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Cooperatives in Ohio's Economy: Their Contribution and the Impact of Covid-19

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THE OHIO STATE UNIVERSITY

COLLEGE OF FOOD, AGRICULTURAL,
AND ENVIRONMENTAL SCIENCES

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**COOPERATIVES
IN OHIO'S ECONOMY:
THEIR CONTRIBUTION
AND THE IMPACT OF
COVID-19**

September 2021

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ABOUT THE RESEARCH TEAM

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ABOUT THIS STUDY

Cooperatives are a business model that help create robust, sustainable communities. Organized to meet the economic needs of its member-owners, a cooperative is a particularly resilient business form. It embodies the concept of self-help: members use the cooperative, own it, and control it. Cooperatives are essential to the U.S. economy, especially in rural communities and in agriculture where they often fill market gaps. Cooperatives provide effective marketing, low-cost supplies, and services for their member-owners, bringing electricity, e-connectivity, affordable housing, capital, financial services, telecommunications, health care, food, hardware, building supplies, and countless other goods and services to communities across America.

Ohio is home to 452 cooperatives, including some of the largest agricultural co-ops in the country, and is the birthplace of rural electric cooperatives in the U.S.^{1,2} While co-ops are important, the state of Ohio does not currently have a reliable estimate of their economic impact.³ The Center for Economic Development in the Maxine Goodman Levin College of Urban Affairs at Cleveland State University has partnered with The Center for Cooperatives in the College of Food, Agricultural, and Environmental Sciences at The Ohio State University to estimate the economic contribution of cooperatives to Ohio's economy and to understand the economic impacts of the COVID-19 pandemic on the state's co-ops.

This report illustrates the economic impact of agricultural, food, and rural electric cooperatives in Ohio, using the input-output analysis models of the state economy. The economic impact indicators include employment, labor income, value added, and output. The fiscal impact estimates local, state, and federal tax revenues collected within Ohio due to the operation of cooperatives.

The research team used various public sources to gather data on 58 agricultural and food cooperatives and 25 rural electric cooperatives in Ohio. Economic impact estimates in this report are based on 2019 data. As the COVID-19 public health emergency has had far-reaching impacts on all aspects of the state economy, the team conducted 11 interviews with co-op leaders to learn about the changes brought about by the pandemic, from temporary closures to supply chain shifts.

This research report has two main parts. The first part presents the economic contribution of agricultural and food cooperatives. The second part describes the economic contribution of rural electric cooperatives. Both parts outline the methodological approach of the economic impact analysis, describe the data collected, interpret the economic and fiscal impact results, and summarize the impacts of the COVID-19 pandemic on cooperatives. The appendix provides further details on methodology, assumptions, and tables.

¹ CFAES Center for Cooperatives, The Ohio State University. (n.d.). [Ohio Cooperatives](#).

² Miller, D. (2021, September 2). [Building a Self-Help Network of Cooperatives: The Electric Co-ops Story](#). [Webinar Recording].

³ This report uses the words "impact" and "contribution" interchangeably.

SUMMARY OF MAIN RESEARCH FINDINGS

Economic Contribution of Agricultural and Food Cooperatives

- In 2019, 58 agricultural and food cooperatives supported an estimated 7,017 full-time, part-time, and seasonal jobs in Ohio, including 2,714 direct jobs. Jobs in cooperatives and additional jobs in the supply chain and consumer industries across Ohio generated a total of \$445 million in labor income. Operations of the cooperatives contributed \$807 million to the state’s value added and \$1.5 billion to output.

Economic Contribution of Rural Electric Cooperatives

- In 2019, 24 rural electric cooperatives in Ohio supported an estimated 5,893 full-time, part-time, and seasonal jobs in Ohio, including 1,293 direct jobs. These jobs corresponded to a total of \$430 million in labor income including salaries and wages paid to rural electric cooperatives’ employees, employees of their suppliers in Ohio, and employees of other industries supported by employees’ local spending. In addition, rural electric co-ops’ operations contributed \$1.1 billion to the state’s value added and \$2.7 billion to output.

Table 1. Summary of Annual Economic Contribution of Cooperatives in Ohio

Total Contribution	Agricultural and Food Cooperatives	Rural Electric Cooperatives
Employment	7,017 jobs	5,893 jobs
Labor Income	\$445M	\$430M
Value Added	\$807M	\$1,129M
Output	\$1,496M	\$2,744M

Impact of the COVID-19 Pandemic on Cooperatives

Ohio’s cooperatives experienced both positive and negative impacts from the COVID-19 pandemic. The pandemic had a largely neutral impact on job counts, with cooperatives employing roughly the same number of people in 2021 as they did pre-pandemic. Electric cooperatives are part of the state’s critical infrastructure and therefore had to continue operating throughout the pandemic. Some cooperatives shifted their in-person business operations to remote operations or closed public spaces such as corporate offices and customer service lobbies, while others continued with business as usual. Internet access in non-metro areas is limited, and the need for better internet access, VPN services, cyber-protection, and computer equipment purchases to support remote work and virtual meetings drove up costs associated with information technology and technological services during the pandemic.

The pandemic positively impacted cooperatives’ operations by accelerating adoption of digital technologies. Cooperatives have developed new web portals and apps for their members and customers; upgraded computer systems with fully virtualized servers; and invested in expanding internet access services for their members due to demand for high-quality internet in homes. In many cases, business meetings among corporate staff shifted from in-person to hybrid or remote settings, where staff interfaced virtually through telecommunications or videoconferencing. This

reduced travel expenses by eliminating the need to commute for employees, committee members, and trustees to attend meetings.

Supply chain issues have had a major negative impact on cooperatives since the onset of the COVID-19 pandemic. The pandemic has led to significant increases in freight costs and shipping delays. Some products have no delivery guarantee. Products that used to take two to three months to receive are now taking 12 to 14 months. As a result of this uncertainty, projects that used to take one year are now significantly delayed, in some cases for up to five years. Prices on major inputs like raw materials, machinery parts, plexiglass, boxes and packaging, substations, poles, and transformers continue to rise, showing little stability. Because of this price instability, cooperatives have had difficulty making decisions. Cooperatives have also had to diversify and find new vendors in order to meet their needs.

SECTION I. ABOUT ECONOMIC IMPACT ANALYSIS

Cooperatives contribute to the economy through their spending on intermediate inputs and labor. Intermediate input expenditures include all expenses related to primary input purchases (e.g., grain, produce, milk, electricity), transportation, warehousing, advertising, banking and insurance, management, utilities, packaging and others. The impact is measured using a framework of input-output modeling utilizing the economic multiplier-based approach. Spending by cooperatives to provide services for their members triggers the flow of money exchange between industries. Using buy-sell relationships between industries in input-output models, it is possible to estimate how the impact of one dollar of direct spending ripples through the state economy, creating additional goods and services, jobs, and income. The CSU Center for Economic Development conducted the economic impact analysis using the IMPLAN economic impact online application and IMPLAN Regional Data Files for Ohio.

The results of the economic impact are addressed with four measures: employment (number of full-time and part-time jobs)⁴, labor income (household income), value added (output less the value of intermediary goods – often used as a proxy for Gross Regional Product), and output (total value of services provided in Ohio). Each of these components is composed of direct, indirect, and induced impacts.

A direct impact, also called the “first-round effect,” or “initial direct spending,” indicates the total expenditures made in Ohio which can be directly tied to the operations of cooperatives. Examples include when an employee receives a paycheck from the cooperative or a cooperative purchases milk from dairy farmers.

Indirect impact, or the “second-round effect,” measures the effects of purchases taking place in the supply chain. Indirect impact captures the sell-buy chain of interactions between local companies supplying goods and services to each other; it includes activities of suppliers selling directly to cooperatives and suppliers selling to the cooperatives’ supply chain. Indirect impact accounts for businesses contracted by cooperatives, such as warehouses, transportation companies, accountants, and lawyers.

Induced impact measures the effects of cooperatives’ employees and suppliers spending their labor income in Ohio. In all, these multiple rounds of spending create the total economic impact on the economy.

The fiscal impact estimates include federal as well as state and local tax revenues collected within Ohio. This includes income tax paid by employees, social insurance tax (both employee and employer-paid contributions), kWh tax, property tax, sales tax, motor vehicle license taxes, fees, etc. The fiscal impact is also composed of direct, indirect, and induced impacts.

⁴ Employment data in IMPLAN follows the same definition as Bureau of Economic Analysis Regional Economic Accounts (BEA REA) and Bureau of Labor Statistics Quarterly Census of Employment and Wages (BLS QCEW) data, which is full-time/part-time annual average.

SECTION II. AGRICULTURAL AND FOOD COOPERATIVES IN OHIO

Agricultural cooperatives are prominent actors in the production of agricultural goods in the United States. In 2019, there were 1,779 agricultural co-ops across the United States, with 1,899,625 voting members and 137,718 full-time employees.⁵ Agricultural cooperatives assist farmer-, rancher-, and fisher-members by providing support and streamlined access to marketing and distribution systems for the goods they grow. According to the USDA Rural Development Agricultural Cooperative Statistics, states with the highest concentrations of agricultural cooperatives include Minnesota, Texas, and North Dakota. Food cooperatives are community-oriented enterprises that often work to connect goods produced by local farmers directly to consumers. These customer-owned grocery stores allow members to participate in decision-making and share profits. According to the National Cooperative Business Association, there are almost 5,000 food co-ops in America, with more than 3 million members.⁶

In Ohio, cooperatives are active across the state's geography and economy. Ohio's cooperative landscape as of 2020 included 452 cooperatives headquartered in the state and 1,088 physical locations where cooperatives operate. This community is diverse, including credit unions, agriculture, school, purchasing, electric, housing, worker, and food cooperatives.⁷ Three of the largest 100 cooperatives in the U.S. in 2019 were headquartered in Ohio: United Producers, Inc., Heritage Cooperative, and Buckeye Power, Inc.⁸ United Producers, Inc. and Heritage Cooperative are both agricultural cooperatives, and Buckeye Power, Inc. is an electric power generation and transmission cooperative.

Ohio's food and agricultural cooperatives provide essential services in supporting agricultural production and food distribution statewide. Agricultural co-ops in the state produce, market, and distribute a range of products, including grain, fruits, vegetables, dairy, and livestock, in addition to providing inputs like feed, fertilizer, and seed to farmers. Ohio is also home to four century-old agricultural cooperatives marketing grain and oilseeds since the early 1910's: Jewell Grain Company, Gerald Grain Center Inc., Farmers Elevator Grain & Supply Association, and The Hicksville Grain Company.⁹ Using spatial distribution of agricultural cooperatives' headquarters, Demko (2018) found that Henry, Lucas, Putnam, Wood, Hancock, and Paulding Counties are *cooperative hotspot* counties in Ohio.¹⁰ These are counties with high levels of cooperative activities, as measured by the number of agricultural cooperative headquarters in the county, surrounded by other counties with high levels of cooperative activities. Hotspots have been shown to benefit cooperatives by providing higher availability and specialization of inputs, knowledge spillovers, investment growth, and increases in entrepreneurial activities.

⁵ USDA Rural Development. (2021, January). [Agricultural Cooperative Statistics 2019](#).

⁶ National Cooperative Business Association CLUSA. (n.d.). [Food and Grocery Co-ops](#).

⁷ CFAES Center for Cooperatives, The Ohio State University. (n.d.). [Ohio Cooperatives](#).

⁸ National Cooperative Bank. (2020, October). [America's Top Co-Op Companies](#).

⁹ USDA Rural Development. (n.d.). [U.S. Century Cooperatives, by state, type, and date organized](#).

¹⁰ Demko, I. (2018). [Trends of U.S. Agricultural Cooperatives \(1913-2016\)](#). *Urban Publications*.

This report includes data for 49 active agricultural cooperatives and 9 active food cooperatives in Ohio. These cooperatives employed 3,709 people, of which 2,714 (73%) worked in Ohio.¹¹ Agricultural cooperatives are larger than food cooperatives with multiple facilities in their regions of operation. In their Ohio locations, agricultural cooperatives had on average 54 employees compared to 6 employees in food cooperatives.

Cooperatives play a unique role in the agri-food supply chain. The purpose of the agricultural supply chain is the efficient delivery of agricultural products from farmers to consumers. Agricultural cooperatives act as intermediaries in the supply chain by connecting farmer-members to wholesale markets for their goods, as well as providing vital marketing and communications services. Agricultural cooperatives also produce and purchase inputs and materials needed for their member-farmers to function, helping individual farms realize efficiencies in input procurement.

Food cooperatives are a distinctly place-based grocery option, focusing on community needs given their customer-owned structure. Importantly, they support local economies by shortening the supply chain between producers and consumers. Small farms often have unpredictable production volumes of produce and may find it harder to maintain the consistent supply of products required by large retailers.¹² Food co-ops often work closely with local growers. A typical food cooperative works with over 150 individual farmers and food producers, while a conventional retailer works with 65 local farmers and food producers.¹³

¹¹ Based on Mergent Intellect Database information.

¹² Plakias, Z. T., Demko, I., & Katchova, A. L. (2020). [Direct Marketing Channel Choices among U.S. Farmers: Evidence from the Local Food Marketing Practices Survey](#). *Renewable Agriculture and Food Systems*, 35(5), 475-489.

¹³ The ICA Group. (2012). [Healthy Foods, Healthy Communities: Measuring the Social and Environmental Impact of Food Co-ops](#).

SECTION III: ECONOMIC AND FISCAL IMPACT OF AGRICULTURAL AND FOOD COOPERATIVES IN OHIO

This section provides a description of input data and the estimates of the total economic and fiscal impacts (direct, indirect, and induced) of 58 agricultural and food cooperatives in Ohio. The economic impact indicators include: *employment* (number of jobs), *labor income* (household earnings), *value added* (output less the value of intermediary goods – often used as a proxy for Gross Regional Product), and *output* (total value of goods and services produced by cooperatives in Ohio). Fiscal impact includes estimates of taxes received by the state, local, and the federal governments. For detailed tables of the economic and fiscal impact, see Appendix A.

Summary of Input Data

We employed the census database developed by the CFAES Center for Cooperatives at The Ohio State University to identify Ohio’s agricultural and food cooperatives.¹⁴ We complemented their database with Mergent Intellect Database information on cooperatives’ location, line of business, primary North American Industrial Classification System (NAICS) code, and employment per location. In addition, we conducted an online search to locate and explore the website or social media of the cooperative and to assess whether the cooperative is currently active. Only cooperatives’ employment in Ohio was accounted for in the IMPLAN model, while employment outside of the state was not included due to *economic leakage*.¹⁵

The IMPLAN data categorizes economic activity into 546 distinct sectors. These sectors are defined under the 2012 North American Industrial Classification System (NAICS). We assigned IMPLAN sectors to each cooperative’s location in Ohio. Appendix Table B1 shows corresponding distribution of Ohio cooperatives’ employment across 25 IMPLAN sectors. Ohio’s 58 agricultural and food cooperatives employed 2,714 workers in the state. IMPLAN Sector “Wholesale – Other nondurable goods merchant wholesalers” encompassed 24 cooperatives, representing 77% of Ohio’s food and agriculture co-op employees. This accounts for cooperatives marketing grain and field beans, livestock, and farm supplies. Various retail sectors represented 25 cooperatives’ locations in Ohio and employed 352 people, 13% of cooperatives’ employees. Agriculture support activities, warehousing and storage accounted for 5% the total Ohio employees, 73 and 66 jobs, respectively.

With the employment data in Appendix Table B1, we modeled cooperatives’ economic and fiscal contribution using IMPLAN Regional Data Files for Ohio. The data is aggregated across the entire spectrum of agricultural and food cooperatives in Ohio so that no information can be attributed to any one cooperative.

¹⁴ Map of Ohio’s Cooperatives. CFAES Center for Cooperatives. The Ohio State University. Available at <https://cooperatives.cfaes.ohio-state.edu/research-publications/ohio-cooperatives>

¹⁵ Economic leakage is money that does not stay within the local economy.

Economic Impact

The direct employment impact of agricultural and food co-ops in Ohio was 2,714 full- and part-time jobs (Table 2). These cooperatives supported an additional 2,270 jobs in their local supply chain (indirect impact). Of these, the top five industries experiencing the largest employment impact in agriculture and food co-ops' supply chains were: *Other real estate* (204 jobs); *Management of companies and enterprises* (168 jobs); *Couriers and messengers* (159 jobs); *Warehousing and storage* (144 jobs); and *Employment services* (141 jobs). In 2019, cooperatives supported 2,034 jobs through the spending of wages paid to employees (induced impact). Industries experiencing the most significant induced impact were: *Restaurants* (202 jobs), *Hospitals* (135 jobs); and *Offices of Physicians* (72 jobs).

The direct labor income impact accounted for \$207 million in wages and salaries for agricultural and food cooperative employees (Table 2). The income of employees in the supply chain companies totaled over \$138 million. The induced labor income impact in population-serving industries was \$101 million.

Valued-added represents the difference between output and the cost of its intermediate inputs and is often used as a proxy for Gross Regional Product. Agricultural and food cooperatives contributed over \$807 million in value added to the Ohio economy; \$414 million of this was supported directly by the cooperatives, \$206 million by local industries buying goods and services from other local industries, and \$186 million across the myriad of companies delivering consumer goods and services to cooperative employees and employees of cooperatives' suppliers (Table 2).

Output impact measures the total value of all goods and services produced in Ohio as a result of agricultural and food cooperatives' operations. Like value added, the output is a measure of wealth created by the cooperatives.¹⁶ The total economic output supported in Ohio due to food and agricultural cooperative operations and spending was \$1.5 billion (Table 2). Out of this total, \$784 million was attained within cooperatives, \$389 million was created in their local supply chain companies, and \$322 million was generated across many consumer industries in Ohio.

Table 2. Annual Economic Contribution of Agricultural and Food Cooperatives in Ohio

	Employment	Labor Income	Value Added	Output
Direct Impact	2,714	\$207M	\$414M	\$784M
Indirect Impact	2,270	\$138M	\$206M	\$389M
Induced Impact	2,033	\$101M	\$186M	\$322M
Total Impact	7,017	\$445M	\$807M	\$1,496M

Notes: (1) Jobs include full-time, part-time, and seasonal jobs

(2) All monetary values are in 2021 dollars

¹⁶ Output is always greater than value added because it includes the value of intermediate inputs.

Fiscal Impact

The federal, state, and local tax revenues collected due to agricultural and food cooperatives' operations in Ohio represent additional measures of economic impact created by co-ops. Cooperatives pay social insurance tax (both employee and employer-paid contributions), personal income tax for employees and member-owners, sales tax, property tax, gasoline and diesel fuel taxes, license fees, vehicle registration fees, and excise taxes on telephone, power, and other utility services.

Subchapter T of the Internal Revenue Code governs cooperative income tax treatment of any business that chooses to operate on a cooperative basis. Under Subchapter T, the objective of cooperative business is not to generate earnings for the cooperative, but to increase the income of members. After accounting for a cooperative's income and expenses, allowable expenses are deducted, and the surplus income (net margin) is redistributed to patrons of the co-op on the basis of their use of the co-op. These patronage refunds can be distributed as cash, capital credits, or property. Net margins on business with or for patrons are subject to federal income tax at either the cooperative level or the member level. However, income from nonpatronage sources is subject to tax at the cooperative level when earned and at the recipient level when paid out to members or others.¹⁷ Farmer cooperatives meeting certain requirements set out in section 521 of the Internal Revenue Code may qualify for additional deductions from taxable income.¹⁸ One cooperative expert estimates that currently most agricultural co-ops are Subchapter T cooperatives because of the strict rules for qualifying as an "exempt" cooperative under Section 521.¹⁹

Due to the complexities in cooperative taxation and limited tax information provided at the individual co-op level, we could not estimate the direct tax contribution of agricultural and food cooperatives in Ohio. Suppliers selling directly to the cooperatives and suppliers selling to the cooperatives' supply chain generated \$28 million in federal and \$15 million in local and state tax revenues (Table 3). The induced tax impact from wage expenditures was \$41 million.

Table 3. Annual Fiscal Contribution of Agricultural and Food Cooperatives in Ohio

	Local Tax	State Tax	Federal Tax	Total Tax
Direct Impact	N.A.	N.A.	N.A.	N.A.
Indirect Impact	\$7M	\$8M	\$28M	\$43M
Induced Impact	\$9M	\$10M	\$22M	\$41M

Note: All monetary values are in 2021 dollars

¹⁷ [Understanding Cooperatives: Income Tax Treatment of Cooperatives](#). Cooperative Information Report 45, Section 8.

¹⁸ [Title 26. Section 521. Exemption of farmers' cooperatives from tax](#). Cornell Law School. Legal Information Institute.

¹⁹ [Section 521 Farmer Cooperatives](#). Co-Op Mastery. The Ohio State University.

SECTION IV: COVID-19 IMPACT ON AGRICULTURAL AND FOOD COOPERATIVES

We interviewed six Ohio-based food and agriculture cooperatives to qualitatively assess the influence of the COVID-19 pandemic on their organizations.²⁰ One interviewee began operating during the pandemic, offering a unique perspective on the process of navigating their launch. Four of the cooperatives operate only in Ohio, while the other two are based in Ohio and operate in Ohio and neighboring states.

Impacts on Employees, Operations, and Governance

Three of the cooperatives stated that the pandemic has only negatively impacted their organization, whereas the other three found that the impacts of the pandemic had been both positive and negative. The pandemic had a largely neutral impact on job counts, with all of the cooperatives employing roughly the same number of people in 2021 as they did pre-pandemic. In terms of membership, most of the cooperatives also did not see a change. One co-op did anticipate seeing membership numbers drop in 2020 but had not yet done this analysis at the time of the interview. Another co-op saw membership increase, given the need to add out-of-state farmers to supplement crop losses caused by a May 2020 freeze in Ohio.

Every interviewee saw the COVID-19 pandemic substantially impacting their cooperative's operations. Co-ops that were accustomed to employees traveling to member farms ceased these in-person visits; as one interviewee put it, "we went from travelling two days a week to never." Virtual visits and meetings arose in place of face-to-face. One cooperative already operated completely remote pre-pandemic. Administrative staff of the other five cooperatives worked from home as much as possible. Most had returned to in-person operations by the time of the interviews in 2021. One returned to the office in the summer of 2020 but went back to remote operations over the winter months to mitigate the impact of the holiday season on potential COVID-19 spread.

Remote operations similarly impacted governance structures. One cooperative used digital technologies to connect and meet with community members. Others used Zoom to conduct board and membership meetings. One cooperative "tried Zoom board meetings once, but it didn't really work out so we moved back to in-person, masked and socially distanced." Another had to change their co-op bylaws to accommodate remote meetings, as "one of the rules was we had to meet in person, on a quarterly basis...We had to change it to then be able to go virtual..." Several co-ops mentioned the downside of losing chances for face-to-face interaction. One remarked, "what we're missing is conversations outside of the board meeting. Virtual meetings are good for business that needs to be taken care of, but not for fostering 'what if' or 'what else' conversations." The same co-op did find that membership delegate meetings were more convenient when held remotely and will likely keep that format moving forward. Another

²⁰ These interviews were conducted between January 2021 and July 2021 and were held virtually via Zoom. IRB-FY2021-107

interviewee shared that they did not think board meetings were as effective virtually, because “you lose dialogue...You have disruptions...That does have consequences.”

One cooperative found that the pandemic positively impacted operations by accelerating their adoption of digital technologies. The co-op had developed a member-facing web portal and app, and although not fully implemented, the pandemic sped up the timeline and “acted as a catalyst to make this change more quickly.” The cooperative expects that the web-based platform will create substantial time and efficiency savings, as well as a reduction in reliance on labor.

Sales Impact

In terms of COVID-19’s effect on sales, as one co-op put it, “the impact ended up not as negative as we thought it would be.” Four of the cooperatives interviewed saw an initial drop in sales given the closure of restaurants and in-person dining statewide. One interviewee observed that in 2021 “restaurant demand is gradually coming back but is still only at about 40% capacity.” Eventually, increases in grocery and other retail demand helped to balance out the initial drop, but it took time for cooperatives to expand into this retail market. For one, “we took a very significant financial hit...due to the pandemic.”

Several cooperatives also mentioned issues created for their operations because of extreme backups with meatpackers and livestock processors through the summer 2020 months. This backlog was largely due to the need to reduce staff to accommodate social distancing as well as periodic closures because of COVID-19 cases among employees. In compliance with Centers for Disease Control and Prevention (CDC) guidelines, packing houses had to cut their staff by as much as 50% to reduce possible exposure.

Two cooperatives saw a positive impact on revenues due to the pandemic. For one, beyond experiencing an upward trend in wholesale demand, their direct-to-consumer Community Supported Agriculture (CSA) program grew by 130% due to more people eating and cooking at home. However, the co-ops have seen CSA participation drop down to pre-pandemic levels in 2021. Another cooperative was able to secure a government contract through the Farm to Family Food Program, which contributed to increased sales in 2020. They also saw retail demand growth by 75%. Both of these co-ops were less reliant on restaurant sales than their industry peers.

Two cooperatives interviewed for this study applied for and received a Paycheck Protection Program (PPP) loan from the U.S. Small Business Administration during the first round the program was offered in 2020. No co-ops had applied during the second round of funding in early 2021. Both of the cooperatives who received PPP funds stated that the loan enabled them to maintain employment and withstand the dramatically negative impacts on sales they experienced at the start of the pandemic.

Supply Chain Impacts

By and large, COVID-19 has negatively affected agriculture and food cooperatives’ supply chains. Four of the cooperatives interviewed explicitly mentioned trucking issues as the largest supply

chain hurdle created by the pandemic. One interviewee stated, “the biggest change or variable that is affected, that would have to be trucking. That’s been the hardest part, being able to get the product to our packing sheds from other states.” One cooperative stated they have been paying double what they normally pay in freight costs; another put this increase at 20% to 30%. Two cooperatives explicitly cited Amazon for increases in cardboard box prices and freight costs due to a shortage of drivers and more people ordering things to their homes during the pandemic.

Shipping times for cooperatives’ supplies have been substantially delayed. One cooperative waited 5 months for shelving parts to arrive, something that was supposed to take 2 to 4 weeks. Another cooperative shared that they “had to plan much farther ahead to receive agronomy goods than we’ve ever seen before.” One found that in 2021, the biggest impact continued to be on “trying to procure parts for our facilities to keep machinery running.” Goods that previously could be overnighted within two days are now taking months to arrive or are out of stock and cannot even be ordered. One interviewee has found that “it’s been hard to get boxes, it’s been hard to get bags,” both of which are needed for their packing process. As these issues have continued into 2021, one interviewee shared, “it almost feels like it’s the new norm. We have not seen any relief on it. Everything is still on backorder.”

Prices for goods used by agriculture and food cooperatives in Ohio have also been impacted. As one cooperative aptly stated, “prices have increased. If you want something sooner, you’d better be willing to pay more for it,” citing that boxes have increased over 20% in price. Another cooperative discovered that “the price for plexiglass has gotten really high,” which has impacted their efforts in installing protection barriers in their offices and member facilities. A third interviewee found that “steel prices are up, a lot of things we buy have steel in them, so obviously those prices are up.” Due to increased prices and decreased supply, two cooperatives have had to diversify and find new vendors to meet their needs. One interviewee observed that “because of our suppliers not being able to hit their target due dates and handle our volume, we’ve basically double our suppliers, just from a risk analysis standpoint.”

Sections V-VI of this report will describe rural electric cooperatives in Ohio, their economic and fiscal contribution to the state economy, and the impact of the COVID-19 pandemic on cooperatives’ membership, employees, operations, governance, and supply chain.

SECTION V: RURAL ELECTRIC COOPERATIVES IN OHIO

Rural electric cooperatives are a customer-owned, non-profit model of electric distribution. In the U.S., 830 electric distribution cooperatives operate in 2021, owning and maintaining 42% of the nation's electric distribution lines.²¹ According to the National Rural Electric Cooperative Association, 63 cooperatives provide electric generation and transmission, generating and selling wholesale power to distribution cooperatives. Together, these electric cooperatives represent the largest electric utility network in the U.S., owning \$130 billion in generation, transmission, and distribution assets,²² ultimately generating 5% and delivering 12% of the nation's electricity.²³ Rural electric cooperatives serve 42 million Americans, powering 56% of the country's landmass across over 2,500 counties in 48 states.²⁴

Electric cooperatives emerged in the 1930s through 1960s to aid in a national initiative to electrify rural America following creation of the Rural Electrification Administration by President Franklin Roosevelt in 1935.²⁵ As a result, rural home electrification grew from 10% to 90% in a 20-year span from the mid-1930s to mid-1950s.²⁶ Electric cooperatives follow a typical cooperative member-owned model, whereby the customers purchasing electricity for use in their home or business are the member-owners of the cooperative. Each member gets one vote to elect trustees to the cooperative's board, which then governs cooperative operations. Member-owners of the cooperative also often receive a portion of the economic surplus generated by the cooperative using a patronage-based system.²⁷

Ohio is the birthplace of rural electrification. In 1935, Pioneer Rural Electric Cooperative performed the nation's first installation of an electric power pole by a co-op in Piqua, Ohio. The state is currently home to 24 rural electric distribution cooperatives. These co-ops operate in 77 of Ohio's 88 counties, serving over 380,000 members' households and businesses.²⁸ Each distribution co-op serves a distinct service area as determined by Ohio statute. This limits potential cooperative customers to those residing or operating a business within the co-op's prescribed service area.²⁹ Each distribution cooperative has an obligation and exclusive right to provide electricity to those users within their service area.

²¹ National Rural Electric Cooperative Association. (2019). [Electric Co-op Facts & Figures](#).

²² Butler Rural Electric Cooperative, Inc. (n.d.). [History & Facts](#).

²³ National Rural Electric Cooperative Association. (2019). [Electric Co-op Facts & Figures](#). National Rural Electric Cooperative Association.

²⁴ National Rural Electric Cooperative Association. (2019). [Electric Co-op Facts & Figures](#).

²⁵ Ohio's Electric Cooperatives. (n.d.). [History](#).

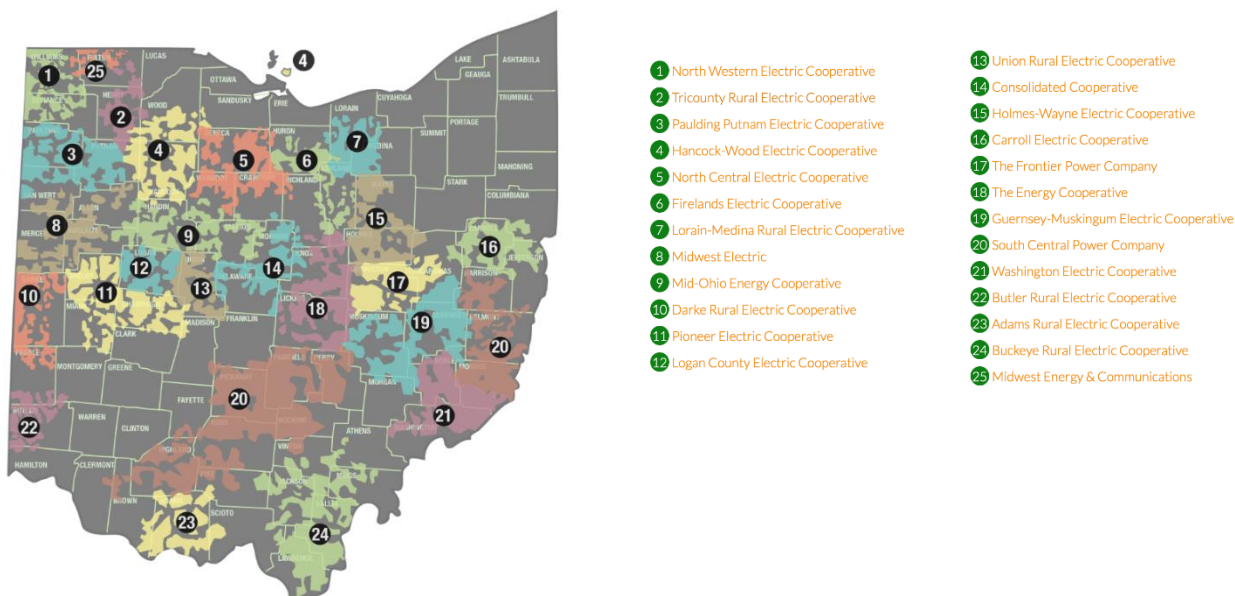
²⁶ Wallace, H. (2016, February). [Power from the people: Rural Electrification brought more than lights](#). *National Museum of American History*.

²⁷ Ohio's Electric Cooperatives. (n.d.). [Co-op Principles](#).

²⁸ Miller, D. (2021, September 2). [Building a Self-Help Network of Cooperatives: The Electric Co-ops Story](#). [Webinar Recording].

²⁹ Ohio Public Utilities Commission. (n.d.) [Electric Certified Territories Mapping Application](#).

Figure 1. Ohio Electric Distribution Cooperatives' Service Areas³⁰



Source: Ohio's Electric Cooperatives: <https://www.ohioec.org/ohios-cooperatives>

In addition to 24 Ohio-based distribution co-ops, Buckeye Power, Inc. cooperative provides energy generation and transmission services in the state. Buckeye Power was established in 1959 by Ohio's distribution co-ops, that cooperatively own and operate the generation and transmission enterprise.³¹ The majority of the electricity generated by Buckeye Power is through the Cardinal Power Plant. This plant is comprised of three coal-fired generation units in Southeast Ohio, two of which are owned by Buckeye Power.³² All of the state's electric distribution cooperatives purchase power from Buckeye Power, which then sells any excess electricity on the open market to other non-cooperative utilities.

In addition, Ohio Rural Electric Cooperatives, Inc. (also known as Ohio's Electric Cooperatives or OEC) is the statewide trade and services association for all of Ohio's electric cooperatives. OEC was founded in 1941 as an organizing body that works to foster collaboration among cooperatives, provide training and education, generate marketing and communications resources, and advocate for rural electric's interests at state and national policymaking levels. The association coordinates efforts among Ohio's electric co-ops to assist one another when there are widespread outages and other destruction due to storms and natural disasters.³³

Providing reliable, affordable electricity is essential to sustaining the economic well-being and quality of life for all of the nation's rural residents. Rural electric cooperatives emerged to serve remote areas that were not being covered by investor-owned utility companies, due to the high

³⁰ Midwest Energy & Communications co-op is based in Michigan with some Ohio operations.

³¹ Ohio's Electric Cooperatives. (n.d.). [About Buckeye Power](#).

³² Cardinal Operating Company. (n.d.). [About the Cardinal Power Plant](#).

³³ Ohio's Electric Cooperatives. (n.d.). [About OEC](#).

infrastructure costs associated with rural electrification. Today, rural electric co-ops successfully operate in these communities. The cooperative model enables these organizations to provide electricity at the lowest possible cost for rural populations, given their member-owned, non-profit structure.

The reality of rural electric co-ops serving low-density areas results in electricity prices being higher for rural electric co-ops than investor-owned utilities.³⁴ In Ohio, the 2019 average price per kilowatt-hour (kWh) for rural electrics was \$0.127, compared to \$0.072 for investor-owned utilities and \$0.118 for municipal providers (Table 4). In the Midwest, the cost difference is similar, at \$0.121 for rural electrics, \$0.088 for investor-owned, and \$0.111 for municipal. While the wholesale costs for power generation are largely the same, unique distribution challenges drive up the end-user cost of electricity for co-ops, as they provide power that has to travel longer for less revenue at higher costs. Especially true in Ohio, getting power from the substation to the end-of-the-line consumer is costlier given the larger distances power must travel and lower density per mile of electric line. Further, in rural areas it takes longer and is more challenging to restore power when lines go down. There are added natural barriers, such as more trees that must be cleared, that do not exist to the same extent in urban areas served by investor-owned utilities.³⁵ Despite these hurdles, cooperatives still have shorter outage times than investor-owned utilities.³⁶

Table 4. Electricity Cost per kWh Comparison, 2019

Provider Type	Ohio	Midwest Region	U.S.
Cooperative	\$0.127	\$0.121	\$0.121
Investor-Owned	\$0.072	\$0.088	\$0.120
Municipal	\$0.118	\$0.111	\$0.115

Note: Midwest region includes Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin
 Source: U.S. Energy Information Administration

Electric co-ops play a vital role in their communities. Beyond providing jobs, economic revenue, and member benefits, rural electric cooperatives are uniquely place-based and member-owned organizations that invest in and care for the places they serve. Rural electric co-ops operate in 92% of the nation’s persistent-poverty counties.³⁷ These co-ops report participating in local chambers of commerce and economic development organizations, as well as financially supporting local charities, educational institutions, and other non-profits.

³⁴ One factor not included in this analysis is the fee structure of the electric utility. The kWh rate does not necessarily include other fees or charges that a provider may tack onto customer bills beyond strictly rate-based charges. Discrepancies in fees between cooperatives, municipal utility providers, and investor-owned utilities may result in different gaps between end-user costs for each respective utility type.

³⁵ Miller, D. (2021, September 2). [Building a Self-Help Network of Cooperatives: The Electric Co-ops Story](#). [Webinar Recording].

³⁶ [Powering Through 2020](#). Butler Rural Electric Cooperative, Inc. Annual Report.

³⁷ National Rural Electric Cooperative Association. (2019). [Electric Co-op Facts & Figures](#).

SECTION VI: ECONOMIC AND FISCAL IMPACT OF RURAL ELECTRIC COOPERATIVES IN OHIO

This section provides a description of input data and the estimates of the total economic and fiscal impacts (direct, indirect, and induced) of rural electric cooperatives in Ohio. The economic impact indicators include: *employment* (number of jobs), *labor income* (household earnings), *value added* (output less the value of intermediary goods – often used as a proxy for Gross Regional Product), and *output* (total value of goods and services produced by cooperatives in Ohio). Fiscal impact includes estimates of taxes received by the local, state, and federal governments. For detailed tables of the economic and fiscal impact, see Appendix A.

Summary of Input Data

Electric distribution cooperatives create an impact in the economy through their purchases of electricity from power-generating plants, spending on wages and salaries, legal services, accounting, administration, advertising, meetings and conferences, and returning benefits like patronage and equity to members. We collected data on Ohio’s electric cooperatives’ functional expenses, employment, wages, and benefits paid to or for members from their most recent IRS Form 990.³⁸ Rural electric cooperatives are 501(c)(12) tax-exempt organizations, which means they are required to file a Form 990 with the IRS each year. Some rural electric cooperatives also shared their Form 7, submitted to the USDA Rural Utilities Service. In addition, we conducted an online search to collect annual reports and contact information of Ohio rural electric cooperatives’ managers. In this report, information is aggregated across the entire spectrum of rural electric cooperatives in Ohio so that no information can be attributed to any one cooperative.

Appendix Table B2 details operational expenditures of 24 rural electric cooperatives across 29 IMPLAN Sectors. Operational expenditures include any expenses made by the cooperative to support the transmission, distribution, operation, and maintenance of their services and existing capital assets.

Distribution cooperatives do not generate their own electricity; rather, they rely on power generation and transmission from Buckeye Power, Inc., which provides power to the 24 Ohio-based electric cooperatives. The cost of electric power generation contributed 76% to operational expenses paid by electric cooperatives, or \$647 million. Insurance and banking represented 10% of expenses paid by Ohio’s electric cooperatives. Landscape and horticultural services represent the cost of right-of-way clearing, the trimming, and removal of trees around power lines to ensure they do not grow too close to power lines. This category accounted for 2% of total expenses, nearly \$21 million. Architectural, engineering, and related services represent system evaluations and inspections, testing poles, and finding problems. Ohio’s rural electric cooperatives reported spending almost \$14 million on system inspections.

³⁸ IRS search website for tax exempt organizations: <https://apps.irs.gov/app/eos/>

Interviews with co-op stakeholders informed the analysis of the portion of operational expenditures spent in Ohio. On average, 73% of operational expenditures was spent in the state. Only 2% of the respective IMPLAN expenditure categories of “Insurance carriers, except direct life” and “Monetary authorities and depository credit intermediation” were spent in Ohio. Rural electric cooperatives prioritize working with other cooperatives whenever possible. Ohio’s rural electrics generally purchase insurance from Federated Insurance in Kansas City, a cooperative-based insurance company. For most of its banking, Ohio’s rural electrics used CoBank, a cooperative banking institution headquartered in Colorado.

Ohio’s rural electric cooperatives annually allocate excess operating revenue to members based upon the cooperative’s business, or patronage, with each member. Patronage capital allocated to a cooperative’s members is a form of consumer spending. Once provided to consumer-members, the amounts become part of income and can be used to help finance any type of spending. In IMPLAN, we modeled these expenditures, totaling almost \$69 million, as household spending.³⁹

Economic Impact

The direct employment impact of rural electric co-ops in Ohio was 1,293 full- and part-time jobs (Table 5). These include jobs reported by 24 distribution cooperatives, Buckeye Power, Inc., and Ohio Rural Electric Cooperatives, Inc. Electric distribution cooperatives supported an additional 2,294 jobs in their supply chain (indirect impact).⁴⁰ Industries with the largest employment impact in the electric distributor co-op’s supply chain were: *Electric power generation - Fossil fuel; Landscape and horticultural services; Office administrative services; Employment services; Management of companies and enterprises; and Business support services*. Ohio’s rural electric cooperatives supported 2,276 jobs through the spending of wages paid to employees (induced impact). Industries experiencing the most significant induced impact were: *Restaurants; Hospitals; and Offices of Physicians*.

Labor income encompasses all forms of employment income. The direct labor income of rural electric cooperatives (salaries, wages, and benefits) accounted for \$118 million (Table 5).⁴¹ The indirect income of employees in the supply chain companies totaled \$199 million. The resulting induced labor income impact in population-serving industries was \$113 million.

Value added encompasses labor income, other property income (e.g., depreciation), and taxes on production and imports (e.g., sales tax, property tax). Value added represents an industry’s

³⁹ Deller, S., Hoyt, A., Hueth, B., & Sundaram-Stukel, R. (2009). Research on the economic impact of cooperatives. *University of Wisconsin Center for Cooperatives*, 231(2209), 232-3.

⁴⁰ We derived indirect and induced impacts using operational expenditures, labor income, and household spending of 24 electric distribution cooperatives. Buckeye Power (power generator) and Ohio Rural Electric Cooperatives (association) are excluded in calculations of indirect and induced impacts to avoid double counting of spending.

⁴¹ Direct labor income includes Buckeye Power, Inc.

contribution to GDP.⁴² The resulting direct value added impact was \$380 million (Table 5). In all, rural electric cooperatives contributed \$1.1 billion in total value added to the Ohio economy.

Table 5. Annual Economic Contribution of Rural Electric Cooperatives in Ohio

	Employment	Labor Income	Value Added	Output
Direct Impact	1,293	\$118M	\$380M	\$1,273M
Indirect Impact	2,294	\$199M	\$543M	\$1,112M
Induced Impact	2,276	\$113M	\$206M	\$359M
Total Impact	5,893	\$430M	\$1,129M	\$2,744M

Notes: (1) Jobs include full-time, part-time, and seasonal jobs
 (2) All monetary values are in 2021 dollars

Output is the total operational expenditures in Ohio including payroll. The total economic output supported in Ohio from rural electric cooperatives' operations was \$2.7 billion (Table 5). Out of this total, almost \$1.3 billion (46%) was in direct output.⁴³

Fiscal Impact

Even though electric cooperatives are non-profit and tax-exempt from income tax, they pay payroll tax, kilowatt-hour tax, and property tax on every pole, every span of a wire, every power plant and resell stations. Overall, Ohio's rural electric cooperatives generated \$246 million in tax revenue (Table 6). Direct tax payments accounted for the highest proportion of the total tax receipts, \$142 million.⁴⁴ Suppliers selling directly to electric cooperatives and suppliers selling to the cooperatives' supply chain generated \$81 million in local, state, and federal tax revenues. Induced tax revenues from wage expenditures were \$23 million.

Table 6. Annual Fiscal Contribution of Rural Electric Cooperatives in Ohio

	Local Tax	State Tax	Federal Tax	Total Tax
Direct Impact	\$60M	\$48M	\$34M	\$142M
Indirect Impact	\$26M	\$27M	\$28M	\$81M
Induced Impact	\$5M	\$6M	\$12M	\$23M
Total Impact	\$91M	\$81M	\$74M	\$246M

Note: All monetary values are in 2021 dollars

⁴² We derived direct value added using the value added coefficient (29.81%) for IMPLAN sector 47 "Electric power transmission and distribution" in Ohio.

⁴³ The same as with direct employment and labor income, we included the operational expenditures and payroll of 24 distribution cooperatives, Buckeye Power, Inc., and Ohio Rural Electric Cooperatives, Inc. in direct output.

⁴⁴ We obtained information on direct tax payments from co-op interviews. We used labor income and operating expenditures of other rural electric cooperatives to infer direct tax paid.

SECTION VII: COVID-19 IMPACT ON RURAL ELECTRIC COOPERATIVES

To understand the impacts of the COVID-19 pandemic on Ohio’s rural electric cooperatives, we interviewed four distribution cooperatives and one non-profit stakeholder.⁴⁵ While three of the interviewees stated that there has been some positive impact on operations due to COVID-19, all of the cooperatives found that the negative impacts outweighed any benefits they may have experienced. The impacts of COVID-19 on Ohio’s rural electric cooperatives can be categorized as those pertaining to membership, employees, cooperative governance, and supply chain issues.

Impacts on Membership

Each interviewee shared that cooperative’s customer members clearly suffered economically due to the pandemic, with one stating, “many members were out of work, meaning they had difficulty paying their bills.” The Public Utilities Commission of Ohio (P.U.C.O), in response to the COVID-19 pandemic, urged regulated utilities under its jurisdiction to halt service disconnections to ensure utility access regardless of payment status. While electric cooperatives do not fall under P.U.C.O.’s jurisdiction, all of Ohio’s rural electric co-ops voluntarily ceased disconnections for non-payment during a several-month period beginning in late March 2020. This resulted in a rise in past-due accounts, especially at the height of the pandemic, April through August 2020, which has since largely been resolved. Further, electric cooperatives voluntarily shut down their lobbies as a result of the pandemic, forcing them to temporarily transition to online, over-the-phone, or drive-through bill pay. Limited internet availability in some locations also caused issues for members who were obliged to pay their bills online using credit or debit cards instead of paying in-person. Some interviewees cited that this was especially difficult for older members, who were attached to the social act of paying their bill in person. As a result of the pandemic, one cooperative also ceased their home inspection program designed to assist members with energy efficiency.

In terms of positive impacts, one interviewee mentioned higher than normal electricity usage due to a larger number of people working from home. Another co-op was able to invest in expanding their internet access service for members during the pandemic, in part due to greater demand for high-quality internet in homes. Overall, none of the interviewees had a net loss of members due to the pandemic, with one stating that their growth rate had slowed, but they had continued to add membership. One cooperative shared that the pandemic enabled them to update their internal systems and fully virtualize their servers, “accelerating our plans by maybe 3 to 5 years.”

Impacts on Employees, Operations, and Governance

Every interviewee from a rural electric cooperative stated that the pandemic had substantially negative impacts on employees. Across Ohio, it is estimated that approximately 30% of rural electric cooperative employees and managers contracted COVID-19. While none of the

⁴⁵ These interviews were conducted between June 2021 and September 2021 and were all held virtually via Zoom. IRB-FY2021-107

cooperatives interviewed had to lay off workers due to the pandemic, contracted work was largely put on hold. Several cooperatives had office staff transition to remote work, with one co-op still having administrative staff work from home, and others implementing a full return to office in summer 2021. Two cooperatives attempted to return to in-office work during summer of 2020, “but this was not successful. We returned to work from home due to the surge in cases in Ohio and employees getting exposed to COVID.” One interviewee struggled in convincing their board of trustees that employees could effectively work from home. Another found that there was a “moderate loss of employee efficiency and production” as a result of remote work. Employees at one co-op had limited or poor internet access at home, causing a situation where they needed to remain working in the office.

Two cooperatives shared positive aspects of the remote work experience. One found that remote work expanded their employment pool, enabling them to reach skilled talent living in urban areas and to not have to rely on the limited local talent pool of their rural area. This “improved [their] position in the competitive job arena for more technical jobs like IT and accounting,” which now will be done completely remotely moving forward. A second cooperative had planned, pre-pandemic, to invest \$10 to \$15 million within the next 5 years on increasing office space to accommodate their growing workforce. They have realized that “now, in this remote paradigm, it’s very likely we will almost never have to increase our office space...That has saved our members \$15 million.”

While most of the cooperatives interviewed were able to have administrative staff work from home, “linemen, anyone working in the field, were considered necessary, or essential employees,” and thus could not work remotely. This caused issues in resolving how to reduce exposure and implement safety measures for these essential workers. Many of the cooperatives divided linemen into smaller groups, or “pods,” that would only work with one another, avoiding cross-contamination of teams. These arrangements created a situation where “service workers were driving separately...causing an increase in fuel use and increased safety risk while on the road.” Almost every electric cooperative interviewed stated that there is a very low COVID-19 vaccination rate among their linemen, causing a need to continue this “pod” format of operations.

One cooperative recounted tensions that have arisen between employees due to the pandemic, which represent a short-term negative impact on morale. The interviewee cited a tension between employees who have gotten the COVID vaccine and those who have chosen not to. While none of the cooperatives interviewed have mandated employees get the vaccine, they have struggled with internal tensions over whether to implement such a mandate and have developed various incentivization mechanisms to increase vaccination rates. Another tension cited is between employees who can work remotely and those whose jobs cannot be done remotely, requiring that they work from the office or field.

In terms of governance impacts, several of the cooperatives interviewed mentioned issues navigating remote board of trustees meetings. One cooperative has a board with a “large number of older, retired trustees who were not comfortable with meeting remotely.” Another found that

“internet access for trustees was limited in rural areas, so meetings through telecommunications were more frequently used than online.” All cooperatives interviewed stated that meetings were completely remote for some period of time.

Supply Chain Impacts

Every electric cooperative interviewed has experienced negative supply chain impacts due to the COVID-19 pandemic. During the height of the pandemic, the largest supply chain impact cited was on sourcing personal protective equipment (PPE). All interviewees had difficulty sourcing masks, forcing them to turn to home remedies. Remote work helped to relieve the burden on cooperatives, but masks, gloves, and cleaning equipment were necessary to source for linemen. One cooperative had “each field person...assigned to one vehicle so that we didn’t have to worry about cleaning and cross-contamination,” further impacting operations.

As business operations have been ramping back up, more serious supply chain issues have arisen. The “lag and lack of materials” and “extreme interruptions” have meant that two interviewees must order large components for substations, poles, and transformers 6 months in advance. One cooperative stated that products that used to take two to three months to receive “now take 12 to 14 months.” Further, vendors are having difficulty finding semi-truck drivers, which is resulting in co-ops getting no delivery guarantee for certain products. One interviewee has found that a project “that used to take 24 months is now taking up to 5 years” because of the uncertainty.

Every electric cooperative interviewee mentioned rising prices as a serious supply chain impact they are currently experiencing. As one interviewee stated, “prices are increasing with no end in sight,” and another, “everything is costing more.” Vendors are unable to guarantee prices, which has made it “very difficult to quote projects to homeowners and businesses” and “impossible to make decisions on expanding or improving operations.” One cooperative has found that there is an 8% to 12% price variance between quoted and actual prices.

CONCLUSIONS

Cooperatives are embedded in communities across Ohio. The mutually-owned businesses operate on principles of democratic control, profit-sharing based on use, concern for community, and self-help, among others. These enterprises help member-owners market their agricultural products, secure economic capital, purchase goods more efficiently, access services like electricity and other utilities, obtain affordable housing, and much more. As of 2020, there were 452 cooperatives headquartered in Ohio and 1,088 physical locations where cooperatives operate.⁴⁶ However, prior to this analysis there was little information about the economic impact of those cooperatives on the state's economy.

Using publicly available information for Ohio's agriculture, food, and rural electric cooperatives, it is clear that these cooperatives contribute to the local and state economies. This study found that agriculture, food, and rural electric cooperatives supported an estimated 12,910 full-time and part-time jobs in the state, attained \$875 million in labor income, and contributed \$2 billion to value-added and \$4 billion to output in 2019.

The COVID-19 pandemic has had profound impacts across the nation's economy and society. As learned from interviews with eleven co-op leaders, Ohio's cooperatives did not escape being affected by the pandemic. Cooperatives in Ohio had to make changes in their daily operations, find new ways of doing business with customer-members, utilize new tools to engage with member directors, and shift the market channels they served. In some instances, these changes had neutral or even positive impacts. For example, some cooperatives saw positive impacts on revenue while others were able to expand their labor pool and still others were able to accelerate the implementation of digital technologies that will benefit their operations. Based on interviews, Ohio's cooperatives employed roughly the same number of people in 2021 as they did pre-pandemic and did not have to layoff workers during the pandemic. Perhaps the most significant negative impact of the COVID-19 pandemic on Ohio's cooperatives were supply chain issues, including significant delays in procuring goods, instability in pricing, and challenges planning for the long-term.

This report examined agricultural, food, and rural electric cooperatives; future work could expand the scope of analysis to include other cooperative sectors such as credit unions or housing co-ops. As interviewees made clear, the effects of the COVID-19 pandemic are ongoing and an important aspect of future work will be to examine further changes in Ohio's cooperative community caused by the pandemic.

⁴⁶ CFAES Center for Cooperatives, The Ohio State University. (n.d.). [Ohio Cooperatives](#).

APPENDIX A: ECONOMIC IMPACT RESULTS DETAILS

Table A1. Annual Economic Contribution of Agricultural and Food Cooperatives in Ohio

	Employment	Labor Income	Value Added	Output
Direct Impact	2,714	\$206,564,782	\$414,476,477	\$784,078,764
Indirect Impact	2,270	\$137,664,173	\$206,432,654	\$389,166,356
Induced Impact	2,033	\$101,246,029	\$185,706,536	\$322,369,036
Total Impact	7,017	\$445,474,984	\$806,615,667	\$1,495,614,156

Notes: (1) Jobs include full-time, part-time, and seasonal jobs

(2) All monetary values are in 2021 dollars

Table A2. Annual Fiscal Contribution of Agricultural and Food Cooperatives in Ohio

	Local Tax	State Tax	Federal Tax	Total Tax
Direct Impact	N.A.	N.A.	N.A.	N.A.
Indirect Impact	\$6,511,416	\$7,894,139	\$27,511,353	\$41,916,908
Induced Impact	\$8,690,899	\$9,734,084	\$21,712,784	\$40,137,767

Note: All monetary values are in 2021 dollars

Table A3. Annual Economic Contribution of Rural Electric Cooperatives in Ohio

	Employment	Labor Income	Value Added	Output
Direct Impact	1,293	\$117,968,196	\$379,551,567	\$1,273,107,595
Indirect Impact	2,294	\$198,500,126	\$543,157,761	\$1,112,442,844
Induced Impact	2,276	\$112,530,716	\$206,137,598	\$358,594,206
Total Impact	5,893	\$428,999,038	\$1,128,846,926	\$2,744,144,645

Notes: (1) Jobs include full-time, part-time, and seasonal jobs

(2) All monetary values are in 2021 dollars

Table A4. Annual Fiscal Contribution of Rural Electric Cooperatives in Ohio

	Local Tax	State Tax	Federal Tax	Total Tax
Direct Impact	\$60,248,240	\$48,166,583	\$33,933,077	\$142,347,900
Indirect Impact	\$25,663,185	\$27,000,773	\$28,425,874	\$81,089,832
Induced Impact	\$5,007,576	\$5,606,626	\$12,475,728	\$23,089,930
Total Impact	\$90,919,001	\$80,773,982	\$74,834,679	\$246,527,662

Note: All monetary values are in 2021 dollars

APPENDIX B: INPUT DATA DETAILS

Table B1. Employment in Agricultural and Food Cooperatives in Ohio by IMPLAN Sector

IMPLAN Sector	IMPLAN Sector Description	Employees in Ohio	% of All Employees in Ohio
400	Wholesale - Other nondurable goods merchant wholesalers	2,088	77%
412	Retail - Miscellaneous store retailers	131	5%
413	Retail - Nonstore retailers	82	3%
19	Support activities for agriculture and forestry	73	3%
422	Warehousing and storage	66	2%
406	Retail - Food and beverage stores	60	2%
82	Cheese manufacturing	40	1%
405	Retail - Building material and garden equipment and supplies stores	39	1%
10	All other crop farming	25	1%
404	Retail - Electronics and appliance stores	20	1%
288	Conveyor and conveying equipment manufacturing	17	1%
65	Flour milling	13	0.5%
407	Retail - Health and personal care stores	10	0.4%
409	Retail - Clothing and clothing accessories stores	10	0.3%
168	Phosphatic fertilizer manufacturing	7	0.2%
3	Vegetable and melon farming	5	0.2%
478	Other support services	5	0.2%
522	Grantmaking, giving, and social advocacy organizations	5	0.1%
11	Beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming	4	0.1%
49	Water, sewage and other systems	3	0.1%
169	Fertilizer mixing	3	0.1%
133	Wood preservation	2	0.1%
167	Nitrogenous fertilizer manufacturing	2	0.1%
297	Scales, balances, and miscellaneous general purpose machinery manufacturing	2	0.1%
398	Wholesale - Grocery and related product wholesalers	2	77%
Employment in All Sectors		2,714	100%

Note: Based on Mergent Intellect Database information

Table B2. Operational Expenditures in 24 Rural Electric Distributions Cooperatives

IMPLAN Sector	IMPLAN Sector Description	Operational Expenditures	% of Operational Expenditures
40	Electric power generation - Fossil fuel	\$647,256,134	76%
444	Insurance carriers, except direct life	\$43,641,484	5%
441	Monetary authorities and depository credit intermediation	\$42,361,699	5%
47	Electric power transmission and distribution	\$24,661,373	3%
477	Landscape and horticultural services	\$20,737,150	2%
60	Maintenance and repair construction of nonresidential structures	\$18,346,576	2%
470	Office administrative services	\$15,399,129	2%
457	Architectural, engineering, and related services	\$13,852,967	2%
473	Business support services	\$7,879,669	1%
447	Other real estate	\$6,091,597	1%
459	Custom computer programming services	\$3,280,998	0.4%
400	Wholesale - Other nondurable goods merchant wholesalers	\$3,228,799	0.4%
465	Advertising, public relations, and related services	\$1,743,961	0.2%
460	Computer systems design services	\$1,643,386	0.2%
455	Legal services	\$938,782	0.1%
456	Accounting, tax preparation, bookkeeping, and payroll services	\$547,464	0.1%
523	Business and professional associations	\$376,211	0.04%
418	Transit and ground passenger transportation	\$353,671	0.04%
507	Hotels and motels, including casino hotels	\$336,952	0.04%
412	Retail - Miscellaneous store retailers	\$323,641	0.04%
522	Grantmaking, giving, and social advocacy organizations	\$244,432	0.03%
482	Other educational services	\$243,926	0.03%
417	Truck transportation	\$213,688	0.03%
514	Electronic and precision equipment repair and maintenance	\$177,827	0.02%
462	Management consulting services	\$143,169	0.02%
474	Travel arrangement and reservation services	\$41,119	0.005%
526	Postal service	\$25,784	0.003%
481	Junior colleges, colleges, universities, and professional schools	\$7,953	0.001%
464	Scientific research and development services	\$4,210	0.0005%
	Operational Expenditures	\$854,103,751	100%

Note: All monetary values are in 2021 dollars