure it will get people's attention. ■

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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About CoBank

COBANK IS a $148 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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