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Final Report

The Economic Impact and Tax Revenue Impact of Nebraska Supply/Marketing and Regional Cooperatives

Prepared for the Nebraska Cooperative Council

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Executive Summary

Agricultural cooperatives serve an important economic function in Nebraska and throughout the nation. Cooperatives provide significant cost savings and efficiency for agricultural producers through access to goods and services. Cooperatives also generate an economic impact on states and communities. In order to estimate the overall impact that Nebraska cooperatives have on the Nebraska state economy, the Nebraska Cooperative Council (NCC) asked the University of Nebraska-Lincoln Bureau of Business Research (BBR) to conduct an economic impact study of Nebraska Cooperatives over a three-year period from 2012-13 through 2014-15. The results of the analysis yielded the following information about Nebraska Cooperatives:

- **Nebraska Cooperatives have a $2.2 billion annual impact** on the Nebraska economy through sales and investment.
- **Nebraska Cooperatives create a total of 13,944 jobs annually** via cooperative operations, member payments, and investments.
- Through labor income and member payments, **Nebraska Cooperatives have an average $752.5 million annual impact on income in the Nebraska economy**.
- **Nebraska Cooperatives have a tax revenue impact of $117.9 million annually**.
- Nebraska Cooperatives benefit the Lincoln and Omaha metropolitan areas:
    - Nebraska Cooperatives have an indirect impact of $127.2 million on the Omaha and Lincoln Metropolitan area economies.
    - The Omaha and Lincoln Metropolitan Areas see 740 additional jobs and $47.6 million in indirect labor income from the activities of cooperatives throughout the state.
    - Nebraska Cooperative activities result in $6.7 million state and local taxes paid in the Omaha and Lincoln Metropolitan Areas.

Additional facts about Nebraska Cooperatives include:

- Nebraska Cooperatives average about $8.8 billion dollars in sales annually.
- Nebraska Cooperatives directly employ an average of 6,410 workers annually, with total average wages and benefits of $308.7 million annually.
- About $200 million in investments in new facilities and equipment are made annually.
- Nearly $97 million annually are returned to cooperative members in the form of patronage allocations, equity redemptions, and equity redemptions to estates.

The analyses demonstrate that Nebraska Cooperatives have a significant impact on the economy in both rural and urban parts of the state.

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I. Introduction

Agricultural cooperatives are unique business organizations. They exist to provide agricultural producers a mechanism to compete locally, regionally, nationally and globally with national and international agri-business companies at a level that individual agricultural producers alone could not attain.

The characteristics of agricultural cooperatives include:

- ✓ The subordination of capital, whereby the entity is not capitalized by individual investment by the stockholders or patrons, but by savings (profits) generated by the combined business of the agricultural producer members, the net savings are then allocated as patronage allocations to the patrons based upon the amount of business done by each patron;
- ✓ Patronage allocations may be in cash or "deferred" as members' equity credits which reflects each member's earned capital equity interest in the entity;
- ✓ Members' equity credits are ultimately redeemed, or paid in cash to the patron through a variety of redemption programs that may be adopted by the agricultural cooperative, including age based redemption or redemption on a revolving basis according to the year the deferred equity was earned;
- ✓ Agricultural cooperatives are "single taxation" entities whereby tax on net profits (savings) are paid by the cooperative only if retained for working capital purposes, or paid by the patron upon receipt of the patronage allocation or upon redemption depending upon the nature of the allocation as qualified or non-qualified pursuant to Subchapter T of the Internal Revenue Code;
- ✓ Pursuant to the Capper-Volstead Act of 1922 agricultural cooperatives may enjoy a limited anti-trust exemption allowing agricultural producers to form cooperative entities through which they may jointly market their commodities and purchase their inputs. To qualify as a Capper-Volstead Cooperative, however, the cooperative must meet the following requirements:

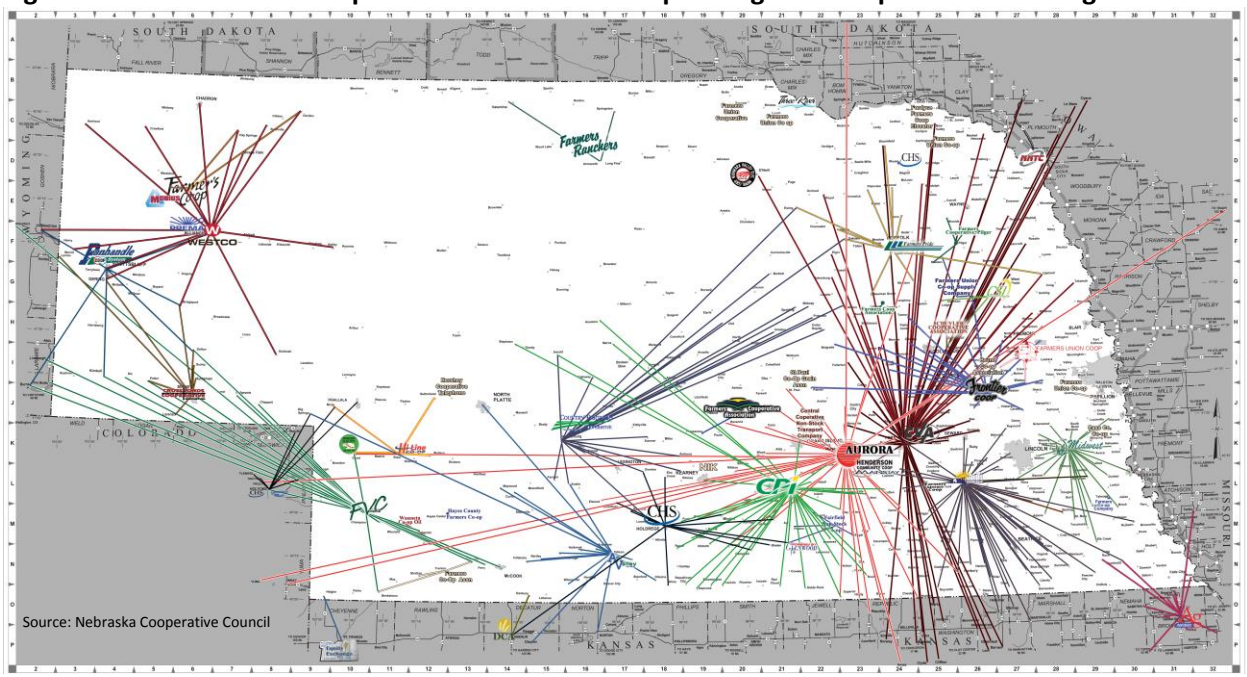
    a. Democratic control whereby each agricultural producer stockholder that patronizes the cooperative annually holds one vote in the affairs of the cooperative (voting control is not based upon the amount of equity the equity-holder has in the entity) or limit its dividends paid on capital stock to 8% per annum); and

b. The voting members or stockholders of the cooperative must all be agricultural producers. (As only qualified stockholders may sit on the boards of directors, by extrapolation then, the voting members of the board of directors must all be agricultural producers as well); and

c. More than half of its business must be done with agricultural producers.

Agricultural cooperatives serve an important function in Nebraska and throughout the nation. Cooperatives provide significant cost savings and efficiency for agricultural producers through combined access to debt and equity capital to build facilities and purchase equipment in order to provide goods and services needed by agricultural producers. Democratic control over operations to agricultural producers, ensures that cooperatives will continue to work in the best interests of agricultural producers. In Nebraska, cooperatives are prevalent and play a particularly important role in the state's economy. Currently, there are 31 agricultural supply and marketing cooperatives that are members of the Nebraska Cooperative Council (NCC). These cooperatives are depicted in Figure 1 below.

Figure 1. Nebraska Local Cooperatives and Branches Operating on a Cooperative Patronage Basis



According to 2014-2015 NCC statistics,[1] these 31 cooperatives operate an additional 345 locations across the state. In total, these cooperatives employ over 6,410 workers annually and have a total payroll well in excess of $300 million annually. Recently, NCC member cooperatives have invested over $200 million in new facilities and equipment annually, and pay over $20 million in property tax and income tax per year. Moreover, cooperatives have returned over

$90 million in patronage allocations and equity/estate redemptions annually. While these figures are impressive in their own right, it is important to consider that the vast majority of these salaries, taxes, and investments are being made in rural communities. Consequently, Nebraska cooperatives are making significant impacts on the economy in some of the most rural areas of the state, in addition to making a major contribution to the overall state economy, and the economy of metropolitan areas such as Omaha and Lincoln.

In order to estimate the overall impact that Nebraska cooperatives have on the Nebraska state economy, the NCC asked the University of Nebraska-Lincoln Bureau of Business Research (BBR) to conduct an economic impact study of Nebraska cooperatives. This economic analysis has two specific purposes. First, the study summarizes the activities of Nebraska supply/marketing cooperatives and regional cooperatives that operate in the state. Second, the economic impact of Nebraska cooperatives is measured. Direct impacts—measured through sales, employment, and wages—are presented. The report also measures "multiplier effects" using the IMPLAN model. This model considers cooperatives' purchase of supplies and services and cooperative employees' household spending. Multiplier impacts are added to direct economic impacts to estimate the total economic impact of supply/marketing and regional cooperatives on the Nebraska economy.

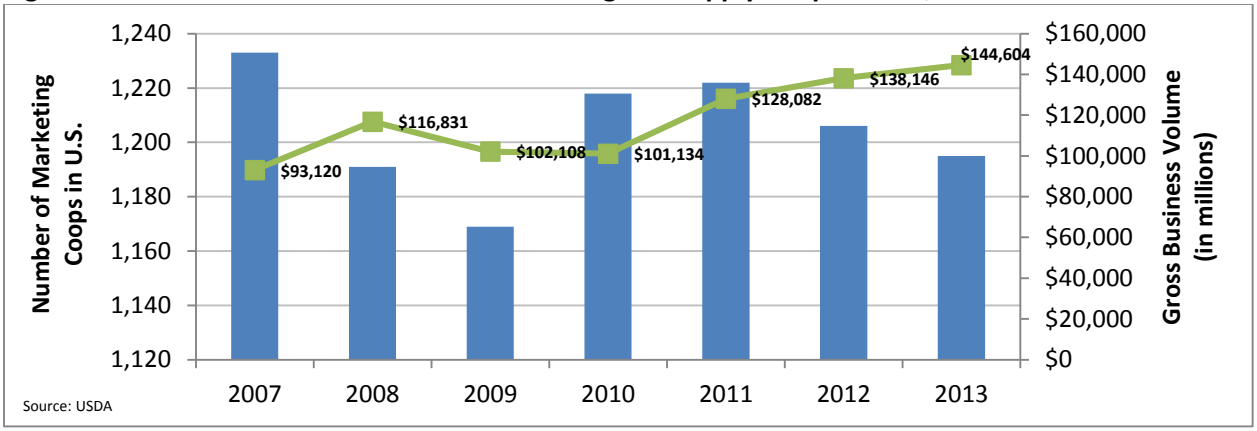
Data were collected from two primary sources. First, researchers from the BBR administered a brief questionnaire to each NCC member, as well as to several regional cooperatives that operate in Nebraska. The questionnaire asked cooperatives to provide specific information about sources of sales and revenue, the total cost of goods sold, and information about investments. BBR researchers employed a multi-step approach to administer the questionnaire. The draft questionnaire was initially sent to three cooperatives for general comment and feedback in early September, 2015. Once these cooperatives completed the form and submitted feedback, the questionnaire was revised in line with the comments received. The revised version was delivered via email to each of the remaining cooperatives in late September, 2015. The BBR received a number of responses during late September and early October, 2015. In mid-October, approximately three weeks after the original invitation had been sent, the BBR sent reminder emails to those cooperatives that had not yet responded to the survey. This reminder yielded several more responses in late October and early November. To further boost the response rate, a researcher from the BBR and personnel from the NCC telephoned cooperatives that had not yet responded. These phone calls resulted in several more surveys being returned during late November and early December. The second source of data came from NCC administrative data. Researchers at the BBR obtained the administrative data from personnel at the NCC. This information included general revenue, employment, tax payments, and redemption/equity payments, which the NCC gathers annually in the normal

course of its membership renewal process. The data collection approach allowed the BBR to analyze data by product line, as well as present a more general look at the economic activities of Nebraska cooperatives. In sum, the research provides a comprehensive estimate of the economic impact that cooperatives have on the economy in the State of Nebraska.

Cooperatives in the U.S.

In the U.S., the number of coops has decreased considerably in recent years. For example, in 2004 there were nearly 2,800 marketing and supply cooperatives in the U.S. By 2013, this number was fewer than 2,200. The USDA indicates that the net decrease is the result of mergers, acquisitions, or dissolutions. This consolidation in the number of cooperatives, however, has generally resulted in agricultural cooperatives that are better capitalized and in a better position to maintain the value of the members' equity while at the same time leveraging that equity to build the facilities and services required by agricultural producers. Modern agricultural producers are both larger in scale and have access to technology that has shortened planting and harvesting periods and required agricultural suppliers and grain buyers to be able to transport and deliver, store, and manage larger quantities of product in shorter periods of time. Thus, the reduction in the number and memberships of cooperatives has not led to a diminished economic impact. According to the USDA, the gross business volume of U.S. cooperatives increased from $237.8 billion in 2012, to $246.1 billion in 2013, an increase of 3.5%. In addition, the number of full-time cooperative employees increased from 129,400 in 2012, to 136,200 in 2013, an increase of 5.2%.[2] The graphs below present the numbers of marketing and supply coops in the U.S. in relation to gross business volume from 2007 to 2013.[3-9]

Figure 2. Gross Business Volume of U.S. Marketing and Supply Cooperatives, 2007-2013



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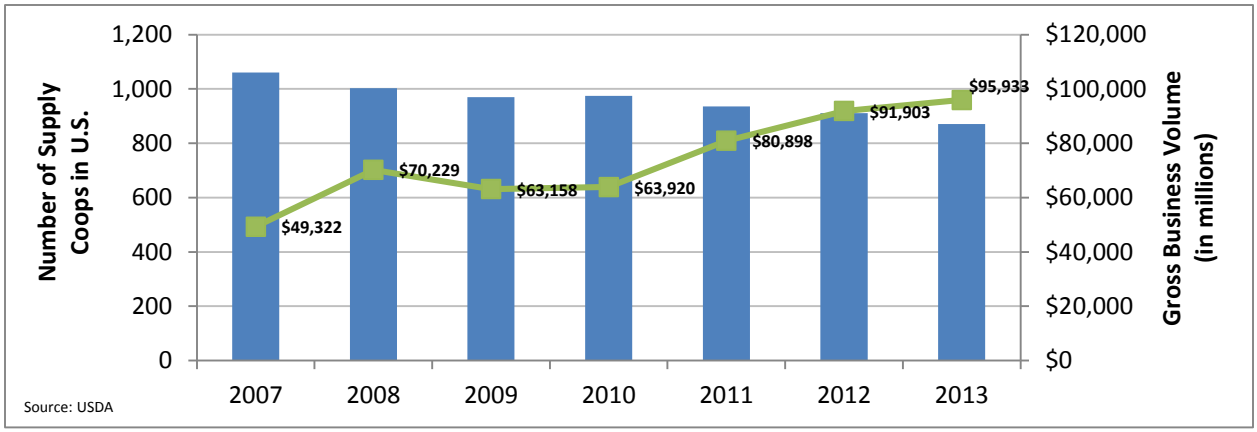


II. Cooperatives in Nebraska

Nebraska has appeared to follow national trends, with the number of cooperatives in the state decreasing considerably in recent decades. Once again, the drop in number should not be seen as an indication of a reduced presence in the state, but rather the result of a series of acquisitions and mergers. Since 2014 alone, there have been eight mergers involving Nebraska coops. The trend toward consolidation is consistent with the consolidation of farms more generally in the state. For example, USDA statistics indicate that the number of oilseed and grain farms in Nebraska dropped from 21,475 in 2007 to 20,838 in 2012.[10,11] The net result of the merger and acquisition activity is fewer, but larger, cooperatives in the state. To illustrate, Figure 3 below shows that, while the number of cooperatives has declined in Nebraska, cooperatives have seen considerable business growth in recent years.

Figure 3. Gross Business Volume of Nebraska Marketing and Supply Cooperatives, 2007-2013 (USDA)

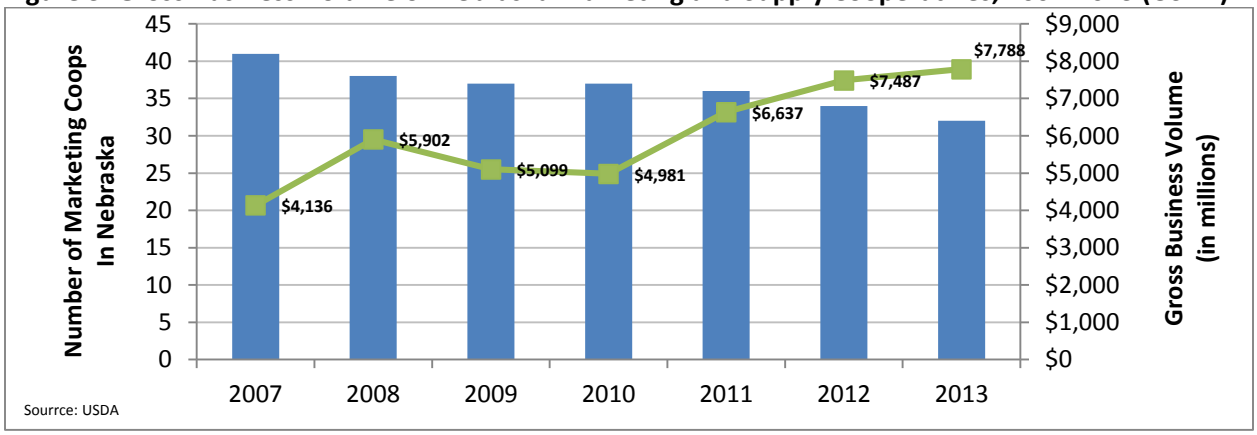
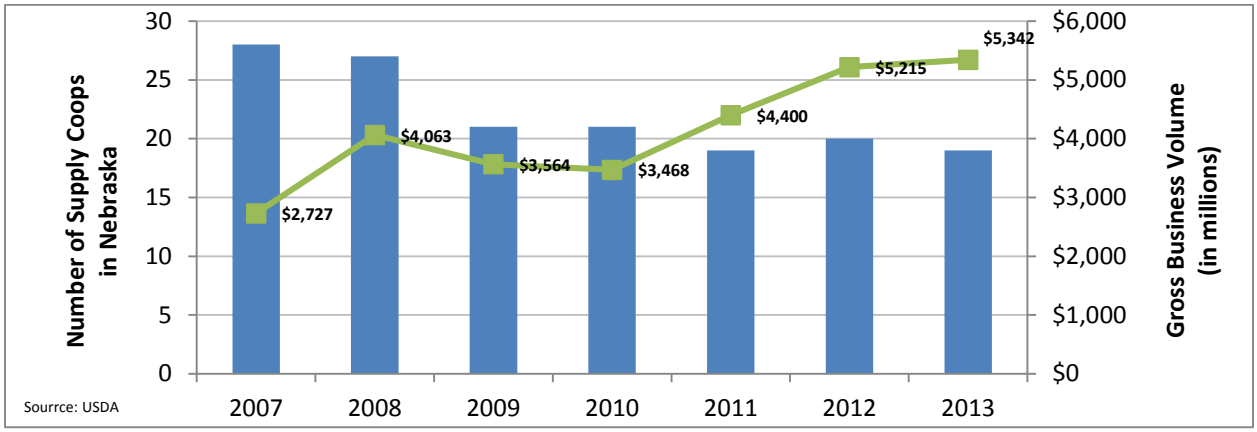


Figure 3 continued.



As Figure 3 shows, from 2007 to 2013, the gross business volume of marketing cooperatives in Nebraska went from $4.14 billion to $7.79 billion. This represents an increase in gross business volume of 88% during that time. Similarly, supply cooperatives went from $2.73 billion of gross business volume in 2007 to $5.34 billion in 2013, an increase of 96%. It is important to note that these numbers do not control for inflation during those years. Further, it is critical to point out that gross business volumes do not account for the costs of input prices or commodities.

Nebraska is home to some of the largest cooperatives in the U.S.[12] Table 1 below presents the Nebraska cooperatives that were listed among the 50 largest cooperatives in the U.S. in October, 2014. As the table shows, seven of the 50 largest cooperatives in 2014 were located in Nebraska, or nearly 15% of the total. The number of relatively large cooperatives in the state provides further evidence of the magnitude of the economic activity being conducted by cooperatives. Furthermore, it is noteworthy that some of the largest cooperatives in the nation are operating in some of the most rural areas of Nebraska. This fact attests to the impact that cooperatives have on the rural economy in the State of Nebraska.

Table 1. Nebraska Cooperatives among the 50 Largest in the U.S.

2013 U.S. Rank	Name	2013 Revenue ($ Billion)	2013 Assets ($ Billion)
5	Ag Processing Inc., Omaha	5.678	1.348
27	Producers Livestock Marketing Association, Omaha	1.152	0.149
30	Aurora Cooperative Elevator Co., Aurora	1.098	0.471
33	Cooperative Producers Inc., Hastings	1.068	0.243
43	Farmers Cooperatives, Dorchester	0.864	0.236
49†	United Farmers Cooperative, York	0.732	0.153
50†	Central Valley Ag Cooperative, O'Neill	0.726	0.255

† United Farmers Cooperative and Central Valley Ag Cooperative merged on July 1, 2014.

Source: USDA Rural Cooperatives Magazine

III. Economic Activities of Nebraska Cooperatives

To assess the economic impact that cooperatives have on the Nebraska economy, researchers from the University of Nebraska, Bureau of Business Research (BBR) collected data from a number of sources from September-December, 2015. First, researchers from the BBR administered a questionnaire to each of the cooperatives that are members of the NCC, as well as to four "regional" coops that have operations in Nebraska in addition to operations outside of the state. The purpose of the questionnaires was to collect financial information that was not available through NCC membership forms. Data collected via the questionnaire included: total amount of sales from operations in Nebraska; the share of sales from different product lines; total cost of goods sold; investments into new equipment and facilities; and information related to any joint projects between Nebraska and regional coops. These data were collected for years 2012 to 2014, which correspond with the years on which membership form data were based. Second, researchers worked with the NCC to gather administrative data and financial information from 2013/2014, 2014/2015, and 2015/2016 Nebraska Cooperative Council Membership Forms (which were based on financial data from previous fiscal years). These data included the number of full, part-time, and seasonal employees; the total amount of patronage refunds paid; equity redemption; investments into new equipment and facilities; property taxes paid; federal and state income tax paid; and employee payroll.

In a small number of cases, researchers were unable to obtain questionnaire data from Nebraska coops. In these cases, information about these coops was estimated based on the information obtained from similarly-sized coops in Nebraska. While the estimation of numbers introduces a slight amount of error into the calculations and economic impact estimations, it is common practice in analyses such as the present that rely upon entities to report financial information. Furthermore, it is worth noting that the estimated amounts of total sales accounts for less than 4% of the total sales from operations.

Value of Economic Activities

The first indicator of cooperative economic activities in the state is the total sales from cooperative operations. As Table 2 shows, the total sales were highest in 2012-2013, with nearly $9.5 billion in total sales from operations. This total dropped slightly to just over $9 billion in 2013-2014 before dropping substantially to just under $8 billion in 2014-2015.

Table 2. Total Sales from Operations of Nebraska and Regional Coops (Millions $)

	2012-13	2013-14	2014-15	3-Year Average
Sales from Operations	$9,437.30	$9,048.16	$7,905.56	$8,797.01

Source: Calculations based on BBR Questionnaire Data

To understand the sources of sales, researchers asked cooperatives to indicate the activities they undertake, as well as the percentage of total operations that those activities comprise (see Table 3). Not surprisingly, the majority of sales are the result of grain marketing activities. In 2012-2013, grain marketing sales totaled nearly $5.60 billion, comprising nearly 60% of the overall sales from cooperatives. Grain marketing sales dropped slightly to $5.24 billion in 2013-2014 before dropping considerably to about $4.30 billion in 2014-2015. Fertilizer sales also constituted a considerable proportion of activity, with sales topping $1.1 billion in both 2012-2013 and 2013-2014, before dropping to $965.92 million in 2014-2015. In each year, fertilizer sales accounted for over 12% of the overall total sales by cooperatives. Petroleum sales were the third largest area of activity with over $858.95 million in sales in 2012-2013, $786.32 million in sales in 2013-2014, and $759.88 million in sales in 2014-2015. In each year, petroleum sales accounted for around 9% of overall sales.

Table 3. Total Sales from Operations by Product Line (Millions $)

	2012-13		2013-14		2014-15	
	Dollars	% of Total	Dollars	% of Total	Dollars	% of Total
Chemicals	$512.87	5.43%	$581.29	6.42%	$621.29	7.86%
Feed	$448.15	4.75%	$442.97	4.90%	$406.99	5.15%
Fertilizer	$1,139.71	12.08%	$1,111.73	12.29%	$965.92	12.22%
Grain Marketing	$5,599.63	59.34%	$5,239.98	57.91%	$4,302.49	54.42%
Manufacturing	$155.32	1.65%	$156.92	1.73%	$86.08	1.09%
Other Revenues	$507.12	5.37%	$518.17	5.73%	$520.53	6.58%
Other Service	$75.86	0.80%	$80.46	0.89%	$92.36	1.17%
Petroleum	$858.95	9.10%	$786.32	8.69%	$759.88	9.61%
Propane	$94.10	1.00%	$87.42	0.97%	$103.97	1.32%
Transport	$45.58	0.48%	$42.90	0.47%	$46.04	0.58%
Sales from Operations	$9,437.30	100%	$9,048.16	100%	$7,905.56	100%

Source: Calculations based on BBR Questionnaire Data

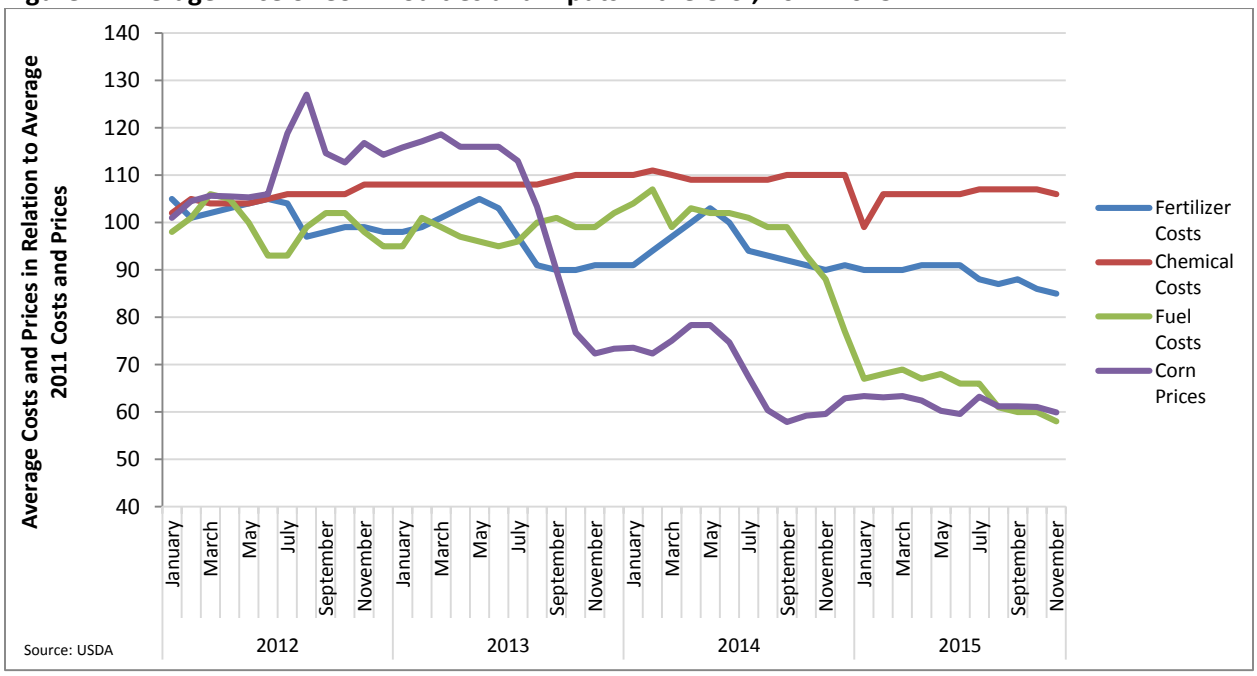
A number of trends in the data deserve mention. As noted above, the total value of economic activity of cooperatives decreased from 2012-2013 to 2014-2015. Consistent with this trend, there were considerable decreases in value of grain marketing sales. In addition, the proportion of sales from grain marketing dropped over 5% during this time. The overall value of feed dropped from 2012-2013 to 2014-2015, but feed comprised a larger proportion of sales (5.15%) in 2014-2015 than in 2012-2013. Petroleum sales followed a similar trajectory, dropping in overall value, but increasing as a percentage of overall sales. Manufacturing activities decreased in both value and proportion of sales from 2012-2013 to 2014-2015.

In turn, there has been an increase in the economic activities related to chemical sales, other revenues and services, propane, and transport. In particular, chemical sales increased from

about $513 million to over $621 million; chemicals went from comprising 5.43% of total sales in 2012-2013 to comprising 7.86% of sales in 2014-2015. Other revenues and other services—broad categories that capture a variety of activities—also increased in both value and the proportion of sales during the time period under investigation.

To better contextualize the findings, it is useful to examine commodity prices in relation to input prices over the past several years. Figure 4 below presents average chemical costs, fertilizer costs, and fuel costs in relation to corn prices per bushel. In line with recent USDA reports,[13] the data are presented as a percentage of average 2011 costs and prices. Thus, numbers greater than 100 indicate that prices were above the 2011 average, while numbers below 100 indicate prices below 2011 averages. As the graph shows, corn prices peaked in 2012, and held steady during early 2013 before dropping steadily through 2014 and 2015. On the other hand, fertilizer prices and chemical prices have held steady during this period. Fuel costs have dropped considerably since late 2014, but remained a substantial input cost for producers through early 2014.

Figure 4. Average Price of Commodities and Inputs in the U.S., 2012-2015.



Employment and Payroll

As discussed above, Nebraska cooperatives employ thousands of workers throughout the state. In many cases, particularly in rural communities, cooperatives serve as one of the primary employers. To assess the impact that cooperatives have on employment and income in Nebraska, we asked coops to report the number of full-time, part-time, and seasonal employees. The results of the analysis demonstrate that cooperatives have employed well over 6,400 individuals over the past few years (see Table 4). Not surprisingly, the vast majority of employees are full-time employees. The number of full-time employees has increased from 5,027 in 2012-2013, to 5,204 in 2014-2015. Reliance on part-time employees has decreased during the same time period, with the number of part-time employees dropping from 804 to 534. The number of seasonal employees has remained fairly steady during the time period under investigation.

Table 4. Number of Nebraska and Regional Cooperative Employees

	2012-13	2013-14	2014-15	3-Year Average
Full-time	5,057	4,997	5,204	5,086
Part-time	840	792	682	771
Seasonal	553	572	534	553
Total	6,450	6,360	6,421	6,410

Source: BBR Summaries based on NCC Membership Information

We also collected payroll information from each cooperative operating in Nebraska. As Table 5 indicates, the total payroll of Nebraska coops was over $312 million in 2012-2013. This total dropped to just over $283 million in 2013-2014 before increasing to $330 million in 2014-2015. This trend is consistent with the trends observed with regard to employment figures.

Table 5. Total Payroll of Nebraska and Regional Cooperatives (Millions $)

	2012-13	2013-14	2014-15	3-Year Average
Payroll with Benefits	$312.39	$283.60	$330.00	$308.66
Payroll without Benefits	$244.99	$230.60	$247.33	$240.97

Source: BBR Summaries based on NCC Membership Information

Investments in Equipment and Facilities

Another way in which cooperatives contribute to the Nebraska economy is through investing in new projects, either individually, or through joint ventures with other Nebraska or regional cooperatives. To assess the extent to which cooperatives do invest in new projects, we asked each coop to list the total dollar amount of new investments in equipment and facilities. The results are presented in Table 6. As the table indicates, in 2012-2013, investments in new equipment topped $71 million and investments in new facilities reached over $98 million, for a

total of over $170 million in new investments. In 2013-2014, the level of investments remained relatively steady at over $166 million total. However, investments in new equipment comprised a much larger sum of the total at over $100 million than did investments in new facilities, which were over $66 million. A substantial increase in investments occurred in 2014-2015, jumping to over $263 million. This figure represents at 58% increase in investment from 2013-2014 to 2014-2015. As Table 6 indicates, investments in new equipment were more than $133 million and investments in new facilities were more than $130 million.

Table 6. Investments in New Equipment and Facilities by Nebraska and Regional Cooperatives (Millions $)

	2012-13	2013-14	2014-15	3-Year Average
Investments in New Equipment	$71.60	$100.07	$133.18	$101.62
Investments in New Facilities	$98.84	$66.59	$130.38	$98.60
Total	$170.44	$166.66	$263.56	$200.22

Source: Calculations based on BBR Questionnaire Data

Taxes Paid

Cooperatives contribute to the Nebraska economy through payment of state income and local property taxes. To assess the magnitude of the taxes paid by Nebraska and regional cooperatives, we collected information to allow us to aggregate the total amount of taxes paid. Table 7 presents the totals. In 2012-2013, cooperatives paid over $14 million in property taxes, and nearly $3 million in state income tax. In 2013-2014, cooperatives paid over $13 million in property tax and just over $3 million in state income tax. In 2014-2015, cooperatives paid considerably more in property tax, reaching nearly $17 million. State income tax payments dropped to just under $2 million.

Table 7. Property and State Income Tax Paid by Nebraska and Regional Cooperatives (Millions $)

	2012-13	2013-14	2014-15	3-Year Average
Property Tax	$14.47	$13.28	$16.97	$14.91
State Income Tax	$2.85	$3.04	$1.99	$2.63

Source: BBR Summaries based on NCC Membership Information

Patronage Allocations and Equity Redemptions

One of the key features of supply and marketing cooperatives is the use of patronage allocations, which return cooperative income to patrons in proportion to patrons' annual use of the cooperative. Patronage allocations may be paid to patrons all in cash, in a combination of cash and deferred equity (members' equity credits—earned equity capital interest—in the cooperative) or all in deferred equity. The amount and nature of patronage allocation are determined annually by the Boards of Directors. Amounts allocated but deferred are used by

the cooperative as working capital to support operations and leverage for any required debt capital to finance capital expenditures. Agricultural cooperatives are required to redeem and pay the patrons cash for their deferred equity at some point, although the timing and amount of any equity redemption is solely at the discretion of the Boards of Directors.

Patronage allocations and equity redemptions become part of the economic impact of cooperatives. In Nebraska, cooperatives distributed over $87 million in patronage allocations in 2012-2013 (see Table 8). This amount dropped to just over $68 million in 2013-2014 before increasing slightly to $71 million in 2014-2015. Closely related to patronage allocations are the equity redemptions made by cooperatives in Nebraska. Table 8 presents the details on equity redemptions paid by Nebraska cooperatives.

Table 8. Patronage Allocations, Equity Redemptions, and Equity Redemption to Estates Paid by Nebraska Supply and Marketing Cooperatives (Millions $)

	2012-13	2013-14	2014-15	3-Year Average
Patronage Allocations	$87.78	$68.12	$71.43	$75.78
Equity Redemptions	$15.14	$14.61	$19.42	$16.39
Equity Redemption to Estates	$2.79	$3.07	$7.67	$4.51

Source: BBR Summaries based on NCC Membership Information

IV. Economic and Tax Impact Analysis

The survey results and membership data presented above provide a picture of the size of the agricultural supply and marketing cooperative sector in Nebraska. With some modification, these data provide a picture of the direct economic impact of the cooperative sector on the Nebraska economy. This is the first and most essential part of the total economic impact on the economy. However, the revenue earned and spent by Nebraska agricultural cooperatives supports additional “multiplier” activity in the Nebraska economy. The spending of cooperatives on supplies and services supports activity at other Nebraska businesses. Further, businesses of all kinds earn new revenue as cooperative employees spend their paychecks. These additional multiplier impacts must be calculated and added to the direct economic impact in order to estimate the total impact of Nebraska cooperatives on the state economy.

Direct economic impacts are presented in the first section below. Multiplier impacts are presented in a second section. The third section presents the total economic impact and the tax revenue associated with the total economic impact of Nebraska agricultural cooperatives.

Impact estimates are provided for each of the past three years (2012-13, 2013-14, 2014-15) as well as a three-year average. The three-year average is of particular interest given that the variability in prices and other conditions in the agricultural sector over the past three years. The

three-year average provides the best current snapshot of the contribution of the sector to the Nebraska economy, abstracting from the particular price conditions found in any given year.

A. Direct Economic Impact Analysis

The direct economic impact of Nebraska cooperatives is presented for three economic concepts: output, labor or member income, and employment. Output is a measure of business sales. Labor income is the portion of that revenue that is paid out as wages, salaries, or benefits to workers. Employment is the number of jobs supported by that income.

Direct economic impact is not equivalent to the data on cooperative sales provided earlier in the report. This is because direct economic impact refers to the additional economic activity in the Nebraska economy due to the operations of agricultural cooperatives. In particular, the direct economic impact from grain marketing is not the total value of grain sales, rather it is the wholesale markup. It is this wholesale markup, the difference between the prices paid and prices received, that supports the operations of the cooperatives, and the wages and salaries of employees. A similar argument applies to sales of fuel, feed and fertilizer at cooperatives. The portion of the sale price which is markup is the direct economic impact on the Nebraska economy. In the survey data collected, the markup portion ranged from 9.9% to 13.3% of the value of sales during the three-year period. The three-year average markup portion was 11.2%.

The direct economic impact estimates reported in Table 9 reflect the markup portion of grain marketing and other sales of farm supplies, fuel, groceries and other items by agricultural cooperatives. The direct output estimate also includes the value of manufactured goods, transportation services and other services provided by cooperatives. The direct economic impact averages $1.22 billion over the three-year period.

Annual investments in facilities and equipment also contribute to the economic impact of Nebraska cooperates. Survey results indicate that the annual investment in facilities and equipment range from $166 to $266 million over the three-year period. Construction spending on facilities contributes to the direct economic on the Nebraska economy. The markup portion of equipment spending also contributes to the economic impact. The direct economic impact averages $0.12 billion over the three-year period.

The total direct economic impact from both annual operations and investments averages $1.33 billion annually.

Table 9. The Direct Economic Impact of the Annual Expenditures and Investments of Nebraska Cooperatives				
	2012-13	**2013-14**	**2014-15**	**3-Year Average**
Output (Millions $)				
Cooperative Operations	$1,218.3	$1,448.0	$986.4	$1,217.6
Investment	$111.3	$84.0	$153.5	$116.3
Total	$1,329.6	$1,532.0	$1,140.0	$1,333.9
Labor Income & Member Payments (Millions $)				
Cooperative Operations	$312.4	$283.6	$330.0	$308.7
Member Payments	$105.7	$85.8	$98.5	$96.7
Investment	$42.2	$31.6	$58.1	$44.0
Total	$460.3	$401.0	$486.6	$449.3
Employment				
Cooperative Operations	6,450	6,360	6,421	6,410
Investment	725	531	988	748
Total	7,175	6,891	7,409	7,158

Source: BBR calculations

Two other components are employment and the associated labor income. Data on employment and wages at Nebraska cooperatives is available from annual membership forms supplemented by the survey of cooperatives, and was reported above in Tables 4 and 5. Results for the direct economic impact in terms of wages and benefits and employment also are presented in Table 9. Table 9 also has information on payments to cooperative members. These payments are made by cooperatives in the form of patronage allocations, equity redemptions and estate redemptions. This additional income also generates an economic impact on the Nebraska economy to the extent this income is spent. These payments average of $0.97 billion over the three-year period.

Annual wages and benefits from investment activity need to be estimated. Estimates are made using the IMPLAN model. In particular, the IMPLAN model contains ratios of construction sales to labor income (wages and benefits) and construction sales to employment. Similar ratios are available for equipment sales. These averages for Nebraska are applied to the dollar value of investment activity in order to estimate the direct labor income and employment associated with annual investment. Estimates also are reported in Table 9, and average 748 jobs per year.

Direct labor income and employment due to cooperative operations and investment are summed to yield the total direct economic impact. The direct annual economic impact is $1.33 billion in output, $0.45 billion in labor income and member payments and 7,158 jobs.

B. Multiplier Impacts

The second portion of the economic impact is the "multiplier" impact, which is the additional economic activity which occurs as agricultural cooperatives purchase supplies and services and as cooperative employees spend their paychecks on all of the components of household consumption. The economic multiplier impact is estimated utilizing the IMPLAN model. IMPLAN multipliers provide a comprehensive picture of how industries impact the economy, by fully reflecting the relationship between industries. The multiplier impact also varies based on the specific industry. Multiplier impacts will be added to direct economic impacts in order to estimate the total economic impact of supply/marketing and regional cooperatives on the Nebraska economy in terms of 1) sales, 2) labor income, and 3) employment.

Table 10 shows the annual multiplier impact from cooperative operations and investments. The multiplier impacts are typically 60% to 70% as large as the direct economic impacts. The multiplier impact can be as large as $1 billion in a year. The three-year average of the multiplier impacts is $0.87 billion of output, $0.31 billion in labor income, and 6,853 jobs.

Table 10. The Multiplier Impact of the Annual Expenditures and Investments of Nebraska Cooperatives

	2012-13	2013-14	2014-15	3-Year Average
Output (Millions $)				
Cooperative Operations	$793.8	$953.2	$653.6	$800.2
Investment	$70.9	$54.1	$98.3	$74.4
Total	$864.7	$1,007.3	$751.9	$874.6
Labor Income (Millions $)				
Cooperative Operations	$269.5	$323.9	$222.0	$271.8
Member Payments	$17.1	$13.9	$15.9	$15.6
Investment	$24.4	$18.6	$33.9	$25.6
Total	$311.0	$356.4	$271.8	$313.1
Employment				
Cooperative Operations	5,867	7,057	4,850	5,925
Member Payments	430	349	400	393.0
Investment	509	390	706	535.0
Total	6,806	7,796	5,956	6,853

Source: BBR calculations

C. Total Economic and Tax Revenue Impact

Table 11 shows the total annual economic impact of supply marketing and regional cooperatives in Nebraska. The estimates are simply the sum of the direct and multiplier impact in Tables 9 and 10. The three-year average of the total annual economic impact is $2.21 billion in output, $0.75 billion in labor income and member payments, and 13,944 jobs.

Table 11. The Total Economic Impact of the Annual Expenditures and Investments of Nebraska Cooperatives

	2012-13	2013-14	2014-15	3-Year Average
Output (Millions $)				
Cooperative Operations	$2,012.1	$2,402.2	$1,640.0	$2,018.1
Investment	$182.2	$138.1	$251.8	$190.7
Total	$2,194.3	$2,540.3	$1,891.8	$2,208.8
Labor Income & Member Payments (Millions $)				
Cooperative Operations	$581.9	$607.5	$522.0	$570.5
Member Payments	$122.8	$99.7	$114.7	$112.4
Investment	$66.7	$50.2	$92.0	$69.6
Total	$771.4	$757.4	$728.7	$752.5
Employment				
Cooperative Operations	12,317	13,417	11,271	12,335
Member Payments	430	349	400	393
Investment	1,234	921	1,694	1,283
Total	13,981	14,487	13,365	13,944

Source: BBR calculations

Economic impacts also lead to tax revenue impacts. Specifically, estimates of the labor income and member payments (wages, salaries and proprietor income) impact imply that there will be additional state income tax impacts. Further, a portion of that income also is used to purchase goods and services subject to the sales tax, and property subject to the property tax. This makes it possible to estimate state income taxes, state and local sales tax impacts, and local property tax impacts based on the labor income and member payment impacts reported in Table 11. There are also indirect business taxes on property and imports which are paid directly by businesses. These impacts are calculated by the IMPLAN model.

Table 12 shows the estimates of the state and local tax impact from indirect business taxes, state income taxes, state and local sales taxes and local property taxes. Note that the reported

income and property tax payments exceed those reported by the agricultural cooperatives in Table 7, since these estimates also incorporate additional indirect tax payments by individuals and businesses who work with cooperatives, or benefit from cooperatives through the multiplier impact. As is evidence from Table 12, approximately 45 percent of the tax revenue impact is due to indirect business taxes. The average annual state and local tax revenue impact over the three-year period was $117.9 million.

Table 12. The Total Tax Revenue Impact of the Annual Expenditures and Investments of Nebraska Cooperatives (Millions $)

	2012-13	2013-14	2014-15	3-Year Average
Indirect Business Taxes	$53.4	$57.0	$53.3	$54.6
State Income Taxes	$20.8	$20.4	$19.7	$20.3
State and Local Sales Taxes	$19.4	$19.1	$18.4	$19.0
Local Property Taxes	$24.7	$24.2	$23.3	$24.1
Total	$118.3	$120.7	$114.7	$117.9

Source: BBR calculations

D. Economic and Tax Revenue Impacts in the Omaha and Lincoln Metropolitan Areas

The direct economic impact of Nebraska's agricultural cooperatives primarily occurs outside of the two largest metropolitan areas in the state. However, the two metropolitan areas, Omaha and Lincoln, receive substantial multiplier economic impacts, due to key suppliers of finance, insurance, and other services which are located in these regions. Table 13 shows the three-year average for the multiplier economic and tax revenue impact of Nebraska agricultural cooperatives in the Omaha and Lincoln Metropolitan Areas. The table also presents data from Table 10 to provide insight on the share of the multiplier economic impact which occurs in these two larger metropolitan areas.

Table 13. The Multiplier Economic and Tax Revenue Impact in the Omaha and Lincoln Metropolitan Areas, 3-Year Average (Millions $)

	Omaha MSA	Lincoln MSA	Statewide	Omaha and Lincoln MSA Share of Total
Output	$100.7	$26.5	$874.6	14.5%
Labor Income	$39.4	$8.2	$313.1	15.2%
Employment	569	171	6,853	10.8%
State and Local Taxes	$5.4	$1.3	$62.3	10.9%

Source: BBR calculations

Results in Table 13 indicate that the multiplier impact of Nebraska agricultural cooperatives on the Omaha Metropolitan area averaged $100.7 million per year, including $39.4 million in labor

income spread over 569 jobs, and with a state and local tax revenue impact of $5.4 million. The figures for the Lincoln Metropolitan area were $26.5 million in annual output, $8.2 million in labor income, 171 jobs and $1.3 million in tax revenue. The two metropolitan areas account for 14.5% of the statewide output multiplier impact, 15.2% of the labor income impact, 10.8% for employment and 10.9% for taxes.

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